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POLICY SYNTHESIS

FOOD SECURITY RESEARCH PROJECT – ZAMBIA

*Ministry of Agriculture and Cooperatives, Agricultural Consultative Forum
and Michigan State University, Lusaka, Zambia.*

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

By:

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Key Points

- More effective policies are needed to improve access and secure rights to land and other natural resources for various stakeholders, particularly smallholder farmers.
- 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 are needed for protecting and developing natural resource areas based on appropriate resource management systems that promote broad-based participation and sharing of benefits, and offer potential for more effective community-based natural resource management.
- Improvements are needed in natural resource policy and law review processes in order to take better advantage of accumulated technical knowledge among stakeholders. In addition more efforts are required to achieve effective public-private pooling of interests and resources as well to adopting business-oriented approaches to natural resource management.
- Coordinated efforts are required to raise productivity of smallholders' agricultural land through greatly expanded applied research and extension, and complementary infrastructure investments.

PROBLEM STATEMENT: Natural resource use, including land, and rural population location is an important topic for Zambia's Sixth National Development Plan (SNDP). 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 agricultural productivity, including the use and improvement of conservation farming techniques. GRZ is currently reviewing policies for the SNDP 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.

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 3rd of December, 2009. This was intended to reach out to many stakeholders and create awareness about the effect and performance of policy and programmes in natural resources management, food security 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. Minister Catherine Namugala of Tourism, Environment and Natural Resources officially opened the forum.

OBJECTIVES: This policy brief is a summary of a larger proceedings report¹ summarizing the results of the outreach forum, which had the following objectives:

- To share research findings on studies related to natural resources management in Game Management Areas (GMAs), access to land and conservation farming, and how these relate to rural welfare;
- 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.²

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. Figure 1 uses geographical information system techniques to overlay land use and population shape files which identify many of the important and interrelated land use and rural population concentration issues discussed in this forum.

FINDINGS - DISCUSSIONS ABOUT

GMAs: 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. Three 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.

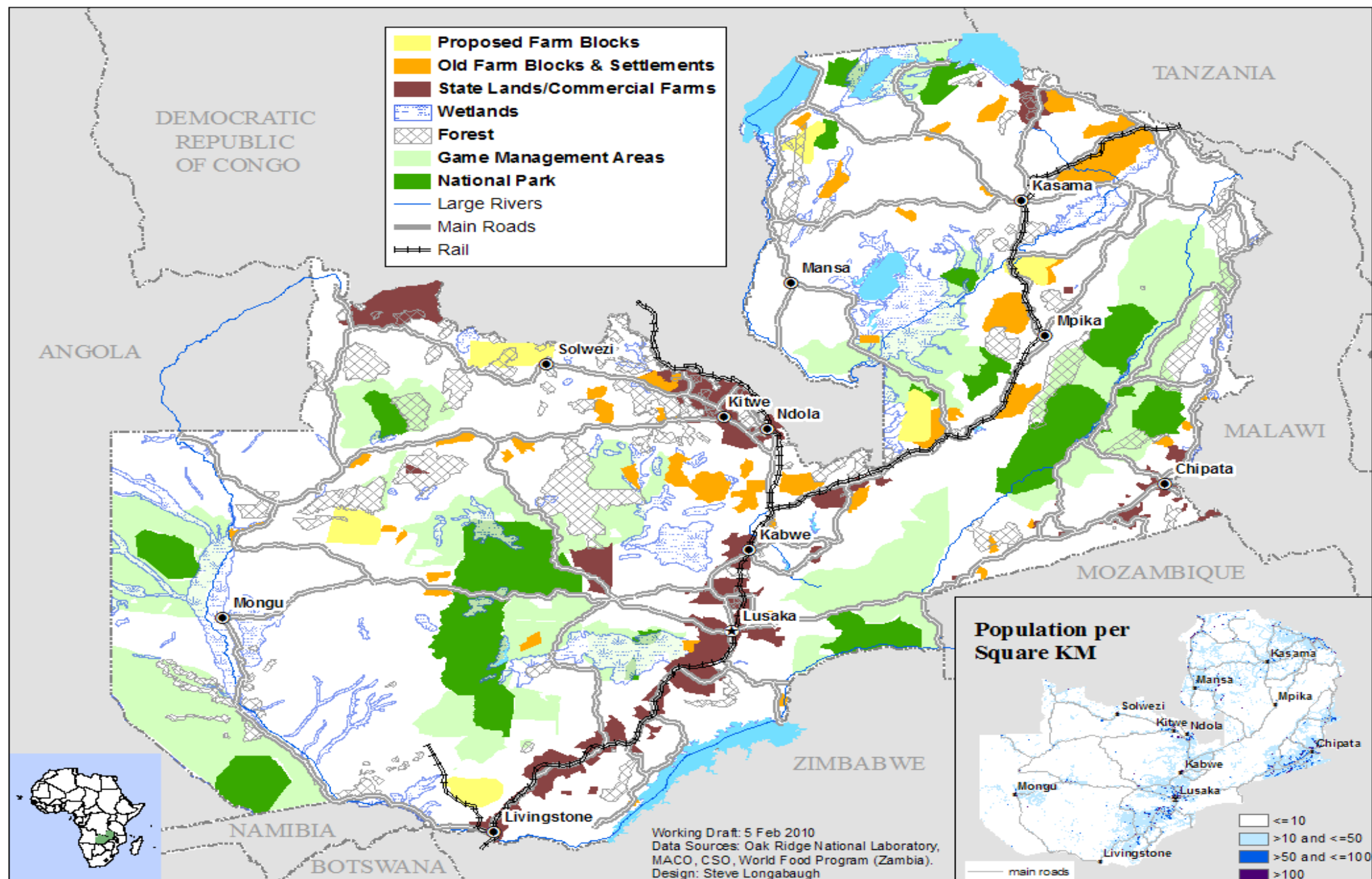
The first study by NRCF sought to evaluate the impact of wildlife management policies on communities by analysing the commercial, ecological and social performance of the wildlife-based tourism industry. The study also assessed impacts on conservation by analysing the status of the habitat and the animal 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 Zambia Wildlife Authority (ZAWA) to Community Resources Boards (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) 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

Figure 1. Map of Important Land Use Features and Population Density in Zambia



4) within the GMAs, 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 from animals (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.

FINDINGS - CONSERVATION FARMING, LAND AND COMACO: 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 living far away from towns, who have more land and are related to a headman, perceived 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 farm blocks are remotely located, in areas with few people and therefore far from markets and services (see Figure 1). 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. Results show that despite these 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 other complementary factors.

The study concluded that limited access to land, the 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 showed 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 2006/2007 baseline study results 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. Training is about 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 as processed products to urban retail outlets.

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.

POLICY RECOMMENDATIONS: 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

Additional 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 public sector participation in the management of natural resources is needed including formulation of appropriate policies and legislation.

4. Business Oriented Approaches from a Strengthened Private Sector Involvement

More business-oriented natural resource management approaches are needed 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.

Additional efforts are also 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 habitats, while also finding ways to improve smallholder food security and welfare.

Likewise, more adequate approaches are needed to raise productivity of smallholders'

agricultural land through greatly expanded applied research and extension, and complementary infrastructure improvements.

6. Additional Applied Research is Needed on the Following Topics:

- CBNRM, natural resources management and food security: appraisals of current practices in and outside government;
- Land access and security of tenure: ways to improve land tenure security, access and user rights for other natural resources on customary land;
- 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;
- Private Public Partnerships (PPPs) and business environment: current government policies acknowledge the importance of partnerships yet an implementation challenge remains of turning policy into action.

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

REFERENCES/ACKNOWLEDGMENTS:

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¹ This policy synthesis draws on a larger proceedings report with the same title and authors, downloadable at: <http://www.aec.msu.edu/fs2/zambia/wp44.pdf>

² See On-Line Document and Resource Directory at: <http://www.aec.msu.edu/fs2/zambia/resources/index.htm>