CONSERVATION AND DEVELOPMENT

HISTORY AND DIRECTION

IN AFRICA

PREPARING FOR THE 21st CENTURY

Paul Andre DeGeorges

Regional Environmental Advisor East and Southern Africa USAID/REDSO/ESA. October 1992 Prepared as final briefing document

1.0 INTRODUCTION	PAGE 1
2.0 EXECUTIVE SUMMARY	2
2.1 Natural Resource Conservation In Pre-Colonial Days	2
2.2 Conservation Under The Centralized Governments Of Colonial And Post Independence Africa	2
2.3 Initial Attempts At Linking Conservation Andy Development To Biodiversity	4
2.4 Conservation And Development, Where Do We Go From Here	6
3.0 NATURAL RESOURCE CONSERVATION IN PRE-COLONIAL DAYS	8
4.0 CONSERVATION UNDER THE CENTRALIZED GOVERNMENTS OF COLONIAL AND POST INDEPENDENCE AFRICA	10
4.1 Erosion Of Traditional Authority	10
4.2 Creation Of Parks And Protected Areas	10
4.2.1 Creation Of Centralized Management	10
4.2.2 Top Down Management with a Protectionist Philosophy By Centralized Government Natural Resource Agencies	11
4.2.3 Creation Of Protected Areas, "Sherwood Forest Approach" To Natural Resources Management	12
4.3 Modern Medicine And Veterinary Care	13
4.4 Different Socio-Cultural Perspectives By Africans Towards Natural Resources	14
4.5 "Traditional Common Property Resources" Controlled By Rural Society Become "Open Access Resources" Of The Crown/State	14

TABLE OF CONTENTS (Cont.)

4 -		PAGE
4.6	Agricultural Bias By Colonials, Independent States And Donors	18
4.7	Inappropriate Western Education Imposed On Rural Communities	21
5.0	DONORS, CONSERVATION AND DEVELOPMENT NGO'S ESTABLISH GOAL TO LINK BIODIVERSITY TO DEVELOPMENT	22
5.1	Creation Of More Parks And Protected Areas	23
5.2	Place Scientists And Researchers In Charge Of Conservation And Development Projects	23
5.3	As a Shortcoming For The Scientist/Researcher Bring On "Rural Development" Experts	24
5.4	Community Development Officers On Conservation And Development Projects	24
5.5	Key Decisions About The Future Of The Protected Areas Made Without Input From The Rural Communities	24
5.6	Preservationist Approach In Favor Of Adaptive Management	26
5.7	Increased Enforcement Without Conflict Resolution	27
5.8	Private Sector Seen More Often Than Not As A Threat Rather Than A Collaborator	29
5.9	Varied Track Record On Governments Willing To Decentralize Natural Resource Planning And Management	33
6.0	CONSERVATION AND DEVELOPMENT, WHERE DO WE GO FROM HERE	33

TABLE OF CONTENTS (Cont)

		PAGE
	Redefine The Concept Of Modern Day Parks And Protected Areas To Fit Into The Socio-Cultural Realities Of Modern Day Africa	34
6.2	Link To Private Sector Key To Sustainability	35
6.3	Continue To Pursue Decentralization Of The Decision- Making Process For Park/Protected Area Management And Planning	35
6.4	Redefine Role Of Government In Park And Protected Area Management And Planning	36
6.5	Creation Of Host Country Community Level NGO's Run And Operated Like Small Businesses	37
6.6	Establishment Of Decentralized Area Management Committees For Each Park And Protected Area To Be Operated As Advisory Boards To Community NGO's/Small Businesses	38
6.7	Redefine Role Of International Conservation NGO's And Researchers In Linking Conservation And Development	40
6.8	Establish A Park Or Protected Area Planning Process Using An Integrated Land Use Planning Approach	40
6.9	Use Local Knowledge About Natural Resources And Overlay This With Modern Day Management Practices	42
6.10	O The Need To Bring On "Big Picture" Natural Resources Planners To Deal With The Multi-Faceted Complexities Of Conservation And Development Projects	42
6.1	1 Natural Resource Managers Needed To "Bridge The Gap" In Conservation And Development Projects	44
6.1	2 Environmental Education Programs Appropriate To The	

	Needs Of Rural Communities TABLE OF CONTENTS (Cont.)	45
	TABLE OF CONTENTS (Cont.)	
		PAGE
6.13	The Need To Continue Promoting The Use Of Geographical Information Systems (GIS) and Global Positioning System (GPS)	48
6.14	Africa's 21st Century, Urban Conservation And Development, The Big Issue	49

ABBREVIATIONS

ADMADE Conservation/Development Project With Wildlife, Zambia

CAMPFIRE Conservation/Development Project With Wildlife, Zimbabwe

CIC Conseiller Internationale Pour La Chasse Et Conservation

GIS Geographical Information System

GPS Global Positioning System

MS Masters Of Science

NGO Nongovernmental Organization

REA Regional Environmental Advisor

REDSO Regional Economic Development And Support Office, United States Agency For

International Development

SCI Safari Club International

1.0 INTRODUCTION

The purpose of this analysis is to take the author's last 15 years of experience in working on conservation and development projects in Africa, and as an advisor to the United States Agency For International Development in both the Caribbean, and East and Southern Africa, share his understanding of where we are today, both successes and failures, and what we should be emphasizing to maximize the opportunity for conservation and development projects to operate sustainably, both economically and ecologically, while serving as catalysts for rural development.

A brief review of the history of conservation in Africa is presented.

The Western World's early attempts at linking conservation to rural development are discussed. A number of examples, based upon personal involvement or in-field evaluations of projects are presented as they relate to issues that have or have not been adequately addressed.

Finally, an overview is provided as to additional steps or actions that need to be considered in designing and implementing conservation and development projects, not as a cookbook recipe for success, but as food for thought, to stimulate thinking in this area.

We are all products of our environment and life's experiences. Certainly, this analysis contains certain opinionated ideas based upon the background of the author. If nothing else, it is hoped that this analysis will stimulate discussion, debate and in some small way will contribute to the innovative and creative thinking that will be necessary to assure the increased likelihood of rural economic development in Africa based upon sustainable natural resources management.

2.0 EXECUTIVE SUMMARY

Within 15-20 years many of Africa's countries will experience a doubling of their human populations. By the year 2020, it is estimated that approximately 50% of Africa's population will be urbanized. Furthermore, Africa is the only region of the world where the level of nutrition has declined in the last two decades.

It can be argued that most of Africa is in a crisis situation with regard to its human and natural resources, primarily due to ever increasing human populations and antiquated policies that are often out of tune with the realities of modern times. In such instances innovative thinking must take precedent over the status quo if there is to be any hope for the future of these resources, the people of Africa and the continent as a whole. Given this reality, it is imperative that African nations, the international conservation community, the private sector, and the donors rethink where they are heading in helping Africa prepare for the 21st Century.

To date there has been an "Agricultural Bias" by both countries and donors as a solution to Africa's developmental problems that has promoted crop production when the majority of Africa's lands are non-arable, and whose wildland natural resources may have a comparative economic advantage over crop production. In order to conserve these natural resources, policies must be adopted which look beyond crop production and which favor "Food Security" over "Food Self-Sufficiency" taking Africa's rural and urban poor out of their cycle of poverty into a moneyed economy. Poverty is one of the major reasons for both environmental and human degradation on this continent.

- 2.1 <u>Natural Resource Conservation In Pre-Colonial Days</u>. Natural resources were <u>Common Property Resources</u> whose access was controlled by the community for both exploitation and conservation. Capitalism and ownership of resources existed but unlike the western version where wealth is measured through an individual, ownership and wealth were controlled by a very strict social hierarchy through extended families and clans, often under the authority of chiefs, headsmen, elders or religious leaders.
- 2.2 <u>Conservation Under The Centralized Governments Of Colonial And Post Independence Africa</u>. The net result of colonial rule was the creation of centralized management through the creation of western bureaucracies and "Bureaucratic Elites" whose role was to expand, legitimize and consolidate their control over the natural resources mandated to them by the state. This led to making decisions independent of and isolated from the reality of local people and their livelihoods and in ignorance of the nature and status of <u>small-scale rural societies</u> to sustainably control the access to and use of their natural resources. For the most part this centralized control was carried over in the post independent governments which became carbon copies of their colonial masters:

- *Eroding Traditional Authority that had maintained control over and conserved the natural resource base,
- *Installed Top Down Protectionist Rather Than Management Oriented Policies which were alien to and cut off traditional users from accessing those resources upon which they traditionally depended for subsistence and/or economic purposes. Traditional resource users became poachers as the rules of the game were changed. Policing rather than management of the resources was the rule of the day and carried over into post independence.
- *Created Parks And Protected Areas in implementing their protectionist policies, no different than the "Sherwood Forests" of Europe which were accessible to the ruling elite and off limits ("Exclusion Zones") to the people, in this case the rural peasants.
- *Turned Common Property Resources Into Open Access Resources. "Common Property Resources" managed by the community, were taken away to the advantage of the "Crown" and then the "State" (Initially the ivory trade, then revenue from park fees, timber fees, and sport hunting fees, etc.). In many cases they became "Open Access Resources" suffering from the "Tragedy Of The Commons" in which the resources were mined by both the rural poor and the post independent underpaid bureaucrat.
- *Introduced Improved Medical And Veterinary Care without understanding what the population and domestic livestock growth rates, among the highest in the world, would do to the natural resource base, nor to the ability of the centralized governments to provide basic services.
- *Agriculture As The Development Remedy To Rural Africa's Ills. A product of their background, the colonialization of Africa by western agrarian societies assumed that Africa's "backwardness" could be solved by the application of modern agricultural technology. This was carried over into post independence, as most African technocrats were western trained and western donors came out of the same background as the colonial masters, even though most of Africa contains marginal agricultural land.

This often favored agrarian societies within the colonial hierarchy over the more difficult to control pastoralists, and hunters and gatherers, whose cultures were often destroyed in cutting them off from their traditional resources that now belonged to the "Crown/State" and in encouraging them to become sedentary in order to be controlled and manipulated by centralized governments.

*Western Education Out Of Context With The Rural Setting combined with the above policies which limited most Africans to marginal lands, resulted in a major exodus of the best and brightest into urban areas that have been ill equipped to deal with this emerging problem.

The net result of these actions and policies has been a rapid and accelerated deterioration of the natural resource base over much of Africa and a realization that Africa will not be food self-sufficient given its population growth rate versus amount of arable land.

2.3 <u>Initial Attempts At Linking Conservation And Development To Biodiversity</u>. There has been a slow realization that over much of Africa, the future of rural societies may depend upon their earning a livelihood from sustainable natural resource management and the promotion of policies that return control of these resources back to the rural communities in ways that link traditional controls and knowledge to modern day management principles. This can be conveniently linked to the new and strongly emerging politics of "Biodiversity" in that parks and protected areas, coupled to various forms of community based ecotourism, can help in conserving Africa's natural heritage.

Over the last 2-4 years conservation and development projects have been initiated. Progress has been slow. In linking conservation to development, the issues that must be dealt with are more realistic in acknowledging the problems confronting rural Africa, but on the other hand more complex when compared to former isolated parks "exclusion zone" projects or on-farm rural development projects which made the simplistic assumption that there would be no interaction between the two. Unfortunately, in many cases complex problems are still being dealt with in simplistic ways such as the haste to protect various ecosystems containing rare and endangered species by creating more "classical" parks, or trying to solve natural forest issues through onfarm agroforestry activities.

Many of the organizations charged with linking conservation to development do not have the needed experience. Either they come out of a background of parks and preservation, or they are emerging from food relief agencies that have seen funding opportunities in development.

The reality is that no one has this experience and it is because of this that these initial years of "experimentation" should be placed under close scrutiny, with a critical eye in order to learn what is and is not successful in these endeavors. We must be open with each other and share our successes and failures so that each may learn from the other. Most importantly, we cannot assume that by throwing money at "biodiversity" we will solve the problem. Anyone who has worked for any length of time in development has seen the perils of this angle.

Currently, there are a number of areas where small changes could result in great progress. Since these first five years are experimental and a learning experience for everyone, the stage is set for objective analyses, and innovative and creative solutions in dealing with the projects' shortcomings. To date the current state of conservation and development projects can generally be described as:

*Creation Of More Parks And Protected Areas but with little regard for defining how a modern day park/protected area will differ from a classical park/protected area in its management, relationship to local communities or revenue streams.

*Place On-Site Scientists And Researchers In Charge Of Conservation And Development Projects who come out of a very narrowed and specialized background and who are expected to address very broads and complex issues.

*Bring Rural Development Specialists Into Conservation And Development Projects, who have no expertise or experience in with dealing natural resource management issues of natural areas, and though often ill equipped, try to solve the complex myriad of natural resource issues "On The Farm" through simplistic responses to complex issues such as agroforestry to replace the need to manage and use natural forests for the multitude of resources which they provide the rural community.

*Increased Enforcement Without Conflict Resolution. Prior to bringing together all of the stakeholders in order to reach a consensus on how a park and protected area should be managed and what should happen to its resources, either government or hastily organized poorly trained community anti-poaching patrols are often placed in the field, to control accesses to the resources with an impossible task, since the rules of the game have not been changed, making the majority of the local citizens poachers. Until the majority are legal users of the resources as a result of the development of an agreed upon management plan and possibly policy changes, anti-poaching forces will fail as they will not have the backing of resource user groups; most likely the majority of the community in subsistence societies.

*Planning In Isolation. There has been a general tendency for many projects to make key decisions (e.g., what, where and how various resources within the park protected area can be used) in isolation of the local communities resulting in an alienation by the community that sees these actions as little different from their colonial masters.

*Buffer Zones. Many projects, especially those in Afro-montaine settings have failed to recognize or have established limited use natural area buffer zones in the context of the UNESCO biosphere reserve. Often what can and cannot be used in the buffer zone is imposed upon rather than agreed upon by the peripheral community. Many consider a buffer zone as on the farm, with the park or protected area off limits, an unrealistic objective destined to result in continual conflict with the rural subsistence community.

- *Inadequate Involvement Of The Private Sector. While the future of conservation and development projects depends on their economic viability, there has been no or inadequate involvement of entrepreneurs making the achievement of this goal in the near future very questionable.
- *African Governments Slow To Divest Authority To Local Communities. Since the revenue from parks and protected areas is a major source of income for many of the poorly paid bureaucrats of the government natural resource agencies, there is a reluctance to decentralize management authority, giving the right to economically benefit from conservation of natural resources to rural communities.

2.4 Conservation And Development, Where Do We Go From Here?

- *Redefine The Concept Of Modern Day Parks And Protected Areas to fit into the sociocultural realities of modern day Africa, adopting the philosophy of a UNESCO biosphere reserve, with the flexibility to define multiple use areas within park/protected area boundaries in the case of "Hard Edged" Parks surrounded by already existing communities.
- *Continue Pursuing Decentralization In Control Over Parks And Protected Areas and the downsizing of government natural resource management agencies, turning them into small, highly trained, well paid, elite bodies involved in providing technical advice, monitoring and training to community run park and protected areas. This should be considered over a 10 year planning horizon.
- *Create Community NGO's/Businesses to run and operate the parks and protected areas.
- *Closer Ties To The Private Sector in undertaking joint ventures with community NGO's/Businesses.
- *Establish Decentralized Management Committees as advisory boards for each park and protected area consisting of the key stakeholders; the local community, resource user groups, the private sector and the government management agency(s).
- *Redefine Role Of International Conservation NGO's And Researchers to doing what they do best, undertake research and provide the technical advice that such committees need in order to make wise management decisions, training and rural animation.
- *Holistic Planners And Management Biologists. There is a need to have a more balanced approach to what is happening in and around parks and protected areas. This will require involvement of planners with a holistic approach to conservation and development. Also to round out the researchers and rural development personnel, management biologists are

needed to bridge the gap between on-the-farm and in-the-park activities, working with these bodies and the rural community to sustainably manage natural resources in multiple use areas.

- *Establish Interactive Park Planning Process through the Decentralized Management Committee, initially by an Interim Management Plan, followed by regular updates as scientists, management biologists and other provide new information upon which better decisions can be made.
- *Actively Pursue Traditional Knowledge About Natural Resources and overlay this with modern day management principles in helping the local community and its resources users to better manage what they have.
- *Continue Exploring The Use Of GIS/GPS as tools in conservation and development projects.
- *Africa In The 21st Century, Urban Conservation And Development The Big Issue.

3.0 NATURAL RESOURCE CONSERVATION IN PRE-COLONIAL DAYS

Natural resources were <u>Common Property Resources</u> whose access was controlled by the community for both exploitation and conservation, such as:

*Control Grazing Pressure. Tuareg clans controlled wet and dry season grazing pressure in corridors running inland from the Niger River. This is believed to have been typical of most pastoralist societies in Africa, the degree to which this still exists being directly correlated to the degree of isolation from modern day governments.

*Hunting And Gathering Rights. Bushman clans control(led) hunting gathering rights to clearly defined geographical areas "N'Ore's." It is believed that this was typical of many hunting and gathering societies.

*Hunting Pressure. Elders controlled who became a hunter (and thus hunting pressure) and member of organized hunting guilds (e.g. Bisa Luangwa Valley of Zambia, Walingulu and Wakamba of Kenya, Mali/Burkina Faso) and taboos often determined what species was hunted and thus what others were conserved (e.g., Bisa traditionally hunt buffalo, impala and warthog, but there was a taboo against "striped animals;" zebra, kudu, bushbuck). Hunting tended to be primarily to feed the extended family and not for commercial purposes, the one major exception being the ivory trade in East Africa.

*Control Fish Nursery Grounds. In order to assure young of the year recruitment and thus sustainable fish yields, fishermen at Georgetown, the Gambia, have traditionally prohibited fishing from certain areas during times of the year when they serve as critical nursery grounds. It is uncertain as to how common such policies were over Africa. It is uncertain to what degree traditional controls over fishing rights were used to control fishing pressure in Africa.

During pre-colonial times, in many cases the human and domestic stock populations were so below ecological carrying capacity that there was little or no need for intensive management controls over livestock.

In essence, capitalism and ownership of resources existed but unlike the western version where wealth is measured through an individual, ownership and wealth were controlled by a very strict social hierarchy through extended families and clans, often under the authority of chiefs, headsmen, elders or religious leaders (e.g., marabouts in Muslim countries). The group controlled access to land and environmental resources such as game meat, fish, other food, fuel, medical care, etc. However, wealth and status accrued to individuals who excelled in hunting, fishing, farming, etc., but who tended to share this wealth with the group in exchange for their support expressed in the individual's social standing and his/her influence over decision making in the group.

There may have been much greater similarity to this form of capitalism a generation ago when America was a rural agrarian society, less mobile than it is today and where the extended family thus played a more important role than the nuclear family that tends to be the dominant social structure of our modern mobile society. As Africa becomes urbanized, they are also slowly moving in this direction.

4.0 <u>CONSERVATION UNDER THE CENTRALIZED GOVERNMENTS OF COLONIAL</u> AND POST INDEPENDENCE AFRICA.

4.1 <u>Erosion Of Traditional Authority</u> over access to natural resources taken away by controls placed by centralized government.

4.2 <u>Creation Of Parks And Protected Areas.</u>

4.2.1 <u>Creation Of Centralized Management</u> through the <u>creation of western bureaucracies and "Bureaucratic Elites"</u> whose role was to expand, legitimize and consolidate their control over the natural resources mandated to them by the crown/state. This led to making decisions independent of and isolated from the reality of local people and their livelihoods and in ignorance of the nature and status of <u>small-scale rural societies</u> to sustainably control the access to and use of their natural resources.

*Centralized Control Over Wildlife In Zambia. As an example, hunting by Africans in 1891 was made illegal in Zambia to suppress the slave trade while gaining control over the lucrative ivory market. By the early 1900's the colonial administration in Zambia was creating game reserves and regulations which further restricted African's access to and traditional management over these resources. By 1950, the colonial government started the safari business to reap cash benefits from wildlife (From The Imperial Lion by Marks).

Even in 1992, wildlife policies in Zambia provide greater legal access to wildlife resources by outsiders (tourists, urban elite, professional hunters) than to rural residents (meat, the right to legally hunt, percentage of revenue from wildlife going to rural residents-none from parks, 2% of gross profits from safari hunting). The 1992 ADMADE evaluation by USAID raised many of these issues, and it is hoped that appropriate policies will be adopted.

*Centralized Control Of Wildlife Resources In East Africa. The history of conservation in East Africa (Uganda, Kenya and Tanzania) over the past 90 years is a "bastard product of a union between one thousand years of Anglo-Norman game keeping and 19th century economic imperialism. Initially, the economic incentive to preserve game was directly tied to a desire to secure monopolies over ivory trading. The outward form of the laws

was English history repeated. Instead of a Royal House and aristocracy enforcing their will on lowly Britons, the East African laws regulated the sport of imperial gentlemen at the expense of the indigenous people (From Oh Quagga and The Ivory Crisis by Ian Parker)." Entire cultures and ways of life were destroyed (e.g., Walingulu and Wakamba in Kenya).

Even in 1992, access to and use of wildlife by the landowner in Kenya is so tightly regulated that it is virtually uneconomical to sustainably exploit. It should be noted that Kenya is "slowly," I feel too slowly, trying to change this. In Tanzania and Uganda, with few exceptions, no revenue derived from parks or hunting areas is returned to the rural community. Southern Africa has moved much quicker to return wildlife utilization rights to the landowner (e.g., Zimbabwe, Namibia, and South Africa). It is hoped that USAID sponsored COBRA and APE respectively in Kenya and Uganda will address these issues to some degree.

These examples in the colonial history of conservation are typical of most African countries and in most cases carried over into the newly emerging independent African States of the 1960's where the "State" replaced the "Crown" with regard to the right to control and benefit from natural resources at the expense of the rural communities.

4.2.2 <u>Top Down Management with a Protectionist Philosophy By Centralized Government Natural Resource Agencies</u>. Parks, Forestry and Game Departments became more policemen than managers. For instance, the colonial masters tended to attribute the decline in wildlife to over hunting by rural Africans. Little consideration was given to the impacts on wildlife from diseases imported into Africa by the colonialists such as rinderpest, the impacts of tsetse fly eradication programs, improved transportation facilitating the extraction of resources by outsiders (e.g., the ivory trade) and the opening up and exposure of isolated areas to market economies (e.g., Illegal commercial game meat markets in urban areas); improved medical and veterinary care increasing the number of rural Africans relying on wildlife for food or a livelihood, and increasing the number of livestock who competed with wildlife for grazing space.

Be it wildlife or forestry products, their response, rather than to address the complex web of issues that still faces Africa today, was to bypass traditional social controls, which they were uninterested in trying to comprehend, in favor of traditional European centralized controls through establishing license fees, seasons, protected species, protected areas, quotas, etc. Failure to abide by the instituted rules and regulations meant penalties in the form of fines or incarceration. These ideas were foreign to and biased against people who had traditionally relied upon these resources in securing their subsistence needs.

As applied these natural resources favored privileged access to the "Urban Elite" (Formerly colons, today expatriates, western tourists and the national political/moneyed elite) to the detriment of people living in rural areas. As a result the majority of the rural populace was

obliged by colonial laws to suffer the consequences for having to live among the resources without receiving proportional benefits. This immediate put the rural community in a confrontational mode with colonial administrations, forcing them to "poach" and develop parallel black markets. This in turn forced the natural resource departments to put the greatest percentage of their manpower and budget into anti-poaching campaigns, an approach which has proven less than successful in conserving Africa's real wealth, and beginning in the mid 1980's, a direction which more and more African institutions are moving away from.

The big difference between their role as policemen and those of similar authorities in the United States is that African colonial laws, though coming out of a similar Anglo-Norman origin, were prejudiced in being established to protect the natural resources from being accessed by the common man in favor of the "Crown", where in the U.S., established laws allowed the majority of people "commoners" access under a similar strict set of guidelines (seasons, quotas, licenses, park and cutting fees, hunting instruments) resources in parks and forest reserves. Under such circumstances, state and federal natural resource agencies in the United States were and are able to devote the greatest portion of their resources to management and not policing issues since the majority of the citizens are legal users of the resource.

It might also be argued that America was much richer agriculturally than Africa and along with industrialization this permitted the rural community to create surpluses in a market economy or escape to lucrative jobs in the city and as a result become once removed from the harsh realities of depending on the natural resource base for their day to day survival, while provide the necessary wealth to afford licenses and other fees, and the leisure time to be able to enjoy the large tracts of land set aside under Theodore Roosevelt as national parks. However, even today, for many rural Americans, the annual offtake of deer and elk serve as an important source of protein, while firewood is an important source of energy.

4.2.3 Creation Of Protected Areas, "Sherwood Forest Approach" To

<u>Natural Resources Management</u>. In Africa, the large sections of rural areas set aside as National Parks, Game Reserves and Forest Reserves are "<u>Exclusion Zones</u>" which were and are alienated from rural people, but open to the moneyed elite who can afford what most rural Africans consider extravagant and unaffordable licenses and entry fees:

*Niokolo Koba Park, Senegal serves as a fine example of the classical African Park, which until about four years ago was run and operated by a former foreign legionnaire whose management plan consisted of placing heavily armed troops around the periphery of the park in undertaking military counter insurgency operations against the local populace. The Bassari Hunters/Gatherers were thrown out of the park losing legal access to their traditional hunting grounds, sacred forests and burial grounds. To this day, there is a confrontational relationship between them and the Parks Department.

The early history of most African parks is one of formerly successful military officers employing what was successful in combat in waging a war in what they perceived as a battle to save the animals from the surrounding residents. Is it any wonder that rural communities have little regard for classical parks and protected areas??

*Tsavo National Park, Kenya. Waliangulu and Wakamba were stopped from hunting elephant, their main livelihood, in Tsavo National Park, Kenya. Ian Parker, a forward thinker, had a scheme to use their bush skills in a sustainable elephant cropping scheme which was thwarted. With no management and elephant compression from increasing human populations, the 1970-71 drought resulted in major elephant die-off; some estimating as many as 10,000.

*Bwindi National Park, Uganda. Created in 1991 to protect 300 mountain gorillas, against the desire of the surrounding rural populace. Given what they feared and then became a reality, all pit sawing, the major source of rural income was stopped, even though there was little scientific evidence that this means of exploitation was harmful to gorillas or the forest, nor incompatible with ecotourism - providing a more diverse portfolio of resource utilization with greater economic returns.

The <u>main benefactors</u> have been the State, northern tourists and businesses. They are often once removed from the harshness of the African bush, and have the accumulated wealth to enjoy, or derive a livelihood from maintaining these large tracts of lands in what is perceived as a "natural state," that is under little or no influence from man.

The <u>main losers</u> have been the rural African peasant who is the bearer of real costs and pays with the loss of food in the form of game meat, livelihood, life, crops and livestock to support large numbers of wildlife, or the lost access to new land or subsistence/economic products from forests from which he/she recognizes no legal benefit.

It is interesting that little attention has been paid to fishermen. Where controls were placed (e.g., Lakes Albert/George, more recently Lake Victoria as Nile Perch becomes economic resource and some ocean fisheries of economic importance as off of Senegal), they involved limiting access to resource by gear (e.g., mesh size of nets and number of canoes). Like so many other rules imposed upon rather than developed in collaboration with rural Africans, these are basically unenforceable.

4.3 <u>Modern Medicine And Veterinary Care</u> introduced without regard for social and ecological consequences (e.g., In Kenya, with improved medical and veterinary care, the human population doubled in 50 years and livestock more than doubled between 1900 and 1950. Between 1990 and 2020, the population is expected to nearly triple-See Attached Table):

*Little or no attempt was made to control family size,

*Nor have successful programs been introduced that take herders from extensive to intensive pastoralism.

The net result is that small farmers are increasingly moving onto marginal lands which are often dry season grazing lands critical to wildlife/livestock carrying capacities, or flooding into urban centers which are incapable of offering them a minimum quality of life. Herders are overgrazing the range in direct competition with wildlife. This is causing the accelerated degradation of wildlife and pastoral areas all over Africa, and urban centers to be overrun with slums supported by crime, drugs and prostitution.

4.4 <u>Different Socio-Cultural Perspectives By Africans Towards Natural Resources</u> compared to westerners, reinforced by western laws and policies which further alienate rural Africans from sustainable exploitation of natural resources.

*Human, Animal and Crop Pest. As it is of little economic value legally, wildlife is seen as a human, animal and crop pest that should be exterminated and mined without thought for its future. This is reiterated regularly in African newspapers, even today.

*Nyama. Over much of East and Southern Africa, the word "Nyama" has two meanings: wild game and meat, the two being inseparable. In the West African nations of Senegal, Guinea and Mali "Sogo" in the Bambara, Diola, Malinki and Mandingo languages also means one in the same thing, antelope and bushmeat.

Until recent times, these traditional concepts have been reinforced through laws in which the wildlife and its habitat have been available as a legally marketed economic resource of the Crown/State but not to the average rural community/African.

The above attitudes are in many respects incompatible with the once removed Western-Urban concept of wildlife, which we try and impose on the rural African, as something to be admired for its natural beauty and a "romantic" but unrealistic reminder of our and the educated urban African's not too distant past when we too lived in blissful harmony among the wildlife!? One might ask what has happened to the wolf, eastern elk herds and buffalo in North America, and with similar species and their habitat in Europe. A western rancher, concerning his opinion of a coyote, is likely to provide a response similar to that of an African over a jackal which like the coyote annually decimates significant numbers of young goats, sheep and cattle?

4.5 <u>"Traditional Common Property Resources" Controlled By Rural Society Become "Open Access Resources" Of The Crown/State</u> experiencing the phenomenon, "Tragedy Of The Commons," in which they become the responsibility of no one but the resources of everyone to be mined and eliminated, being of no long-term economic value to Africa's rural inhabitants, while providing short-term rewards to both the government bureaucrats and the rural poor.

*Traditional Management By Small-Scale Rural Society Eroded Or Eliminated. Because traditional resource users have become alienated from natural systems (e.g., wildlife and forests) they now see only man-induced systems as giving them a future. Until recently, elimination of wildlife/habitat and forests by rural Africans, in favor of livestock and dirt farming, has been perceived as the only viable future under colonial and western style governments.

Natural resources become perceived by rural Africans as fulfilling immediate short-term needs which are mined without any long-term value.

*Bloated Yet Still Understaffed and Underpaid Bureaucratic Institutions in Post Independent Governments, who are more policemen than managers, and who have alienated themselves from the rural communities are incapable of placing enough people and guns in the field to adequately cover huge geographical areas without support-which they do not have-from local communities. In most cases, such a large percentage of what little budget there is goes to staff salaries, that there is little money left over for fuel, vehicle maintenance and ammunition for anti-poaching activities let alone the collection of data needed for making management decisions.

Over-staffed and underpaid park, forest and game personnel are obliged to themselves become poachers or support poaching (e.g., get involved in the illicit ivory, provide cutting permits or allowing over-harvesting in return for kickbacks) in order to survive and to feed their large extended families, many of whom are no longer self-sufficient or who have been overtaken by the desirers of western materialism. As typical examples, as of 1990 a forest guard in one East African country is paid about \$US 6/month and is paid about once every six months, while the Director of National Parks makes \$US 25/month and like most Africans in his position is obliged to survive on per diem trips where he takes advantage of western sponsored seminars to save a few dollars by skipping meals and finding a cheap hotel.

Thus, little or no resource management occurs while resources are mined, or replaced by manmade systems without any concept for sustainability:

*Classified Forests, Senegal. Farmers turn their backs on what they perceive as the "Government's Problem" as illegal Guinean charcoal cutters clear cut the interior of government "Classified Forests" while leaving a 100 meter diameter perimeter of trees untouched so that such activities will go undetected by the understaffed Eaux et Forets.

In Senegal, while local people are told that the forests were off limits, poorly paid employees from over-staffed but inefficient Eaux et Forets-for a cut of the action-give cutting permits to "Big Men" to clear the very forests that are off-limits to workers.

A Fulbright scholar who followed the charcoal cutters in Senegal estimated that they clear-cut about 20,000 ha/year for charcoal, destined to major urban areas. Once cut these areas were not managed for sustainable forest exploitation but converted to farms or grazing lands, the trees never given a chance to recover. Many of these men began their careers in the Ferlo of central Senegal and at the time of the study-mid 1980's-were near the Gambian border south of Tambacounda.

Many people might question how a marabout, whose people were recently given rights over a "Classified Forest," could have cut it down and had the land planted in peanuts. This has been the history of forests in Senegal; forests being seen as short-term resources for mining, while peanuts have provided a source of long-term income. This can be partially attributed to the heritage of monoculture systems established over much of the colonized world and to which most countries still cling to as a major source of revenue, even though it may no longer be economically viable.

Most importantly, in Senegal there is no history of sustainable natural forest management in recent times as a means of entry into a moneyed economy. This is true over much of Africa, Uganda being a major exception where detailed forest management plans existed, but were of little economic benefit to rural communities living in their vicinity, the majority of the money from forest exploitation going as usual to the State or politically connected middlemen.

As late as 1988, tropical hardwoods in the Casamance, Senegal were being mined by outsiders using clearcutting techniques and skidders.

*Niokolo Koba Big Game Park, Senegal. Local Communities, who receive no benefits from the park turn their backs on meat and ivory poachers from Mauritania who invade what is perceived as the "Government's/White Man's" Park.

Bassari Hunters refuse to acknowledge Park boundaries, continuing to hunt, and on the average killing a park guard every other year.

The net result is that with 200 park guards armed with M36 rifles, elephant populations continue to dwindle as poaching is uncontrollable.

*Kibale Forest, Uganda. Even in 1992, pit sawing and hunting is uncontrollable as this forest park, set aside to protect chimpanzee and black colobus monkeys and their habitat, is overrun by an estimated 200-300 illegal pit sawyers.

*Traditional Hunting in Uganda is currently illegal, but uncontrollable. Within 10 miles of Kampala, traditional hunters with spears and nets, who hunt sitatunga in the papyrus swamps, can be seen openly walking along the highway. Sitatunga horns are openly sold

at souvenir stands.

*Elephant/Rhino Poaching. All over Africa, political elites and unscrupulous businessmen have taken advantage of rural poverty to encourage poaching of these resources. Poachers receive a fraction of value while taking all the risks. In francophone West Africa, ivory is still openly marketed by jewelers and at *marches artisanals*.

*Kenyan Parks.

-<u>Tourism In General, Kenya</u>. Other than donor aid, Tourism is the major source of foreign exchange in 1992 yet the average "wananchi" (people) receives no real benefit from wildlife and would prefer it to be eliminated from the country, seeing it primarily as a human, animal and crop pest.

-<u>Peripheral Areas To Kenya's National Parks</u>. Most of Kenya's national parks are not ecologically viable without the inclusion of rainy season dispersal areas lying outside their boundaries on group, private, and cooperative ranches. In 1992, Kenya has begun its first revenue sharing program with peripheral communities around Amboseli National Park who live on rainy season dispersal areas and whose cattle contribute to the overgrazing inside Amboseli during the dry season in search of water and grass.

*The Rest Of Kenya's Wildlife. While such programs have value for the future of some of Kenya's parks, they do not resolve the future of Kenya's wildlife resources most of which are found on private, group and cooperative lands, and on Samburu/Turkana trust lands. It is estimated that 80 % of Kenya's wildlife lies on the 80 % of land lying outside its parks and reserves. In these areas, wildlife is seen as an open access resource competing with livestock and of no long-term economic value.

-In the late 1980's, Clive Aggate of <u>Kifluku Farm, Laikipia, Kenya</u> built a stone wall around his 9,000 acre ranch and shot out all wildlife. This decreased livestock dipping from once a week to once a month, and significantly increased range carrying capacity. As a land owner he had the right to exterminate vermin. He explained that in his eyes, until wildlife utilization rights were given to the landowner, all wildlife, for him, is a pest worthy of extermination. He explained that his attitude towards wildlife was typical of most small holders in Africa. He challenged the Kenya Wildlife Service to take him to court. They refused, fearing that legally he would win the case and set a precedent for other small holders in Kenya.

Many Laikipia ranchers, recount with fervor how they night-shoot lions as vermin preying on their livestock. They explain that if permitted to sell their lions as

sporthunting trophies (A male lion can bring as much as \$US 12,000), they would be willing to allow some loses of livestock without taking extreme actions. This is not unique to Kenya, but typical of ranch country all over Africa.

-Masai, Kenya. Because they see no value of wildlife or its habitat, as Masailand in Kenya is subdivided into group and cooperative ranches, and as Masai begin entering into a moneyed economy, many critical wildlife areas-both wet and dry season-are being sold off for wheat schemes or to Kenya's ever-increasing land hungry small farmers, even if these lands are marginal. The Masai become illegal grazers on other lands and major wildlife habitat is rapidly being lost to the plow.

-<u>Poaching In Kenya</u> Peace Corps Volunteers who live in the vicinity of traditional hunters (Tsavo, Machakos) observe the regular flow of bushmeat, including elephant, while Kenya Wildlife Service drags its feet in turning wildlife over to the landowner and thus controlling this exploitation through legalization.

In Machakos, protein starved Wakamba, traditional hunters from the area, faced with a drought and little opportunity in urban areas, and who have exterminated much of their wildlife or had it exterminated for them, turn to what they know best "poaching" on private ranches, causing major confrontations.

*Lake Natron, Masailand, Tanzania. Sport hunting and photographic safaris are major sources of revenue for the Central Treasury and Professional Hunters. None of this money goes back to the Masai for development. Virtually none goes back-other than to game guards-to manage the resources. Wildlife offtake quotas are not based on recently collected census data. There is no attempt at range improvement such as controlled burning or bore holes for wildlife (not livestock).

Seeing no other options, the Masai are rapidly overgrazing this area with cattle, goats and sheep seeing livestock, not wildlife, as their only future. No one is trying to work with them or seems to care if their way of live will be possible or if wildlife will survive in another generation given the current rate of rangeland deterioration.

*Ngorongoro Conservation Area, Tanzania. Ole Saitoti, famed author, holding an M.S. from the University of Michigan in natural resources management, and who has returned to live among his people, recently explained that no money obtained from ecotourism goes to the Masai living in this area for development, to the point where the Masai - some of the best conservationists that Africa has known - are now becoming alienated against wildlife which they perceive as being given preferential treatment by their country and the international community over the integrity of the Masai culture and their advancement as a society.

4.6 <u>Agricultural Bias By Colonials, Independent States And Donors</u>. Since colonial days and continuing until to today there has been a tendency by Westerners who come out of agrarian societies, and western educated Africans, to have an agricultural bias towards resolving Africa's developmental needs. This has occurred even though the percentage of arable land in Africa is extremely small (e.g., in Kenya one of Africa's "richest agricultural countries" only about 18-20% of the land is arable) and most of this arable land, as in much of colonial Africa, was under cultivation prior to independence. Exceptions include Zambia and Tanzania which are said to still contain sizeable areas of arable land??

This means that in most cases the donors and governments have been investing in losing propositions trying to make marginal lands productive. One only has to drive a short distance from most African capitals to realize the wasted money in the name of increased agricultural production and development over the last 25 years. For the most part people lives have not improved, they have deteriorated in rural Africa, even after billions of dollars in donor money. In fact, Africa is the only region of the world where the level of nutrition has declined in the last two decades.

*Food Self-Sufficiency Over Food Security. One of the most destructive policies to sustainable natural resources management in Africa has been the policy of food self-sufficiency in which each rural family must have its "x hectares" of land to feed itself. In most African countries there is little arable land and in most cases no new arable land to put into production. This policy combined with the rapid population growth rate in Africa, has resulted in a tendency for family farms on arable land being broken down to as small a unit as is economically viable. The net result, given poor natural resource policies, is for small farmers to begin moving into marginal areas for agriculture such as critical dry season grazing area for wildlife and livestock, and onto steep sloped, acidic soiled forested areas.

Gradually African countries are looking into the policy of <u>Food Security</u> in which rural citizens would not need to grow all of their food but might manage some of their resources as a source of revenue which can be used to buy food and meet other necessities:

-Wakamaba, Machacos, Kenya. In the first half of the 20th century, J.A. Hunter, a Scotsman licensed by the colonial government shot out 1,088 rhinos for an agricultural scheme in Machacos area on marginal lands. To this day, the Wakamba's lives have been marginalized as they rely on subsistence agriculture to survive in areas of low rainfall and poor soil, most of the wildlife and their habitat having been converted to farm land. They would have been better off cropping rhino through sport hunting (Brings upwards of \$US 25,000 or more in gross value/ rhino) than farming from an economical point of view.

-Small Farmers, Kenya desperate for land, buy marginal agricultural land on subdivided ranches in Machakos and Laikipia, beginning in the mid 1980's. Many survive on remittances from urban relatives, possibly poaching, and in general will see plains game, typically found in this ranch country as a crop pest in need of elimination.

*Inappropriate Livestock Policies. Likewise, although largely culturally based, because in many African countries, pastoralists are not given the opportunity to market livestock through efficient private sector networks, and/or because they are not allowed access to wildlife as an economic resource, large extensive herds, as the pastoralist's only true sign of wealth, continue to degrade much of Africa's rangelands. It should be noted that pastoralists are as interested in money as anyone. Given correct policies, this can be taken advantage of for both livestock and wildlife management to the benefit of the pastoralist and the range habitat.

*Donor Agencies Dominated By Agronomist and Agricultural Economists Who Control Key Decisions With Regard To Natural Resource Issues.

-<u>Until The Last Two To Three Years, Natural Resources Meant Agricultural Projects</u> with little evidence of significant increases in Africa's ability to feed itself, population increases greatly exceeding any gains in agricultural production.

-River Basin Development Schemes. In the 1970's and 80's major support by USAID to the Senegal, Gambia, Juba, and Niger River Basin Authorities for dam schemes for hydropower (hasn't proven feasible) and to promote pumped irrigation of rice (e.g., 500,000 acres along the Senegal River) which have in the case of the Senegal River Basin or would have displaced traditional natural resource systems such as estuarine and freshwater floodplain fisheries, critical dry season floodplain forage for livestock and wildlife, wetland habitat for migratory waterfowl and traditional recession agriculture. Pumped irrigation of rice in Africa was and is now known to be uneconomical. This appears to be the case of development politics, and at what cost?

- -<u>Agricultural Research</u>. Tremendous amounts of money have been placed into agricultural research to provide higher yielding or disease resistant crop varieties.
- -<u>Fish Culture Research</u>. Once again a form of farming, large sums of money have been poured into fish culture research, primarily with Tilapia sp.
- -<u>Natural Resource Management</u>. Virtually No Money was given for Research in Wildlife, Natural Forest or Wild Fishery Management in Africa.

-Subsidizing of Fertilizers and until recently, pesticides, has been common place.

-Agro-Forestry Given Precedent Over Natural Forest Management. Huge amounts of money have been poured into ICRAF for research into agro-forestry. It appears that in 1992/93 ICRAF will slowly move into natural forest management.

Agro-forestry, a favorite of the NGO's as their contribution to "Conservation and Development," this is really a form of "agriculture" and appeals to the western mind with neat rectangular nurseries, and rows of trees on the farm which can easily be equated to rows of corn, sorghum and millet. Their high visibility and orderliness makes excellent showpieces for visiting dignitaries.

In most cases the farmer has been promised great increases in crop production, but it is rare that soil testing for limiting nutrients (e.g., in Malawi a recent World Bank study demonstrated that boron and zinc not nitrogen were the limiting factors to crop production) or other limiting physical/chemical properties has been undertaken.

Unless the farmer is far removed from the bush, it has been rare that he will wish to grow firewood or livestock forage on his farm, negating the value of agro-forestry in displacing the need for natural forest management. Even when there is a desire to grow firewood, this does not replace the diverse array of resources from natural forests needed by rural people for both subsistence and economic purposes and thus the need for natural forest management, maybe even taking precedent over agro-forestry as a development priority.

In most cases, though purported to help take pressures off natural forests, the demand for charcoal and firewood (e.g., 20,000 ha/yr of forest removed in Senegal for charcoal to urban areas) in most African countries can never be replaced with expected production from village woodlots and on-farm tree plantings.

In Senegal, and many African countries the 1970's and 80's saw donors spend millions of dollars on agroforestry in favor of ignoring natural forest management. The net result, because this was a perceived need forced on African peasants rather than a demand driven activity, was that most agroforestry and the maintenance of nurseries ends when donor financing ends, while each year there is a net loss of natural forests all over Africa from a failure to develop sustainable harvesting programs linked to rural development.

4.7 <u>Inappropriate Western Education Imposed On Rural Communities</u>. While reading, writing and arithmetic are important to the future of all Africans, this form of education has not been undertaken in a context which provides an appropriate use of these tools in the everyday lives of rural Africans. The net result has been a major exodus of rural educated youth into urban areas

to seek employment which will allow them to use these newly acquired skills, and/or to seek higher education at the university level:

*A loss in rural areas of the most productive segment of the society.

*High unemployment in the urban areas of both the educated elite and the uneducated, who have come to seek their fortunes given the limited resources available to them in rural areas (mostly marginal agricultural land), and a corresponding increase in slums along with social and cultural degradation leading to increased use of drugs, prostitution and crime in order to survive.

This is due to the lack of a viable private sector, both urban and rural) to absorb these people and the inability of the financially strapped and already bloated government bureaucracies to any longer continue as the major employer of the educated elite.

*Urban areas are rapidly becoming political time bombs, due to the high unemployment among the youth. In most African countries the majority of the population is under 15 years of age, and becoming rapidly urbanized (estimated that 50 % of Africa will be urban by the year 2020). The current educational system expands their horizons with little or no hope to achieve goal expectations.

*The educated elite unwilling to return for the purpose of helping to develop rural areas due to:

- -The low compensation paid by the Government to bureaucrats,
- -The low investment in many rural areas by the government in basic infrastructure (e.g., schools, health care, rural electrification, roads),
- -Given current government policies, the resources legally accessible by the private sector portion of the rural community are mostly limited to agriculture on marginal land or mismanaged and over-grazed rangelands (not ecotourism, wildlife or forestry resources). This is slowly changing.,
- -Exposure to western ways and materialism, little of which is currently accessible in today's rural setting.

5.0 <u>DONORS, CONSERVATION AND DEVELOPMENT NGO'S ESTABLISH GOAL TO</u> LINK BIODIVERSITY TO DEVELOPMENT.

Current History Of Conservation And Development In Africa.

In the mid 1980's donors and rural development/relief NGO's began to question the shortcomings of international aid in bringing about significant economic development based on mainly agricultural pursuits. At the same time international conservation NGO's, who came out of a background of establishing parks and fighting to save endangered species such as the elephant, rhino, chimpanzee and gorilla, began to see an accelerated degradation of the natural resource base associated with expediential increases in rural populations of man and his livestock. The three groups joined up to see if there was away to use the wealth of the developed nations in innovative and creative ways to overcome the seemingly incompatibility between "Parks and People." This might better be called "Natural Resources and People" since many of the issues are outside parks and protected areas and because many parks and protected areas depend upon dispersion zones lying outside their boundaries in areas where human populations are to be found. The last four years has seen the following attempts and issues arise:

5.1 <u>Creation Of More Parks And Protected Areas</u>. The initial response has been to create more protected areas, especially parks based upon the need to protect ecological systems containing endangered species (e.g. protection of gorillas, chimpanzees, lemurs, elephants, rhinos and their habitat) with little regard for:

*Involving local communities in determining if a "classical park" was in their interest, and if not how to best protect the ecosystems/endangered species at risk.

*Existing laws that tended to legally require a park to become an "Exclusion Zone" for local communities.

*That current park and protected area agencies tend to be steeped in policing, not management of resources nor community development.

*The Political-Economic System, especially that of the local communities surrounding these areas, lack of understanding in how resources in these areas are used by the local community to meet its subsistence/economic (hunting and gathering, medicine, timber, etc.) and cultural needs (e.g., access to sacred forests), and how creation of a park would affect their livelihoods. Even in cases where this was understood to some degree, it was often ignored in a rush by the international environmental community to see these areas set aside and protected. Protected for whom is still unclear!!

- 5.2 <u>Place Scientists And Researchers In Charge Conservation And Development Projects</u>. In many instances, areas in need of protection already had devoted scientists undertaking research in these threatened areas. These researchers were the most readily available and willing people for both international NGO's and donors to turn to in starting projects. While potentially of great importance in providing the research data needed to make key management decisions, many found themselves in roles they were ill prepared to handle:
 - *Staff Management where most researchers are trained to manage data not people.
 - *Financial Management of project funding.
 - *Big Picture Integrated Planning requiring bringing together key stakeholders to determine what the project should be doing in order to link conservation and development, or identifying the myriad of expertise needed for making management decisions.

By the nature of training for a PhD, one becomes specialized and develops a very narrowed focus and perspective on issues rather than a big picture integrated approach to the issues. One tends to be trained not to plan or to manage resources but to collect very specialized quantitative data which when applied to statistical tests can provide key pieces of information which can be used by a planner or manager in the decision-making process.

- *Natural Resource Management Decisions. Most researchers on these projects tend to be zoologists, primatologists or animal behavioralists with not even basic training in natural resources management.
- 5.3 As a Shortcoming For The Scientist/Researcher Bring On "Rural Development" Experts. These people, because of their training have tended to try and solve all the problems of the rural community on the farm including agro-forestry as a simplistic alternative for the need to managing natural area buffer zones with all the shortcomings as explained in Section 4.6. This has been especially the case in project areas containing Afro-montaine forests (e.g. Uganda and Madagascar). Most rural developers appear to have no training in natural forest management and little understanding for agronomy.
- 5.4 <u>Community Development Officers On Conservation And Development Projects</u>. This is one of the more valuable steps that has been taken. On many projects community development officers, tending to come out of a social science background, have been brought on to act as a liaison between the researchers and rural developers, both to inform the community of what the project is thinking to undertake and to get feedback from the local people of what their hopes and expectations might be and what they know about the resource base.

5.5 <u>Key Decisions About The Future Of The Protected Areas Made Without Input From The Rural Communities</u>. There are a number of instances where key decisions about what can or can't be done with a resource(s) are made and then the local community is approached with open arms in a spirit of collaboration. In the eyes of the traditionally oppressed rural communities this is tantamount to "Neo-Colonialism," especially when these decisions have a direct effect on their subsistence and/or economic livelihood, which is often the case. This immediately puts the project in a confrontational mode with the local community.

*Forestry Resources. This has been especially common in the afro-montaine forest projects in Uganda and Madagascar:

-Ranamafona Lemur Reserve, Madagascar. When interviewed the spokesman of the community explained, "We realize that our forests are disappearing from unsustainable slash and burn agriculture, but we are torn between feeding our children today and having forests tomorrow. We were one of the last groups to resist the French. We are willing to collaborate with you, but anyone who tries to cut us off from feeding our families should be prepared for war." Due to international conservation politics, not necessarily desires of the local people, this area has been declared a park. Time will tell whether the future will be collegial or confrontational.

-Andohahela Lemur Reserve, Madagascar. While a group of young girls sang for the evaluation team a beautiful song which the project "formal environmental education program" taught them "Don't touch the forest, plant trees on the farm," a simultaneous interview with another group of school children demonstrated that through non-formal education their parents were teaching them how to live in a harsh and unforgiving environment using the vegetation of the forest for food, medicine, shelter material, handicrafts, etc., the children able to give local names for each key species. One young girl asked, "We're confused, why don't you want us to hunt and gather in the forest." Are we not prejudging, based upon a western urban bias, what is best for this community and what does it mean for the long-term success of such a project!!

-Bwindi Forest, Uganda was made a national park due to pressure from the international conservation lobby, and against the wishes of the local communities interviewed based upon their understanding of a park as an "Exclusion Zone". When the head of the Uganda Park's Board explained to the people that they would be compensated for not being able to use the Park's resources by having schools, clinics and roads built for them, the local community explained, that the forest yielded resources that provided money, though little by our standards, to many heads of families. As one pit sawyer explained, "Your schools, clinics and roads are well and good but they don't fill empty bellies or pay school fees. We

want access to the forest." Their worst fears have taken place, all pit sawing has been stopped since Bwindi was made a park.

-Rwenzori Mountains "Mountains Of The Moon" was declared a national park in 1991 due to lobbying from the international conservation community, without regard for how a modern day park might be operated. In this case, the local community represented by the Rwenzori Mountaineering Service (RMS) favored a biosphere reserve type park in which the upper limits of the forest would be preserved for ecotourism and the lower limits would act as a multiple use buffer zone by the local communities. Unfortunately, prior to declaring this area a park, the specific role of the Parks Department versus RMS in nature tourism, and access by locals to the lower reaches of the park was not clearly defined nor agreed upon by all parties, resulting in major conflicts between the various parties. The International Conservation community project has had little impact or success in resolving these issues to date.

*Wildlife Resources. Traditional Hunters have been overlooked, cut off from and ostracized by many of the wildlife management projects, where in traditional society they were a revered member of their community and have critical knowledge about wildlife, its behavior and habitat that could be used in making management decisions but which so far has been overlooked. They are also the key "poachers" without whose cooperation and skills, the long-term viability of these projects may be put into question. Currently, this is the case in both the ADMADE and CAMPFIRE Programs.

5.6 Preservationist Approach In Favor Of Adaptive Management. Rather than use the policy of "Adaptive Management," because of the academic and thus philosophical backgrounds of those who currently control biodiversity projects, there has been a general tendency to attempt to cut off local resource users from accessing that which they perceive as necessary for subsistence or economic development. As noted above much of this is believed due to the academic and thus "Preservation Philosophy" background out of which many people come which is more hands-off than management oriented. In fact it has been found that there is confusion among many of these "Conservationists/Preservationists" as to the definition of key words, critical to determining the overall directions which such projects will take:

<u>Conservation Versus Preservation</u>. Most people involved in these projects mean <u>preservation</u>, "no active management of the resources" when they say <u>conservation</u>, "the sustainable and wise utilization of natural resources through applied management principles."

For many biodiversity projects, especially in the afro-montaine forest areas and which tend to be linked to primate conservation, the general policy has been the classic park <u>preservation</u> policy of maintaining these areas in their "natural state," in a condition most closely approximating those in which they would exist if there was no human influence acting upon them.

In the evaluation of lemur reserve/development projects in Madagascar, not one Malagasy team member could clearly define the word <u>conservation</u>. All but one defined it as <u>preservation</u>, while one individual said "Moi....Je ne sais pas mais ce n'est pas une boite de conserve!" (Me...I don't know but it isn't a jar of <u>preserves</u>).

Buffer Zone. Everyone seems to have their own definition of this term.

*<u>Definition #1</u>. On many projects a buffer zone has been defined as an area contingent to but outside a protected area where people live and on which farming is practiced; that is there is little or no natural habitat left.

This appears to be especially the case in the Afro-montaine forest projects of Madagascar and Uganda. The people running these projects have tended to have little flexibility in defining a modern park and appear reluctant to allow communities to define multiple use buffer zones within the park boundaries where the community in collaboration with park managers can determine where and what natural forest products can be sustainably extracted. Increasingly, consideration is being given to some extraction of minor forest products, with little or no consideration for pit sawing which in some areas has been a major source of income. This is mostly on philosophical grounds and not due to scientific surveys by either silviculturists or ecologists.

*Definition #2. Very few, define buffer zone as a natural area lying between where: a) people live and b) a core area of protection, in which multiple resource use is promoted on a sustainable basis for both subsistence and economic purposes. This latter definition is how the original <u>UNESCO Biosphere</u> "Buffer Zone" was defined. The wildlife management projects in Southern Africa, and those planned for Burkina Faso, Mali and Cote Ivoire tend to follow this latter definition in which multiple use game management areas surround core protected areas as defined by national parks.

It seems that projects dealing with consumptive use of Africa's ungulates conceptually have an easier time dealing with Definition #2 than do Afro-montaine Forest projects linked to primate protection. It is easy to see why, but it does not justify the narrow use of Definition #1 and could risk the longevity of these projects if local communities are not in agreement with what they feel has been imposed upon them.

5.7 <u>Increased Enforcement Without Conflict Resolution</u>. On many projects there is a tendency for increased enforcement by either Government Agents, or by local community-based guards hastily put in place by project staff, usually with inadequate training, but most importantly without resolving many of the community resource conflicts (e.g. What are the parks and protected areas going to become? Should there be buffer zones and where will they be? What resources can and cannot be accessed and on what terms?, etc.). This immediately places

enforcement personnel in direct conflict with the majority not the minority of the community. It is believed that enforcement will be effective if and when, and not until:

*A Management Plan has been developed in collaboration with the rural community and on which they have agreed. In fact if properly undertaken, planning will be undertaken through appropriate traditional authority and the community will take the lead with support from animators. This was readily seen in the recent Bushmanland planning session which took place in July 1992.

*Critical Resource Users have not been overlooked and whose needs have been integrated into the management plan. Such resource users or special interest groups may include hunters, loggers, fishermen, women, honey gatherers, gold miners, etc. Any attempt to exclude these groups from having their needs met by the management plan and then to impose enforcement on them will result in a great likelihood that enforcement will fail and illegal poaching of the resource will be the status quo, virtually eliminating the hope of controlled sustainable management.

For instance while <u>ADMADE anti-poaching activities</u> appeared on the surface to be acceptable, <u>traditional hunters</u> were found to have been <u>legally</u> cut off from hunting, while centralized culling by the Government had not proven cost effective, nor effective in equitable meat distribution among villages.

Traditional hunters have been forced to poach while their family members, youth from the villages, are expected to arrest their brothers', nephews', uncles and cousins', something that is unrealistic in the context of the African extended family. Furthermore, the project has failed to realize the importance of the hunter in the socio/cultural context of these rural communities. Hunting is considered an important and respected profession by the community, assuring meat on the table and is an important path to eventual community leadership in winning out the right to become a "Headman."

The traditional hunters have requested that "ADMADE Traditional Hunter's Associations" be formed and that traditional hunters be involved in decentralized meat culling for the villages, anti-poaching against outside commercial meat poachers, and in collecting management data needed to make decisions on wildlife offtake and landuse planning. In essence, this is a return to the creation of hunting guilds that existed prior to colonialization and may even exist today, but are not officially recognized by the centralized government.

By taking the above actions, ADMADE will help this special interest group become a "Legal Player" making anti-poaching an easier job as now citizens interested in hunting will have legal access to wildlife resources, their social importance in the society will be maintained, and thus only a minority of local residents will abuse their inalienable rights. This, then would be similar to the situation in the United States with regards to hunters.

We should not forget that the resources have been around for a long-time. The delay of a few months or even a year in bringing the community on board and in involving them in the planning and decision making process, something that will be a thrill to them given their repressed past, should be worth the wait. With backing by the majority of the community, the likelihood of successful enforcement will be greatly increased, since enforcement should become almost a non-issue once resource users become legal players in a game to which they have been bystanders up until now.

5.8 Private Sector Seen More Often Than Not As A Threat Rather Than A Collaborator. Many "researchers" and NGO's have created small empires for themselves and see non-project members who might be outside of their control as a threat rather than as an asset. This appears to be especially true with their relations to the private sector, who are somehow looked on as less than pure as exploiters of the resource, even though their involvement will likely be critical in assuring economic viability and thus sustainability of their projects. Currently, there are few if any donor funded conservation and development projects that could sustain themselves economically. This is because the private sector has not been adequately involved in the planning and decision making process within most parks and protected areas. The private sector is avoided even though the NGO's lack the entrepreneurial skills to valorize the natural resources of these areas and thus generate renewable income through ecotourism and sustainable natural resource management which will serve as the "Catalyst For Rural Development" in and around these areas. If there is any chance of seeing this happen within the next five years, the involvement of the private sector in these projects cannot happen too quickly:

There are a few cases where the private sector has been peripherally linked to a conservation project controlled by an international conservation NGO. While there are many excellent things happening on the ground, there are many actions occurring which the NGO, though no fault of its own, has not recognized and therefore not taken action on <u>because NGO's are not business oriented but fund raisers and are staffed by scientists, not businessmen</u>. In essence, NGO's are being placed with or taking it upon themselves to carry a burden in which they are incapable of addressing.

*Gorilla Tourism And The Private Sector. The private sector around Uganda's gorilla reserves/park has been seen by the NGO's as trying to rush their hand in habituating gorillas. The major NGO has been in-country studying gorillas for at least 6 years. Small wonder that the private sector, which doesn't depend on fundraising and donor handouts, has been impatient. Since pit sawing was stopped in 1991, and there is no ecotourism, there is a net negative cash flow to the rural community compared to prepark days.

*Inadequate Us Of The Private Sector In ADMADE. Many of the problems that exist with ADMADE are because neither the government nor the NGO have adequate insight into the economics of the Safari Business, nor are they skilled negotiators in the business sense of the word. These people are wildlife biologists and researchers, completely out of their fields. Fortunately, they admit it and are working to resolve this issue.

In a project that is heavily dependent on safari hunting to generate the economic wealth for both wildlife management and rural development, <u>Professional Hunters</u> have not been adequately integrated into ADMADE, Zambia. It is estimated by not being sufficiently integrated, that ADMADE is losing about \$US 90,000/year/prime hunting concession which should be going to community development and wildlife management, where today about \$US 4-6,000/year/prime concession is reaching these rural areas.

The primary reason for this discrepancy is that Safari concessions have been placed in the hands of the wrong entrepreneurs, Lusaka businessmen, who are not interested in conservation but in using this as a means of getting foreign capital out of the country. They are taking a huge sum of money just because they have used their political contacts to obtain the concessions. They are in turn sub-leasing to the professional hunters who are the real businessmen; marketing the hunts in North America and Europe through SCI/CIC conventions and through the elite and wealthy network of clientele they have built up over the years. The poor professional hunter has no idea from year to year if he will be back on the lease. Why should he invest his time or money in trying to improve the hunting block, maintain trophy quality or collaborate with the rural community. He has been put in a the tenuous position, like most other African resource users, and like them figures that he might as well mine it while he can get it. Give him a long-term lease and see if things don't change!!

In the ADMADE evaluation it was recommended that the professional hunters, through competitive bidding, be given a long-term leases for hunting concessions so that they will have a vested interest in becoming more actively involved in wildlife management such as in providing information on the location of wildlife and their numbers so that realistic quotas can be estimated, in landuse planning, fire management and in marketing. They should also be encouraged to collaborate more in working with the community in rural development as they are in the bush for 6-8 months of the year and often develop collegial relations with local communities. In turn, they could afford to turn over about \$US 90,000/year from the high valued hunting concessions for rural conservation and development. This could be assured in a properly drawn up joint venture contract between them and the rural community (For the moment it will likely be with the government).

ADMADE's centrally controlled revolving fund is also mismanaged by the Government. This requires good accounting practices and business know how, especially the ins and

outs of the Safari Business so that profits can be maximized. Suggestions have been made that ADMADE move out of the government and be operated as a business with a business advisor.

Because of the international politics of conservation, and fund raising concerns, the international NGO receiving USAID money will not and likely cannot market ADMADE type programs linked to "Exploiting Resources" in North America and Europe, because many of its contributors, out of ignorance, are diabolically opposed to such activities. Promoting and marketing ADMADE could help educate them, but fund raising takes precedent. Marketing consumptive use programs such as ADMADE is something over which the private sector, as represented by the professional hunting world, has no qualms.

The Professional Hunters Association of Zambia is also in need of a face lift. As locally representing the private sector, it has basically dissolved due to a lack of support nationally and internationally, so that it is unable to currently regulate and control the quality of professional hunter placed into critical positions within the ADMADE program, nor negotiate terms best suitable to the long-term sustainability of Zambia's wildlife resources to the benefit of all concerned parties.

*Ecotourism, Bushmanland, Namibia. The economic feasibility of this project will depend on the harvest of about 6 elephants per year. To date, the professional hunter has been ostracized being seen, without reason, as a threat to the NGO working in Bushmanland, Namibia. In fact, there has been much talk that the NGO wishes to take over the professional hunting concession, including marketing. This shows just how naive they are, in thinking that they can replace one of the top hunters/businessmen in the country who has developed and courted wealthy clients over a life time. This individual has also drafted a proposed "Bushman 2000" report that makes recommendations for how the Bushman can be helped, including the reintroduction of wildlife, the placement of boreholes for wildlife, and designation for the first time of bushmen professional hunters to initially guide clients on bow hunts for antelope. If given the chance, he feels that he can generate about Rand 250,000/year (\$US 93,000/yr) for conservation and development in Eastern Bushmanland.

Professional hunters should not be seen as "Neanderthals with Guns" but multi-talented people with diverse skills in wildlife management, marketing, and even rural development.

*Aquarium Trade Exporters Of Minor Forest Products, Madagascar. Currently, there are a handful of "Operators" in Madagascar exporting, the real wealth of Madagascar; pacapodium plants, orchids, red lizards and frogs, butterflies, etc. This is being undertaken at the expense of Madagascar's biodiversity and of the rural poor who are paid a pittance of the true value derived from the export of these organisms. Many of these individuals may be selfish businessmen, but they have contacts all over the world.

It is said that they have been involved in illegal exports in collaboration with Eaux et Forets. The tide is changing and everyone wishes to survive. To date it would appear that no one has approached them to try and integrate them into the conservation and development in Madagascar. If used in a constructive way, their overseas and even incountry contacts could prove quite valuable and have the potential to help assure what are certainly to date lemur reserve projects which are not economically viable.

Although the politics of today would tend towards stopping all trade by placing these organisms on Appendix I of CITES, the reality is that in many cases, especially in a country like Madagascar, this might preclude the opportunity to valorize many of its isolated and remote forests which risk to be lost unless seen by the rural community as economically more valuable as a forest than being converted into slash and burn agriculture in order to meet their daily subsistence needs.

Tourism will certainly help but in no way will it sufficiently valorize the forests of Madagascar to the point where we can assure their viable future. Madagascar is one of the most expensive countries in the world to visit. When once there, reserves are very remote and inaccessible with poor accommodations. With the exception of a few interesting species of lemur (e.g., Indri Indri, Ring-tailed) most are of no great interest other than to primatologists or behavioral scientists compared to the tourism value of Africa's great apes. There are two options:

*Option Number 1. Once again, we can take the easy way out and say "don't use it." Where has this worked? Where there is a perceived need to access a resource by rural communities, especially those linked to a subsistence lifestyle, prohibiting access has generally resulted in a loss of control by managers over the harvest of the resource and increased poaching.

[Prohibition of the Ivory Trade may be one of the few exceptions to this, though as African populations triple over the next 30 years, without elephants as economic resources, in trying to save the elephant we may lose the elephant as much of their habitat may go and the elephant along with it, unless it is in the vested economic interest of the masses not to take the natural system which supports the elephant out of production and convert it into fields or overgrazed range for livestock. It is likely that even the ban on ivory must be seen as a short-term stop gap solution until elephant populations sufficiently recover and marketing controls can be devised to regulate the trade, so that ivory and the elephant can once again return to their historical roles in Africa, as economic resources].

*Option Number 2 is to recognize current shortcomings, take advantage of the entrepreneurial spirit currently generating wealth from Madagascar's forest

resources, but control and regulate their trade to assure sustainability and adequate revenue streams to the rural communities living in and around these biologically important areas that are in need of protection:

-Better Export Regulation Of The Private Sector, with an "Adaptive Management" approach to how many organisms can be exported,

-<u>Sensitization of Local People</u> to the true value of these minor forest products and providing them with <u>skills to negotiate</u> with the private sector and government to assure that they secure an equitable percentage of the net profits (Note: This is what the Nyae Naye Foundation of Namibia is doing with the Bushman),

-<u>Increased Efforts To Better Understand The Life Histories Of Commercially Valuable Species</u> (role of scientists associated with International Conservation NGO's) so that management plans can be developed to assure their sustainable exploitation.

*Ecotourism In The Rwenzori Mountains. In the case of ecotourism projects like the Rwenzori Mountaineering Service, while they are receiving upwards of 1,500 visitors a year, it is likely that if they could undertake a joint venture with an international operator (e.g., REI Climbing Expeditions) they could generate much greater income from higher paying customers, and depending on the carrying capacity of the park, increase or decrease the number of tourists in order to maximize profits and the outdoors experience while minimizing habitat destruction from overuse.

These are just a few examples that indicate how linking to and then regulating the private sector in these projects will help lead to their long-term economic viability and the conservation of biological diversity.

5.9 <u>Varied Track Record On Governments Willing To Decentralize Natural Resource Planning And Management</u>. Currently, because of the large bloated nature of many of the African conservation agencies, staff members are poorly paid and ill equipped to manage or protect their country's natural resources. As noted, under current conditions it is not in the economic interest for many of the key government agencies to decentralize, since currently, they perceive the natural resources of their country as "Open Access Resources" which they will harvest to their economic benefit, but not necessarily that of the local community.

As an example park entry fees, wildlife trophy fees from hunting and logging fees do not always end up where they should. Bribes are often paid by outsiders to obtain "legal permits" to in essence "illegally harvest" what should be the economic resources of the communities.

6.0 CONSERVATION AND DEVELOPMENT, WHERE DO WE GO FROM HERE?

Africa is one of the most rapidly evolving hot spots in the world today. Democratization is rampant, corrupt governments are being rapidly overthrown either by force or through the voting booth. The average African no longer lives in isolation from the rest of the world. Even deep in the bush, through their radios, they are well aware of world events. Many believe that the turn of events in Eastern Europe was the moving force that is resulting in today's change.

As part of this change, the average African is going to no longer tolerate the repressive actions taken upon him in the past from despotic and dictatorial regimes.

If conservation and development are going to succeed they must heed these changes. In their enthusiasm to save "biodiversity" for mankind, they must remember that if the areas they wish to protect are to survive, they must first and foremost be seen by local communities as being in their interest to conserve. Otherwise under the onslaught of the panga, hoe, cattle and plow, they will be chopped down and mowed under to feed Africa's population which is expected to nearly triple by the year 2020. The following are recommendations of where the environmental community should be heading, given the historical perspective of conservation and our last 4 years of experimentation,

6.1 <u>Redefine The Concept Of Modern Day Parks And Protected Areas To Fit Into The Socio-</u>Cultural Realities Of Modern Day Africa.

*Biosphere Reserve Concept. The idea that parks can survive as exclusion zones is doubtful given the population pressures and the demand for resources in Africa. If sufficient natural areas exist outside of and around parks (e.g., as game reserves around many savannah parks) then these areas should be actively managed in collaboration with local communities.

In "<u>Hard Edged Parks</u>" (e.g., Bwindi and Rwenzori National Parks in Uganda, Lake Nakuru National Park in Kenya, any of the lemur reserves in Madagascar), there should be sufficient flexibility to consider defining specific multiple use areas within the park between where communities live and core protected areas. In some cases (e.g., Lake Nakuru National Park) the geographical area of the ecosystem in need of protection may be too small to permit such actions.

*Community Participation In Park and Protected Area Management And Planning And The Right To Economically Benefit From Their Existence. If parks and protected areas are to survive into the 21st Century, they must be seen as belonging to and economically benefitting the peripheral community (e.g., Bakonjo around Rwenzori Mountains, inhabitants in game reserves under the ADMADE, CAMPFIRE, and Nazinga programs). The community should be integrally involved in determining:

- -What a modern day park will become,
- -Where ecotourism boundaries should lie,
- -What sections should be allocated as buffer zones and what, where and when resources should be extracted.
- -Key planning and management decisions, even so far as negotiating contracts with the private sector to assure their interests are being met such as employment and revenue sharing of net profits.

Given an adequate planning horizon of about 10 years, both anti-poaching and management personnel should be chosen by and come from the community to run and operate "Their Park" similar to what took place prior to the creation of a park in the Rwenzori Mountains by the Bakonjo people through the Rwenzori Mountaineering Service.

- 6.2 <u>Link To Private Sector Key To Sustainability</u>. As discussed in Section 5.8, the international conservation NGO's have not demonstrated that they understand or are capable of dealing with many of the "Business Related Issues" of Africa's conservation and development projects. It is believed that the NGO's have an important role to play and that they should be allowed to do what they does best; research, training and rural animation. However, for all of the good that they can do, it will be for not if the private sector is not allowed to become more actively involved in assuring the economic sustainability of these projects. Future donor funding of conservation and development projects should be contingent on the demonstration of private sector ties.
- 6.3 Continue To Pursue Decentralization Of The Decision-Making Process For Park/Protected Area Management And Planning. Over the past five years most donors have begun to realize the futility of dumping huge sums of development monies into bloated, inefficient government bureaucracies with over-staffed, underpaid and unmotivated workers. As mentioned earlier, Africa's bureaucracies are often a major cause of natural resource degradation, these political elite's, often taking advantage of rural desperation and poverty, in using the rural poor to take all the risks with little reward, while mining the natural resource wealth of Africa (e.g., ivory, rhino horn, timber, etc.). In many cases, the rural poor are innocent, powerless and confused bystanders as legally sanctioned outsiders move in to mine their resources.

Through <u>policy dialogue</u>, the donors and private sector should encourage government bodies who manage natural resources to:

*Slowly, down-size their staff, filling them with small elite teams of well paid and motivated individuals. This may be the only hope of seeing graft and corruption in

government agencies controlled, one of if not the biggest hindrances to sustainable natural resources management which must be overcome in Africa today.

*Consolidation. In some cases this can be further facilitated by consolidating forestry, parks, wildlife and fisheries departments making for a more efficient management of the natural resources, and a reduction in unproductive staffing patterns. In many African countries these branches are often found in different ministries, have overlapping and therefore conflicting responsibilities within the same geographic boundaries of parks and protected areas, and do not communicate or have different agendas to the point that conflict resolution does not occur, resources are mismanaged and rural communities become confused as to what policies/laws to obey.

*Divest planning and management of parks and protected areas to local communities who, in joint venture with the national and international private sector, should run and operate these areas as a "Family Business." The rural community and private sector would negotiate a percentage of the net profits, to be turned over to the government to cover the cost of employing the natural resource department's elite staff and to supply the required technical services in the field.

This will require a transition period of 10 years. As government bureaucrats retire, they should not be replaced. At the same time monies allocated for training should be aimed at the children of the rural communities, who will be selected by them to be their wildlife biologists, their game guards, their tourism operators, etc. Some of the training can be on the job, while others can be undertaken in rural based training centers such as at the Nyamaluma Wildlife Training Center in the Luangwa Valley, Zambia or the Nazinga Ecology Center, Burkina Faso. It is believed that most of the practical aspects needed to manage wildlife, forestry, fishery and park resources can be obtained at these centers. The development of appropriate environmental education curriculum is discussed in more detail in Section 6.12.

For the moment university training should be limited to the development of the small elite body of technicians in the government's main line management agencies, once it has agreed to down size staff and divest authority as part of the decentralization process. As the transition period to decentralization progresses, gradually members of the rural community who have proven themselves in the field working with their community to manage the community's resources, may be sent off for advanced training in everything from business and marketing, to hotel and natural resources management.

6.4 <u>Redefine Role Of Government In Park And Protected Area Management And Planning</u>. As noted above, government natural resource agencies need to divest to the rural communities much of the control over management and the right to economically benefit from sustainable natural resource management, if there is to be any hope of many of these resources surviving into the 21st century. This will likely be a slow process of about 10 years.

It is recommended that for the most part the resource management agencies move away from anti-poaching and policing, leaving much of this up to the local community. Initially, it may be necessary for them to place someone in charge of such activities in each park and protected area, but if ADMADE can be used as any sort of model, the local community is rapidly taking over this responsibility.

Eventually, the natural resource management agency(s) should become a service and monitoring oriented body to provide technical support to parks and protected areas, to undertake holistic planning, and to provide training to community based management and planning organizations that run and operate as <u>Small "Extended Family" Businesses</u>. The core staff depending upon whether the natural resource agencies are combined or separate should include as a minimum, a holistic natural resources planner, a wildlife biologist/range management specialist, a forester/silviculturist, a fishery biologist, an agronomist, a business advisor/accountant and community development specialist. Where control over natural resources is kept within separate government bodies, it may be necessary for them to form a steering committee for intergovernmental cooperation. They will provide:

*Technical Advice on issues such as wildlife censuses and the interpretation of data to establish quotas, establishment of timber survey techniques and forest management plans, fire management, dry season agriculture, basic landuse planning, etc.,

*Pure And Applied Ecological Research in collaboration with scientists from the international conservation NGO's, national universities, etc. in collecting information for park and protected area planning and management.

*Monitoring They will serve as a central computerized data base to monitor country wide field data that must be collated and analyzed statistically in order for planning and management committees to make key decisions on how to best utilize their resources for sustainable economic development.

Monitoring will also allow the government to carry out a key mandate, which is to safeguard the unique biological heritage of each country. Through annual or bi-annual analyses of such factors as population census data, average trophy size, hunter success, annual fish and timber yields, they will be able to better understand who and who is not wisely using their resources, and aid communities to take corrective measures before the resource becomes degraded to the point where it is neither economically nor ecologically of great value.

*Final Say On Quotas When Extractive Natural Resource Management Is Planned. As part of their mandate to oversee the nation's resources, as technical advisors, while quotas for extractive use of resources (e.g., wildlife, timber and fish) should be undertaken in a

collaborative effort with the local community and private sector, the natural resource agency should have final say in any disputes or arbitration.

*Training. As at the Nyamaluma Wildlife Training Center, this group along with periodic short-term interventions from outside experts, can provide local communities and the private sector with various technical skills needed to manage their natural resources.

6.5 <u>Creation Of Host Country Community Level NGO's Run And Operated Like Small Businesses</u>. As noted earlier, traditionally, many communities in Africa actively managed their natural resources to the benefit of the community rather than the individual as is the tendency in our society. However, this was a form of capitalism in which goods and services were offered to generate wealth for the group and various individuals within the group. Likewise, it has been noted, that for natural resources in Africa to survive into the 21st century, they must become economic resources for rural communities or risk to be converted into man-made environments dominated by agriculture and livestock, as to date, in the eyes of most rural inhabitants, the resources of the man-made environment have been their only access to wealth in modern times. It should be remembered that, with few exceptions, the major loss of natural resources in Africa today is not from using the resources but from habitat destruction related to taking these natural systems out of production through farming and over grazing.

What will be required is to <u>turn back the clock in order to go forward</u>, by returning to rural communities the natural resource base that has been taken from them. In return, they must be instructed in modern day management principles, and placed in contact with the private sector to undertake joint ventures so that these resources can help bring them into a moneyed economy, serve as the catalyst for rural development and thus give them an incentive to conserve these resources for future generations.

It is believed that the best way for this to occur is to organize rural communities into small businesses. In many cases this may mean be by going through traditional leadership such as chieftaincies, clans heads, elders or even marabous; the exact socio-cultural framework to be determined on a case by case basis in collaboration with the community. As an example:

*Rwenzori Mountaineering Services. Although there is a need to study this model closer, the Rwenzori Mountaineering Service, appears to be quite democratic in nature where its members, who must join and pay fees, vote for their leadership, and appear to also vote for how profits are to be distributed (e.g., reinvested into the business versus community development),

*ADMADE. In this case, it appears that businesses might be organized along the lines of chieftaincies, which are the current wildlife management decision making bodies in

Zambia.

6.6 Establishment Of Decentralized Area Management Committees For Each Park And Protected Area To Be Operated As Advisory Boards To Community NGO's/Small Businesses. "COMMUNICATION" between "STAKEHOLDERS" is one of the biggest drawbacks to Conservation and Development "TODAY". Likewise, it would be naive to think that rural communities could overnight assume responsibility for the management and valorization of resources. Even as the years pass and people from the community become better trained and better prepared to make decisions, it will be in their interest to team up with the private sector (both local and/or international) to help valorize their resources, and the private sector/down-sized government management agency to provide technical advice and training.

It is recommended that for each park and protected area a management committee be formed as an advisory and planning body with its operational location within the given area. Each Park/Protected Area Management Committee should consist of key stakeholders including:

*Local Community Business/NGO as described above.

*Resource Users Groups such as fishing cooperatives, pit sawyers and traditional hunters associations, traditional medicine groups, women's handicraft societies, etc.

*Park Management Staff initially from the government, eventually coming from and paid for by the community.

*Private Sector such as ecotourism operators, hoteliers, professional hunters, etc.

The International Conservation/Development NGO's would be available to provide technical advice, much needed research data and community animation.

Representatives from the local community would oversee this committee, with the park staff and private sector providing advice. The private sector would also undertake long-term (five, preferably 10 year) contracts with the community to help in valorizing and sustainably managing its resources. Day to day management decisions, contracts and joint ventures, collection of revenue and accounting, decisions on how net profits should be spent, etc. would take place at the field level by each community NGO/Business. It is obvious that at first the Community NGO/Business would require extensive support from the private sector, government and animation from the international conservation NGO, the reason for recommending a Park/Protected Area Management Committee. As time goes on over the 10 year period, the level of independent decision making would depend on the community NGO/Business's maturation. Hopefully, the Government and international conservation NGO would play a more and more peripheral advisory role, while the local community and private sector (professional hunter, ecotourism operator, etc.) would develop strong working relations through long-term joint

ventures, and thus work as a team in making key decisions.

It should be noted that this framework was recommended for parks and protected areas in Uganda in the planning document prepared by the REDSO/REA and also in his evaluation for ADMADE. It is also interesting to note that in complete isolation, the World Bank funded West African Game Ranching Extension Program came up with a very similar model in complete isolation of what is happening in East and Southern Africa.

Although, in need of further analysis, it is possible that there may need to be an oversight body in the capital consisting of representatives from the community (A person or persons selected by the local NGO's to represent them on the Board), a representative(s) from the Natural Resource Management Agency(s), and the private sector (e.g. Tourism Board, Professional Hunters Association). This Board would review broad policies and guidelines that would support the opportunity for success by small businesses in the field (e.g., establishing standards for tour guides and professional hunters, placing a ceiling on various fees charged to tourists or resource users in order to remain competitive in the international market place, sending representatives to overseas tourism promotion events to undertake marketing, establishing contract guidelines and negotiating procedures, etc.

6.7 <u>Redefine Role Of International Conservation NGO's And Researchers In Linking Conservation And Development</u>. In many instances it would appear that the International NGO's have gotten away from what they have traditionally done best:

*Research And Technical Advise

*Village Animation

*Training

While they have played a major role in sensitizing the world to the plight of many of Africa's parks and protected areas, if these areas are to survive, it is not the international NGO's and their researchers who, in the long run, will conserve these areas. These areas must become community based operations and not be perceived by the rural communities as some new neocolonial expression of the white man. You can be assured that, in many instances, this is the case today. Furthermore, for these areas to become economically viable and sustainable entities, it will require teaming up a diverse array of talents, many of which the international conservation NGO's, alone, cannot provide.

It is time for the international conservation NGO's to begin thinking about where they hope to be in relation to various parks and protected areas over a five to 10 year planning horizon. Strong consideration should be given by them to start taking a back seat in promoting the above noted park and protected area community NGO's/businesses, where the international conservation

NGO's go back to being research and advisory bodies which is the role for which they are best suited. It is believed that this is where ADMADE and the World Bank funded Nazinga game ranching schemes will be heading. The Rwenzori Mountaineering Service is already there.

One of the best examples of this is the ADMADE program. The researcher remains at the Nyamaluma Wildlife Training Center in the Luangwa Valley involving himself in basic and applied research, training game guards, management biologists and local leaders. Upon request, he provides advice. Neither in the capital, nor in the bush is there another expatriate to be found, other than the international NGO manager who is mainly a administrator of the project's funds.

Here is a researcher who has stuck with what researchers do best. He has avoided dictating to the government or the rural community what they should or shouldn't do leaving them to learn from both good and bad management decisions.

6.8 Establish A Park Or Protected Area Planning Process Using An Integrated Land Use Planning Approach. There has been a tendency by both governments and international conservation/development NGO's to make critical decisions about access to and resource use in parks and protected areas without bringing together all of the stakeholders. In many instances, there has been a tendency for both donors and nations to feel that key decisions can be made in a onetime preparation of a planning document.

Prior to making any key decisions about the future of how an area should be managed and for what purposes, a reiterative "<u>Interactive Park Planning Process</u>" should be established. It is believed that this can best be accomplished by:

*Establishment Of Decentralized Parks and Protected Area Management Committees Advisory Boards For Each Park And Protected Area to begin planning for the future,

*Using the International Conservation/Development NGO's as advisory bodies to these committees

Once established, rather than wait years for the development of a detailed and expensive management plan which will likely be outdated by the time it is published, the <u>Management Committee</u> will sit down with base maps, satellite images, aerial photos and other interpretive aids that might be available, undertake initial desk top planning followed by groundtruthing field visits in the process of developing an "<u>Interim Park Or Protect Area Management Plan</u>." This may take 3-4 months at the most, not years. This plan, based upon using current knowledge will lay out a basic land use management plan identifying:

*Core Protected Areas

*Commercial Resource Utilization Areas (e.g., hunting, logging, fishing, honey

gathering, handicraft material gathering, traditional medicine gathering, etc.

*Agricultural/Livestock Areas

*Human Habitation

Based upon existing data, decisions will be made by the group about how to best use existing resources, an application of the "Adaptive Management Philosophy." The Interim Management Plan will identify data gaps and make plans for collecting the baseline information needed to make better decisions on how to more sustainably use the resource while maximizing economic benefits. The private sector will help prepare a preliminary business plan estimating the cost of investment and the potential for revenue generation.

If it is decided that a particular resource should not be used because it is too degraded and needs an opportunity to recover, or because without better information the long-term sustainability of the resource might be jeopardized, this will be a decision made by the management committee on which all stakeholders have agreed. It will be a decision based upon negotiation and compromise with which all parties can agree; not something imposed (as is too often the case today) by a special interest group who because of biases may not have the best interest of all parties in hand.

6.9 <u>Use Local Knowledge About Natural Resources And Overlay This With Modern Day Management Practices.</u> By establishing a "Parks/Protected Area Management Committee" for each park and protected area, the traditional knowledge of resource users will be incorporated into the planning and management process. The value of this knowledge should not be underestimated, as much of it can be overlain with modern day management and planning principles:

*Bushmen in the Kalahari, by observing the spoor of game can determine the numbers of animals, the species, approximate age and sex ratios. This information can be used to help establish wildlife offtake quotas.

*Bisa Hunters, Luangwa Valley, Zambia know, by species of game, its habitat and where it can be found at different times of the year. This information can be used in narrowing down areas for the laying of transects for wildlife censuses, or in conducting antipoaching patrols, as the poachers will be found where the animals to be poached are located. In both cases, this can save much wasted energy and improve the quality of results.

*Batwa Pygmies are used to help locate and track gorilla movements in Bwindi Forest, Uganda.

6.10 The Need To Bring On "Big Picture" Natural Resources Planners To Deal With The Multi-Faceted Complexities Of Conservation And Development Projects. As noted in Section 5.2, up until now most funding of conservation and development projects has been through International Conservation and Development NGO's. In most cases, on-site research scientists, who have been conveniently in place, have been put in charge of these projects. In general, as a product of their training, they have taken a very narrowed perspective as to what these projects should do, failing to take a strategic integrated planning approach, but dealing with the complex myriad of issues in a piecemeal and fragmented fashion.

It is believed that in many instances researchers have gotten away from what they do best and what makes them happiest, and that is research. The burden of dealing with these issues should be taken off the shoulders of these people and they should be allowed to go back to undertaking the important research that will be needed in making key planning and management decisions in these parks and protected areas.

Meanwhile, there is a need to find people with "Big Picture Natural Resources Management" backgrounds who can coordinate and work with the various stakeholders (Community, private sector, government) in the planning process, and who have a sufficient grasp on a wide variety of issues and enough common sense to know when to bring in various specialists to help address many of the complex issues which the project must deal with. For instance, a holistic understanding of issues may be required:

*In Order To Determine Zonation Within A Park Or Protected Area:

- -Traditional Resource Users may need to indicate where they hunt, cut timber and poles, fish, collect firewood, handicraft materials and herbal medicines,
- -A botanist and a number of specialized zoologists (ornithologist, primatologist, herpetologists, entomologist, etc.) may be needed to carry out a biodiversity survey of plants in a forest,
- -A forester may be needed to carry a siliviculture survey,
- -A wildlife biologist may be needed to assess both tourism potential and food potential of resources within a protected area,
- -A private sector person may be needed to undertake a review of tourism potential in the area, with estimates of the cost of investment and potential annual net revenue,
- -A GIS specialist may be needed to place the above information spatially on a computer.

*Help Organize Park Protected And Protected Area Management Committee Meetings. The planner will then have to sit down with this group and overlays of this data coming from the computer, based upon the above surveys (Mapping could be done with mylars and kept much simpler) and undertake negotiations and conflict resolution discussions with all stakeholders in order to obtain preliminary and ongoing plans for zonation and thus management of the park or protected area. This is complex. It will take many meetings and discussions. It will be reiterative in nature, decisions improved upon as better data is available (Adaptive Management). It will take someone with a holistic, not a focused approach, for this to happen.

At the same time, among others, it may be necessary to:

*Bring In Business And Contract Specialists to establish accounting procedures and draw up contracts for joint ventures between the private sector and local community,

*See That Appropriate Community Level Natural Resource Training Programs are developed by bringing in training specialists and various technicians to devise these courses.

Researchers are focused people and not trained to deal with these issues, nor are they, in general interested.

The big question arises is where does one find such a multi-faceted individual. It will not be easy. Such people are not born. They develop after years of experience working in the field. It is believed that some of the best backgrounds to look for are:

*Geographers. In general these are people who come out of an education that provides an integrated approach to man and his relationship to the environment,

*Conservation Biologists. Masters programs in conservation biology, for instance the one at University of Maryland, are new. In many instances, the first graduates are just coming out. Most of these graduates are older, many with overseas experience, often with Peace Corps backgrounds.

Interestingly enough, it appears that many of these programs have been developed by researchers who have seen the shortcomings of being so narrowly focused and specialized that the "forest is lost through the trees." The people coming out of this interdisciplinary holistic program are exposed to the whole host of issues that have been dealt with in this paper in hopes that they can oversee conservation and development projects, while "their professors" can be left alone to do what they do best, undertake research and teach.

*River Basin Planners. Although river basin planning is no longer in vogue, people

coming out of this applied background have had to take an integrated approach to all the complexities within a watershed that come into play when development of such an area is being planned.

Even these people cannot do it all. It is highly recommended that in parallel with the holistic planner, who should be left to deal with the technical planning portions of the projects, that a <u>Project Administrator</u>, be brought on to deal with the mundane paper work and other administrative requirements necessary for project success, but which are non-technical in nature (e.g., running an office, ordering equipment, paying salaries, dealing with personnel grievances, maintenance of vehicles, etc.).

6.11 <u>Natural Resource Managers Needed To "Bridge The Gap" In Conservation And Development Projects.</u> As noted in Sections 5.2 and 5.3, currently most conservation and development projects have researchers (to study the "forest") and rural development persons (to solve the problem on the "farm") working with them, due to a general failure to acknowledge that there was and will always be a "Zone Of Interaction" between where the people live and any natural area which is in need of protection.

These areas must be defined with the community and legally established as UNESCO Biosphere type "Natural Area Buffer Zones" lying between where people live and core areas of protection.

Management biologists (e.g., wildlife, forestry, fishery), as specialized in their fields as scientists, will need to be brought in to deal with management issues. In many instances they will need to team up with zoologists and botanists, in trying to understand the natural history of the organisms for which they may be trying to develop sustainable offtake programs. In some cases, there may be no one with proper management credentials. For instance, who can call themselves a management specialist with regard to marketing Madagascar's small red (also blue) aquarium frog (Mantella sp.) worth \$US 75 in Europe and North America? In this case a herpetologist may have to take what he/she knows of the animal's life history and make a judgment of what can and can't be done or teamed up with private sector people who may have already begun looking at this issue from an applied approach. Maybe even the local community may contain the answer through knowledge passed on by oral history.

Never-the-less, resource management biologists will be needed, depending on the project, in such diverse areas as range management, wildlife management, forestry management, fishery management, soil conservation, migratory waterfowl management, park management, agronomy, irrigation management, etc. These management specialists are one of the missing links to the future success of conservation and development in Africa. They certainly have been the key to the maintenance of biodiversity in North America and Europe and make up the bulk of the people working for state fish and game departments, the U.S Fish and Wildlife Service, the U.S. Forest Service, the National Marine Fishery Service, Bureau of Land Management, etc. in the United States.

We need to get these kinds of people trained at the community level, at the national level and teamed up for both short- and long-term periods with management biologists from Africa (Southern Africa is full of people with such experience who could be brought on for long- or short-term assignments with these projects), or from elsewhere.

6.12 Environmental Education Programs Appropriate To The Needs Of Rural Communities. Up until now most of the environmental education programs developed in Africa, as in most of the developing world have been developed by Western dominated conservation NGO's with a Western/Urban bias. Environmental education centers in parks or elsewhere and curriculum have been used to expose urban children to the wonders of rural Africa. These types of environmental education programs are of little value to rural children who grow up among the natural resources and who must learn to live off of and co-exist with these resources. For example:

*Environmental Education In Zambia. While undertaking the USAID sponsored ADMADE evaluation in Zambia, it was explained that the urban based Chongololo Club (Children's club associated with the Wildlife Conservation Society Of Zambia) had sent the school teacher in the Chitungulu Sub-Authority some environmental education materials that were useful for urbanites in Lusaka, but useless for his rural pupils.

*Environmental Education In Madagascar. The evaluation of the Andohahela Lemur Reserve Project in southern Madagascar found that the educational curriculum being developed for the school children was completely contradictory to what they were learning from the non-formal sector. While the children were learning from their parents how to survive from the forests in a very harsh environment (e.g., What trees/bushes provided tubers in times of drought, fruits, firewood, medicine or handicraft materials, etc.), in the classroom, the children were being taught to not touch the forest but to plant trees on their farm. The reality is, and this has proven itself time and time again, that indigenous people living near natural forests will ultimately reject the planting of trees, other than fruit, on their farms while continuing to use the natural forests. Ultimately, while agro-forestry may have a value in soil conservation, it will never replace the diversity that a natural forest provides the community, nor the need to work with them in the area of natural forest management.

More importantly, an ill conceived environmental education program with a western/urban bias could do more harm than good, confusing the children/adults, as it will likely be contradictory to that which they have learned through the non-formal education sector. In the long run, the risk is high that such programs will be rejected by the community as being in conflict with the basic survival needs of the community. In Madagascar, a young school girl asked, concerning what she was being taught in school, "We're confused!! Why don't you want us to hunt and gather in the forest??"

A similar concern is raised in a paper presented on the Bushman,

"...one explanation for the spectacular failure of the educational system available to Ju/'Hoansi can be found primarily in the complete neglect of Ju/'hoansi culture and language." It should be clearly understood that the use of natural resources by traditional societies has as much a socio-cultural basis as a survival basis. Once again the failure to recognize this need in the development of environmental education programs could result in a high risk of failure and rejection by the rural community.

Unless these principles are clearly understood and environmental education programs are devised which integrate these socio-cultural values and survival needs into the curriculum, the program like so many western conceived and developed programs in Africa will be doomed to failure.

In essence, the children/adults in these rural areas need to be exposed to a <u>utilitarian environmental education program</u> that builds on the already existing indigenous knowledge base and which combines this knowledge with modern day ecological and management concepts which enhance their ability to sustainably use these resources for subsistence purposes, but more importantly, for economic purposes to support rural development and an improved quality of life in the community.

Most importantly, by the time the rural youth of today are ready to enter into the work force, many of the values and principles, that their parents struggle to grasp, will be a part of their everyday vocabulary and way of life. As adults, they would be ready to step into their parent's 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 reading, writing and arithmetic, but how to turn these subjects into practical skills needed to sustainably "Farm Their Natural" resources as stewards of these lands.

For instance, at a recent meeting between Kalahari Bushmen, NGO's, the private sector and the Government of Namibia, the bushmen asked for training in wildlife management, fire management, livestock management, forestry management and dryland agriculture.

The development of environmental curriculum that is relevant to rural societies will likely require the following steps:

*Synthesizing the existing indigenous knowledge about natural resources and their management within a given community.

*Involvement of the local communities, especially the elders, chiefs, wise men and wise women, etc. from the community to determine what aspirations they might have for the

education of their children in the area of the environment.

- -The above curriculum areas would be discussed with the community in order to assess and to meet their felt need for the development of this curriculum.
- -As the curriculum is developed, the community would be involved in its review and refinement.
- -Built into the curriculum would be traditional knowledge, modern scientific principles, and any religious, or beliefs that are important to the community.
- -Where traditional folk tales exist to get the message across, this would be built into the curriculum.
- -An end product would be a syllabus and course training outline that focuses on the learner and teacher.

There might be special environmental education components oriented to help form and to educate various user groups such as traditional hunters associations, pit sawyer/charcoal maker cooperatives and women's handicraft societies.

Feedback loops would exist for these materials to be reviewed by the communities, local teachers, and the team specialists until the curriculum development is acceptable to this wide audience and is ready to be distributed for application and testing in the field.

Of key importance will be to develop various methods of organizing and presenting the environmental curriculum to the particular target group in a manner that will hold its attention, draw it into the discussion, bringing out what it already know of the resource and its management, and most importantly make the group a participant learner. These methods alone or in combination may include but should not be limited to:

*Formal Lectures (e.g., classroom setting)

*Group Discussions

*Reconstruction in which questions are asked to draw out traditional knowledge

*Explain, Demonstrate And Do with a heavy practical field emphasis. For many hunter gatherer societies education through example may be the most traditional and thus appropriate means of learning. This could include school or community pilot projects (e.g. Establishing a management plan for a community natural forest, undertaking a community wildlife management plan, community controlled early season burning for

pasture management).

- *Traditional Song, Dance Or Story Telling
- *Independent Assignment for innovative and motivated students, local entrepreneurs or resource user groups.
- 6.13 The Need To Continue Promoting The Use Of Geographical Information Systems (GIS) and Global Positioning System (GPS). The frame work of information needed for decision making in the planning and management processes will be largely spatial in nature. Many decisions will be needed on the geographical location of where and when resources may be used/not used. In many cases there may be overlapping conflicts between different resource user groups as to what should or shouldn't be used in a given geographical area. In some cases, there will be multiple resource use that is compatible within a given geographical area. It may be critical to accurately map wildlife or timber resources or to identify the habitat of an endangered species that is in need of protection. Ecotourism or safari hunting areas may need to be identified in which the local community agrees to minimal interference in order to assure maximum revenue generation. The use of the GPS in the field and then the transfer of geographically located information to the GIS system can go a long way in improving the entire decision making process necessary for sound management and planning. Many projects are experimenting with these systems. This should be encouraged until the most appropriate user friendly systems have been identified. Developing the skills to use these tools should be a priority of the down-sized natural resource management agency.
- 6.14 <u>Africa's 21st Century, Urban Conservation And Development, The Big Issue</u>. The natural resources of rural Africa are finite and even if we are successful in these rural based conservation and development projects, with Africa's rapidly expanding (expected to nearly triple by the year 2020) and youthful population, unless something is undertaken to relieve current and expected pressures on the rural natural resource base from this swelling population, any progress made over the next few years in conservation and development may be for not.

Ultimately, the future of Africa's rural economies and natural resources will depend on the ability of African nations to develop an atmosphere that encourages urbanization and industrialization, thereby taking pressures off of the finite rural resource base by absorbing the continent's exploding human population. Currently, as in most developing countries of the World, urbanization has meant rural/urban flight to capital cities. While the urban elite live in luxury the majority of Africa's urban inhabitants live in the complete misery of urban slums

Urbanization is taking place in Africa, but in an uncontrolled, unplanned manner that could spell as big a catastrophe ecologically and socially for Africa as the degradation of their rural natural resource base. Currently, the lack of arable land and any other obvious opportunities is forcing the exploding human populations in Africa to flee the countryside, as millions of unskilled,

uneducated and even educated youth flood into the major capital cities on the continent searching that "Pot of Gold at the End of the Rainbow." By the year 2020, it is estimated that at least 50% of Africa's population will be urbanized.

Unfortunately, under current conditions, for the majority this rural/urban migration means unemployment living in the squalor of urban slums without adequate shelter, water or sewerage. For many, their lives worsen rather than improve over their rural based cousins. Many are forced into lives of crime, drugs and prostitution in order to survive. The slums of Africa are among the worst in the world. In many cases, because these are settled by squatters, the city councils refuse to acknowledge their existence, and thus little or no donor support goes into addressing their problems.:

*Housing Is Inadequate, in many places being made from the plywood crates that have contained the belongings of expatriates working in "Development??"

*Water and Sewerage are virtually non-existent. Water is often provided from an inadequate number of standpipes, or taken from polluted streams and rivers that are used for bathing, dumping of garbage and sewage, or industrial waste.

*Inadequate Solidwaste Disposal serving as a breeding sight for many disease vectors.

*Energy. The major source of energy for most urban poor is and will continue to be charcoal. This has major implications for developing rural enterprises that manage natural forests for energy production. Up until now all attempts to address this problem have been attempted on the farm. The fact is that no amount of on-farm tree plantings will replace the annual loss of natural forest being used as an energy sources (e.g. about 10,000 hectares/yr of unmanaged forests in Senegal are clear cut for charcoal production to nourish the urban areas). Natural forests can be managed for sustainability as economic resources for rural people to meet this urban demand instead of being mined as they are today.

*Industrial Pollution. Foreign Investors flock to developing countries to establish industries due to lax or non-existent environmental and worker safety regulations that allow enormous savings at the expense of environmental pollution (air, water and soils) and the worker (under paid, little or no health benefits, dangerous or polluted work environment).

*<u>Urban Coastal Pollution</u>. As, it already is in the Caribbean, this will jeopardize among the most biologically diverse ecosystems in the world; the coral reef/grass beds/mangrove complexes.

The big challenge for African countries and the donors in the 21st Century will be to address

environmental, employment and general quality of life in urban areas.

Regardless, unless Africa's human growth rate can be stemmed through <u>education and family planning programs</u>, many of the potentially positive benefits from such initiatives will be for not as the system, both in rural and urban areas, will very likely be unable to absorb the human masses.

TABLE
POPULATION GROWTH IN AFRICA (1,000'S)

EASTERN AFRICA	19	950	1970	1990	2020
<u> English</u>					
Burundi	,	2,456	3,522	5,472	11,950
Ethiopia	1	9,573	30,623	49,240	114,313
Kenya	(6,265	11,498	24,031	69,799
Madagascar		4,230	6,742	12,004	30,272
Malawi	2	2,881	4,518	8,754	22,278
Mozambique	(6,198	9,395	15,656	32,593
Rwanda		2,120	3,728	7,237	17,196
Somalia	2	2,423	3,668	7,497	16,905
Uganda	•	4,762	9,806	18,794	48,101
Tanzania	,	7,886	13,513	27,318	75,485
Zambia		2,440	4,189	8,452	23,286
Zimbabwe		2,730	5,260	9,709	20,870
SOUTHERN AFRICA					
Botswana		389	623	1,304	3,095
Lesotho	734	1,064	1,774	4,01	3
Namibia		666	1,016	1,718	4,245
South Africa		13,683	22,458	35,282	61,446
Swaziland		264	419	788	2,023
MIDDLE AFRICA					
Angola		4,131	5,588	3 10,020	22,438
Cameroon		4,467	6,610	11,833	32,264
Cent. Af. Rep.		1,314	1,849	3,039	7,154
Chad		2,658	3,652	5,678	12,013
Congo		808	1,263	3 2,271	5,860
Equat. Guinea		226	291	352	752
Gabon	469	50	4 1,172	2,59	4
Sao Tome		60	73	121	219
Zaire		12,184	19,769	35,568	88,972

TABLE (Cont.) POPULATION GROWTH IN AFRICA (1,000'S)

	1950	1970	1990	2020
WEST AFRICA				
Benin	2,046	2,693	4,630	11,369
Burkina Faso	3,654	5,550	8,996	21,327
Ivory Coast	2,775	/	11,997	34,776
Gambia	294	464	861	1,736
Ghana	4,900		15,028	
Guinea	2,550	3,900	5,755	13,820
Guinea Bissau	505	525	964	1,791
Liberia	824 1,385			,
Mali	3,520	5,484		22,439
Mauritania	3,320 825	1,221		4,642
		,		,
Niger	2,400	4,165	,	19,406
Nigeria	32,935	•	108,542	•
Senegal	2,500	4,158	,	,
Sierra Leone	1,944	2,656	4,151	19,139
Togo	1,329	2,020	3,531	8,821
NORTH AFRICA				
Algeria	8,753	13,746	24,960	48,484
Egypt	20,330	33,053	52,426	85,768
Morocco	8,953	15,310	25,061	43,022
Sudan	9,190	13,859		•
Tunisia	3,530	5,127		12,925
Western Sahara	14	76	178	335

Source: United Nations. 1991. World Urbanization Prospects 1990. Dept. of Int. Economic and Social Affairs. ST/ESA/SER.A/121. 223p.

Things to add in:

^{*}Famine relief and cessation of intertribal warfare also added to population increases along with improved medical and vet care.

^{*}Lake Malawi- fisherman kicked off land - village moved without consent to accommodate hotel, Cape McLear Nat Park-fishermen live right beside the park – but have minimal involvement, no benefits from gate receipts, or as dive masters

^{*}Pygmy- desire by Ugandan govt. to have them become sedentary so can "civilize" them.