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**ADMADE**  
**AN EVALUATION**  
**TODAY AND THE FUTURE**  
**POLICY ISSUES AND DIRECTION**

**Prepared For:**

**United States Agency For  
International Development**

**and**

**The National Parks And  
Wildlife Service Of Zambia**

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## ABBREVIATIONS

|        |  |
|--------|--|
| ADMADE | ADMINISTRATIVE MANAGEMENT DESIGN                       |
| GMA    | GAME MANAGEMENT AREA                                   |
| IUCN   | INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE     |
| LIRDP  | LUANGWE INTEGRATED RURAL DEVELOPMENT PROJECT           |
| NGO    | NON-GOVERNMENTAL ORGANIZATION                          |
| NPWS   | NATIONAL PARKS AND WILDLIFE SERVICE OF ZAMBIA          |
| NRMS   | NATURAL RESOURCES MANAGEMENT PROJECT                   |
| PH     | PROFESSIONAL HUNTER                                    |
| PHAZ   | PROFESSIONAL HUNTERS ASSOCIATION OF ZAMBIA             |
| SADCC  | SOUTHERN AFRICA DEVELOPMENT COORDINATION<br>CONFERENCE |
| USAID  | UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT     |
| WMA    | WILDLIFE MANAGEMENT AUTHORITY                          |
| WWF    | WORLD WILDLIFE FUND                                    |

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## 1.0 INTRODUCTION

ADMADE (Administrative Management Design) is a government policy initiated in 1987 which recognizes the need for local communities to have stewardship over and receive economic benefits from sustainable use of wildlife resources within Zambia's 34 Game Management Areas (GMA's) if the wildlife within these areas is to survive and if the GMA's are to act as protective buffer zones for Zambia's national park system. It is the progeny of and is currently administered by the National Parks and Wildlife Service (NPWS), who should be given all credit for this wonderful program. Along with the CAMPFIRE Program in Zimbabwe, it must be considered one of the most innovative designs in the history of conservation.

This mid-term evaluation is being undertaken for USAID and the Zambian National Parks and Wildlife Service. The Scope Of Work for this evaluation was a joint effort between these two parties. This mid-term evaluation should be considered multi-purpose in nature.

Its main reason for being undertaken is to determine to what degree the five major Zambian objectives of ADMADE are being achieved, as funded by the USAID Zambian Natural Resources Management Project (690-0251). This is a component of the Regional Natural Resources Management Project funded through the Southern Africa Development Coordination Conference (SADCC) for a total of \$US 19,530. The Zambian component consists of \$US 3,000,000 to support game management in 9 GMA's and was authorized in 1989 with a project completion date (PACD) of August 31, 1995. These objectives consist of:

- \*"Demonstrate wildlife utilization as a preferred profitable land use in four command areas, and influence change in national policy to confer proprietorship to the community through confirming local capacity for sustainable management.

- \*Establish self-sustaining resource management programs in the target areas which will increase local employment opportunities and income, result in optimal and sustained wildlife yields, and provide the communities with access to a renewable source of revenues for development projects.

- \*Establish and strengthen institutions and decision-making procedures involving the local communities in sustainable resource management and distribution of economic benefits from the wildlife resource base.

- \*Enhance social and rural welfare through increased income and access to protein, community development projects, and expanded participation of women in the development process.

- \*Build the ability of the sub-authority to capture returns from wildlife utilization directly and to influence policy

changes supporting direct return of economic benefits to communities."

Additionally, this evaluation will look at training needs, institutional linkages and an appropriate framework, access by the community to accrued wealth from wildlife management and the current accounting system, effects of the project on national policy, expansion of the project into other income generating activities.

Constructive and innovative thinking will be provided whose ideas, upon the consent of USAID and NPWS can be used for the development of a Project Paper Amendment.

Most importantly, this mid-term evaluation will provide an unbiased evaluation to the ADMADE program from outsiders. It is hoped that suggestions provided in this report may provide fresh and creative ideas with regard to policy reform and actions, some of which might be considered appropriate for ADMADE to adopt as part of their widely accepted program.

## 2.0 EXECUTIVE SUMMARY

ADMADE (Administrative Management Design) is a government policy initiated in 1987 which recognizes the need for local communities to have stewardship over and receive economic benefits from sustainable use of wildlife resources within Zambia's 34 Game Management Areas (GMA's).

This mid-term evaluation is being undertaken for USAID and the Zambian National Parks and Wildlife Service. The purpose of this mid-term evaluation should be considered multi-purpose in nature: 1) Its main reason for being undertaken is to determine to what degree the five major Zambian objectives of ADMADE are being achieved, as funded by the USAID Zambian Natural Resources Management Project (690-0251), 2) Recommendations from this evaluation will be used by USAID to formulate a Project Paper Amendment, and 3) Suggestions provided in this report may provide fresh and creative ideas with regard to policy reform and actions, some of which might be considered appropriate for ADMADE to adopt.

ADMADE, above all, should be looked upon as a process established to develop communication links in decision making between all key stakeholders involved in the conservation of wildlife within Zambia's borders. The hope of this evaluation is that it will provide better insight into how this communication may be improved upon so that better decisions can be made that will result in rural economic development through sustainable and wise use of Zambia's wildlife and possibly some of its other natural resources.

The following is a summary of the major findings and recommendations from this evaluation:

2.1 Creation Of An ADMADE NGO. It is recommended that NPWS strongly consider giving ADMADE a life of its own as an ADMADE NGO for the following reasons:

\*Creation Of A U.S. Dollar Trust Fund to operate ADMADE, permitting ADMADE to build upon and to operate off the interest, and to receive contributions directly from donors, who can not create such funds for governments, and other philanthropic organizations.

\*Improved ADMADE Salaries. Paying appropriate salaries to key staff members such as management biologists, land management specialists, and even to top off salaries of key government staff.

\*ADMADE Able To Operate As A Business. In essence, ADMADE is in the business of marketing and selling wildlife. As an NGO it will be able to speed up the decision-making process needed to assure market oriented success.

It will also be able to venture into creative financing, undertake marketing, invest in for-profit enterprises, and provide investment/financial advice to sub-authorities.

\*Improved Communication Between Stakeholders For Management And Business Purposes through a Board of Directors based at NPWS headquarters in Chilanga consisting of the Director of National Parks, representatives from communities within the game management areas and professional hunters. This communication would extend to the field level.

\*Wildlife Insurance Policy for Village and Game Scouts.

\*Village Scout Insurance Policy to protect families of individuals working in this dangerous field.

\*Through Financial Autonomy, Selection of Who Should Be On The ADMADE Team And Permitting ADMADE To Promote Its Own Agenda And Not The Agenda Of Other Institutions.

2.2 Hiring Of a Financial Advisor to help operate the Revolving Fund and to begin determining how to equitably distribute and manage profits from sport hunting. On the average only about 2% of the gross profits from sport hunting are reaching rural communities within the GMA's for the purpose of development (35% Fund) and slightly more are reaching the unit leaders for the purpose of GMA management (40% Fund). Like any business venture, the long term success or failure of ADMADE will be determined by proper management of the Revolving Fund and on wise policy and investment decisions.

Local Hire Business Advisors would also be placed at each command to advise sub-authorities in determining how to best invest and make use of their money.

### 2.3 Safari Hunting Policies.

\*Put Safari Hunting Concessions Up For Bid:

-Each bid will have to demonstrate a Management Plan which will indicate how coordination and cooperation will take place between the professional hunter, the unit leader, management biologist, scouts and the community. This will encourage allocation of time before, during and after the hunting season interacting with the above parties.

-CV's Of All Professional Hunters will have to be submitted in order to assure qualified professionals in the field.

-Rather than a lump sum, Payments from safari hunting can be made in a Role Over fashion, after the stay of each client.

-Long Term Leases will be provided of 5 years in order to provide a vested interest in the safari operator to become actively involved in improving the habitat, managing the game for improved trophy quality, and closer involvement with the community. Consideration should be given to placing in the lease an option for renewal if the Sub-Authority and the ADMADE Board of Directors are satisfied with the performance of the lessee.

\*Meet With Qualified Professional Hunters to determine the marketing implications of having a client pay for all game licenses up front.

\*Purchase Of Cull Animals By A Professional Hunter. In order to protect trophy quality, stipulate that any cull animal purchased by a PH for sport hunting should be old, infirm, a female or immature breeding trophies, and not a mature trophy bull.

#### 2.4 Gradually Decentralize The Decision-Making Process

\*As Each WMA Matures In Its Decision Making Abilities Bring The Wildlife Management Authority Down To The Level of the Unit/Game Management Area to improve the efficiency of management and development decisions.

\*Striving For One Management Biologist/Game Management Area in order to enhance planning and management decisions based on scientifically collected data at the level of the Game Management Area.

\*Providing A Book Keeper For Each Unit although planned has not yet happened and will begin providing a high level of financial autonomy.

\*Opening A Separate Community Development ("35%") Account, Having Each Sub-Authority Select One Person To Be Trained As A Sub-Authority Book Keeper in order to avoid the slow bureaucratic procedures for accessing funds. The chief and Unit Leader would be co-signatories at each sub-authority.

\*Educate Traditional Leaders Into The Economics Of ADMADE. At Nyamaluma Wildlife Management Training Center, seminars for traditional leaders should include a component that educates them into the economics of ADMADE and the safari hunting business so that they can begin taking a more active role in the decision making process.

2.5 Encourage Full Application Of The "Grass Roots Democratization Process" That Exists In Traditional Rule By:

\*At the planned seminars to be held by the Nyamaluma Training Center, encourage the chiefs and headsmen to take advantage of this "Grass Roots Democratization Process" by both feeding and receiving information from the communities.

\*Encourage the formation of sub-authority based interest or resource user groups who can be represented as "Special Interest Bodies" on the sub-authority. This may include representatives from the local women's club, traditional hunter's association, pit sawyers association, and even a fishermen's association where this resource is critical.

2.6 Professional Hunter's Association Of Zambia should exist to collaborate with NPWS, to regulate this branch of the private sector in order to assure that only the most qualified individuals are allowed into Zambia to pursue this profession. Consider:

\*Rejuvenation OF The Professional Hunters Association Of Zambia to be run by professional hunters for professional hunters and not by businessmen.

\*Encourage A Joint Effort Between NPWS and PHAZ To Establish Standards And Training Programs For Aspiring Professional Hunters

\*Development Of Long Term Links With Safari Club International (SCI) in order to help weed out illegitimate professional hunters, in order to promote safari hunting in Zambia, in order to avoid bad press from misinformation, and in order to undertake fund raising for the proposed trust fund from the American hunting industry and from philanthropic SCI members.

2.7 Decentralize Culling In Order To Bring Traditional Hunters Into The ADMADE Program, make culling economically viable, and assure wider distribution of game meat to the villages:

\*Create A Traditional Hunters Association with a branch at the level of each sub-authority where there is interest, with representation on the sub-authority.

\*Through The "35% Fund" Provide Game License Loans to traditional hunters who are members of the association, who will through the sub-authority equitably split the hunters and the cull quota between villages, and determine at what prices meat should be sold either in currency or in kind.

\*Creation Of A Special Position, "Village Scout Tracker" which uses the "Bush Lore" of the traditional hunters for anti-poaching purposes.

\*Use Of ADMADE Traditional Hunters To Infiltrate Commercial Poaching Rings In Order To Identify The Big Men

\*Employment Of Traditional Hunters In The Safari Industry

\*Development Of A Poachers Rehabilitation Program for commercial poachers as an option to prison which usually fails to reform them.

2.8 Managing Other Natural Resources Through The ADMADE Concept.

\*Fund a legal study to assess NPWS's and the communities' rights to resources other than wildlife within the GMA's (e.g., forests, fish, minerals.

\*Begin collaborating with the Fisheries and Forestry Departments on various pilot non-wildlife natural resource management schemes within the GMA's which use the ADMADE approach.

\*Make sure that any pilot scheme is part and partial to the development of a landuse management plan

\*Fund a literature review to see what is already known in the region about management of mopane and miombo woodlands

2.9 Planning And Management Of ADMADE GMA's/Hunting Blocks.

\*Encourage Sub-Authorities to become more actively involved in the decision-making process concerning policy issues, negotiation of concession leases, and project selection.

\*Obtain Short Term Technical Assistance To Develop A Workable Wildlife Census Methodology which focuses in areas where wildlife are concentrated in order to strive for estimates of absolute numbers for the purposes of establishing more realistic offtake quotas, and to gage trends; while combining this decision making data with with hunting statistics.

\*Provide One Management Biologist/GMA in those GMA's that are of greatest economic importance. Each biologist should have his own vehicle, computer, software, etc. as needed to carry out data collection in the field.

\*Incorporate Geographic Positioning System (GPS) improving the accuracy of ground truthing during data collection.

2.10 Improved Anti-Poaching.

\*Radio Communications between the unit and the professional hunter, and between the unit and the scouts on patrol.

\*Rainy Season Gear, including poncho, tents, ground cloth preferred over cots, light weight 40lb inflatable boat to get across swollen streams; first aid kit with tetracycline, diarrhea medicine, malaria pills, iodine, bandages, black stone (Get from "White Fathers") against snake bites.

\*Firearms and Firearms Training

-Annual Ammunition Budgets. Budget in enough ammunition so that each Scout can fire 5-10 rounds at a target each month, and every arm has at least 20 rounds in the field

-Firearms Sighting-In. Assure that at 50 meters, each firearm can hold point of aim within a 5 inch circle with 3 out of 5 shots.

-Firing Ranges. At each Unit Headquarters, construct a nearby firing range.

-Gun Repair. Have all broken weapons collected and make arrangements with the police armorer in Lusaka to repair them.

-Regular Firearms Inspection.

\*Regular Physical Training when not on patrol

2.11 ADMADE Training Needs.

\*Continued In-Country Short-Term Training At Nyamaluma Wildlife Management Center Of ADMADE Staff, and traditional leaders

\*Develop An On-The-Job Masters Degree Program For Management Biologists.

Overseas Training. The only obvious overseas training needed may be in sending two management biologists for advanced university training in silviculture (Natural Forest Management), one person for an masters in business administration/finance, and one for a BA in marketing.

2.12 Environmental Education

\*Development Of A Utilitarian Environmental Education Program With A Rural Bias

\*Develop An ADMADE Radio Program to reach out to the large and geographically isolated GMA populations to inform them better about ADMADE, and to educate adults and children about basic utilitarian natural resource management concepts that they can apply to everyday life.

2.13 ADMADE Monitoring. Provide a grant to the University of Zambia for 2-3 years to monitor the progress of ADMADE, providing creative thinking and innovative ideas to the program as unbiased outsiders, especially in the areas of finance/business, socio-economics and natural resource management.

2.14 Expand ADMADE Into The National Park System returning the park resources to the rightful owners, the rural communities to protect and to economically benefit from ecotourism.

\*Extend the chiefdoms back in to the parks to their original boundaries.

\*Based upon the percentage of the chiefdom within the parks develop a revenue sharing program with the chiefdoms (In Kenya a minimum of 25% of the gate receipts is initially being considered.

\*All lodges within the parks would negotiate long term leases through the Sub-Authorities, including first priority employment for community residents

\*All vehicles entering the park would be required to have a paid "Local Park Guide" from the community who would be trained in natural history and know the whereabouts of the latest wildlife sightings.

\*Additional Village Scouts would be recruited and trained to undertake anti-poaching patrols within the park as they currently undertake within the GMA's. This would include additional employment of traditional hunters as "Village Scout Trackers" bring them into the park management system.

2.15 General Equipment Needs. Provide a Radio Telephone to the Nyamaluma Training Center, a borehole machine to provide potable water to the villages, and an earth mover to begin constructing fish culture ponds.

### 3.0 GENERAL DISCUSSION

This evaluation is based upon (See attached list of contacts):

\*Discussions with project personnel from the Regional Natural Resource Management Project (NRMS's) based out of Zimbabwe and Malawi.

\*Discussion with the USAID/Zambia Agricultural/Natural Resources Officer

\*Discussions with National Parks and Wildlife Service Staff at the headquarters in Chilanga and the training school at Nyamaluma in the Luangwe Valley

\*Discussions with NPWS Wardens, District Executive Secretaries, Unit Leaders, Scouts, Chiefs, Sub-Authority Members, Women's Groups, Traditional Hunters and Professional Hunters in Lumimba and Munyamadzi GMA's within the Luangwe Valley, bordering North and South Luangwe National Parks and Luambe National Parks; and in Mumbwa and Lunga-Lushishi/Busanga GMA's bordering Kafue North and South National Parks.

This evaluation took place between June 8-26, 1992, with approximately one week each in the field for the two geographical regions of the country (See attached Maps).

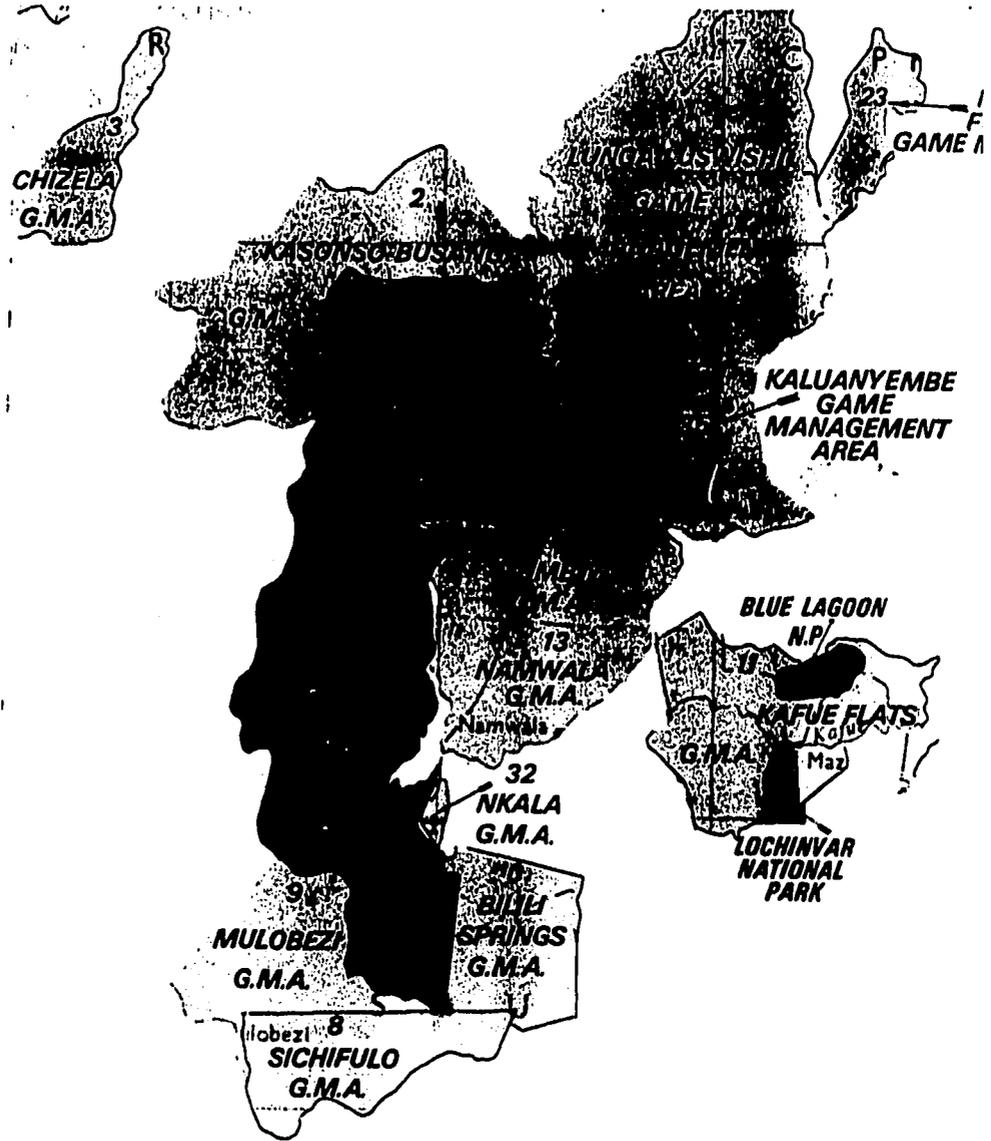
Because, there were many issues common to all GMA's, rather than have a description of each GMA and associated issues, the evaluation is presented by topic. The current situation within each area is presented and then possible policy reforms or actions are suggested which the ADMADE Program might consider adopting.

The greatest strength of ADMADE found by the evaluation team is the openness of all parties involved in this program. Everyone realizes that in implementation, ADMADE is still an enfant to be nurtured in its first two years of life. There appears to be a great deal of flexibility for testing, no one idea or no one person controlling the outcome of ADMADE. ADMADE, above all, should be looked upon as a process established to develop communication links in the decision making process between all key stakeholders involved in the conservation of wildlife within Zambia's borders. The hope of this evaluation is that it will provide better insight into how this communication may be improved upon so that better decisions can be made that will result in rural economic development through sustainable and wise use of Zambia's wildlife and possibly some of its other natural resources.



ADMADE GAME MANAGEMENT AREAS, LUANGWA VALLEY, ZAMBIA

11a



ADMAD GAME MANAGEMENT AREAS AROUND KAFUE NATIONAL PARK, ZAMBIA

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Though confined primarily within the GMA's, ADMADE as a concept and as a model for establishing the process of communication has implications for Zambia's parks, and possibly other protected areas such as national forests.

Looking beyond Zambia, the ADMADE concept with some minor modifications, can serve as a model for sustainable natural resources management, regardless of the resource, throughout much of the developing world.

Finally, the following issues and ideas presented in this evaluation, should not be considered those of the authors. None of these ideas are new. They are a synthesis of ideas presented to us by the ADMADE stakeholders with whom we met. Because of ADMADE's "Adaptive Management" approach, many of these ideas are already being discussed by ADMADE staff and some are in the process of being implemented.

4.0 INSTITUTIONAL LINKAGES AND COMMUNICATION BETWEEN STAKEHOLDERS WITHIN ADMADE.

4.1 The Current ADMADE Institutional Framework. The ADMADE institutional framework consists of the following hierarchy:

\*ADMADE Directorate based at the National Parks and Wildlife Service at Chilanga:

-Co-Administrators, the Director and Deputy Director of the National Parks and Wildlife Service

-A senior member of NPWS staff who is the ADMADE Coordinator

-National Parks And Wildlife Service Specialists based at headquarters including the head management biologist, a landuse planner and a community development officer.

-Head of the Revolving Fund

-Other senior staff members based at Chilanga

\*Thirty-Four Game Management Areas (GMA's), overseen by a Wildlife Management Authority (WMA) consisting of:

-District Executive Officer of the area's District Council acting as the Chairman of the WMA

-The NPWS Warden responsible for the GMA, acting as Executive Secretary. May be responsible for a number of GMA's

-NPWS Unit Leader directly responsible for the GMA. Responsible for only one GMA which may have a number of hunting blocks [Geographically defined Units within a GMA which can support, on the average 1-2 safari hunting operations/block]

-Chiefs (Traditional leaders whose geographical area of rule is labeled as a "Sub-Authority" for the purposes of ADMADE decision making and planning. There may be one or more sub-authorities within a GMA and within a hunting block.

-Senior Civil Servants form the District Council Headquarters "Boma," including but not limited to foresters, Director of Works, etc.

**\*Wildlife Management Sub-Authority**, normally based upon the geographical rule of one chief, though there are exceptions such as Lunga-Luswishi-Busanga GMA which has one chief who rules three sub-authorities due to the immense size of the area. Consists of:

-Chief who acts as chairman

-The GMA Unit Leader, an NPWS civil servant who serves as Secretary (May serve as a Secretary from one to three Sub-Authorities depending upon the number found within the GMA)

-Headmen/Ndunas picked by the chief. In some cases where there are many villages and thus headmen, "Group Headmen" have been established who represent a number of headmen.

-Technical Assistants, such as teachers, health clinic officers, etc.

4.1.1 **ADMADE Directorate** The role of the ADMADE Directorate as defined in the "Green Book" (Mwenya et al, 1990)<sup>1</sup> is defined as:

\*"Monitor ADMADE Program;

\*Plan For Training Of Local residents and Civil Servants assigned to work under the ADMADE program;

\*Plan, organize and direct aerial and ground censuses as well as other studies;

\*Facilitate the implementation of technical programs;

\*Manage and control project property including vehicles;

\*Identify, initiate, develop, and secure funding for the implementation of projects;

\*Provide technical advisory services to wildlife management authorities."

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<sup>1</sup>Mwenya, A.N., D.M. Lewis and G.B. Kaweche. 1990. ADMADE: policy, background and future. National Parks and Wildlife Services new Administrative Management Design for Game Management Areas. Republic of Zambia. Published with support from USAID and WWF-USA. 15p

4.1.2 Wildlife Management Authority (WMA). The WMA, which has been established for each Game Management Authority (GMA), has as its terms of reference based upon the "Green Book":

- \*"Monitor Legal and Illegal Off-Takes Of Wildlife Resources;
- \*Initiate Projects For Improved Wildlife Management;
- \*Approve allocation of sustained-yield quotas of wildlife as recommended by NPWS for various forms of use:safari hunting, export and restocking, culling, resident hunting, etc.;
- \*Liaise with the Director, NPWS, on the issuance of hunting licenses;
- \*Ensure that 40% of the revenue generated from the exploitation of wildlife resources is committed to the management costs of the wildlife resources within the unit;
- \*Ensure that the 35% revenue earned is used by the local village communities from whose areas such revenues were generated;
- \*Prepare a workplan for the unit's wildlife management program and local community improvement on an annual basis;
- \*Enforce the National Parks and Wildlife Act, Cap. 316, and other relevant Acts through the office of that unit's unit leader;
- \*Furnish the Director of NPWS records of its meetings;
- \*Encourage applied management research and solicit outside expertise when needed;
- \*Act as a planning body for formulating new wildlife policies and appropriate management activities;
- \*Implement policy governing wildlife management for its unit, and;
- \*Manage self-help schemes by appointed committees.

4.1.3 Wildlife Management Sub-Authority. A wildlife management sub-authority is established for each traditional chiefdom within a Game Management Area or Unit. According to the "Green Book," the terms of reference for the sub-authority is as follows:

\*"Monitor and solve wildlife management problems on the level of the chiefdom, such as illegal off-takes of animals, unnecessary destruction of wildlife habitat, disciplinary problems of wildlife management personnel, etc;

\*Identify projects to be funded out of the 35% of the ADMADE revenues allocated for local community improvement;

\*Facilitate the implementation of any programs, plans, projects, etc. approved by the authority, and;

\*Initiate plans or recommendations for approval by the authority for the overall improvement of the unit.

4.2 Key Stakeholders And Their Roles Within The ADMADE Institutional Framework. The key stakeholders within ADMADE should be considered:

\*National Parks And Wildlife Service:

-Headquarters at Chilanga

-Command under the leadership of the Warden

-GMA under the leadership of the Unit Leader

\*Local Communities or Chiefdoms within the GMA's

\*Professional Hunters or Safari Operations Operating Within The NGO's

4.2.1 The National Parks And Wildlife Service should be seen as the national body empowered by the country of Zambia to safeguard its parks and wildlife resources. The NPWS wishes to gradually phase out of its traditional role of policing, turning this over to local communities through the ADMADE Village Scout Program. It's hope is to form an elite body of technicians who will be primarily involved in (Personal Communication Akim Menya, Director of NPWS):

\*Providing technical assistance to the GMA's,

\*Directing policy reform as it involves parks and wildlife,

\*Overseeing monitoring and data collection,

\*Serving as the ultimate wildlife management authority for Zambia.

4.2.2 The Local Communities or Chiefdoms should be seen as the ultimate beneficiaries of activities related to the exploitation of wildlife found on their lands. It should be in their economic interests, through the Village Scout Program to protect, what should be perceived as "their wildlife" from abuse by outsiders (commercial poachers or otherwise).

The community should also be seen as a primary resource user within the GMA. Traditional hunters have always used wildlife to provide meat for the community. Fishing, honey harvesting and the use of trees for firewood, building materials and timber are just a few of the other resources within a GMA that are commonly used by the community.

Finally, the community should be seen as having a knowledge passed from generation to generation about certain aspects of natural history that could contribute to the development of landuse plans and even to the establishment of wildlife quotas.

4.2.3 The Professional Hunter (PH) has been one of the most misunderstood of all of the stakeholders. He has a multi-faceted role to play:

\*He should first of all be seen as the salesman who goes overseas each year to Market the GMA's wildlife resources primarily to North American and European clientele. Like any salesman his hope is to nurture a long term relationship with sports hunters so as to assure repeat business to Zambia.

Once a quota has been established by the management biologist, he has a key role to play in sitting down with the wildlife management authority and determining how to best divide up the quota so as to maximize revenue generation from safari hunting.

\*As a businessman, he has a key role to play in working with NPWS to assure the various wildlife policies, such as how game license fees should be paid, are acceptable with regard to assuring Zambia's competitiveness in the international safari hunting market.

\*He should be considered as a "Game Keeper on an English Estate." He is available to provide information to the management biologist based upon his practical knowledge of wildlife and habitat management gained by spending up to 6 months per year in the field, and a life time of on-the-job training passed on by older professional hunters and by his trackers, skinners and gun bearers who tend to be traditional hunters.

He is available to work with the management biologist to provide him with some of the key information (e.g., location of wildlife populations within the GMA by species) necessary for the eventual establishment of a quota system and a land use plan.

Once established, he has a key role to play in implementing the management biologist's plan from early season burning to helping in the harvest of game through bringing in foreign sports hunters.

\*Many PH's in Zambia are successful farmers and can collaborate local communities at the beginning or end of the season with regard to appropriate farming practices, identifying and adopting new and improved seed varieties, selecting good soils for farming but which will not detract from sport hunting, and other aspects of community development.

#### 4.3 Key Stakeholders And Their Actual Relationships Within The ADMADE Institutional Framework.

If ADMADE may be equated to a football team, all of the players are on the field, but they have not begun to play as a team, their ultimate goal being the sustainability of ADMADE through cooperation and an understanding of the role that should be played by each member of the team.

First of all there appears to be a lack of understanding for the role of each stakeholder in achieving the sustainability of ADMADE.

Within the National Parks And Wildlife Service, there is a perception at all levels that the level above in the over-all hierarchy has inadequate communications with the level below. There currently, is little opportunity for feedback to and from the field to headquarters. Communication appears to be primarily in only one direction from headquarters to the field. Both wardens and unit leaders complained of this communication gap. Many were let down that in their two years in the field. Not one person from headquarters had paid a visit to the field. This is also confirmed by the reports from the new ADMADE Community Development Officer.

Likewise, other than deciding how to spend the money that is given to them for development, most communities have little knowledge of the economics of the wildlife resource, nor are they involved in the establishment of the quota or the distribution of the quota between safari hunting, non-resident hunters (People living in Zambia but not on the GMA's), resident (traditional) hunters, culling, live sales, etc. They have no understanding of nor involvement in choosing who will be awarded safari hunting leases, nor what the terms are in the leases.

The professional hunters have been completely left out of the picture to date. In fact one of the major problems which must be overcome, if ADMADE is to be sustainable, is the dissipation of bad feelings between NPWS headquarters and the PH's. While some Unit leaders appear to have infrequent contact with PH's in their area, most communities have little or none. PH's are supposed to be members of both wildlife management authorities and sub-authorities, but attend none of the meetings.

Basically, there is a major need to overcome the problem of communication between key stakeholders.

NPWS recognizes this communications problem and is attempting to address this issue.

4.4 Creation Of An ADMADE NGO, A Key Institutional Structure To Improving Communication And Management. NPWS has given birth to ADMADE and nurtured it along in its formative years. Like any parent, though reluctantly, NPWS, while not completely breaking ties, should consider letting ADMADE develop a life of its own through the creation of an ADMADE NGO. At all levels from headquarters to the field, concerns were raised by all stakeholders as to the slowness of the bureaucratic system to make key business and management decisions, or as to making these decisions in isolation and without communication to other stakeholders or members of the bureaucratic chain. For example:

\*It is now June and the Sub-Authorities have still not received culling quotas

\*Although in principle they exist, resident hunting licenses are not readily obtainable in the field.

\*It is the opening of the 1992 hunting season and key changes in hunting regulations have been made at the last moment causing confusion at the field level and disrupting safari hunting.

\*The new pre-payment of game license fees has been instituted without assessing the impacts on marketing Zambia Safari Hunting overseas.

Part of this problem is believed to be due to the nature of any bureaucracy and its associated red tape, and the fact the ADMADE Directorate, who are also the heads of the NPWS are over-whelmed with trying to make ADMADE work along with their administrative duties of running a bureaucracy and management responsibilities for other projects. The other major reason is that there is not a forum nor a process which officially brings together and which promotes discussions between stakeholders as to their roles and as to where, as a team, they should be directing ADMADE.

It should be recognized that problems can only be resolved if there is a process and forum which promotes good communications between all key stakeholders.

Preliminary discussions have been held with USAID and the Director of National Parks and Wildlife Service as to the appropriateness of this recommendation. Discussions were undertaken about establishing an "ADMADE Statutory Body" by an act of parliament versus an "ADMADE NGO."

It is recommended that NPWS strongly consider giving ADMADE a life of its own as an ADMADE NGO for the following reasons:

\*Creation Of A U.S. Dollar Trust Fund to operate ADMADE, permitting ADMADE to build upon and to operate off the interest. It would offer a mechanism for USAID, other donors, philanthropists or international NGO's to make monetary or in kind contributions directly to this organization.

In most cases, major donors and NGO's can contribute to NGO trust funds but can not establish such funds for government agencies.

Rather than having funds channeled to ADMADE through projects, to disappear at the end of three to five years, contributions could be placed into the trust fund to assure more permanency.

Additionally, by having a U.S. Dollar account, ADMADE would avoid losing money as the Zambian Kwacha inflates (Between 1991 and 1992, the Kwacha went from 100 to 200K/\$US).

\*Improved ADMADE Salaries. Paying appropriate salaries to key staff members such as management biologists, land management specialists, etc. One of the problems that ADMADE will shortly face is, because of government limitations on salaries, not being able to keep qualified people.

As WWF currently is doing, an ADMADE NGO could top off salaries of key NPWS officials, who can not afford to be lost due to financial insecurity, without being harassed by bureaucratic hangups which may prohibit such actions by a government agency.

\*ADMADE Able To Operate As A Business. In essence, ADMADE is in the business of marketing and selling wildlife. As with all major business ventures, Zambia has adopted a policy of privatization of such enterprises in order to among other things speed up the decision-making process needed to assure market oriented success.

It will also be able to venture into creative financing, undertake marketing, invest in for-profit enterprises, and provide investment/financial advice to sub-authorities.

Like any business, but unlike the government, it could pay bonuses for outstanding performance, such as for capturing a high number of poachers, demonstrated management decisions that significantly improve the revenue from sustainable wildlife management, etc.

\*Improved Communications Between Stakeholders For Management And Business Purposes. In order to improve the communications between stakeholders, a Board of Directors would be created consisting of:

-Director of National Parks And Wildlife Service

-Representatives From The Local Communities (Possibly, chiefs elected by chiefs from different geographical sections of the country such as one from Luangwe Valley and another from the Kafue area).

-Representative from the Professional Hunter's Association

-Representative from the Zambia Tourism Association, if ADMADE eventually spreads into the National Parks System.

Observers, who would have no decision-making authority, but who could make recommendations, would be representatives from other natural resource management authorities such as the Departments of Fisheries and Forestry, key donors, and researchers associated with international conservation agencies who would provide relevant policy or management advice to the Board based upon their research.

The ADMADE Board of Directors would be based in NPWS headquarters at Chilanga. In collaboration with and under approval by NPWS technical staff, its field staff (e.g. Management biologists, Village Scouts and PH's) would contribute to and/or collect key data necessary in making overall decisions with regard to managing the GMA's, establishing landuse management plans and especially in establishing wildlife offtake quotas.

The ADMADE Board of Directors would work closely with NPWS in developing wildlife policies which would maximize revenue from wildlife exploitation, while maintaining Zambia's marketing competitiveness and the sustainability of wildlife as an economic venture for future generations of GMA residents.

\*Wildlife Insurance Policy. Wildlife is the most appropriate land use for the greater portion of the Zambia's GMA's. Like any agricultural venture, the farming of game needs an insurance policy against failure such as an economic recession or a world crisis that affects clients, in the case of a severe drought affecting animal populations, or in case of the need to temporarily cut back on quotas and thus revenue in order to increase trophy sizes as a long term plan to assure market competitiveness. Such an insurance policy would tide a GMA/Hunting block through rough times.

\*Village Scout Insurance Policy. Village Scouts have the one of the highest risk professions in Zambia going after highly skilled and efficient commercial poachers armed with AK-47's and other deadly weapons. A Village Scout Insurance Policy would guarantee long term security to their families in case of a mishap.

\*Selection of Who Should Be On The ADMADE Team And Permitting ADMADE To Promote Its Own Agenda And Not The Agenda Of Other Institutions. Currently, the NPWS staff has had a major problem, because of bureaucratic and political snaggles, with hiring an outside financial advisor to help manage the Revolving Fund. An autonomous NGO could hire and fire at the discrimination of the ADMADE NGO Board of Directors, thus creating and molding a winning team rather than having to put up with incompetence, red tape or "experts" often imposed upon government agencies which do not have the financial independence to say "No Thank You."

By having a trust fund in which interested donors could place money, the ADMADE NGO would make its own decisions about how the donor's money would be spent, rather than being dictated to by the contributor. It would be able to implement its ideas based upon its own agenda, rather than the agenda(s) of those who use money to gain influence, often coming from outside the boundaries of Zambia.

The Wildlife Conservation Revolving Fund would move into the ADMADE NGO and would become the Financial Arm of the NGO. Money could be used for creative purposes. There would be a Financial Manager, with business advisors at each Command to advise Sub-Authorities on how to best invest their money in for profit ventures.

The ADMADE NGO would operate like any for-profit business. The Board of Directors would behave as the key decision-making/policy body as in any large corporation giving direction and planning for the future of the organization. Each WMA/Sub-Authority would, in the field, have representatives of the key stakeholders working together as a team to maximize profits from wildlife and other natural resources found in their area. In essence the WMA's/Sub-Authorities would be considered branch offices of the corporation based at NPWS headquarters in Chilanga.

Creation of an ADMADE NGO would result in official and long term ties between the resource manager (NPWS), the owner (local communities within GMA's) and the resource users (private sector and local communities) in the planning and management of GMA resources for sustainable use and maximum economic benefits to all stakeholders while assuring the preservation of biodiversity. It would also offer an opportunity to expand this proven concept and its underlying principles to other African countries and to even consider creating branches in other parts of the world as the philosophy of community based natural resource management by indigenous peoples through adaptive modern technology becomes better understood and accepted as the future for linking conservation and development in the rural third world.

The seed money for the creation of the ADMADE NGO Trust Fund could come from USAID contributions.

Further discussions presented in this evaluation are not dependent upon the adoption of this recommendation, but would be greatly strengthened by creation of an ADMADE NGO.

## 5.0 THE ECONOMICS OF ADMADE

In 1991 the net revenue from sport hunting in ADMADE GMA's resulted in<sup>2</sup>:

|                                  | Kachwa       |
|----------------------------------|--------------|
| *Hunting Rights                  | 33,852,386   |
| *Game License Fees From Safaris  | 40,016,867   |
| *Game License Fees Local Hunters | 2,432,595    |
| TOTAL                            | 76,301,848   |
| @K 100/\$US                      | \$US 763,019 |

As this section will demonstrate, the gross revenue is many times this figure, but appears to be ending up in the pockets of middleman rather than ADMADE/NPWS.

5.1 The Economics Of Sport Hunting In Zambia. Based upon discussions with professional hunters working in the field, the following costs can be allocated to operating a sport hunting concession assuming a daily client fee to the hunting operator of \$US 800 (Can be as high as \$US 950/day) for a Class A Hunting Block:

|                                     |                  |
|-------------------------------------|------------------|
| *Salary of Professional Hunter      | \$US 225-250/day |
| *Operation of Hunting Camp          | 150-200/day      |
| *15% Booking Agent Fee              | <u>120/day</u>   |
| (Note:15% to PH if has own clients) |                  |
| Total Maximum                       |                  |
| Daily Cost                          |                  |
| To Safari Operation                 | \$US 570/day     |

In essence, all profits from safari hunting beyond this daily cost have the potential to be shared between the Government of Zambia, NPWS and the Wildlife Management Authority.

For example, areas with excellent wildlife populations and thus marketing potential are classified by the safari operators as Class A Hunting Blocks. They can sustain a higher offtake and thus hunting pressure. Examples of Class A hunting blocks include: Mulobezi/Sichifulo GMA (2 hunting blocks), Lumimba GMA (2 hunting blocks), Mumbwa (2 hunting blocks), Munyamadzi (2 hunting blocks), Lunga-Busanga (1 hunting block), Lunga-Luswishi (1 hunting block), Kafue Flats/Bangweulu (two areas considered 1 hunting block supporting specialty hunting for Kafue and Black Lechwe, respectively), and Kasonso-Busanga (1 hunting block). In such areas, a typical Class A Hunting Block can generate the

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<sup>2</sup>Personal Communication, Mwiya, Situmbeko, Revolving Fund

following net revenues:

Typical

CLASS A HUNTING BLOCK

Typically can support 18 two week clients, or 36 weeks of hunting pressure.

|  |              |
|--|--------------|
| *Client Pays Per Day   | \$US 800     |
| *Minus Cost To Safari Operator   | - <u>570</u> |
| *Money left Over for Sub Authority/Govt but which is currently lost by going through Safari Operator instead of a direct contract with a professional hunter | 230/day      |
| *Plus daily concession fee-paid by client in addition to the daily rate <sup>3</sup>   | + <u>140</u> |
| *Total Daily money to available to split between Zambian Government, NPWS and GMA Communities  | 370/day      |
| or   |              |
| Times 252 days from 36 client weeks by cutting out middle man  | 93,240       |
| *Plus 18 clients at an average of \$US 4,000/client in game license fees (Trophy or Head Tax)  | 72,000       |
| Total to be split between GMA, NPWS and Govt by cutting out middle man   | \$US 165,240 |
| versus   |              |
| Total to be split between GMA, NPWS and Government by having middle man <sup>4</sup>   | \$US 77,400  |

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<sup>3</sup>While Safari Companies charge overseas sports hunters \$US 1,000/week/hunter, ADMADE/NPWS is payed only \$US 150/week/hunter.

<sup>4</sup>ADMADE/NPWS receives only the game license fees plus \$US 150/week/hunter, or (36 weeks x \$US 150) = \$US 5,400 plus \$US 72,000

This implies a net loss of \$US 87,840/Class A Hunting Block/Year on the average by having a middle man in the Safari business who subleases to professional hunters in a Class A Hunting Block. Gross revenue generated from a Class A Hunting Block is \$US 273,600.

Class B Hunting Blocks (As classified by safari companies) have lower wildlife populations, especially of high value animals such as cats, and thus can sustain a much lower hunting pressure. Such Class B hunting blocks are represented by Fulaza GMA (1 hunting block), Luano GMA (1 hunting block), Chikwa-Chifunda (1 hunting block), West Petauke (1 hunting block), Chisomo (1 hunting block) and Rufunsa (1 hunting block).

Assuming a daily client fee to the hunting operator of \$US 700 for a Class B Hunting Block:

|  |                  |
|--|------------------|
| *Salary of Professional Hunter           | \$US 225-250/day |
| *Operation of Hunting Camp (May be less) | 150-200/day      |
| *15% Booking Agent Fee                   | <u>105/day</u>   |
| (Note:15% to PH if has own clients)      |                  |
| Total Maximum                            |                  |
| Daily Cost                               |                  |
| To Safari Operation                      | \$US 555/day     |

A typical Class B Hunting Block can generate the following net revenues:

#### Typical

#### CLASS B HUNTING BLOCK

Typically can support 12 two week clients, or 36 weeks of hunting pressure.

|  |             |
|--|-------------|
| *Client pays daily rate of client  | \$US 700    |
| *Minus Cost to Safari Operator   | <u>-555</u> |
| *Money left Over for Sub Authority/Govt but which is currently lost by going through Safari Operator instead of a direct contract with a professional hunter | +145        |
| *Plus daily concession fee-paid by client in addition to the daily rate <sup>5</sup>   | <u>+70</u>  |

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<sup>5</sup>While Safari Hunting Company charges overseas client \$US 70/day, the company pays ADMAD/ NPWS only \$US 70/week

\*Total Daily money to available to split  
between Zambian Government, NPWS  
and GMA Communities 215/day

or

Times 168 client days from 24 client weeks  
by cutting out the middle man 36,120/season

\*Plus 12 clients at an average of  
\$US 4,000/client in game license  
fees (Trophy or Head Tax) 48,000

Total to be split between GMA, NPWS  
and Govt by cutting out middle man \$US 84,120

versus

Total to be split between GMA, NPWS  
and Government by having middle man<sup>6</sup> \$US 49,680

This implies a net loss of \$US 34,440/Class B Hunting Block/Year on  
the average by having a middle man in the Safari business who  
subleases to professional hunters in a Class B Hunting Block

Furthermore, \$US 105-120/day is available to split between  
ADMADE/NPWS and the professional hunters who go to the annual SCI  
convention in Reno, Nevada obtain their own clients, cutting out an  
additional middleman, the United States based Safari Booking Agent.

In the attached table (Table 1), there is a summary of detailed  
financial statistics provided to the Mumbwa GMA Unit leader by  
Fungi Safaris, a NPWS owned company established to help them better  
understand the safari business. Two things that can be garnered  
form these statistics are: 1) Such summarized statistics should be  
required from all safari operators and entered into the ADMADE  
computerized data base as a means of having quantifiable  
information so that profits can be equitably allocated to the  
respective GMA's, and 2) huge sums of money are being lost annually  
from providing hunting leases to safari operators who turn around  
and sublease to professional hunters.

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<sup>6</sup>By having middle man instead of direct contract with  
professional hunter, ADMADE/NPWS receives only:  
(24 weeks x \$US 70) = \$US 1,680 plus the \$US 48,000 in game  
license fees

TABLE 1

MUMBWA GMA1991 SAFARI HUNTING STATISTICS

|   | <u>Mumbwa West<br/>Dam 4</u> | <u>Mumbwa West<br/>Nangoma</u> | <u>Mumbwa East<br/>Dam 3</u> |
|---|------------------------------|--------------------------------|------------------------------|
| A. Forex paid to NPWS in Game Animal, Safari Lic., GMA Permit (\$US)  | 63,982.5                     | 38,242.5                       | 45,410                       |
| B. Forex paid direct to company by hunting client for daily rate (\$US) after removal of Safari Operation Expenses & PH Salary. Equivalent to profit made by having middleman | 48,982.5                     | 29,365                         | 35,527                       |
| C. Forex paid in lease fee to revolving fund (\$US)   | 30,790                       | 20,320                         | 17,750                       |
| D. Total Net Revenue After Safari Operation Expenses & PH Salaries (A+B+C)  | 143,755                      | 87,927.5                       | 98,687                       |
| E. Revenue to ADMADE/NPWS If Through Safari Company (1)   | 68,532.5                     | 41,382.5                       | 37,957                       |
| Money Lost By ADMADE/NPWS By Having Middleman   | 75,222                       | 46,545                         | 60,730                       |
| (D-E)   |                              |                                |                              |
| Number of Classic Safaris (2 Weeks)   | 14                           | 10                             | 6                            |
| Number of Mini Safaris (1 Week)   | 5                            | 2                              | 9                            |
| Total Number of Hunter Weeks  | 33                           | 22                             | 21                           |

Note: (1) ADMADE only gets 150 \$US/week for classic safari and 70 \$US/week for mini-safari while overseas sport hunters pay \$US 1,000/week for both types of safaris. ADMADE/NPWS receives only Game License Fees (A) plus the 150-70 \$US/week/hunter.

Source: Field data sheets provided by FUNGI Safaris to the NPWS Unit Leader of the Mumbwa GMA.

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Most professional hunters argued that from a purely economic point of view, by having GMA's or NPWS undertake direct hunting leases with professional hunters over the safari operators (middlemen) that tremendous savings could be passed on to NPWS and the local communities without any loss to the quality services necessary to assure client approval.

From discussions in the field, neither the wardens, the unit leaders nor the chiefs understand the economics of sport hunting within their GMA or sub-authority.

5.2 The Current Breakdown Of Revenue From Sport Hunting. Based upon detailed conversations with the current head of the ADMADE Revolving Fund the ADMADE Revenue Stream Flow is as follows

\*License Fees and Game Animal Fees:

-50% to Government

-50% Revolving Fund used NPWS for capitol replacement of vehicles and other disposable supplies

\*Concession Fees: 100% retained by revolving fund:

-40% Management of GMA:

-Salaries of staff (Scouts, drivers, casual laborers-assistant Scouts-day to day basis

-Fuel costs

-Vehicle running and maintenance

-Rations for staff

-Camp renovation, bridge building, vehicle workshops

-35% Community Development

-10% National Park Management

-15% Non-Self Sufficient GMA's and Administrative support costs to program

Of all of the matters discussed, this was the least understood. Most of the professional hunters believed that the GMA's were getting 50% of the game license fees for development. Most of the Sub-Authorities, the wardens and unit leaders new it was 35% for community development and 40% ADMADE operational costs of something to do with the sport hunting revenue, but that was all. Even, at NPWS headquarters, many of the senior staff were confused. In Number 8 (May June 1991) of the Zambian Wildlands

and Human Needs Newsletter while the correct allotment of the concession fees is given community development and field ADMADE Operational expenses, but incorrect information is given as to how the game license fees are to be allocated.

5.3 Appropriateness Of The Current GMA Allocation Of Net Profits From ADMADE. A summary of 1991 allocations to GMA's for the purpose of management and community development is contained in Table 2. On the average only about 2% of the gross profits from sport hunting are reaching rural communities within the GMA's for the purpose of development (35% Fund) and slightly more are reaching the unit leaders for the purpose of GMA management (40% Fund).

Regardless of who was interviewed in the field, both managers (Wardens and Unit Leaders) and community developers (Sub-Authority members), there was a unanimous conclusion that too little money was reaching the field from sport hunting to permit relevant field activities.

More importantly, as noted above, neither the managers nor the community had any idea about the economics of sport hunting in their areas and thus were unable to be in a bargaining position with either NPWS headquarters, nor the safari hunting operators so as to assure an equitable share of the profits from this activity. Most sat innocently by awaiting for money to be dropped in their lap.

In many cases the appropriate amount of money is not reaching the Sub-Authorities and yet, because of their ignorance of the economics behind ADMADE and the safari hunting business, there is no response from the field as to why they are not receiving even the small percentage that has been allocated them. For instance, in a report shown to the evaluators at the Chitungulu Sub-Authority, the following money had been allocated to the GMA between August 1991 and April 1992:

\*86,000 K Chief Manyas

\*88,200 K Chief Chitungulu Area

\*18,000 Chief Kazemba, few animals in his area

Total:191,000 K

Whereas, the Lumimba GMA was to have received K719,427 for 1991.

TABLE 2

LOCAL COMMUNITIES (35%)ANDADMADE FIELD MANAGEMENT COSTS (40%)FROM 1991 SPORT HUNTING CONCESSION FEES

| <u>GMA</u>  | <u>LOCAL COMMUNITIES<br/>(35% in Kwacha)</u> | <u>MANAGEMENT<br/>(40% in Kwacha)</u> | <u>TOTAL<br/>(Kwacha)</u>  |
|---|--|---------------------------------------|----------------------------|
| Class A Hunting Blocks  |  |                                       |                            |
| Mulobezi/Sichifulo<br>GMA (2 hunting blocks)                                  | 994,799                                      | 1,136,914                             | 2,131,713                  |
| Lumimba GMA<br>(2 hunting blocks)   | 719,427                                      | 822,203                               | 1,541,630                  |
| Mumbwa (2 hunting<br>blocks)  | 1,291,766                                    | 1,476,304                             | 2,768,070                  |
| Munyamadzi<br>(2 hunting blocks)  | 1,705,536                                    | 1,949,185                             | 3,654,721                  |
| Lunga-Busanga<br>(1 hunting block)  | 981,804                                      | 1,122,062                             | 2,103,866                  |
| Kafue Flats   | 518,619                                      | 592,708                               | 1,111,327                  |
| Banguelu  | 1,040,236                                    | 1,188,842                             | 2,229,078                  |
| Kasonso-Busanga   | 429,939                                      | 491,359                               | 921,298                    |
| Lunga-Luswishi<br>(1 hunting block)   | 507,773                                      | 580,312                               | 1,088,085                  |
| Total   | 8,189,899                                    | 9,359,889                             | 17,549,788                 |
| Average Per Class A<br>Hunting Block  | 629,992<br>(\$US 6,300)                      | 719,992<br>(\$US 7,200)               | 1,349,983<br>(\$US 13,500) |
| Percent Of Net Revenue<br>Without Middleman<br>For Average Class A Block      | 3.8%   | 4.4 %                                 | 8.2%                       |
| Percent Of Net Revenue<br>With Middleman For Average<br>Class A Hunting Block | 8.1%   | 9.3%                                  | 17.4%                      |
| Percent Of Gross Revenue<br>For Average Class A Block                         | 2.3%   | 2.6%                                  | 4.9%                       |

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TABLE 2 (Cont)

LOCAL COMMUNITIES (35%)

AND

ADMADE FIELD MANAGEMENT COSTS (40%)

FROM 1991 SPORT HUNTING CONCESSION FEES

| <u>GMA</u>  | <u>LOCAL COMMUNITIES<br/>(35% in Kwacha)</u> | <u>MANAGEMENT<br/>(40% in Kwacha)</u> | <u>TOTAL<br/>(Kwacha)</u> |
|---|--|---------------------------------------|---------------------------|
| Class B Hunting Blocks  |  |                                       |                           |
| Fulaza GMA<br>(1 hunting block)   | 173,120                                      | 197,851                               | 370,971                   |
| Luano GMA<br>(1 hunting block)  | 295,603                                      | 337,832                               | 633,435                   |
| Chikwa-Chifunda<br>(1 hunting block)  | 380,415                                      | 434,760                               | 815,175                   |
| West Petauke<br>(1 hunting block)   | 325,476                                      | 371,973                               | 697,449                   |
| Chisomo (1 hunting block)   | 334,624                                      | 382,427                               | 717,051                   |
| Rufunsa (1 hunting block)   | 339,434                                      | 387.925                               | 727,359                   |
| Total   | 1,848,672                                    | 2,112,768                             | 3,961,440                 |
| Average Per Class B<br>Hunting Block  | 308,112<br>(\$US 3,081)                      | 352,128<br>(\$US 3,521)               | 660,240<br>(\$US 6,602)   |
| Percent Of Net Revenue<br>Without Middleman<br>For Average Class B Block      | 3.6%   | 4.2 %                                 | 7.8%                      |
| Percent Of Net Revenue<br>With Middleman For Average<br>Class B Hunting Block | 6.2%   | 7.1%                                  | 13.3%                     |
| Percent Of Gross Revenue<br>For Average Class B Block                         | 1.7%   | 2.0%                                  | 3.7%                      |

Note: In 1991, 100 Kwacha/\$US

Source: Extracted from: Mwima, Henry K. 1991. Wildlife conservation revolving fund. Annual report-1991 (Covering a review of 1988-1990. NPWS Zambia. 7p.

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Most people complained that the money being received is just too small for capital projects. For instance, a bricklayer alone can cost K35,000 just to extend a classroom or renovate a clinic. In some cases projects are incomplete. For instance new teacher staff housing, the clinic and school renovations are all incomplete in the Chibuluma Sub-Authority, Mumbwa GMA, all of the Community Development "35%" Funds for this year having been spent. This problem of an insufficient percentage of the money derived from the ADMADE program reaching the communities was heard over and over again and is supported by the recent surveys of the ADMADE Community Development Officer.

#### 5.4 NPWS Policies That Will Affect The Economics and Marketability Of Safari Hunting In Zambia.

5.4.1 The Placement Of Safari Hunting Blocks Up For Bid. The National Parks and Wildlife Service is in the process of rewriting its hunting regulations<sup>7</sup>:

\*All hunting blocks will be put up for competitive bidding

\*Each bid will have to demonstrate a management plan which will indicate how coordination and cooperation will take place between the professional hunter, the unit leader, management biologist, scouts and the community. This will encourage allocation of time before, during and after the hunting season interacting with the above parties.

\*CV's of all professional hunters will have to be submitted in order to assure qualified professionals in the field.

\*Rather than a lump sum, payments from safari hunting can be made in a role over fashion, after the stay of each client.

\*Long term leases will be provided of 5 years in order to provide a vested interest in the safari operator to become actively involved in improving the habitat, managing the game for improved trophy quality, and closer involvement with the community.

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<sup>7</sup>Personal Communications, Dr. Lewis Saiwana, ADMADE Coordinator and responsible for drafting hunting policies.

NPWS should be lauded for their foresight in developing these new regulations. Most of the current safari companies, are run and operated by businessmen who rarely visit the field and who have no real interest in wildlife other than as an economic venture. For many it is a side investment which if it was to disappear tomorrow, would only mean a loss of FOREX for them and a convenient means of capital flight from Zambia. All safari companies in Zambia sub-lease to professional hunters who are the real, but unacknowledged private sector force behind sport hunting in Zambia, but to whom no one is listening or currently talking. Not one safari company is owned and operated in the field by a professional hunter.

Competitive bidding, and the role over payment will favor hunting blocks run and operated by the professional hunter, and allow the huge sums of up to about \$US 88,000/Class A hunting block /year, that are currently being absorbed by the safari companies, to be handed over to ADMADE.

Most importantly, it will begin allowing ADMADE to deal directly with the individuals who have hunting as their major source of income and who have a direct, not indirect, stake in seeing the habitat and wildlife managed for sustainability as an economic resource.

5.4.2 Pre-Payment Of Game License Fees. Up until 1992, safari operators were able to buy the annual game quota up front and then market these animals to their clients, passing the unfulfilled portion of the quota from client to client. In essence, the client paid only for those animals which he/she shot.

Beginning in the 1992 season, each client must purchase, up front, all game animal licenses (trophy fees or head taxes) which he/she wishes to hunt without any guarantee of success, all game animal fees being lost to ADMADE regardless of success or failure.

It is believed that Zambia is the only country in East or Southern Africa which has adopted this policy. To the knowledge of the author, in West or Francophone Africa, game license fees are paid only after the animal is harvested. Only Ethiopia, in the Horn of Africa, is known to have such a policy, and it can afford to do so because of its specialty hunting (Mountain Nyala unique to Ethiopia and Nubian Ibex unique to Ethiopia and Sudan)<sup>8</sup>.

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<sup>8</sup>Personal Communications Wayne Pocius, President of Safari Club International, whom authors met while he was on safari in the Luangwe Valley, Upper Lumimba Hunting Block.

All professional hunters interviewed feared that with such a policy Zambia would not be competitive with the rest of East and Southern Africa in marketing safari hunting overseas. Two clients interviewed while with Fungi Safaris had each paid over \$US 8,000 each up front for their game license fees in addition to the approximately \$US 14,000 daily rate/concession fees, plus airfare. While one of the clients had about filled his quota, getting a nice sable, lion, and buffalo in addition to other antelopes, the other client had shot only two animals and had only 4 days left to fill his prepaid game animal fees. Both claimed that if they had known in advance to arriving in Zambia of this policy, they would have gone elsewhere.<sup>9</sup>

5.4.3 Sale Of GMA Cull Quota To Safari Operators. In 1992, Safari operators may request to purchase cull animals from a GMA to be harvested by sport hunting clients. The Sub-Authority is paid directly, 65% of the game license fee, plus the safari operator must deliver the carcass to the Sub-Authority as a source of meat.

For instance, one professional hunter claimed he could sell a female buffalo hunt for \$US 2,800 and clients would come just to have their African experience.

This same PH stipulated that a cull animal should only be old, infirm, a female or immature breeding trophies, otherwise the additional cull quota, if misused would be counter productive to the safari hunting quota which is meant to conserve trophy size within a hunting block.

5.4.4 Hunting By "Non-Residents" Within Commercially Viable GMA's. There was not one professional hunter interviewed who was in favor of this. Non-Resident Hunters (Zambians or resident expats who do not live within the GMA) are felt to be disruptive to the commercial safari hunting industry. They are allowed to camp anywhere, and often take away from the exclusion desired by the high paying client. It is claimed that many do not report to Unit Headquarters, nor are they accompanied by a village scout to assure that game regulations are obeyed. It is claimed that many are meat hunters and not trophy hunters and that they harvest over their quotas. More importantly, from a business standpoint, they, the GMA's are losing potential money from the loss of daily

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<sup>9</sup>Personal Communication American Sport Hunters, Blackie Landreville and Tom Cossack.

U.S. dollar fees, concessions fees, and game license fees. For instance:

| <u>Animal</u> | <u>Non-Resident Hunter</u> |       | <u>Overseas Safari Hunter</u> |
|---------------|----------------------------|-------|-------------------------------|
|               | <u>\$US</u>                |       | <u>\$US</u>                   |
|               | 1991                       | 1992  | 1991 & 1992                   |
| Buffalo       | 300                        | 150   | 790                           |
| Kudu          | 400                        | 200   | 750                           |
| Leopard       | 2,000                      | 1,000 | 1,500                         |
| Lion          | 2,400                      | 1,200 | 1,550                         |
| Sable         | 2,400                      | 1,200 | 1,350                         |
| Roan          | 2,600                      | 1,300 | 1,350                         |
| Sitatunga     | 500                        | 250   | 900                           |

Note: Based on 1991, rate of 100 Kwacha/100/\$US, 1992 rate of K200/\$US

Additionally, a non-resident pays only the equivalent of \$US 5-10 concession fee/week compared to \$US 1,000/week by Overseas Safari Hunters. Unfortunately, as noted above the safari companies, not ADMAD/ NPWS are the ones benefitting from this large fee from their overseas customers. Also, no daily rates are payed, which is an additional \$US 700-800/day lost in gross income.

This year, for the first time, high value animals such as roan, sable, lion and leopard will not be available to Non-Resident hunters. This makes good business sense. What makes even better business sense, is to permit the professional hunter, the management biologist/unit leader and Sub-Authority to meet and to let economics and the need for protein decide, at the sub-authority level, how to best market their resource.

Furthermore, if non-resident hunters are to be allowed into GMA's, they need to be better regulated. The professional hunters recommend that specific camps be set up where they must stay. It might even be wise to designate non-resident hunting areas within a given GMA, as part of a greater landuse management plan, so as to not conflict with the commercial safari operations. They must all be accompanied by a village scout.

Another consideration is to keep the commercially viable GMA's exclusively for the safari hunters, and to direct non-resident hunters to the depeleted GMA's that are not as economically viable but where some money into the community is needed as the wildlife populations recover.

5.5 Other Potential Markets For Wildlife And Wildlife Products.  
At Nyamaluna Training Center there is already a pilot scheme to tan leather from culling programs using a natural vegetable treatment process. This should be encouraged.

If a quality private sector tannery can be developed, tremendous amounts of revenue can be generated. For instance, in Johannesburg a quality buffalo hide brief case sells for approximately \$US 300 apiece, almost half the price of a buffalo game license fee. From one buffalo hide many brief cases could be produced, ultimately making the hide more valuable than the trophy. Consideration should be given for ADMADE to explore the idea of contracting out the tanning to a commercial tannery and then joint venturing with a Zimbabwean or South African wildlife by-products company to introduce high quality wildlife by-products through Lusaka outlets. At the same time locally made handicrafts from residents of the GMA's could also be marketed through the same outlets.

As Sub-Authorities gradually meet their immediate needs of constructing and renovating schools, teacher housing and health clinics, and begin looking at profit making ventures, leather tanneries and handicrafts may provide one important opportunity.

If an ADMADE NGO is established with a for-profit motive, consideration might be given to opening an outlet for ADMADE wildlife by-products or other handicrafts in one of the major hotels in Lusaka. Negotiations might even take place, as their contribution to conservation to, providing floor space free or at a reduced rate. Many of the large hotel chains (e.g. Sheraton in Uganda which contributes \$US 1 to each \$US 1 contributed by hotel clientele for gorilla conservation in Uganda) are becoming actively involved in conservation.

Although, details would need to be worked out, live animal capture and sale to depleted GMA's or game ranches may eventually provide another source of income to the GMA's.

In Lumimba GMA, there is a lodge located on GMA land but which pays lease fees not to the GMA but to LIRD. Since it is a policy of NPWS to no longer build lodges inside its national parks, GMA's bordering these parks, could consider marketing choice lodge sites for long term leases to be paid into the Revolving Fund.

Finally, sub-authorities should negotiate contracts with the professional hunter so that once each week, traditional song and dance troupes perform for the sports hunters. It is believed that many clients would be interested in such cultural activities.

5.6 Recommended Actions And Policies To Improve The Management Of The Revolving Fund And The Economics Of Sport Hunting In Zambia.  
The following are recommended:

\*Creation of an ADMADE NGO Board Of Directors which has representation from all stakeholders so that proper policy and marketing decisions can be made with regard to sport hunting in Zambia.

\*Hiring Of a Financial Advisor to help operate the Revolving Fund and to begin determining how to equitably distribute and manage profits from sport hunting, assuring that a sufficient percentage of the profits reach the GMA's both for community development and management. A key staff at NPWS and USAID have stated, like any business venture, the long term success or failure of ADMADE will be determined by proper management of the Revolving Fund and on wise policy and investment decisions.

Local Hire Business Advisors would also be placed at each command to advise sub-authorities in determining how to best invest and make use of their money.

The Financial Advisor would begin undertaking marketing surveys to assure that Zambia's sport hunting remains competitive, and that other ventures, in addition to sport hunting, based upon wildlife and wildlife products might be considered by ADMADE.

\*Educate Traditional Leaders On The Economic Of ADMADE. As part of the planned Advanced Unit Leaders training, and the seminars for chiefs and headmen at Nyamaluma Training Center, begin educating them to the economics of sport hunting.

\*Put Out Hunting Blocks For Bid. Adopt the planned policy of putting out hunting blocks for bid as described above.

One additional requirement should be considered is that no one will be given a lease who is not in the field running and operating the hunting block-that is he should be a professional hunter.

Consideration should be given to placing in the lease an option for renewal if the Sub-Authority and the ADMADE Board of Directors are satisfied with the performance of the lessee.

\*Meet With Qualified Professional Hunters to determine the marketing implications of having a client pay for all game licenses up front.

\*Purchase Of Cull Animals By A Professional Hunter. Stipulate that any cull animal purchased by a PH for sport hunting should be old, infirm, a female or immature breeding trophies, and not a mature trophy bull.

## 6.0 DECENTRALIZATION OF THE DECISION MAKING PROCESS IN ADMADE

Currently, most key decisions regarding ADMADE are undertaken by the ADMADE Directorate. This includes:

- \*Establishing wildlife quotas
- \*Determining how and when money within the ADMADE Revolving Fund (Account into which all profits from safari hunting within the GMA's are placed.) will be allocated
- \*Determining overall wildlife policy, with regard to the sport hunting industry
- \*Along with the Nyamaluma Training Center, establishing long and short term training programs

At the level of the Wildlife Management Authority and the Wildlife Management Sub-Authority, there is a strong feeling that the ADMADE Directorate based at the headquarters in Chilanga is clinging too much to control over key decisions and planning needed to make ADMADE operational at the field level.

NPWS headquarters staff are well aware of this dilemma and are beginning to take measures so that in the long run, local communities play a more active role in directly managing their resources. This includes:

- \*Establishing the Village Scout System to allow local communities to select their own people to police the wildlife and other important renewable natural resources in the area.
- \*Hiring Management Biologists to begin collecting key data in collaboration with local communities, scouts and professional hunters needed to establish landuse plans and hunting quotas based on sound scientific data.
- \*Providing bookkeepers for the Unit Leaders so that they can have more direct control over the finances needed to carry out ADMADE management and anti-poaching activities.

The advantage of having an ADMADE NGO, with a board of directors is that autonomy in making decisions and managing a given GMA's natural resources can gradually be handed over at the rate to which each "branch office" or GMA/hunting block demonstrates both fiscal conservatism and wise decisions in how it invests its money, and in demonstrating that it has put together a team of key stakeholders who are capable of both collecting relevant data and making wise management decisions with regard to sustainably using the area's resources.

6.1 Additional Actions Which Might Be Considered To Promote Decentralization And Autonomy Of ADMADE Management Units. Based upon conversations with communities and field personnel the following ideas might be considered:

\*As Each WMA Matures In Its Decision Making Abilities Bring The Wildlife Management Authority Down To The Level of the Unit/GMA. In many instances, the GMA's and the Unit leader are very far from the Command, normally located at the District Council Headquarters or "Boma." Communication are often difficult and often can only be made by a day's drive. Often timely decisions must be made on actions or on how money should be spent that can not afford such delays in either time or communication.

Additionally as currently operated the warden and book keeper attached to the Command often have such large geographical areas to cover that they are incapable of devoting the time necessary for planning, decision making and accounting at the level of the Unit which is the actual operational level of each GMA. For instance, the warden and book keeper at Mpika must cover 4 GMA's scattered over a wide geographical area:

- Munyamadzi GMA
- Musalangu West GMA
- Chisomo GMA
- Mukungule-proposed GMA.

The warden at the Luangwa Command, Chipata is responsible for 4 GMA's which hold 12 meetings a year, plus 3-4 national parks.

In some instances, towns exist with banking facilities much closer to the Unit Leader than at the boma (e.g. At Lunga-Luswishi GMA all accounts are kept at command headquarters at Solwezi, when a bank exists at nearby Kasempa).

Most Unit Leaders felt that the additional layer of bureaucracy at the Boma was only a hinderance to proper planning and decision-making. Their feeling was that in collaboration with the Sub-Authority, and eventually a management biologist that the WMA could be brought down to their level. In return, they could easily inform the warden and District Council as to what management and development decisions they had made.

The hope of most warden's and NPWS headquarters is that as they mature both in their ability to manage resources and finances, GMA's can gradually apply to manage their wildlife. With creation of an ADMADE NGO, and gradual decentralization, such autonomy can be strived for.

\*Striving For One Management Biologist/GMA. Though this will take time, the current situation of one management biologist for 2 or more GMA's is pushing these people to their limits. For instance, with no transport, other than that of the Unit Leader's, the management biologist for the Lunga-Luswishi GMA is also required to collect data and run game census transects in Lunga Busanga, Kasonso and Chizela GMA's/hunting blocks. It must be asked, even with transport is this humanly possible.

Once a financial advisor is brought on board, consideration should be given to seeing if enough funds can be diverted to employing and training one management biologist per GMA with transport (USAID could fund transport) based at the Unit Headquarters. Once there is one management biologist per GMA along with a Unit leader and a properly operating village scout program, a given GMA should be prepared to become semi-autonomous with regards to planning for an managing its territory, the WMA being brought down to the level of the Unit Leader.

Until this is achieved, NPWS headquarters and the Command will have to maintain relatively strict control over quota setting to assure that the system is not abused.

\*Providing A Book Keeper For Each Unit. Consideration should be given to recruiting and training one book keeper per Unit/GMA so as to give more financial autonomy at the field operational level. The ADMADE GMA Management Money (commonly referred to as the "40%") should be placed in an account at the bank nearest to Unit headquarters. The Unit leader and the eventual Management biologist should be co-signatories. An annual report of expenditures should be provided to the Revolving Fund with periodic auditing.

\*Opening A Separate Community Development ("35%") Account, Having Each Sub-Authority Select One Person To Be Trained As A Sub-Authority Book Keeper. Most sub-authorities interviewed were unhappy with the long drawn out process necessary to free up funds for community development. A number complained that by the time they obtained all necessary signatories, the quoted prices for construction materials often had significantly increased.

Consideration should be given to allowing each sub-authority to select someone from the community to be trained at Nyamaluma as a Sub-Authority Book Keeper. Each Sub-Authority should have its own separate Community Development bank account to which the Revolving Fund deposits net profits from safari hunting within the GMA based upon an equitable split of funds as determined by the meeting of the WMA which has representatives from each sub-authority within a GMA. An

annual report of expenditures should be provided to the Revolving Fund with periodic auditing. The Unit leader and the chief should be signatories for this account.

There are certainly precedents for allowing communities to undertake such steps. The Rwenzori Mountaineering Service, a indigenous Ugandan NGO based upon ecotourism through mountain climbing and backpacking in the Mountains of the Moon has its own book keeper who has proven exemplary at keeping auditable books.

## 7.0 DEMOCRATIZATION IN THE ADMADE DECISION MAKING PROCESS

In a number of reports prepared by the ADMADE Community Development Officer, concerns were raised that there was insufficient democratization in the selection of the Sub-Authority and in the selection of Community Development Projects.

This evaluation team tried to better understand how the traditional chieftaincy is structured, chosen and used in decision making. Although different from our western ideas of what is currently a democracy, it appears that in fact the traditional form of decision making is more democratic than many of the African governments that have served since independence to the benefit of a few and who are only now being forced into the process of democratization.

What was observed in the field might be equated to how decisions were made a generation ago in rural America where extended farm families as a clan determined the role of each member in the family and as they created nuclear families how the extended family's resources might be shared but not divided.

As noted in Section 4.1, a Sub-Authority has been established around each chiefdom, while the Unit leader serves as its secretary and there are some technical assistants such as teachers and health clinic officers, the real power in the Sub-Authority's decision making process is the Chief who serves as the Sub-Authority's chairman and the headmen. Because, there is normally one headman per village, a category of "Group Headman" has been created for sub-authorities where there are many villages. One "Group Headman" will represent a number of headmen.

The selection of chiefs and headmen is as follows. When the chief dies, the chief's extended family will generally pick the wisest of his sister's children to be the next chief, the chieftaincy tending to be matrilineal. In some cases, depending on the tribe, the chief's son may be selected if he is deemed worthy by the extended family. In essence the extended family of the chief will select that individual who they believe will best represent their and the community's interests. Though usually male, there are instances of female chiefs.

Likewise, when a headman dies, a cousin is traditionally picked by the village to succeed. Each village might be considered a an extended family within the chief's clan. The chief only confirms, but will not reject the selected headman. Each village will have a headman who is believed to best represent its interests within the society.

In essence at the level of the extended family and clan, a series of leaders are selected in a democratic fashion which are believed to best represent the needs of each village.

In addition to the headmen on the sub-authority, the chief's key decision making group is the Council Of Elders or Nduna's. They are wisemen selected by him and with whom he seeks council. They may or may not be headmen. In some cases they are represented on the sub-authority. In principle they are selected so has to help determine what is best for the community.

It is believed that in many cases headmen do represent the interests of their people. For instance in the Mumbwa Game Management Area:

\*There was an attempt by the Wildlife Management Authority to ban honey collection in the GMA, but headmen came back saying their people did not agree and it was decided to develop a landuse plan to allow honey collection in areas not important to safari hunting.

\*Due to demand from the community voiced through the Headmen, 1992 is the first year that Resident Hunting will be permitted. The Unit leader will sell them their licenses and tell the traditional hunters where they can hunt so as to not conflict with safari hunting.

In the Lunga-Luswishi GMA, Headmen/Nduna led discussions between the evaluation team and traditional hunters in determining how they might best be integrated into the ADMADE Program. The headmen promised to take up the ideas raised in this meeting with the chief thorough calling a Sub-Authority meeting.

What is unclear is how often the Headsmen hold village meetings to explain issues raised at the sub-authority. It is suspected, that because he is a member of a village and because in small communities, there are few secrets, that outcomes and issues raised during the sub-authority meetings quickly spread throughout the village. It is more likely that there are too few sub-authority meetings to allow the democratic process to become actively engaged in the decision making process needed to develop and manage the resources within the GMA.

Although this analysis is superficial, the traditional leadership as represented on the Sub-Authority has been duly selected through a "Grass Roots Democratization Process". By returning the decision-making with regard to management of natural resources within the community, NPWS through ADMADE is recognizing the importance of democracy at work at this level of governance.

It is believed that democratization can be improved upon in the following ways:

\*At the planned seminars to be held by the Nyamaluma Training Center, encourage the chiefs and headsmen to take advantage of this "Grass Roots Democratization Process" by both feeding and receiving information from the communities.

\*Encourage the formation of sub-authority based interest or resource user groups who can be represented as "Special Interest Bodies" on the sub-authority. This may include representatives from the local women's club, traditional hunter's association, pit sawyers association, and even a fishermen's association where this resource is critical.

## 8.0 ADMADE AND THE ROLE OF THE PROFESSIONAL HUNTER'S ASSOCIATION OF ZAMBIA

8.1 Current Setting. Based upon discussion with professional hunters interviewed in the field, the quality of the Zambian professional hunter is at its lowest ever. One hunter told of an American sport hunting client which he had last year who now holds a professional hunters license. Both the president of Safari Club International and a number of professional hunter's (PH's) we met in the field raised concern that a PH is currently hunting in Zambia who is wanted on a poaching charge in Tanzania.

Furthermore, the Professional Hunter's Association of Zambia (PHAZ) is just about disbanded. Professional hunters lament that this has happened but expressed their disenchantment with this organization in recent years that has become dominated and run by owners of safari operations who are purely businessmen and know nothing of professional hunting.

Most professional hunters feel that some of the ill feelings between them and NPWS has been over the fact that they have been cut off from regular and direct with Chilanga, while Chilanga as the result of the current hunting block lease system, has mostly dealt with businessmen who know little about the safari hunting business, nor care what is needed in the field to manage the game and the habitat to assure quality trophies.

8.2 Role Of The Professional Hunter's Association Of Zambia In ADMADE. The role of the professional hunter in ADMADE has been discussed under Section 4.2. The role of the Professional Hunter's Association of Zambia should be, in collaboration with NPWS, to regulate this branch of the private sector in order to assure that only the most qualified individuals are allowed into Zambia to pursue this profession. PHAZ should be run for and operated by professional hunters, not businessmen.

8.3 Recommended Actions To Rejuvenate The Professional Hunters Association Of Zambia. The following recommendations should be considered in order to assure the highest standards in this profession:

8.3.1 Rejuvenation OF The Professional Hunters Association Of Zambia. Encourage PHAZ To Initiate New Meetings in order to choose leaders who are professional hunters to represent professional hunters on the ADMADE NGO Board Of Directors

8.3.2 Encourage A Joint Effort Between NPWS and PHAZ To Establish Standards And Training Programs For Aspiring Professional Hunters. The PHAZ has a booklet that sets standards for professional hunters, but it is no longer used. The PH's claim that NPWS wants to start a professional hunter's school in Livingston, similar to the South African model. Most PH's argued that a 2 week course will not make a PH and that this year, even in South Africa, an apprenticeship program will be required in addition to required classroom work. Based upon the Zimbabwean and the East African Professional Hunter's Associations, most professional hunters would prefer the following system:

\*Two Year Apprenticeship. Full apprenticeship, must be with 2 outfitters over 2 year period learning how to set up camp, natural history, tracking and shooting skills, estimation of trophy size, skinning and trophy preparation, public relations with client and camp staff, vehicle repair etc.

The apprenticeship program will serve as a means of weeding out candidates who lack either the skills, the intellect or the temperament for such a career.

\*Joint Testing By PHAZ and NPWS. At end of the apprenticeship, the apprentice would be required set up his on hunting camp and take representatives from PHAZ and NPWS on a fully blown hunting safari to test the apprentice's skills in the above mentioned areas.

\*NPWS Seminars For PHAZ Members On Safari Hunting Laws and Policies, And On Filling Out Data Forms. While a professional hunter's school might be set up, it would be costly to operate and would be unable to teach the most important skills which can only be learned in on-the-job training. One idea would be for NPWS at Chilanga or Nymaluna to once a year hold a 2-3 day seminar on safari hunting laws and policies, and in how to properly fill critical data forms such as:

-Game Sighting Book in which each PH is supposed to note all game he observes daily. This may be complimented by having the PH locate key wildlife populations by species on the GMA grid maps.

-Safari Hunting Daily Record Sheet of game hunted on safari hunting-in triplicate with one copy to warden, one to Chilanga and one kept by PH.

-Safari Hunting First Order Form-summarizes a client's stay including where from, PP#, Nationality, length of stay, Firearm Import permit #, caliber used, GMA hunted in and what species collected.

-Safari Hunting Client Questionnaire to gage satisfaction of Safari Client.

8.3.3 Development Of Long Term Links With Safari Club International (SCI). The president of SCI, during this evaluation, visited Zambia both to hunt (experimental bow hunt to test this potential in Zambia), to take a closer look at the hunting situation in Zambia after it had received bad press from the Causey Report, and to take a closer look at ADMADE.

SCI represents mostly North American Sport Hunters and professional hunters in Africa. Its role is to promote and to lobby for hunting as a major conservation tool in wildlife management. SCI sees itself as becoming much more actively involved in African wildlife conservation over the next few years (Personal Communications, Wayne Pocius, SCI President). SCI can help ADMADE and the safari hunting industry in Zambia in many ways if a partnership can be developed. This includes but is not limited to:

\*Working with NPWS and PHAZ to set standards, identify and help select only the professional hunters with the highest moral and ethical standards.

\*Promote ADMADE as a Conservation Concept in both its glossy magazine and at its conventions (the major forum for the marketing of sport hunting from Africa), thereby encouraging hunter/conservationists to come to Zambia where revenue from this industry is poured back into the management of the resource and into improving the quality of life of communities living among wildlife in order to promote their conservation of these important resources.

\*Obtaining contributions for the ADMADE trust fund from wealthy philanthropists who are members of SCI and from the hunting industry (e.g., Remington, Winchester, Federal, etc.) who could likely contribute large sums of money to this worthy cause using it as a tax write off.

9.0 CULLING AND THE NEED TO INTEGRATE TRADITIONAL HUNTERS INTO ADMADE.

9.1 Cultural And Social Mores Associated With Wildlife In Zambia.  
From Kenya to Zambia the word "Nyama" has two virtually indistinguishable meanings:

\*Meat

\*Wild Game

It must be clearly understood that the average person living in the African bush has grown up with a completely different perception of wildlife than most westerners.

Traditionally, for rural Africans wildlife has meant food. Regardless of who was interviewed during the evaluation, everyone acknowledged that in rural Zambia, the average person's perception of wildlife was something God gave the rural African to eat.

This in itself is not necessarily bad. In fact it is said that one of the reasons that much of Munyamadzi is undeveloped is because the former chief kept roads from going into the area for fear that this would increase human traffic and thus the poaching of wildlife which is a major source of protein in most of the GMA's where livestock can not live due to sleeping sickness associated with the tsetse fly (Personal Communication James Chibwater, Mpika District Council, Director of Works).

For many rural Africans, wildlife is also a human, animal and crop pest. For instance over the last year:

\*15 lives have been lost along the Munyamadzi River, and

\*20 lives lost along the Luangwe River

from crocodile attacks within the Munyamadzi GMA (Personal Communication Andrew Mukyea, Munyamadzi Unit Leader and Roni Sparrow, PH, Fair Chase Safaris). This problem is expected to increase with the drying up of the rivers, associated with the regional drought, and thus a decreased supply of fish for these predators.

Buffalo, baboons, elephant, bushpig and antelope raid the sorghum, millet and maize fields of villages found within GMA's.

It is then easy to see how the urban westerner and now more and more the increasing population of urban Africans might view wildlife completely differently from someone whose live is integrally linked to and has traditionally depended on wildlife as a protein source.

ADMADE, and the NPWS staff, many of whom grew up in the African bush and who are themselves hunters, have acknowledged this in the design of ADMADE. They have recognized the need for wildlife to be seen as an economic resource by sharing its wealth with rural communities. They have recognized its value, both nutritionally and culturally by introducing experimental culling programs to provide meat to the villages and by introducing resident hunting licenses for traditional hunters.

Even so, there are some issues that arose while in the field that ADMADE officials may wish to address.

**9.2 The Problems Associated With Centralized Culling.** Experimental culling programs were examined in both the Upper Lumimba GMA and in the Munyamadzi GMA. Culling has been organized in both instances by the Unit Leader. A Culling Team has been established using mostly scouts to do the shooting, the Unit Leader's vehicle, fuel, rifles and ammunition. The culling has been centralized around the Unit Headquarters. Both skinning sheds and butcheries have been built at Unit Headquarters. In Upper Lumimba there is even a small stall to sell the meat. Culled game meat is sold per/kg at:

|       | Residents<br>Of GMA | Non-Residents<br>(Regional Towns) |
|-------|---------------------|-----------------------------------|
| Fresh | 20K                 | 100K                              |
| Dry   | 30K                 | 150K                              |

The biggest problems of these experimental culling programs are:

\*Centralized Culling has not proven cost effective in fuel, ammunition, vehicle use or manpower. In Upper Lumimba only 93 of a 132 animals on the 1991 quota were culled due to a shortage of ammunition and fuel.

\*Many of the cullers were not traditional hunters, were unable to adequately approach the cull animal, resulting in wasted ammunition and in a number of instances, animals escaping wounded.

\*In most cases, while there was an attempt to get meat to the rural areas away from Unit Headquarters, most of the meat seems to have been sold at either headquarters or in nearby urban towns, but not to the poorest of the poor living within the GMA.

\*In 1992, it is now June and no one has a culling quota. Providing a timely culling quota is vital if local residents are expected not to poach.

\*It has failed to adequately involve traditional hunters who hunt not only out of need, but for socio-cultural and possibly for genetic reasons.

\*Inadequate salt is available to properly treat the hides so that most of the ones observed were of poor quality and would tan poorly.

While the culling program has not been entirely effective (realizing that it was experimental and that corrective measures are already being taken), the Village Scout program has cut way back on poaching to the point where many GMA inhabitants have no access to this important protein source. The village, just before the Chipuka Gate in Upper Lumimba GMA, has been so cutoff from game meat that out of desperation they are relying entirely on small field mice which they presented to us dried in a bowl (Note, in a number of areas of Africa, small rodents are a major, yet undocumented, source of protein-such as parts of Malawi). It only seems ashame that among this source of plenty, they should have to rely on field mice for food.

9.3 Traditional Hunters And The ADMADE Program. Extensive interviews were held with traditional hunters at Munyamadzi, Mumbwa and Lunga-Luswishi GMA's. Regardless of whom we talked to the following general issues were raised:

"They have a "disease" passed on to them from their fathers; they like to hunt.

\*In every family of a hunter there will be at least one who is born with natural hunting instincts and the desire to hunt. Do not forget the famous quote from the author Robert Ruark, "The Horn Of The Hunter Sounds Within Us All!!!"

\*Most Traditional Hunters feel "stabbed and sick" that they can no longer pursue their calling while the wealthy white man can come from afar and legally shoot their game. In one of the Community Development Officer's reports, this has allegedly led to indiscriminate killing of wildlife by traditional hunters purely out of frustration.<sup>10</sup>

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<sup>10</sup>Larson, Patricia and Bethelam Chonde. February 25, 1992. Mumbwa game management status report. NPWS/ADMADE.

\*While it is on the books that resident hunting licenses are available through the Unit Leader, the reality is that in the field they are currently difficult to obtain.

\*While muzzle loaders are relatively easy to register with the authorities and thus legalized many of the traditional hunters live in areas too remote to pursue this without great difficulty. Legally, a muzzle loader of 30 caliber or larger can be used for buffalo. Black powder is made from tobacco fertilizer mixed with charcoal pulverized bark from the Mwenge bush.

\*Game Licenses are not always regularly available. For instance in 1991, the Book Keeper from Chipata sold all game animal licenses from the Lumimba GMA for traditional hunting in Chief Many's Sub-Authority, leaving nothing available for residents in Chief Chitungulu or Chief Kazemba's Sub-Authorities.

\*Most traditional hunters claimed that they could not afford most game licenses, especially the K5,000 for a buffalo.

\*Traditional Hunters distinguished themselves from poachers by the fact that they mainly take off just enough game to supply meat to the villages, while commercial meat poachers come from and hunt to sell huge quantities of meat to urban areas for money.

\*Village and Regular Scouts acknowledged that it did little good to put either traditional hunters or poachers in jail as they return to hunting game as soon they are released.

#### 9.4 Recommended Actions To Improve Culling And To Integrate Traditional Hunters Into ADMADE.

9.4.1 Decentralize Culling. The idea of decentralized culling using traditional hunters is not a new one to ADMADE, but has yet to be tested. In the Chikwa Chiefdom (GMA 22) a recent meeting was attended by 1000 people discuss their diminishing wildlife resources. It was decide to allow 8 traditional hunters to cull game as a source of the community's meat while the remainder of the community would stop hunting. The community agreed to turn in illegal firearms if such a decentralized community culling scheme could be properly organized. Currently the area has insufficient animals to cull and will have to wait 2-3 years. The community appears ready to cooperate. This seems like a long time to wait!!!

Similar discussions were held with traditional hunters throughout the evaluation. In all cases, they agreed that if absorbed into ADMADE so that they could pursue their passion while at the same time furnishing meat to the villages, they would be willing:

- \*Divide themselves up within the GMA/Sub-Authority so that each traditional hunter would serve a certain number of villages.

- \*Only go out with a village scout so that all culling activities could be officially recorded.

- \*Stop snaring

- \*Stop Collaborating with Commercial Poachers

This makes sense because it solves a number of critical problems:

- \*Traditional Hunters, which have until now been left out of ADMADE become active members and by doing so become more willing to abide by the ADMADE agenda.

- \*By becoming legal hunters, it decreases the likelihood of a Village Scout embarrassingly having to arrest his brother, father, uncle, cousin or friend. It starts placing the traditional hunter and village scout in a collegial rather than confrontational mode.

- \*It helps assure that game meat will be distributed to even the most remote villages and saves on ammunition and fuel at the Unit Headquarters

- \*It is acceptable in the context of the socio-cultural values of the traditional hunter.

9.4.2 Creation Of A Traditional Hunters Association. One of the most innovative ideas presented came from the traditional hunters of Chief Kansonso's Village, in the Lunga-Luswishi GMA. Their proposal was to create a "Traditional Hunter's Association." They would send a representative to the Sub-Authority. Money from the Community Development Fund (35%-fund) would be used to:

- \*Lend them money to buy the game license fees which they can not currently afford.

- \*Possibly lend them money to buy a number of 375 rifles and ammunition which would be left with the Unit Leader until needed. Initially, muzzle loaders could likely be used until the viability of the program can be ascertained.

As in the above scheme, they would organize themselves so as to assure that meat reached all villages.

The Sub-Authority would reevaluate the game license fees in lieu of what is affordable to the villages with regard to meat prices, either in currency or in kind.

The idea of creating a Traditional Hunters Association, with branches in each Sub-Authority, should be strongly considered by ADMAD as a means of bringing into the fold one of the more critical players, the traditional hunter, whom until now has been left out of the game. Additionally, it would help the process of having resource user groups beginning to work with the Sub-Authority to determine policy and to help in managing the area's natural resource base.

Every professional hunter who was interviewed was sympathetic to the plight of the traditional hunter, and not one felt that they were a threat to wildlife, as compared to the commercial poacher. The only request that some of the PH's had was to collaborate with the professional hunter so that this activity does not detract from the safari hunting business. One option is, based on a landuse plan, to have a traditional hunting zone located in an area different than the safari hunting area. Also, since the traditional hunting is for meat only, the village scout accompanying the traditional hunter should not allow trophy quality animals to be taken.

9.4.3 Creation Of A Special Position, "Village Scout Tracker". One of the problems to date has been that Village Scouts must have a minimal education of grade 7 and be able to read, write and speak English. Unfortunately, while most Village Scouts were getting their education in a classroom, traditional hunters were obtaining theirs in the African bush. Reading, writing and arithmetic were not among their courses.

However, a traditional hunter is educated in natural history, able to identify the species of wild game through spoor and scat, even down to the animal's sex, size, and can determine from the spoor whether it has been wounded or not. They can normally read signs and track wildlife where the average person would see nothing. They know most of the vegetation in the region by its vernacular name, and know within their area of geographical knowledge, the location of wildlife and its habitat.

What the Village Scout has learned in the classroom is of little use when miles away in the bush trying to identify signs or track poachers, spotting them before they spot the young scouts who they may ambush and grievously wound. Here is where a traditional hunter, employed as a "Village Scout Tracker" could come into his own. Each scout patrol would have a "Village Scout Tracker" assigned for the above-mentioned purpose. He could run reconnaissance for them moving ahead and reporting back when he

sees signs. He would be there to teach the young scouts (note many of the regular game scouts are city boys) that which they could never learn in a classroom; "BUSHLORE."

This idea is not new. The Botswana national parks authority has recently created a new scout position for bushmen, who like traditional hunters in Zambia, can neither read nor write, but who have "Bush Sense" gained over thousands of years and which is passed from father to son through practical experience in the field, "Nature's Classroom."

9.4.4 Use Of ADMADE Traditional Hunters To Infiltrate Commercial Poaching Rings In Order To Identify The Big Men. Most traditional hunters said if they could be actively integrated into ADMADE, they would be willing to risk their lives to protect "Their Wildlife" against the onslaught of the commercial poacher. It is commonly acknowledged that the commercial poacher is often a victim of poverty, who is taken advantage of by wealthy individuals from urban areas. The commercial poacher, out of economic desperation takes all the risks, while the Big man makes all the money. For every commercial poacher arrested or shot, there is another poor desperate individual willing to take his place and to accept the risks involved. Unless the "Big Men" can be identified purely going after commercial poachers is of little consequence in resolving the problem.

It is believed that traditional hunters may have a vital role to play in identifying these "Big Men" and helping to set up the sting operations necessary to halt such abuse of the community's resources.

9.4.5 Employment Of Traditional Hunters In The Safari Industry. Once the chief and the Sub-Authority better understand the safari business and become more actively involved in negotiating contracts with safari operators, they can push to have more traditional hunters employed as trackers, skinners and gun bearers. If photographic safaris take place, they can be used as guides on foot safaris. In principle by law 70% of the safari operation's staff should be local people. This is difficult to enforce from Chilanga, and should be seen as the duty of the sub-authority.

9.4.6 Development Of A Poachers Rehabilitation Program. While it is believed that the above recommendations will go a long way in making traditional hunters within the GMA's active members of ADMADE, there is still the problem of what to do with commercial poachers, who, as noted above, are among the poorest of the poor, but come out of an urban setting where job opportunities are few if any.

While at the Munyamadzi GMA, four poachers were brought in to the camp by the Village Scouts. The ring leader was an old man in his 60's. His history, might be considered as typical of many urban poachers.

He started his life as a miner in the Copper Belt of Zambia. He claims that as a miner he often dreamed of hunting goats. He was involved in a mining accident and returned to his home in Mpika in order to rehabilitate.

While there, an elephant got into a field and his uncle gave him a muzzle loader with which he killed the elephant. He reported this incident to the chief and was given the meat. After a month of recuperation, he returned to the mines. This was 1965.

In 1972, he stopped working in the mines after a number of near fatal accidents which caused him to fear for his life.

He began hunting for the pot after that. He met a businessman near Ndola who had an elephant license and who hired him to go into Machiya Fungulwe GMA shoot his elephant. He did this twice, finding out how lucrative elephant hunting can be. He began purchasing his own elephant licenses from Lusaka and shooting elephant in order to sell the meat in Lusaka. He did this three times.

Then in 1974 he joined a "Senegalese Poaching Ring" who smuggled ivory. He worked with them through 1986 when the Senegalese were thrown out of country.

He has been caught here several times, as recently as January 1992 in the Munyamadzi GMA. He claims that if he is not in the bush for 2-3 months, that his body stiffens and that he gets the urge to hunt.

If he could get a job like going with scouts, it would make him happy and keep him busy. He explained that if put in jail for two years, he will likely return to poaching upon release.

Three young boys apprenticing under him were urban poor:

- \*Youngest 17, says didn't know what was getting into, only went along because told to.

- \*19 Year Old, poaching with old man since 1987

- \*23 Year Old poaching with old man since 1991.

This is the first time any of these young men had been caught for poaching.

The scouts which were interviewed throughout the evaluation agreed that prison was not the solution. As a number of them said, we have one of two choices, either shoot them or help them find viable long term employment. This same statement was echoed to the author while in the Fouta Djallon Mountains of Guinea, with traditional lion and leopard hunters.

One thing that comes to mind in the case of the urban poachers, is to solicit support from the mining industry, successful businessmen, the Rotary Club, etc. in establishing an "Adopt A Poacher Program" to employ these people once they are caught. The younger boys could be apprenticed and develop marketable skills in some trade. Once employed, ADMADE would receive regular updates to assure that they report for work regularly and that they are not tending to slip back to their old ways. There is certainly nothing to lose by trying. In certainly beats shooting them or putting them in a prison environment which will push them even more into the den of the dark and evil world of poachers.

## 10.0 THE POSSIBILITY OF MANAGING OTHER NATURAL RESOURCES THROUGH THE ADMADE CONCEPT.

It is believed that the basic principles of ADMADE, that of returning stewardship of the natural resources over to the local resource users through a partnership with the government management agencies, holds true whether the resource is wildlife, a forest, a freshwater or marine fishery, or a coral reef area in need of protection. The question that must be asked is whether within the ADMADE Program there is a place for beginning to manage other resources that fall within the GMA's and can other Zambian Agencies adopt the ADMADE approach for natural resources under their delegated authority outside of the GMA's?

10.1 Involvement of Wildlife Management Authorities And Wildlife Sub-Authorities In Managing Other Natural Resources Found Within The GMA's. Key resources found within the GMA's which have yet to be scientifically managed or looked upon as an additional economic resource for rural communities living within the GMA's include:

\*Timber

\*Fish

A minor resource is honey.

Most GMA's are richly endowed with Miombo and Mopane Woodlands with potential for developing them as an economic resource including:

-Firewood can be marketed as in the Lumimba GMA where a local safari lodge hulls in 3-4 seven ton trucks/day

-Charcoal for urban markets

-Pit sawing of timber. ADMADE Unit Leaders are already being trained in this principle.

-Minor forest products such as honey, mopane worms, etc.

Pilot projects are planned by ADMADE at Mumbwa GMA (Miombo Woodlands) and Lumimba GMA (Mopane Woodlands). Surveys will be undertaken to determine the extent of the various resources, both major and minor forest products.

It is unclear from this survey, to what degree ADMADE's legal powers extend to other resources within the GMA's. For instance, national forests exist within both the Lunga-Luswishi and Lunga-Busabwa GMA's.

One of the problems that currently exists is that the Forestry Department is in disarray. Also most foresters are trained in agroforestry and not natural forest management.

There also appears to be a strong correlation between alternative protein sources and the rate of poaching (Personal Communication Dale Lewis, Nymaluma Training Center). In Luangwe Valley it has been found that when fish stocks decline poaching of game increases by local residents. In the Lulangwe Valley there are areas with good clay soils and streams that could be used to feed fish ponds.

In the Kafue Flats area, there is little or no fish as an alternative protein source. Therefore pressure is greater on wildlife is much greater. For instance, it is estimated that of the sustainable offtake estimated at about 7,000 Kafue Lechwe/year, approximately 6,700 are poached<sup>11</sup>.

Regardless, of what is done, it should be undertaken based upon a landuse management plan for the GMA. For instance the hilly Miombo woodlands within Lumimba Hunting Block B, provide critical habitat where most of the kudu, eland, buffalo, lion and leopard are harvested. In Lumimba Hunting Block A, roan, kudu, buffalo, lion and hartebeest are hunted in the hilly Terminalia forests. Prior to selecting any area for logging, not only must the timber potential and a sustainable harvest plan be considered, but the importance of the forest to the safari hunting business must be determined.

Likewise, professional hunters have complained that fishermen in the vicinity of their safari operations have a tendency to cut important trees to smoke their fish, such as those that might be used for baiting cats. Once again, where fishing takes place within a GMA, it is critical so that it is not disruptive to safari hunting, the key economic resource for all GMA's.

10.2 Adoption Of The ADMADE Approach For Natural Resources Falling Outside The GMA's. There is no reason why the Forestry and Fisheries Departments could not adopt the ADMADE concept to resources that are under their responsibility and that lie outside the GMA's. However, given that the institutional ADMADE structure is already in place within the GMA's and given that forestry and fishery resources exist within their geographical limits, the logical approach would to test the viability of the ADMADE approach on these resources within the GMA's prior to deciding to expand this program into other geographical areas, such as in national forests or in major fisheries such as along the Zambezi River.

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<sup>11</sup>ADMADE. April 1992. Zambian wildlands and human needs newsletter. Number 10. Published by the Nyamaluma Conservation Camp. National Parks And Wildlife Service. 11p.

**10.3 Recommended Actions To Begin Considering the ADMADE Approach To Natural Resources Other Than Wildlife, Both In And Outside The GMA's.**

**\*Fund a legal study to assess NPWS's and the communities' rights resources other than wildlife within the GMA's**

**\*Begin collaborating with the Fisheries and Forestry Departments on various pilot non-wildlife natural resource management schemes within the GMA's which use the ADMADE approach.**

**\*Make sure that any pilot scheme is part and partial to the development of a landuse management plan that places a given resource and its potential value in perspective to the value of competing resources which could be impacted from exploiting the alternative resource (e.g., wildlife habitat destroyed by timber harvesting.**

**\*Consider sending two management biologists for advanced university training in silviculture (Natural Forest Management).**

**\*Fund a literature review and possibly a visit to the forestry school at Oxford/Cambridge to locate old British foresters who once worked in Zambia or Southern Africa, to see what might have been already known about managing miombo and mopane woodlands that has been lost with the transfer of power and the displacement of technicians since independence. Study logging practices in neighboring southern African countries to see what scientific management schemes might exist, such as diameter breast height (DBH) for various timber species, rotational cycles, etc.**

## 11.0 PLANNING AND MANAGEMENT OF ADMADE GMA'S/HUNTING BLOCKS

11.1 Current Setting. Up until now there has been very little planning and management of ADMADE GMA's/Hunting Blocks. Regardless of who was interviewed in the field from professional hunters, to ecotourism operators, to wardens and unit leaders, the biggest concern raised, was that the most important part of managing wildlife for a sustainable offtake program, reliable animal censuses, was being overlooked.

Up until now, even for the 1992 hunting season, game quotas for hunting and culling have been based upon random sightings by Scouts while on anti-poaching patrol, and on a guesstimate based on these sightings and last year's offtake quota (Personal Communications, Dr. Akim Tembo, Head of the Research Division, NPWS and Dr. Dale Lewis, WWF Wildlife Biologist).

While a country wide three year aerial elephant census program began in 1991, with incidental sightings of other wildlife, it is not believed that this data will be detailed enough to provide the kind of population estimates needed to determine reliable offtake programs. Nor, is it believed to be cost effective once the funding runs out. This evaluation will provide some ideas in this area.

NPWS headquarters, with at least two Phd's in wildlife management on the staff, as well as the WWF funded wildlife biologist at the Nymaluma Conservation Training Center, openly recognize these shortcomings and are quickly taking steps to remedy the problem:

\*Professionalizing Field Staff. Initially, six university graduates are being recruited as management biologists. Each biologist will be assigned 2-3 Game Management Areas.

\*Computerized Data Collection. A dataform handbook<sup>12</sup> has been produced with detailed forms and grid maps which can be used to create a geographically oriented data base for the purposes of making key management decisions and for developing each GMA based upon a landuse management plan.

\*Training. Regular workshops are held for professionals, scouts and community leaders in data collection and planning at the Nyamaluma Wildlife Training Center in the Luangwe Valley.

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<sup>12</sup>NPWS. 1990. The ADMADE dataform handbook. 2nd Edition. National Parks And Wildlife Service, Republic Of Zambia. 80p

Observations in the field indicate that currently much of the needed data is not being collected. It should be realized that this is a brand new program being implemented as this evaluation is being written, and thus it is too early to judge the degree of success that is being achieved. One thing that can be said is that ADMADE field staff are well aware of what is being planned and are slowly gearing up for these activities.

Based upon this evaluation, various aspects of the ADMADE planning and management program will be discussed, as it relates to field oriented planning and management of the natural resource base and for community development.

## 11.2 The Role Of Key Players At The Level Of The Game Management Area.

11.2.1 Unit Leaders. Unit leaders have mostly come up through the scout ranks. To say the least the role of the Unit Leader is critical to the success or failure of ADMADE. The Unit Leader may be seen as the overall implementer of NPWS and ADMADE policies within each Game Management Area. He normally has an assistant and from 15-30 Village/Regular Scouts under him. In the "Green Book" the duties of the Unit Leader are:

- \*"Direct the overall implementation of wildlife management programs as approved by the wildlife management authority

- \*Maintain the unit headquarters as a center of the unit's operation and data gathering

- \*Organize and convene wildlife management sub-authority meetings

- \*Supervise and direct staff within the unit on a day to day basis

- \*Initiate a wildlife management budget each year and submit the budget to the command warden for presentation to the wildlife management authority, and;

- \*Collect basic data on aspects of wildlife management as approved by the Director, NPWS.

While, this was the Unit Leader's original mandate, the role of collecting data is being given over to the Management Biologist.

While having a major role in coordinating the activities of personnel, especially the allocation of scouts for anti-poaching and data collection, as the management biologist takes over data collection, the Unit Leader will more and more become involved in working with the Sub-Authorities in planning for community development and in working with the Sub-Authorities to develop landuse and wildlife management plans based upon the data, analyses and recommendations coming from the management biologist.

Currently, most Unit Leaders have a background in anti-poaching, and at most training in wildlife management from Chunga Wildlife College in Zambia, with short courses provided to them from Nyamaluma Wildlife Management Training Center.

Future training will be provided for Unit Leaders at Nymaluma in public relations and community participation, in budgeting and administration, and in the management of people.

**11.2.2 Management Biologists.** Six management biologists have just been recruited who are graduates from the University of Zambia. They are being paid out of the Revolving Fund. The ADMADE Directorate currently screens and hires them. They are each given a six month grace period to determine if they have the character to undertake the heavily field oriented exercises required of them, living in isolated and somewhat primitive conditions for extended periods of time. In the future, the GMA's may have to pay their salaries (Personal Communication Dale Lewis, Nyamaluma Wildlife Management Training Center).

Each management biologist will be required to cover 2-3 game management areas (GMA's). His major goal will be to work with Scouts to establish wildlife census transects necessary for determining hunting and culling quotas. He will also be instrumental in collecting geographically oriented data necessary for the development of landuse management plans, including but not limited to:

- \*Identifying major populations of wildlife by species
- \*Major stands of timber
- \*Locating Hunting Camps and Villages
- \*Identifying Key Safari Hunting Areas, versus areas designated for other activities such as traditional/resident hunting, pit sawing, honey collection and fishing.
- \*Migratory routes of key wildlife species
- \*Key areas of poaching

Based upon the analysis of this information and other data emanating from the computerized data forms, analyses will be undertaken and recommendations presented to the Sub-authorities, the wildlife management authorities and NPWS to develop landuse management plans and wildlife offtake plans.

11.2.3 Village and Regular Scouts. Within each sub-authority there tends to be between 10-20 Village and Regular Scouts. The Regular Scouts are civil servants with a grade 9 education and training from a government training school, often with a military background. The Village Scouts are selected by each Sub-Authority and are trained at Nymaluma Wildlife Management Training Center. There are also daily hire temporary or C.E. Scouts hired from the Sub-Authority on an as needed basis.

Up until now, the primary role of the Scouts has been anti-poaching. As poaching is on a decrease within the GMA's, it is hoped that the Scouts will become more actively involved in data collection needed to develop landuse management plans and wildlife offtake quotas.

11.2.4 Sub-Authorities. Their role has been discussed in Sections 4.1.3, 4.2.2 and 7.0. The key to their success will depend on having a dynamic Unit Leader to catalyze them and training programs for chiefs and headmen which educates them as to the role of the sub-authority, teaches them about the economics of their resources and encourages them to become more active participants, rather than observers in the ADMADE process.

Ultimately, the Sub-Authorities should become more actively involved in the decision-making process concerning policy issues, negotiation of concession leases, and project selection.

11.2.5 Professional Hunters. Their role in ADMADE has been discussed in Sections 4.2.3 and 7.0.

11.2.6 Community Facilitator. This is a new position which is being created. A male or female community facilitator will be nominated from the community by the Sub-Authority. Their role will be to encourage two way communication between the community and the Sub-Authority, mobilize the community and to identify critical community development projects that can be funded with the Community Development "35%" Funds derived from ADMADE.

### 11.3 Key Components Of Management And Planning In ADMADE GMA's/Hunting Blocks

11.3.1 Importance Of Land Use Planning. The importance of landuse planning was discussed to some degree in Sections 10.1, 10.3 and 11.2.2. The key here is that safari hunting is the economic backbone that will support ADMADE and the GMA's. All other activities such as resident/non-resident hunting, culling, honey collection, pit-sawing and fishing should be geographically situated so that they do not impinge upon or detract from the safari hunting operation, or the wildlife populations and their respective habitat upon which the safari hunting business is built.

Thus, wise decisions on how to best divide up the use of each GMA/Sub-Authority must be based on the collection of geographically defined data.

ADMADE has begun to employ the geographical information systems (GIS) software PC-ARC/INFO and digital LANDSAT Imagery, along with field data to develop basic landuse planning maps.

The plan is for basic data to be collected in the field by the management biologist in collaboration with the village scouts for each GMA/Sub-Authority.

The ADMADE GIS Computer Laboratory located at the Nymaluma Wildlife Management Training Center will process the landuse data into a map format that can then be used by WMA's, Sub-Authorities and ADMADE field staff in making management and planning decisions within the GMA's.

A simplified more user friendly version of ARC/INFO called ARC-VIEW will be made available to the management biologists for the purpose of entering new field data, and providing screen displays of landuse/resource inventory maps that can be used in the field for decision making purposes by the local community in collaboration with the Unit Leader, Management Biologist and the Professional/Traditional Hunters or other key resource users.

In November 1991 landuse maps and the concepts of landuse planning were for the first time conveyed to traditional leaders in the Sandwe and Lumimbwa GMA's, providing them with visual maps of: 1) Protected buffer zones around limited water resources for wildlife, 2) Protected no settlement corridors in order to maintain wildlife access to important habitat, 3) Resource Use Zones, 4) Projected incomes from sustained harvests of particular tree species, 5) Patterns and distribution of manageable resource disturbances, and 6) Human Settlement patterns and population sizes.

One of the biggest shortcomings is accurately locating field data. This is being partially overcome by providing the Unit Leaders, Management Biologists and Professional Hunters with grid maps where they can geographically locate critical data that has been collected. It is also believed that it would be valuable to consider purchasing some hand held Geographical Positioning System (GPS) instruments which are linked to satellites and provide accurate estimates of geographical coordinates.

11.3.2 Wildlife Censuses. Realizing the shortcomings of the current wildlife census gap, the ADMADE Dataform Handbook, lays out a strategy for management biologists with support from scouts to establish make at least 10 counts/yr over 3-5km transect. The number of transects are to be based upon the availability of man power. The goal of undertaking these transects to date is to get a general idea of trends in population numbers rather than an accurate idea of actual counts.

It is believed that there are a number of issues that must be addressed in establishing these transects and in using the censuses as a basis of establishing offtake quotas.

First of all, many southern African countries has developed adequate data to demonstrate that for most African ungulates, if a good estimate of a population by species can be obtained, from 12-14% of the population can be harvested annually, of which from 2-6% of this total can be harvest for trophies without disturbing trophy quality. Some ungulates such as impala may sustain annual harvests of up to 25% for the purposes of producing protein sources, with no damaging effects on the population.

The problem is obtaining an accurate population count by species. Some people claim that this can be done most efficiently via airplane, even in the heavily forested miombo, mopane and terminalia savannah woodlands of Zambia, if undertaken during the dry season when the leaves have fallen. This may be something to aim for or to investigate in the future. It is possible that as part of the IUCN elephant survey, that a pilot GMA can be picked, game counted and compared to results of a ground survey. There is also a question of cost.

It is believed that ADMADE's emphasis on ground based data counts is the most appropriate for the moment.

In 1991 within the Mumbwa GMA basic game counting transects laid out but the game was never counted, due to the lack of a full

time management biologist, and no transport or supplies:

- \*Each transect is 10 km long, taking an estimated 3-4 hours to walk and record.

- \*100 meters between transects

- \*3 Member team-recorder, observer and ambulatory scout

Given that the average GMA cover 2-4,000 sqkm, it would appear logistically unacceptable to establish such a detailed series of transects over an entire GMA in trying to get game counts for the purposes of estimating absolute wildlife numbers. Some estimates are that only about 1/2 to 1/3 of the average GMA has significant populations of game (Personal Communication Dale Lewis, ADMADE/WWF Wildlife Biologist).

It is believed that with the grid maps, and collaboration between the management biologist and key resource users, the geographical location of key wildlife populations can be even more narrowly defined within the GMA. The following are recommended ideas that might be considered in undertaking a more systematic rather than random approach to laying out transects:

- \*The management biologist should hold a meeting with the "Traditional Hunters Association" within each Sub-Authority. He should have them take him into the field to locate where they know of major wildlife resources, to be marked on the grid map

- \*The management biologist should hold a meeting with the professional hunters in the area who spend six months of the year looking specifically for game trophies. They should be asked to mark out the location of lion prides, buffalo herds (both resident and those that might come from the parks), leopard, kudu or sable, etc.

- \*All scout anti-poaching patrols should record sightings of wildlife on the grid maps and the approximate numbers by species.

Much of the wildlife tends to be territorial (e.g. puku along floodplains, kudu around kopjes). Based upon this information, he will then be able to either:

- \*Lay down permanent transects in narrowly defined areas, with very close spacing between transects so as to get very accurate estimates of the game, or

- \*Undertake actual grid block counts if certain wildlife populations are shown to be sufficiently concentrated within small geographical areas.

It is believed that the more quantitative an estimate that can be obtained by species, the more reliable will be the decision making in determining offtake rates of game. Even with all of this effort there will be certainly some error. The secret will be to narrow down the chance for error by narrowing down the geographic area censused, and once established, using the same methodology throughout in order to keep the error constant and thus have comparable results. Then, over the next 5 years, trends in populations will be observed that should allow the GMA to make better and wiser decisions as to how much of an annual harvest by species safely undertaken.

11.3.3 Other Relevant Data That Must Be Analyzed In Using Census Data To Determine Offtake Rates. The bottom line for the economic success of ADMADE will be: 1) A high hunter success rate, and 2) The production of quality trophies. It then becomes critical that the management biologist, who will have a full time scout placed with the professional hunter, develop a close working relationship with the PH.

This will take a bit of public relations on the part of the management biologist in developing this rapport. Once the PH sees the professionalism of the biologist and understands why the data is being collected (e.g., many PH's and possibly many scouts placed in the safari camp do not understand their main role - thinking that the scout is there to catch the PH making a mistake - like a client shooting a female - rather than mainly to collect statistical data).

For instance, already the PH at Fungi Safaris and the Unit Leader are developing excellent relations after the quick response by the Unit Leader to commercial poachers having invaded the hunting block. Each stakeholder must understand his role and become an active participant.

The key information which the PH can provide the management biologist will be recorded in: 1) The Safari Daily Hunting Sheet and 2) The Safari Hunting License Record Sheet. Of some importance will be to observe comments of clients based upon the Safari Hunting Client Questionnaire. Some PH's have recommended bringing back the Game Sighting Book which allows them to note daily what they have seen in the field. If this could be published in the form of a grid map, such sightings could become critical to determining the locations of censuses.

This information should be followed up by discussions between the PH at the end of the season to discuss the success of his hunting

season and the game census results. For instance:

\*The professional hunter in Lumimba B Hunting Block feels could have cull quota on zebra, puku, warthog and impala. He feels he could sell much of the cull quota to expats and guarantee delivery of meat to villages.

He has 16 years experience hunting in Luangwe Valley and believes the buffalo trophy size is significantly down due to ration hunting which has now been stopped.

He feels that the lion quota should state only full maimed mature male lions. Right now can harvest any lion regardless of age or sex.

\*The professional hunter in Lumimba A Hunting Block says here have 550 resident buffalo and 1,000 buffalo who temporarily come in from the national parks. It would not be wise to base the total buffalo quota for the area on the total count and then to only harvest from the resident population as this would risk to greatly decrease the size of the trophies coming from the resident herd. These types of population dynamics will only be understood by someone who is the field for 6 months of the year such as the PH. This knowledge can be passed on to the management biologist.

\*The professional hunter in the Munyamadzi GMA explained that there were 8,000 people in area. He feels that a lot more meat from safari hunting could go to villages except when hunting cat bait is needed. One idea is to sell the PH a bait package of hippo-which locals don't eat, and then the rest of the harvested game from the Safari operation can go to the villages for meat.

\*Already the Warden in the Mumbwa GMA is collaborating with one of the professional hunters on quotas:

-Quotas could be increased for impalas, hartebeest, warthog, waterbuck and hippo (lion bait)

-Roan quotas need to be reduced or stopped-population very low.

**11.3.4 Significance Of Taking A Watershed Approach.** In many of the GMA's activities far removed from the GMA in the upper watersheds, if continued to be ignored, could have grave implications for the future of ADMARE, the wildlife within the GMA's and thus economic development within the GMA's. This is occurring from poor farming practices by people on the plateau which drains into many of the GMA's, especially Luangwe Valley. In many cases deforestation and poor soil conservation practices are affecting the hydrology of the Luangwe River, resulting in

increasingly lower dry season river flows, the critical period of the year when water is most needed by wildlife. This is immediately threatening hippo and crocodile populations and decreasing fisheries production (Personal Communication, Dale Lewis, Wildlife Management Biologist/WWF).

The thought has been given to ADMADE beginning to encourage communities within the GMA's to negotiate deals with the people on the plateau. One idea is that the GMA communities would use their money from wildlife to buy food from plateau chiefdoms in return for their adopting sound soil conservation practices and landuse plans.

It has been suggested that an attempt be made to develop long term ties to remote sensing centers in the United States such as with in the U.S. Geological Survey, or the Remote Sensing Institute in Sioux Falls, South Dakota. These centers, using satellite telemetry could undertake watershed wide landuse/watershed damage assessments to be provided in the form of maps so that targeted "Upper Watershed Communities" could be identified with whom ADMADE could work.

**11.4 Communications And Logistics.** Currently, this is a major problem within the GMA's. Critical areas, if overcome, which could greatly help improve management and planning within the GMA's include:

**11.4.1 Radio Contact Between the Safari Operator and Unit Leader.** Requiring the Professional Hunter and the Unit Leader to be on the same radio frequency so that problems like additional game licenses, observed poaching, meeting dates, etc. can be relayed. Also possibly linking the Unit leader via radio to Command headquarters may be of value, though this may be less and less important as decentralization takes place.

**11.4.2 Strategical Placement Of 10,000 Liter Fuel Storage Tanks.** Tremendous amounts of time and fuel are wasted by the Unit Leader and eventually the management biologist having to run back and forth to regional towns for petrol. It has been recommended that the idea be raised of strategically locating a 10,000 liter fuel storage tank that could be filled 1-2x times per year as needed.

**11.5 Additional Recommendations To Improve Management And Planning Capacity:**

**11.5.1 Increasing Numbers Of Management Biologists.** For those GMA's which are producing large enough profits, it is recommended that there be a goal of achieving one management biologist per GMA.

11.5.2 Geographic Position Systems (GPS). In order to improve the ability to accurately locate ground truthed data within the GMA's, consider purchasing hand held GPS's that can provide management biologists the exact coordinates of key field data, such as the location of critical forest cover, wildlife habitat, locations of major concentrations of game, delimiting critical safari hunting boundaries, delineating wildlife census transects, etc. This can be automated with GEOLINK for the purpose of converting large data sets into the ARCINFO mapping system

11.5.3 Vehicles and Fuel Rations For All Management Biologists. All management biologists will need 4x4 vehicles and adequate fuel if they are to be effective.

11.5.4 Computers And Software. All management biologists and unit leaders should have access to a computer and printer that runs off of a solar system. The computer should have spare batteries and also be chargeable off of the vehicle. Solar systems should be set up at Unit headquarters to operated the computers.

11.5.5 Short Term Technical Assistance To Develop A Workable Wildlife Census Methodology. One of two options exists:

\*Invite George Frame, wildlife biologist from Burkina Faso who has developed a method of ground censusing a 900 sqkm game management area, using local people walking morning transects over a 5 day period, 2x/year to estimate game populations and to establish quotas. He can be contacted through WWF/USA or direct via:

Dr. George W. Frame  
P.O. Box 822  
Cape May Court House  
N.J. 08210  
(Until Sept)

or

S/C ADEFA  
01 B.P. 5570  
Ouagadougou  
Burkina Faso, West Africa  
(After Sept.)

\*Through the SADCC NRMS Wildlife Coordinating Body In Malawi, invite short term TA from one of the member countries which has developed appropriate census techniques for large open areas as in Zambia.

## 12.0 ANTI-POACHING

12.1 Current Setting. With the exception of the Lower Lumimba Hunting Block, where the professional hunter claimed that he had not seen a scout patrol in the field for two years, most everyone interviewed felt that the Scouts were having a major influence on decreasing illegal hunting. As noted earlier, while at Unit Headquarters, four captured poachers were brought in from the Munyamadzi GMA.

There is inadequate data, but some people feel that while poaching with rifles is down, poaching with snares is increasing, as a snare can be set at night, is difficult to find, and the poacher can move in and out of the area with little or no noise, thereby being difficult to detect compared to armed poachers being easily spotted with their weapons or from gun shots being fired. It is likely that poaching with snares is by the local community rather than by commercial poachers. As noted in Section 9.0, integration of the traditional hunters into ADMADE through the creation of a Traditional Hunters Association should go a long way in stemming this problem.

There is also concern that poaching may be decreasing in some of the parks as they are not as well patrolled as the GMA's. This may provide a basis for ADMADE to expand into the National Parks System.

12.2 Recommended Actions To Improve Anti-Poaching Activities. In addition to actions discussed in Section 9 on integrating traditional hunters into ADMADE, there are a number of areas that could improve the success of anti-poaching activities.

12.2.1 Improved Communications In The Field. It is believed that two types of communications may be critical to increasing anti-poaching success:

\*As noted in Section 11.4.1, radio communications are required between the Unit Leader and the Professional Hunter so that if the PH observes either poachers or fresh signs of poachers in his area, he can radio in for help.

\*Consider, investigating hand held radio systems, that Scout patrols could use to radio Unit Headquarters to call in for backup if necessary, once poachers are located.

12.2.2 Equipment Needs. The biggest problem right now is that the commercial poaching problem is the greatest when there is little or no activity in the field by either the scouts, or the professional hunter; the rainy season. Regardless of what scouts were interviewed, their biggest complaint was that they needed better equipment if they were expected patrol during this time of the year. Major equipment needs include:

\*Rainy Season Gear, including poncho, tents, ground cloth preferred over cots, light weight 40lb inflatable boat to get across swollen streams; first aid kit with tetracycline, diarrhea medicine, malaria pills, iodine, bandages, black stone (Get from "White Fathers") against snake bites

\*Uniforms. Need two sets of uniforms, one for bush, one for parade, every couple of years get new uniform and old parade uniform becomes field uniform

\*Rations big problem in bush-prefer kapenta or other dried fish with mealie meal over beans which take too long to prepare after long day of marching (Why ask evaluators-does this indicate a better need to communicate with Unit Leader??).

\*Need tractor/trailer to get supplies provisioned to camp during rainy season (It is believed this is being dealt with).

12.2.3 Firearms and Firearms Training. This is a major area for improvement. Although some new Czech AK-like 7.62 x 39 automatic rifles have been purchased, they are inadequate in number. Currently, only regular scouts, who have had military training are legally allowed to use them. It appears that each Unit has maybe five of these and then varied and sundry weapons usually including rifles in 30:06, 375 and 458, and a few 12 gage shot guns.

It is not evident that there are enough weapons or ammunition to go around. A number of scouts claimed they go into the field with only 2-3 rounds of ammunition each.

Many of the older rifles are missing sights, and look as if they are rarely cleaned. It appears the only reason there is cleaning equipment in the field is because kits came with the Czech. rifles.

An attempt was made to fire two of the automatic rifles on single fire. Each gun shot significantly off so that at 25 meters, the target could not be hit. One scout said that this was the first time his arm had been fired. Not one person could show a

firearms manual that discussed how to break down these new arms, nor how to adjust the sights (Appears, front sight must be tapped for windage, rear sight adjustable for elevation).

The only practice they ever get is shooting against poachers.

To say the least, given the lack of firearms, ammunition and regular target practice, the lives of these Scouts are at great risk.

The following is recommended:

**\*Annual Ammunition Budgets.** Budget in enough ammunition so that each Scout can fire 5-10 rounds at a target each month, and every arm has at least 20 rounds in the field.

**\*Firearm Sighting.** Assure that at 50 meters, each firearm can hold point of aim within a 5 inch circle with 3 out of 5 shots from a prone or sitting position.

**\*Firing Ranges.** At each Unit Headquarters, construct a nearby firing range.

**\*Gun Repair.** Have all broken weapons collected and make arrangements with the police armorer in Lusaka to repair them.

**\*Regular Firearms Inspection.** Each Unit Leader should be required to conduct regular firearms inspection, with disciplinary action taken against any scout who fails inspection (This assumes that adequate gun rods, gun grease and solvent are provided).

12.2.4 **Physical Training.** Most of the scouts are young men with a lot of energy. When not on patrol they need constructive and enjoyable ways to burn this energy. Furthermore, their level of fitness will improve the endurance needed in the field while in pursuit of poachers, and could even save their life in escaping from poachers or dangerous game.

Although not entered into in great detail, there does not appear to be a regular program of physical exercise at the scout camps. At a minimum, and as a means of instilling discipline, when at the Unit camp, there should be regular morning group exercise for 15 brisk minutes. In addition, some scouts have suggested the following sporting equipment for Unit Headquarters: Football, Volley Ball and net, and Netball and nets. hoops for wives.

12.2.5 **Consider Making More Professional Hunters, Honary Game Rangers,** as is the case with Guy Robinson with whom the team met.

### 13.0 ADMADE TRAINING NEEDS

One of the strong points of the ADMADE is that training at all levels is a regular part of the program. Training may be divided into In-Country and Overseas training.

13.1 In-Country Training. It is believed that 95% of the training needs for ADMADE can be met in country, and carried on through the Nyamaluma Wildlife Management Training Center.

13.1.1 Village Scout Training. The most critical phase of this program is finished. Over 400 Village Scouts have been trained at Nyamaluma in 4-6 month training programs. Originally trained primarily in anti-poaching, it is likely that more and more scouts will need short courses in basic data collection and in wildlife censuses. New scouts will be need to be trained as ADMADE expands.

13.1.2 Unit Leader Training. Approximately 48 people have been chosen and trained at the Nyamaluma Wildlife Management Training Center. Over half have failed, not because of educational deficiencies but because of a lack of character and discipline (Personal Communication, Dale Lewis, WWF Biologist based at Nyamaluma).

An "Advanced Unit Leader Training Course" is just about underway for those Unit Leaders with a minimum of 18 months experience in the field. Key subjects that will be covered at the Nymaluma center include:

- \*Budgeting and Administering the Wildlife Management "40%" Accounts

- \*Public Relations And Community Participation in resource management and development

- \*Disciplining Personnel

13.1.3 Development Of An On-The-Job Masters Degree Program For Management Biologists. There appears to be a felt need to provide the management biologists with advanced master level training. This was discussed in some detail at the Nymaluma Wildlife Management Training Center. An innovative idea that was discussed, is that through the University of Zambia, develop a special masters degree program for the management biologists in which they would not be lost from the field for 2-3 years, as is often the case, but would undertake their research on the job. Two to three times a year intensive one week seminars would be held at Nyamaluma in which eminent wildlife biologists, researchers and planners would provide them with lectures and theory which they could then directly apply both in their research and in their everyday jobs.

This idea is strongly worth pursuing as it keeps critical personnel in the field while giving them educational opportunities, and minimizes the risk, as is often the case, of their not coming back or quickly changing jobs when trained overseas (Interestingly enough this latter point does not appear to have been a problem to date at NPWS).

13.1.4 Short Courses In ARC-View And Computers. A short course will be needed to train management biologists and Unit Leaders in the use of this software. Computer training may also be needed in the use of basic software such as WordPerfect and LOTUS 123.

13.1.5 Short Course In Wildlife Census Techniques. Based upon what was observed in the field, it is not evident that the wildlife censuses as planned will be effective or efficient, until a methodology is developed to narrow down the areas being censused (See Section 11.3.2). Once a methodology has been worked out, management biologists should be called in for a classroom and field exercise lasting about 1-2 weeks.

13.1.6 Training Of Traditional Leaders. Training of chiefs and headmen is needed in the following areas:

\*As part the seminars for chiefs and headmen at Nyamaluma Training Center, begin educating them to the economics of sport hunting.

\*At the planned seminars to be held by the Nyamaluma Training Center, encourage the chiefs and headmen to take advantage of their traditional "Grass Roots Democratization Process" by both feeding and receiving information from the communities.

\*The application of landuse maps for planning community development

13.1.7 Training Programs For Professional Hunters. See Section 8.3.2 of this report.

13.2 Overseas Training. The only obvious overseas training needed may be in sending two management biologists for advanced university training in sylviculture (Natural Forest Management).

Also it would be advisable to have one person sent for an masters in business administration/finance, and one for a BA in marketing. These individuals would be actively involved in the Revolving Fund.

## 14.0 ENVIRONMENTAL EDUCATION

14.1 Development Of A Utilitarian Environmental Education Program With A Rural Bias. Up until now most of the environmental programs developed in Zambia, as in most of the developing world have been developed by Western conservation NGO's with a Western/Urban bias (Personal Communication, Dale Lewis, WWF Wildlife biologist, Nyamaluma Wildlife Management Training Center). Even while the evaluation team was at Nyamaluma, children from the Copper Belt were visiting, sponsored by Wildlife Conservation Society of Zambia. While there is great value in exposing urban children to the wonders of rural Africa, these types of environmental education programs are of little value to rural children who grow among the wildlife and who must to live off of and co-exist with these animals.

At the Chitungulu Sub-Authority it was explained that the urban based Chonhololo Club (Children's club associated with the Wildlife Conservation Society Of Zambia) had sent the school teacher some environmental education materials that were useful for urbanites in Lusaka, but useless for his rural pupils.

The Nyamaluma Wildlife Management Training Center is hoping to develop an environmental education that is utilitarian in nature and which teaches children to make their livelihood from and successfully live among the rural natural resources which they have available to them. Areas in which it might consider developing curriculum for the primary schools within the GMA's include but are not limited to:

\*Basic ecology of the area in which children live:

- Natural History of Miombo and Mopane Woodlands
- Natural History of Wildlife And Fish found in their area
- The potential commercial and nutritional value of wildlife, forests and fish to the community. Basic economics and the principle of food security using the natural resources to generate wealth that can be used to buy food rather than destroying that wealth in trying to grow food.
- The principle of sustainable natural resource management
- Basic wildlife management principles such as carrying capacity, offtake rates, basic census techniques

-Pit Sawing, and principles such as Diameter Breast Height (DBH) by key commercial species

-Basic wildlife, forestry and fishery laws

\*Basic Hygiene such as clean water supplies, the principles of constructing pit latrines away from water supplies

\*Tropical diseases and how to avoid them such as bed nets against malaria, not swimming in stagnant pools to avoid bilharzia, care against dangerous exposure to wild animals, especially hippo and crocodiles

\*Appropriate farming and soil conservation in a arid area.

In essence, the children in these rural areas would be exposed to a utilitarian environmental education program so that by the time they are ready to enter into the work force, many of the values and principles, that adults in the ADMADE GMA's are just now trying to comprehend, would be a part of their everyday vocabulary and way of life. They would be ready to step in to their parents shoes and negotiate hunting leases, manage their timber, undertake wildlife censuses to determine offtake rates. In essence, their formal education would teach them not only how to do reading, writing and arithmetic, but to turn these subjects into practical skills needed to sustainably "Farm Their Natural" resources as stewards of these lands.

14.2 ADMADE Radio Program. It would appear that most of the rural Zambian populace has access to a radio. Consideration should be given to developing an ADMADE Radio Program that would discuss various issues with regard to the practical everyday problems in the GMA;'s such as those that are listed above for the primary schools, plus better explain ADMADE, explain how the sub-authorities should work, sensitize the rural communities to new NPWS/ADMADE policies, etc. A similar program already exists for agriculture extension called The Cooperator. Regular programs are held in the English, Nyanga, Bemba, Luvale, Lunda, Kaonde, Tonga and in the Lozi languages.

#### 15.0 ADMADE MONITORING

It has been recommended that a grant be made to the University of Zambia for 2-3 years to monitor the progress of ADMADE, providing creative thinking and innovative ideas to the program as unbiased outsiders, especially in the areas of finance/business, socio-economics and natural resource management.

This would also help to develop ties between Nymaluma and the University and possibly provide various exchange opportunities with regards to research and studies (e.g., developing an on-the-job masters degree program for management biologists, giving school credit for certain activities learned on the job in order for ADMADE staff to obtain some university credit and to spend a minimal time off of the job in obtaining basic university degrees).

#### 16.0 POSSIBLE EXPANSION OF ADMADE INTO THE NATIONAL PARK SYSTEM

Based upon the fact that currently commercial poaching is being controlled to a large degree in the GMA's which surround the parks but is increasingly uncontrollable in the relatively unpatrolled parks<sup>13</sup>, the obvious next step would be to begin turning over the parks to the local communities to whom these territories originally belonged. This would require the following:

- \*Extend the chiefdoms back in to the parks to their original boundaries.

- \*Based upon the percentage of the chiefdom within the parks develop a revenue sharing program with the chiefdoms (In Kenya a minimum of 25% of the gate receipts is initially being considered.

- \*All lodges with the parks would negotiate long term leases through the Sub-Authorities, including first priority employment for community residents

- \*All vehicles entering the park would be required to have a paid "Local Park Guide" from the community who would be trained in natural history and know the whereabouts of the latest wildlife sightings.

- \*Additional Village Scouts would be recruited and trained to undertake anti-poaching patrols within the park as they currently undertake within the GMA's. This include would additional employment of traditional hunters as "Village Scout Trackers" bring them into the park management system.

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<sup>13</sup>It is estimated that 200 poachers are operating are operating in the Kafue National Park, having just poisoned 100 buffalo with rogar making them unfit to even eat. Source: Front Page of the "Times Of Zambia" No. 8,284, June 29, 1992

#### 17.0 GENERAL EQUIPMENT NEEDS

Other than the equipment needs mentioned in various sections of the report:

\*Radio Telephone For Nyamaluma. The Nymaluma Wildlife Management Training Center, situated in an isolated area of Luangwe Valley, appears to be in need of a Radio Telephone so it can communicate with the outside world.

\*A Borehole Machine is desired to provide villages with potable water.

\*An Earth Mover is desired for the construction of fish culture ponds as an alternative source of protein.

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