

FRAME:

Framework for Regional Action and Monitoring on the Environment

Southern African Opinions on Environmental
Trends and Emerging Issues

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Executive Summary

In the course of its pilot phase, the USAID Africa Bureau's FRAME initiative has focused on the southern Africa region, to better understand environmental and natural resource issues and trends which influence regional priorities, and which will inform USAID investments in the future. This report summarizes the results of FRAME interviews with southern African environmental and natural resource specialists conducted during August 1998. Interviewees were asked to share their thoughts on environmental trends and emerging issues which might be useful for USAID to take into account in the context of the agency's long-range planning for this sector. These ideas will be tabled at a FRAME advisory panel meeting (scheduled for December 1998) comprised of southern African environmental specialists.

This document summarizes viewpoints offered in the course of open-ended interviews with some 55 specialists. Over two hundred specific points or comments are presented, organized into major categories of environmental issue, covering such topics as environmental assessment, NGO and civil society roles, land tenure and resource rights, freshwater and marine ecosystems, climate variability, the environmental consequences of economic policies, the long-term potential for resource-driven conflict, and the changing roles of donor agencies in the southern Africa region.

These interviews suggest that there is relatively widespread agreement within the region on the types of environmental problems being faced in the SADC countries, and on many of the factors driving these problems as well as on their likely long-term consequences. For example, few of those interviewed disagreed in any substantial way with the findings of major regional environmental assessments conducted in recent years (SARDC 1994, SADC 1996, IED 1997). These documents remain key sources for professionals working in the region, and USAID was generally urged not to dedicate resources toward repeating this earlier work.

On the other hand, there has been relatively little progress toward establishing a set of overall priorities, in the sense of a relative ranking of the importance of these problems, whether in terms of their potential impact or other criteria for allocation of scarce budgetary and institutional resources. The most recent regional policy document on this subject, the 1996 SADC Policy and Strategy for Environment and Sustainable Development, notes that "...the next most crucial feature of any strategy is the setting of priorities for the allocation of resources" and calls for "significantly greater resources with clear strategic priorities for allocating them effectively." (p.39)

However, many observers noted that it will be extremely difficult to organize a priority-setting process which is technically-sound, respects the particular situations of countries, involves the largest possible number of stakeholders, and produces a useful and widely-acceptable agenda for action without alienating groups who may feel that their issues have not been given sufficient priority. One question to be tabled at the FRAME consultative group meeting is whether a sufficient basis exists for initiating the development of an environmental priority-setting process for the region, or whether the consideration of priorities is best handled at the level of individual governments and donor agencies.

Finally, the FRAME consultative meeting will also consider the "goodness of fit" between USAID's current environment and natural resource portfolio in southern Africa against the region's changing needs, including such issues as balancing the depletion of natural resources (woodlands, soil, water, wildlife) in rural areas, against rapidly expanding industrial pollution and the deteriorating quality of urban life.

Introduction

The USAID FRAME project, currently in its pilot phase, is reviewing environmental priorities for the southern Africa region, beginning with a series of interviews with persons knowledgeable about environment and natural resource issues in the region. In August 1998, a FRAME team whose task was that of "intellectual scribes" - interviewed some 55 persons in three countries: Botswana, South Africa, and Zimbabwe (plus a brief visit to Maseru, Lesotho, which was curtailed due to civil unrest). Interviewees were asked to share their thoughts on environmental trends and emerging issues which might be useful for USAID to take into account in the context of the agency's long-range planning for this sector. These ideas will be tabled at a FRAME consultative meeting of southern African environmental specialists scheduled for December 1998

A great deal of descriptive national-level information is already available in the form of environment sector assessments, reports prepared for UNCED, assessments and policy papers prepared in conjunction with NEAP (National Environmental Action Plan) or National Conservation Strategy processes, and so forth. At the regional level, environmental issues are also quite well documented, and in addition, the regional policy and institutional context is also well understood, due in part to a rather distinctive regional identity, evidenced in the long-standing presence of SADC (previously SADCC). Abstracts of a sample of existing regional overviews of issues and policies can be found in Annex 1. These include:

- Southern Africa Beyond the Millenium: Environmental Trends and Scenarios to 2015 (B. Clayton-Dalal, IIED 1997)
- SADC Policy and Strategy for Environment & Sustainable Development: Toward Equity-Led Growth and Sustainable Development in Southern, (SADC – ELMS, 1996)
- State of the Environment in Southern Africa (A. Booth, J. McCullum, J. Mpinga, and M. Mukute, SARDC, IUCN, & SADC 1993)

In addition, a number of other recent reports are available which provide useful overviews of more narrowly-defined environmental issues in the region².

Rather than independently reviewing the region's environmental issues in order to produce an internally-generated set of priorities, the FRAME team has attempted to capture southern African specialists' thoughts about the future implications of present trends and their speculations about possible scenarios, as well as their thoughts about the role of donor agencies such as USAID. As the ideas discussed during the interviews were not for attribution, interviewees were encouraged to speak in their individual capacity as observers of environmental issues rather than limiting themselves to any particular official viewpoint endorsed by their present employer. This report is to serve as a launching point for wider discussion by a FRAME consultative group. This discussion will be followed by a synthesis report summarizing the group's conclusions for presentation to USAID's Africa Bureau.

¹ comprised of Fred Swartzendruber, Emily Collings, Saliem Fakir, Glyvyns Chinkuntha, and Simon Metcalfe; Brian Jones conducted separate interviews in Namibia.

² see, for example, Proceedings of the Southern African Subregional RAMSAR Meeting (M.M. van der Walt and G.I. Cowan, Department of Environmental Affairs and Tourism, Pretoria 1998); Towards Sustainable Natural Resource Management in the Kalahari Region: A Regional Scientific Workshop on the Kalahari Transect (International START Secretariat, 1998); Assessment of Community-Based Natural Resource Management (CBNRM) in Southern Africa (Agricultural Development Consultants Inc., for USAID 1998); Southern Africa Regional Trade and Investment Strategic Framework Study (K. Hendrixson; Coopers & Lybrand for USAID, 1998); Capitalizing on Regional Dynamics in Southern Africa (International Resources Group Ltd. for USAID, 1997); Wildlife-Based Tourism in Southern Africa: 1997 US Markets Study Results and Botswana's Comparative Positioning (W. Oden, Chemonics International Inc. for USAID, 1997); Resource Potential of Southern African Ecosystems: Some Strategic Issues for Sustainable Development (C. J. Geldenhuys, R. J. Scholes, and F. J. Kruger, CSIR-Forestek, 1994)

The sections that follow summarize a significant number of points made by the team's interlocutors. Other than arranging them thematically, this report makes no attempt to harmonise the ideas presented, to rank them in order of importance, or to gauge their consistency with existing or proposed environmental strategies or policies. If there are discrepancies or contradictions, this simply reflects the reality of differing individual perspectives on southern Africa's environmental challenges, as well as the difficulty of extrapolating today's issues into the future. The interviewees (listed in Annex 4) are to be commended for their positive and stimulating responses, which will provide a rich set of ideas for consideration by the FRAME consultative meeting.

³ A separate report reviews USAID activities in the region in the context of the Agency's global environmental priorities; see *Inventory of USAID's Existing Environmental Portfolio in Southern Africa*, Nov. 1998.

1 Overarching Issues

1.1 The Priority-Setting Process

It is important to note that from both a policy and a management perspective, identifying issues which are widely acknowledged does not directly lead to consensus around the ranking of these into priorities. The 1996 SADC-ELMS policy identifies no fewer than 45 environmental objectives for the region, subsumed under ten “key environmental policy areas,” and six “key environmental policy support areas.” Policy areas include such items as land management, food security, and sustainable human settlements, while policy support areas include environmental law, institution-strengthening, and environmental education; the full list is reproduced in Annex 1, attached to this report (derived from SADC 1996, pp.34-41). Specific objectives, assigned to various SADC sectors and units, are then identified under particular policy or support areas. For example, the policy area of energy and sustainable development includes such specific objectives as the use of more efficient wood stoves, and assessing and reducing the effects of transboundary air pollution (SADC p.36). This policy document clearly acknowledges that a very ambitious agenda has been proposed, and that the step of developing priorities within this broader agenda remains to be done:

[A] crucial feature of any strategy is the setting of priorities for the allocation of resources. SADC generally and the ELMS programme in particular have limited financial and staff resources, certainly far less than are needed to coordinate and carry out the SADC Environment and Sustainable Development Programme. What is now required are significantly greater resources with clear strategic priorities for allocating them effectively (SADC 1996, p.39 – emphasis added).

- There are many lists of environmental issues, but the term “priority” implies a level of policy decision which in general has not yet taken place in any of the countries. It’s much easier to agree that a certain list of issues is important or even critical, but assigning relative priority – which then would logically have budget and policy implications – is a different matter. Within a given topic such as biodiversity or water, there have been exercises to discuss priorities, but across these sectors as a whole, this has not happened.
- Most informed people in the region will produce the same list of environmental problems. What will be different are their priorities, and perhaps also the approach(es) suggested. The criteria for setting priorities, and the process, have not yet been agreed-upon.
- Identification of environmental issues and threats is a relatively simple process, which can be done as a more-or-less technical process. In comparison, assigning a rank of “priority” implies a host of values and processes, and is almost necessarily both a collective and an optimising process. In other words, priorities are decided as a process of decision-making under constraints, subject to factors such as insufficient information, limited resources, assumptions about political will, and so forth.
- The priority-setting process cannot be done by specialists alone: no specialist will agree to assigning a lower priority to his/her field. Ideally, government should play an arbitration role within a transparent process of analysis and debate, but so far this type of priority-setting has not taken place in the region.
- In defining environmental priorities it is important to clarify one’s purpose. Some problems will always exist, and others may be intractable. Industrialists, as a group, will do whatever they can get away with, while the rural poor will probably receive nothing. So in trying to attack a particular environmental problem, it’s important to be clear about expectations and about realities. What is the policy issue? What is the mechanism for addressing it?

1.2 “Nexus” issues

- The future environmental problems of southern Africa will revolve around a nexus of related issues: increasing fluidity and porousness of national borders, population movements in search of economic opportunity, bringing specific urban/environmental problems, and the effects of new trade regimes, largely driven by factors outside the region (globalisation).
- In large parts of the region there is a water - energy nexus which entangles many issues of resource use, access, management of supply and demand, etc. yet water has received far more attention as a cross-border issue than energy. Water is understood as a cross-cutting issue, in part because rivers often form the political boundaries, but energy is assumed to be a power sector matter and remains largely in the realm of engineers and planners.
- The Zambezi Basin is as much an “energy basin” as a river basin, with large coal deposits as well as hydro potential, and massive production of charcoal from natural forests on Zambia’s side of the river. There is great pressure for further development of these resources: how can this be made compatible with environmental values such as biodiversity?

1.3 Environmental Management

- The environmental agenda remains dominated by a false dichotomy between “development” and “environmental protection.” The environmental community needs to become more proactive to help define the agenda and focus on strategic issues rather than being caught-up in “no-win” debates, and press policymakers to consider what kind of development is sustainable? Who benefits from it?
- More could be done to try to convert environmental problems into economic opportunities, including “clean development mechanisms.” So far the private sector has not been involved in many of the discussions about approaches to environmental management, but private-public partnerships have great potential. In addition, many of the likely measures for mitigation of greenhouse gas emissions will have a strong technological base which broaden the range of options for response and have beneficial local economic effects as well.
- The basic environmental management issue for the region is how to press for better management practices upstream, when the effects of bad practices are only noticed downstream?

1.4 Sustainable Resource Use

- “Sustainable use” - once a corrective to problems of over-use - may now be becoming a mandate for consumption of natural resources, with almost everything now “on the table” for economic exploitation in some form. It needs to be remembered that a more conservative paradigm may still be appropriate in some cases, as resource use inevitably brings pressures, even if it attempts to be “sustainable.” Even tourism, for example, is not without environmental problems and consequences.
- Although decentralisation has had great successes, not everything is appropriate to be planned and managed at the local community level. It continues to be true that some decisions on land-use and resource-access need to be made – and enforced - at the national level.
- Activities such as CAMPFIRE have helped to strengthen the “demand-side” part of the NRM (natural resources management) equation, greatly boosting the efficiency of markets for natural products. But without equal attention to the “supply-side” there is potential for this to become a de facto open access system. Better control over access, based on a better

understanding of ecological limits, is urgently needed.

- CBNRM (community-based natural resource management) has responded to some important issues - rural incomes, perception of government control of resources - but the ecological parameters for sustainable use are in most cases not understood.
- The Botswana government sees poverty as drought-linked, but 23 of the last 30 years have been droughts, and climate trends seem likely only to worsen. Agricultural policy is unlikely to break the poverty cycle, and hopes are that industrial growth (in the eastern region) will provide a more effective solution. But the environmental effects of this strategy haven't been studied, or the implications for rural resource-users. How fragile is the zone targeted for this industrial concentration? How might it be affected by climate change?
- While sustainable use is an important principle, it is hard to measure long-term sustainability in a region with such variable climate as that of southern Africa. There is no real baseline for distinguishing what is a real trend from what is "background noise." If other areas of Zimbabwe became as arid and drought-prone as Beitbridge, this would have severe consequences. But at present it is nearly impossible to know the chances of such a scenario.

1.5 Population Pressure

- Programs such as CAMPFIRE represent a type of holding action, helping to provide economic incentives to retain wildlife inlandscapes which are increasingly fragmented and subject to human pressures. But it isn't clear how effective this tactic can be in the long-run in the absence of overarching land-use strategies which make much more explicit provision for biodiversity. For example, demographic forecasting is needed to assess settlement trends and land-use options from a biodiversity perspective, since we know that the growth of human settlements is a primary factor in the loss of biodiversity. The choice of development path and the approach to human-wildlife conflict are crucial, as it is most difficult for urban-type development (tarred roads, etc.) to co-exist with biodiversity.
- We need to be alert to the potential movement of environmental refugees, for example people migrating from Malawi to northern Mozambique or to Tanzania; over the long-term this is a real possibility as demographic pressure intensifies and as boundaries within the region become "softer" and allow freer movement.
- Botswana illustrates that rising rural expectations may have as much, or more, to do with intensifying resource pressure than with demographic pressure per se. Thus degradation can continue in rural areas even though most of the development dynamic is in urban areas.
- Population in the region is rising much faster than per capita GDP, so there is no possibility to solve the natural resource problems by importing what is needed – the only realistic scenario is continued extensification. We see this already in Zimbabwe, and will soon see it in eastern Zambia and northern Mozambique. It's essential to understand the ecological implications of this trend.

2 Challenges

2.1 Environmental Consequences of Economic Policies

2.1.1 The policy process

- Even more than in other sectors, environmental policy is mostly reactive: focusing on mitigation of unanticipated problems. The information and scientific base exists to shift toward

a longer-term approach toward environmental management, but policy-makers need considerable education before this shift can take place.

- Governments have little capacity to analyse and interpret data for policy formulation and decision-support. There is more potential for conflict in the region over resource-rights than perhaps any other issue, but governments are poorly equipped to monitor and analyze relevant trends and to effectively use information which may exist somewhere but which remains outside the realm of policy-making.
- The process of policy needs to be better understood rather than focusing on policy as a collection of statements of governmental intention. Until the process is understood, there will be little chance of making policy which is more friendly to the environment. The history of southern Africa has been one of relatively closed policy processes, and while some progress toward transparency has been achieved, this is far from being complete. Also, policy is not understood as a long-term process: groups expect to see quick results on something like land reform, which realistically is going to take a long time. One implication is that groups with a long-term strategy may have more success than those who organise around an immediate issue and then disband if they fail to achieve their policy goal.

2.1.2 Subsidies and indirect policy effects

- Botswana's massive indirect subsidies to the cattle sector are a huge untaxed component of the economy, leaving no incentive for efficiency or consideration of environmental values. EU over-reaction to mad cow disease may be the first serious effective check to the dominance of this sector, as the cost of producing the required documentation may drive all but a few highly-modern producers from the export market for beef.
- In South Africa there is now a move to remove fences and to return land - albeit on a modest scale and in already-degraded ecosystems - to community or conservation purposes. In contrast, in Botswana there is a push to continue fencing-in land as a way of securing private loans. This policy represents a means for elites to capture private economic benefits, at the cost of closing-off the last significant expanse of open habitat of southern Africa.

2.1.3 Public sector constraints

- As government is increasingly stretched financially, one needs to consider the implications of the financial needs of the public sector in an area such as environmental management. What kinds of approaches or reforms might be blocked simply because of government revenue needs? How far can the CAMPFIRE bandwagon roll before it reaches this roadblock? Activities with revenue-generation potential are likely to be attractive to government agencies despite pressures to decentralise and privatise most functions.
- Across the region, policy issues undermine efforts to improve environmental programs. Funding which was promised doesn't show up, counterparts aren't named, key staff are transferred too frequently, etc. Without strong intervention these problems seriously weaken the effectiveness of donor programs, but how much high-level arm-twisting is appropriate for external agencies such as donors?

2.1.4 Resource competition and equity

- Equity issues are at the root of many of the environmental policy questions. Human ecological rights and "ecojustice" may become bigger issues in the future, but at present there is almost no idea what these concepts imply or what policy challenges they may bring to the region.

- Environmental justice may become a key issue within the region, for example if industries are seen to be shifting “dirty” plants to other countries in order to escape domestic restrictions.
- Across the southern Africa region one finds countries typically competing around the same set of resources, as their endowments are quite similar (though levels of development are not). This gives rise to considerable competition (though there has been some cooperation in the tourism sector). Will this change as transborder resources (including parks) become a more significant factor? There’s not yet a good understanding of the implications of changes in investment patterns, of the “interests of capital” in general.
- Trade patterns are shifting, but the new set of winners and losers isn’t yet clear; once this pattern is clearer, one can expect greater political mobilisation around some of these issues. Indeed, inequitable access to resources and lagging standards of living may be the greatest threat to regional stability in the post-apartheid era.
- Everyone realises that there will be winners and losers in the new market-led economy, but it isn’t clear what should be done about this. What can be done about the equity issues? Does government have any credibility for trying to address equity issues? Is there an alternative development path that can build on the rich social and cultural context of rural areas and traditional values, or is this just a form of rural romanticism?
- Resolving competition for shared resources, notably rivers, is one of the toughest challenges for the region. Already the Limpopo basin is over-committed, and soon this could also happen in the Zambezi and Okavango basins.
- As long as the countries of southern Africa remain locked-into the primary producer trap – exporting minerals, energy etc. and importing manufactured products – there is potential for resource conflict around issues such as hydropower development. Within the region, the water is in the north (Congo, Zambia, Angola) while the economic power is in the south: in a climate of perceived scarcity, the potential for conflict is quite frightening.

2.1.5 Structural transition within economies

- Globalisation and market forces are affecting land-use in ways which often override local interests. Foreign exchange needs make it difficult to refuse potentially harmful investments, but it is also very difficult to deal with this set of problems in a proactive or strategic way.
- The political economy of the region is going to change as a function of factors such as the rise of an African middle class, and rapid changes in the role of the state, the dynamics of global markets, etc. This economy will probably cease to be rent-based, but the basis for the formation of new elites isn’t yet clear. Control of land is still seen as the main issue, but this may be declining in real importance. By the same token, if the state is to remain a primary owner of land, some form of tax on this land would be important in order to impose at least some level of efficiency on its use.
- The urban, formal wage sector probably cannot absorb the huge increases coming in the labour pool, thus a key challenge is to empower the small and medium-scale enterprise sector to invest heavily in rural areas, often around natural resources.

2.2 Climate Variability and Global Climate Change

- “This issue of ‘global climate change’ is indeed very nebulous.”

- Climate variability – which is primarily noticed as rainfall and water problems - is the major problem for the region. If climate change trends exacerbate this existing variability, the situation in some parts of the region could become critical

- In southern Africa the domestic political will doesn't exist to address global issues such as climate change if these are seen as primarily issues of developed countries. There's little regional interaction around these issues - except on CITES, which directly affects the local economies. Because generally the issues haven't been seen as very important, the countries have not prepared well for most of the meetings, and have often sent the wrong teams. Perhaps a useful experiment would be to try to convene a regional forum to "rehearse" country presentations before going to global fora such as Kyoto or Buenos Aires. Defining issues around local vulnerability might also help.

2.2.1 Impacts of climate change

- The term "global climate change" brings lots of baggage to any discussion within the region and should be avoided; much more useful is "climate variability" which is far closer to southern African concerns and intimately tied to any discussion of the development agenda. Adopting this semantic change not only facilitates the discussion process, but also signals that the donor is not trying to impose an external agenda but is responsive to the internal agenda.
- In Botswana, some rivers have remained dry since the big drought of the 1980s, and 23 of the last 30 years have been declared drought years. The crop potential for marginal agricultural areas is at stake, with arid and semi-arid zones particularly vulnerable to shifts in growing season yet having little capacity to adapt or find alternative livelihoods.
- Malaria could become a much greater problem in the region with even a slight warming trend, as it would substantially expand the home range of the mosquito. Rainfall patterns also seem to be involved in this cycle, even with a slight shift in normal patterns, thus the potential for indirect health consequences of climate change are worrying.
- A warming climate brings real risks of increased levels of malaria, changes in land-use and wildlife habit due to the range of the tsetse fly, and perhaps will also have effects on prevalence of HIV/AIDS.
- Zimbabwe had experienced declining rainfall levels since the 1960s, with a 2000mm cumulative rainfall deficit since that time. A change in crop potential due to climate change (especially for staple cereals) could either require dietary changes or require imports into regions which were formerly self-sufficient; we can expect that water rights for irrigation could become highly contentious.
- The incidence of "superstorms" in the region may be expected to increase, as even slight warming adds energy to cloud systems and results in higher wind speeds and more intense weather events. This will have impacts on agriculture, but also could indirectly influence sectors such as insurance.
- Climate change could have serious income and equity effects. In Botswana, poverty is heavily concentrated in the western, most arid part of the country. Agriculture could collapse over the next ten years, due to internal economic factors as well as climate variability. This could have severe consequences for poor rural households which have lagged behind during the country's rapid economic growth of the last 20 years.
- Prolonged drought followed by rains has led to a series of farm-dam collapses in Zimbabwe, an unanticipated consequence of climate problems and inadequate engineering measures. This has become one of the main civil engineering issues in the country.

2.2.2 Climate monitoring and research

- The 1997-98 ENSO event (El Niño Southern Oscillation) has been an important experience for southern Africa, and is leading to new expectations of cooperation on forecasting as well as taking retrospective looks at what worked and what didn't. The media frenzy over El Niño – the “hydro-illogical cycle” – has somewhat obscured the importance of what has been learned and the new willingness to work collaboratively on a shared problem with minimal bureaucracy and few formal agreements.
- The shortage of weather observation stations hampers efforts to really track what is happening on climate change, and weakens the database for monitoring and prediction. This is in part due to currency fluctuations which make imported equipment more costly, as well as pressures to trim public service staff levels. Locally-built monitoring kits are being pursued, as well as remotely-monitored stations, but in the meantime much valuable data is being lost.
- Policy-makers are still ambivalent about climate issues; systematic observations would strengthen both the countries' negotiations internationally and internal dialogue with policy-makers.
- Regional cooperation in the area of climate research and policy could be attractive due to the economies of scale as well as linked climate systems. However, the policy-negotiation aspect of this issue means that there will always be a tendency to focus on what is in the interest of the particular country: the region is not sovereign and doesn't negotiate conventions. But developing basic river-basin-scale and regional-scale modeling would be important first steps and could well be done through regional-level scientific coordination.
- The IPCC (Inter-Governmental Panel on Climate Change) has made preliminary efforts to investigate regional climate trends but the level of effort – particularly for Africa - has been inadequate and much more is needed. Water is chronically scarce in this region, and if the trend is toward increased scarcity the consequences could be very serious.

2.2.3 Climate Change Capacity-building

- Industrialised countries approach climate change within the developing countries from the standpoint of what threatens or helps the former; as low contributors of global emissions, most African countries are ignored. South Africa is “lucky” in that it is seen as a key country for climate change and thus is becoming engaged in climate change dialogue much earlier than elsewhere in Africa and is much more “up-to-speed” on these issues than some other countries.
- Climate research is a skills-starved discipline for southern Africa, so donors need to be careful to build on what exists and not draw-off scarce technical and management capacity to sudden new issues and ideas. Win-win arrangements can be found, but everyone must realise there is no surplus capacity available.
- Governments would prefer donor assistance on climate issues to support national-level technical capacity rather than building new regional bodies. Existing regional bodies (notably SADC) are not seen as a strong model, and jealousies over the proposed location of any new regional center could distract attention and outweigh the benefits of a regional approach.
- The U.S. Country Studies Program has recently held a meeting with the private sector in Pretoria to discuss climate-change issues: this is seen as a rare example of contact with an important constituency which needs to become more involved.
- Better linkages are needed with resources such as the Africa Desk of the U.S. National

Weather Service and the National Climate Prediction Center. Secondments of technical staff from southern Africa would be a useful new opportunity for USAID support in this area.

- The Binational Commission recently funded some South African teachers to study meteorology (a training of trainers programme) in the U.S.; this is seen as an unusual but very promising approach for USAID support.
- To some extent the industrial and energy sectors “can look after themselves” on climate-change issues: they are organized, have access to information and resources, and are already involved in policy input to government, thus there is no obvious need for donor assistance in this area (though funding would never be turned down). But a more serious gap lies in the area of awareness of the range of potential climate-change impacts and the relative feasibility of mitigation measures. There is pressing need for outside assistance on this, a topic with great long-term significance. Even the GEF capacity-building project (CAP) focuses on business, industry, and the media while support for the areas of impacts and adaptation are mostly overlooked.
- The region only meets on climate change issues in the context of global meetings: there is no regional forum at present. SADC has tried, unsuccessfully, to convene a meeting for two years. At present those meetings which take place are dominated by foreign ministries because it is seen as a treaty/convention-negotiating issue. But much more technical collaboration could take place for sharing of information, discussion of common approaches, even agreements on definitions: for example, a definition of what constitutes a “drought” (which presently varies among the countries). Could USAID help support such a regional technical/contact meeting process to lay the groundwork for possible broader collaboration in the future?
- Despite the relative availability of environmental information of a descriptive type, the region still lacks any taxonomic or ecosystem-process basis for determining meaningful conservation priorities. At present biodiversity and conservation funding over-focus on what can be made useful to humans, while the fundamental attribute of diversity is neglected. Is endemism more important than ecosystem processes? What is the relative importance of wetland, savanna, or other ecosystems? We still don’t really know what parts of the system are essential to keeping it healthy. Only now is any work being done which could provide a basis for scientifically-based priority-setting.

2.3 Land-cover change and degradation

- Land cover change is going to become a major issue over the next 20 years: this is a key driver not only for climate change but also for biodiversity conservation and other problems linked to ecological changes.
- Because of donor priorities, the region has over-emphasised biodiversity and climate change issues, but desertification and environmental security – which increase the risk of resource conflict - are fundamental problems for southern Africa. Resource conflict is a major risk in this region, from the local community level up to the national cross-border level.
- The future is likely to include increased degradation of the resource base in rural areas, while urban areas continue to become the most important element of the national economy (though the percentage of rural dwellers will probably not drop to the low levels of today’s industrialised societies). Is the solution to embark on reclamation measures for degraded areas, or rather to provide alternative means of income so that people are no longer directly dependent on the productivity of natural resources? In some cases, the degradation may be so severe that it becomes an intractable problem, and is therefore not really an “issue:” it’s just a fact of life to be recognised. “Do you chase the rabbit you have already lost, or the one

you can still catch?”

- The Save river basin is severely degraded: the worst environmental disaster in Zimbabwe. Without action, the Zambezi basin could follow, and the consequences could be even worse.
- Desertification is the major Convention issue for the region. SADC could use technical assistance in completing its policy strategy document; although earlier drafts were rejected by the technical committees, progress on revising the drafts seems to have slackened. SADC is hoping to define regional-level expressions of the Conventions - a Regional Charter on the Environment, for example. This could eventually have legally-binding authority and would thus be a major event for the entire region.

2.4 Biodiversity Conservation and CBNRM

2.4.1 Biodiversity priorities

- The major challenge is how to maintain ecological processes which support biological diversity as landscapes become more fragmented through mixed-use and different kinds of development. Little is known about the potential for ecological collapse, or the resilience of these ecosystems. “Carrying-capacity” is a widely-used concept, but at present very little is really known about long-term ecological constraints and resilience.
- It is only in recent years that we have begun to understand the policing and enforcement costs of making people’s traditional forms of resource-use. Only lately are we allowing traditional healers to have access to medicinal plants within national parks, meaning that we are now recognizing the role humans have played in southern African ecology. This will not be enough, of course: we have an obligation to maintain biodiversity, even that part which has no obvious economic value or other human use, yet it’s existence is part of our heritage. But how can the world help to reward our role as custodian of these resources? Without these forms of recognition, at all levels, we may be on the path to nowhere.
- Could catchments be an effective management unit for biodiversity conservation? There is already some movement toward managing catchments on cross-sectoral lines, primarily for purposes of water conservation, but biodiversity might also be added as an explicit objective. There is talk these days about the need to move from a focus on individual protected areas toward larger landscape levels for biodiversity management, and watershed management might be one opportunity to do this.

2.4.2 Monitoring biodiversity loss

- Botswana can be seen as the heart of southern Africa with respect to wildlife and ecotourism potential, yet a 1993 report by Douglas Crowe showed declining wildlife populations. To date there has been no follow-up to examine those findings, but if they are accurate this would be a disturbing trend given the many favorable factors in Botswana compared to other areas: low population density, many remote areas without development, and a generally positive policy environment. More work is needed to validate the statistics and to try to identify the sources of this trend and what can be done about it.

2.4.3 Habitat loss and ecological change

- Some of the region’s natural areas have been successfully managed to elevate the population of elephant without regard to the effects on vegetation and other wildlife. International interest mainly focuses on elephants, but there are serious risks of long-term ecological change by focusing only on maximising the population of one species without regard to the system as a whole. The combination of fires and high elephant populations may be causing considerable damage in northern Botswana and adjacent areas and affecting

habitat for other species.

- Settlements along the new Trans-Kalahari highway could seal-off the remaining wildlife migration corridors and undermine the option for CBNRM among in that region. As this happens it is more important to begin studying the carrying-capacity of this previously open system to prevent unexpected ecological problems.
- Population crashes appear to be occurring more frequently for flora than for fauna, in part due to overgrazing and farming practices which cause changes in the soil. Most attention has focused on wildlife for evident reasons, but widespread ecological change may very well be more pronounced at the floristic level, a point not widely recognised apart from the fynbos biome.

2.4.4 Alien/exotic species and ecological restoration

- Alien species are an increasing concern in South Africa, and a highly visible program is the “Work for Water” initiative which is removing exotic trees (mesquite, eucalyptus) from water courses. Biosafety and “GMO’s” (genetically modified organisms) are going to be the next phase in this program, and this includes a number of areas not usually thought of as environmental issues: for ex. bird breeding, and the presence of alien subspecies of mammals which are native to the country.
- Research on indigenous forests would be useful to compensate for the over-reliance on imported tree germplasm, mostly from North America (pine). Plantations of exotics have replaced natural forests and there is little knowledge about native species.
- Rehabilitation of degraded areas is a more important objective for South Africa than trying to generate funding support for continued protection of more-or-less intact areas.
- SADC ministers consistently express concern about water hyacinth infestation within the region, but so far no donor has taken up this issue; elsewhere in Africa (Lake Victori) there has been better response on this issue.

2.4.5 CBNRM approaches

- CBNRM programs are typically based within governmental agencies which lack “people skills” as well as resource-management expertise other than wildlife. This opens opportunities for the private sector, as much of the necessary work (meeting facilitation, drafting of resource agreements, etc.) could be done by 1-2 skilled persons; one doesn’t need a classic NGO for these functions.
- In Zimbabwe, CAMPFIRE has not had as much impact as it could in related issues such as land reform, due to being categorised a communal area intervention, thus the obvious lessons aren’t necessarily being spread as widely as they should.
- Despite its contributions, CBNRM is treated as a subset of the wildlife sector, which itself is a subsector of the environment. Thus the broader implications for governance and sustainable development policy as a whole haven’t been widely recognised. Particularly at the district level, CBNRM has the potential to effectively link the many entities involved in resource management – something which is hardly possible at the level of central government ministries. But for this to happen, the understanding of the policy process has to change: it needs to be seen as a firstly a stakeholder process, and not something compartmentalised, as it is now, into “wildlife” or “agriculture” or “energy” or similar arbitrary categories.
- Environmental NGOs such as WWF have taken as their starting-point the threats to various

ecosystems or species, while USAID seems to have had food security as an underlying theme for much of its work in the region. So USAID supported wildlife activities because they increased rural incomes and thereby improved food security.

2.4.6 Access and use rights

- Access to biological resources is becoming a more politicised issue. Bioprospecting may become a hot topic but at present there is no benefit for the local communities on whose land these resources exist. Present abuses could well lead to a political backlash in the form of draconian restrictions; a regional policy framework might be a helpful way of avoiding extreme positions (on either side).
- The next generation of urbanised Africans may take control of wildlife for recreational purposes, as Europeans did earlier. Could we eventually see wealthy individuals – an African Ted Turner, for example – buying up remaining large tracts of wilderness for private leisure, or developing timeshare vacation resorts?

2.4.7 Protected Areas

- Sites of high botanical interest are often very small in area, so in principle it wouldn't be very hard to provide some form of protection once these have been identified, given a land-use planning system able to respond to such information.
- Local communities have historically paid the price for conservation, through criminalisation of their behavior and barring access to resources within protected areas. A more positive approach is now being tried through mechanisms such as CBNRM.

2.5 Agriculture

- The region has a strong and well-capitalised agricultural sector, and while excesses and failures are getting a lot of attention, there are strengths in this sector which should not be overlooked. Perhaps there would be environmental benefits from more clearly defining the desirable aspects of conventional, commercial agriculture, alongside other approaches better matched to indigenous or communal systems. Perhaps a "master farmer" standard could be promoted to identify good practitioners and reward better environmental stewardship?
- The miombo biome has very good long-term potential for agriculture, but there's no plan at present that tries to steer agriculture into one zone or another based on ecological criteria.

2.6 Water resources

- The fundamental environmental issue is water: the variability of rainfall, and its proper use throughout the seasons. The number 2 issue may well be loss of forest canopy cover, though this has not been widely viewed as a problem up to the present (and it feeds back to the water problem through long-term watershed deterioration). The primary production of energy through biomass conversion is the no. 3 long-term issue: the possibility of a long-term "Malawi scenario" for the rest of southern Africa should be taken seriously.
- Although water is the main environmental problem, because of its acute scarcity, it directly links to other important issues, notably land-use (which in turn affects biodiversity). Economic hardship, drought, demographic pressure, and political insecurity have led to changes in settlement patterns across the region, without regard to environmental constraints. With adequate water many of these pressures could be managed, but with increasing water scarcity the pressures become more critical at the same time that ecological degradation

increases. In the medium-term, land-use plans could at least help to demarcate areas of particular productive potential or particular vulnerability.

2.6.1 Water scarcity and demand management

- Water is widely seen as the most serious resource problem for southern Africa, and people identify water scarcity as the most likely source of future resource conflict in the region. Recently Botswana and Namibia have had a military stand-off along the Okavango; hard to imagine a few years ago, such confrontations could become more frequent in the future.
- South Africa and Namibia have led in developing water demand-management techniques, including for irrigation; Botswana and other countries are still supply-oriented but will gradually follow the trend of demand management (this is also true in the energy sector).
- Irrigation accounts for the largest share of system losses in the water sector: there is great potential for improvement in the management of irrigation water.
- Water levies are being proposed in industries which make heavy claims on scarce rainfall (i.e., plantation forestry in South Africa); this could introduce new models for costing scarce resources. Concepts such as “virtual water” are also being discussed.

2.6.2 River basin management

- The rivers are typically political boundaries, so it has been around river basins that some of the most advanced institutional arrangements have evolved in southern Africa. But it is also here that there is serious potential for conflict arising from resource scarcity.
- River basin commissions represent one type of political grouping to address shared-resource problems around a single issue; the challenge now is to develop these basic arrangements and help them to operate more effectively.
- River basin and catchment management must pay more attention to downstream effects, such as flooding. Decisions are made in upstream countries without consultation with downstream communities affected by these decisions. Flooding of this type is becoming a big problem in Mozambique, for example.
- Only in South Africa is there much awareness of the ecological aspects of river management in addition to flow and demand issues. The potential for better management which avoids costly restoration after damage has been done isn't yet understood in most of the region.
- Tanzania is introducing a unique approach in this region, undertaking resource management on a watershed basis rather than by administrative unit. This has important potential for more effective NRM and its progress should be monitored.

2.6.3 Coastal Zones and Marine Resources

- Coastal zones have had insufficient attention; the WWF "Global 200" ecoregions programs identifies major portions of southern Africa coastline as facing critical levels of threat, but most conservation efforts so far focus on relatively less endangered inland ecosystems. Most environmental groups in the region know almost nothing about the coastal zone or its problems, and the same is true for the donors. Peace in Mozambique (and hopefully in Angola, at some point) will make the coastal areas much more visible and accessible.
- Perhaps the coastal areas could be declared “Key Resource Areas” in order to draw attention to their environmental and economic importance? These areas have been long-neglected,

yet as they are intimately linked to ecosystems inland – for example upland deforestation has caused uncontrolled flooding in coastal areas – comprehensive management of these coastal areas would require systematic attention to inland ecosystems as well.

- The access to coastal resources in South Africa remains heavily imbalanced toward non-black groups, and it is a major policy issue for the government to more effectively address this issue.

2.6.4 Fisheries

- Fisheries are likely to become a more important environmental priority in the region.
- Heavy-metal pollution of important commercial fisheries is already a problem due to lack of control over industrial discharges.
- Depletion of fish stocks is also likely to get much more attention.
- A substantial share of the region's coastline is controlled by politically and technically-weak states (Mozambique, Angola) effectively unable to control over-exploitation, abuse of flags of convenience, etc. Compared to the forestry sector, SADC has done little to address coastal issues, which are complicated by such factors as the presence of EU economic interests (e.g. Spanish fishing fleets, or French control of waters around some Indian Ocean islands) and absence of information on the size and resilience of the resource.

2.6.5 Monitoring and data

- Data collection in the water sector is very poor: in some areas, only 10-20% of the former statistical systems are still functioning, thus there is often very poor or missing data on river flow; even more rarely is water quality data being collected. Yet most of the innovations being proposed for water resource management presuppose the existence of adequate information.

2.7 Urban growth

- A key strategic choice concerns the relative importance of urban and rural areas for development. In South Africa and Botswana (and to lesser extent some of the other countries as well) rural economies depend on remittances from urban areas; this limits the potential to make rural areas the mainspring of development. So urban and industrial issues are likely to become ever more important, yet continued rural poverty will accentuate trends such as soil erosion and loss of biodiversity. The implication is for some tough choices around investing in the stronger (urban) areas, on one hand, or investments aimed at mitigating natural resource degradation in rural areas, on the other. Assessing the net social and environmental benefits and costs of such choices will be extremely difficult.
- Urban and industrial issues are not yet critical in the region, but we should learn the lesson from the large-scale land misuse which has already taken place in rural areas, and not wait until urban problems reach a similar critical stage before addressing them.
- Urban growth rates are rapidly increasing political demands for better services (water, housing, health, schools, roads, etc.) and in cities such as Harare, leaders are increasingly being called to task for shortcomings in these areas. Competition for resources, particularly water, could become acute, with rural areas likely to lose out in most cases.
- The rise of mega-cities (approaching the scale of Cairo or Lagos) will be a new phenomenon for southern Africa, with massive new problems in providing adequate transportation,

housing, energy, and water.

- Should policies be introduced now to prevent over-growth in metropolitan areas, by steering investment toward secondary centres?

2.8 Pollution, Industry and the Environment

- Green issues have been the main focus of attention so far, but as the region industrialises brown issues will become increasingly important. This could well evolve into distinctly different zones, each with specific resource-management and environmental needs depending on whether these areas primarily face green or brown (or blue) issues; in many cases these zones will cross political boundaries.
- Pollution and other industrial issues are likely to become the key issues in South Africa and perhaps also in Zimbabwe, while for the rest of the region natural resource rights and access will continue to be more fundamental.
- Transboundary pollution is going to become another issue for the region, not only with respect to water-borne effluents, but also through atmospheric processes. A large “air bubble” slowly circulates around southern Africa, taking sulphur dioxide from South Africa as far north as the Equator, while in the winter much of the smog visible in Johannesburg originates from much further north.
- Industries are beginning to view environmental standards (i.e. ISO 14000) as a market necessity, fearing that these will eventually represent non-tariff barriers to southern African exports. Industries in the region were slow to respond to the ISO 9000 (quality assurance) initiative, and now there is a feeling development that the region should be more proactive to avoid missing-out on the initiative to develop environmental standards.
- In Zimbabwe there are beginning to be regulations addressing specific types of industrial pollution, but there is a general attitude that the economy cannot afford the job loss of higher standards, and cannot afford the capital costs of improved technologies. This is likely true for other countries as well.
- “Clean production” approaches are more appealing to southern African industries than end-of-pipe technologies because of the high cost of retrofitting plants. Cost-accounting is proving to be the main barrier for most industries, so more focus needs to be on providing solid financial data to show the long-term financial benefit of cleaner production, preferably with numbers produced by accountants rather than NGOs or advocacy groups which may be somewhat mistrusted by industry.
- In this region industrialists tend toward a mindset which wants to see an approach or technology used somewhere else before trying it here, which is odd given the history of sanctions. This cautious mindset delays adoption of cleaner technologies even though in many cases the cost-efficiencies would be very high and very beneficial to the bottom-line.
- The Eastern Rand area resembles East Germany or Poland from the standpoint of industrial pollution. There are huge opportunities for clean-up of sites and plants, but there are also fears over costs and potential job impacts. But ‘Environmental Cost Management’ is rapidly gaining ground as an effective means of finding ways for industries to reduce long-term costs through better environmental practices.
- Even in this sector, donors tend to work through conventional NGOs, though they typically lack technical credibility with industry. Donors should not overlook other mechanisms for disseminating environmental messages, including professional societies (e.g. engineers, cost-

accountants) and other industry groups (CEO membership societies).

- Emergent businesses (African entrepreneurs) represent a major long-term area for strengthening environmental awareness - generally this sector has no environmental controls or policies, and these groups are likely to grow rapidly in the coming years. But political sensitivities pose a problem: such standards may be seen as a 'white ploy' to stifle emergent business competition.

2.9 Energy Policy

2.9.1 Perverse effects of energy policies

- South Africa's industrial policy attracts foreign investors by maintaining low energy prices without regard to the long-term costs of this approach. What will happen to factories lured here by cheap energy if mitigation measures under the Convention mandate increasing energy prices?

2.9.2 Traditional fuels

- Despite South Africa's relatively high (by African standards) living standards, fuelwoods account for a large share of energy use, and charcoal use may be increasing in absolute terms, with negative environmental consequences. There is renewed interest in the potential of high-efficiency cookstoves as a means of conserving biomass fuel and protecting remaining natural forest areas; a study on the topic in South Africa has recently been done and support is being sought for a larger initiative.
- Despite the industrial base of South Africa, a huge share of the population has little access to commercial energy, and still relies on fuelwood. Apart from environmental effects of over-reliance on biomass use, the new political climate is inevitably going to result in stronger pressure to provide electricity and fossil fuels for the lower-income groups. The obvious candidate for much of this investment is coal, which brings serious drawbacks from the standpoint of CO₂ emissions. Renewable energy may become more attractive, but until the present policy structure is overhauled this is likely to be an elusive solution.
- Botswana lacks an energy sector DSM (demand-side management) program, and the Power Commission remains somewhat outside of these discussions. They will likely become engaged if other power sector agencies in the region are also seen to be active in this area, but for now the discussion remains centered around supply issues. Government policy, with funding support from Germany, also continues to promote domestic coal to substitute sources such as fuelwood.
- The heavy dependancy of rural fuelwood use is a ticking time-bomb. Urban growth outstripping the ability to expand commercial sources of energy will lead to greater use of fuelwood and charcoal in cities, which could rapidly aggravate what is now primarily a rural problem.
- Rising expectations from economic growth will probably increase demand in rural areas for electrification, but the capital costs of installing conventional transmission systems in thinly-settled arid and semi-arid zones will make this prohibitive for a long time. Village-scale PV (photovoltaic) systems may be one option, but declining real rural incomes will make cost-recovery problematic.

2.9.3 Renewable energy technologies

- Experiments with solar power for Botswana villages were encouraged by high-level government officials; it had been assumed the rural poor would benefit but in practice merchants and other wealthier people were the first to adopt these technologies.
- From a climate-change perspective, hydropower is preferable to coal, but the ecological effects of hydro on river systems are also troubling, and it is not easy to calculate the net environmental costs and benefits of these options.
- SADC is courting the Democratic Republic of Congo (ex-Zaire) for its potential to supply water and energy, but the obvious political and civil instability in the DRC illustrate the risks of this policy. Even if successful, these intra-regional resource transfers are going to represent foreign exchange pressures on economies which have major currency problems.

3 The Way Forward

3.1 NGOs and Civil Society

3.1.1 NGO roles and functions

- In most of southern Africa civil society is quite strong even though institutional NGOs in the Western sense are still weak. Civil society is playing an increasingly important role in more and more issues, in proportion to Government's declining role. What is still needed is better definition of the inter-relationships, which are evolving but remain unclear in many cases.
- NGOs in the region tend to operate in "protest-movement mode" rather than from any systematic stance toward policy formulation. Those few NGOs who have worked on policy topics such as land reform, have mostly either served as *de facto* consultants paid by donor agencies, or served as a base for northern researchers who provided the technical expertise. There is a great deal of capacity-building needed to provide NGOs the capacity to develop more sophisticated approaches to policy change.
- NGOs are often used as quasi-consultants to government, and there is reluctance for them to play a more explicit advocacy role which may set NGOs in opposition to government projects or policies. Donors have not done much to encourage a broader view of NGO roles.
- Botswana has led the way in addressing new issues through ad hoc discussions of policy issues involving NGOs, usually with considerable transparency. But outside lobbying is not regarded favorably, and often deepens resistance.
- In South Africa, USAID funds too many groups whose sole purpose is to criticise the Government. NGO's work more effectively in partnership with the government, when both sides agree what area of work is mutually beneficial and the NGOs focus on doing the work government is not very good at doing itself, such as extension, people-level services, etc.

3.1.2 NGO Financial and institutional sustainability

- In the present funding environment NGOs need to become increasingly competitive in selling their services; how far can this process go without unduly restricting their original role as NGOs?
- At present the NGO sector is simply spread too thin, trying to respond to all the issues identified by donors. Perhaps they should focus on one theme, such as economic growth for rural areas, which would have potential linkages to many other topics such as energy,

wildlife, housing, etc.

- Since UNCED in 1992 there has been a wholesale shift within NGOs to emphasize global issues such as global climate change, biodiversity, and now desertification. But the sustainability of groups trying to build core competency in these areas is doubtful, and this in turn affects their credibility.
- The phenomenon of NGOs working as quasi-consultants for donors or governments poses problems as donors are withdrawing and the public sector is increasingly hard-pressed financially. This places NGOs into a highly competitive but also short-term, product-oriented perspective just to survive. The economic situation in the region will determine the prospects for NGOs and civil society. With five more years of real economic growth, the situation could be quite different. There is no real economic recovery yet, but at the end of this period we could see a much more prominent role for civil society, and acceptance of a much-reduced role for government.
- Donor funding practices reinforce the NGO role as quasi-contractors implementing programs of governments and donors. The absence of tax incentives for individual donations inhibits the development of a membership base representing perspectives more independent of official policies (whether of government or of donors). Also, donor funding tends to be channeled toward a small set of favoured groups, which creates tensions and distorts roles within the NGO community.

3.2 Environmental Education and Awareness

- Most African countries feel that food production is more urgent than environmental protection. Environmental protection is seen as a developed-country issue. South Africa, however, is beginning to develop long-term awareness of the role of natural resources and the environment in shaping the country's development options, and is building these concepts – especially water, weather and climate - into the elementary school curriculum. This is seen as one key to building long-term public support for measures which will be necessary as these constraints become more acute in the future, and a key to boosting policy-makers' level of awareness.
- Environmental issues in the region are generally linked: one may be causative, and another the result, so there is a linked 'cascade' of environmental issues and consequences. The problem is in knowing how to attack this Gordian knot. In the long term, environmental awareness and education is the key: even simple brochures in local languages can be very effective methods for bringing about change.

3.3 Cross-sectoral Coordination

- In Botswana, cross-sectoral coordination seems to work better at the district level than at the national level. In the districts, agency staff (including NGOs) know each other and work informally quite easily through on-going bodies such as District Development Committees. At the national level, in contrast, the Ministry of Finance and Development Planning plays a much more dominant role than any single body in the district context. It is also much harder to have effective day-to-day coordination in the capital city as the number of agencies and individuals involved is so much greater.
- The ENSO (El Niño) episode of 1997-98 illustrates that people can come together around a specific issue, but it also illustrates how hard it is to effectively coordinate and work efficiently. Eleven different groups in the region are working on ENSO-related climate monitoring.
- One approach might be to build somewhat informal teams around a shared task (i.e. to

develop a specific product) rather than around an institution. This avoids creating a new centre with assets to be fought-over, and allows “virtual” teams to come together as long as there is a clear purpose, and to disband once that purpose has been achieved.

3.4 Governance and public sector reform

3.4.1 Decentralisation of decision-making

- Decentralization hasn't yet pushed down to the most relevant levels for NRM; usually it only shifts roles from the capital city to district offices, but the district staff typically remain too distant to effectively engage in many of the most serious local-level land and resource issues. Villages and wards still have no legal standing and generally remain outside the discussion. Empowerment of district officials is not the same as empowerment of communities.
- In South Africa, the provincial level now has responsibility for issuing CITES permits, but generally technical capacity at this level is much less than at the national level. This has seriously compromised the effectiveness of CITES, especially in the less-prosperous provinces.
- South Africa's new constitution has greatly strengthened local and provincial responsibility for resource management and conservation, while central agencies, such as National Parks, have had their authority greatly circumscribed. This has clear advantages, but also means that local economic interests are relatively more important, and the definition of what is “sustainable” is increasingly the key issue. Also, provincial budgets for conservation are minimal and are unlikely to attract local political backing, so there is a long-term risk of disinvestment in this sector.

3.4.2 Public-sector down-sizing

- More and more functions are being contracted-out by governments; how far is it possible to go with this in the environment sector? What functions are best kept purely public-sector? One approach may be privatisation of functions such as environmental monitoring, rather than assuming that the public sector must perform this role.
- Is governmental capacity measured by executive efficiency? At present the people depend on government for nearly everything. Rethinking government roles needs to go much further in understanding why things don't work, rather than trying to streamline or upgrade functions within the framework of existing assumptions. But simply shedding tasks as a result of short-term budget pressures, without a larger strategy for redefinition of responsibilities, is a dangerous approach.

3.4.3 Use of market incentives

- Privatisation and decentralisation are taking place in the water sector, and may have lessons for other resource sectors. Concepts such as “virtual water” and tradeable permits are also being discussed.
- South African national parks need to concession-off much more of the management of the private sector; catering and lodging services are inefficient and substandard, and cling to an out- moded type of public-sector service delivery which cannot compete in market-driven contexts.
- Rural Africans may no longer be peasants living under classically feudal conditions, and resources – including land, the most fundamental - are increasingly coming under some form of private management. Yet one point that is often missed in this transition is the potential for

forms of management which remain collective in nature yet are not statist. An important contribution of CAMPFIRE has been to demonstrate the potential for entrepreneurial, market-oriented management which retains a group orientation while avoiding state control.

3.4.4 Factors inhibiting change

- Governmental fears over the loss of patronage opportunities, and political sensitivities over property rights, are powerful constraints on taking the decentralisation and tenure movement to a logical conclusion. For this reason many of the ongoing efforts toward capacity-building may not achieve very much, until this underlying resistance can somehow be addressed.
- The private sector is still viewed with some mistrust in parts of the region, and is seen as representing outside interests. So when the private sector tries to become involved in rural areas, for example in joint ventures for ecotourism, this often provokes a government reaction to intervene.
- CBNRM has made many improvements in the area of consumptive-use rights, but generally non-consumptive use (i.e. ecotourism) has not benefited because this area comes under different legislative acts. Tourism revenues remain quite centralised and it has been difficult to make changes in this system. Somehow ways need to be found to bring these more closely together.

3.4.5 Governance

- Even very good policy work often has little impact because of an unresponsive political system, so eventually the solution everyone comes to is to “sort it out at the local level.” CBNRM can be seen, at root, as a governance activity as much as an environmental one. But while the community can be the entry-point for NRM practices at a micro-scale, at larger scales such as river basins, one needs other approaches, and it’s harder to get around the problem of unresponsive government. Making linkages to global issues is another very difficult task.
- In most rural areas government in the modern sense represents a type of “overlay,” which has been arbitrarily placed above the traditional authority and which is accorded little legitimacy in the eyes of local people. This accounts for much of the ineffectiveness of government initiatives in rural areas. In the bush, nothing happens without the sanction of traditional authority. What things can traditional authority do well? How can these roles be reasserted and revitalised with transparency and accountability?
- In southern Africa, ideas about governance are going to be critically important issues in the next two decades or so; and the issue of local governance is inextricably linked to tenure and resource access. Activities such as CAMPFIRE have created an opening to address these issues from the bottom-up, and in the long-term this may unleash political dynamics which will have powerful implications, with local people demanding more rights, access and accountability from government. With respect to resource-use, one can already see that people are becoming more assertive about their rights. At the same time, it is useful to match this bottom-up dynamic with an effective policy dialogue on governance at the highest levels. But donors need to understand that real accountability is a process, not a structure which can be introduced from the outside.
- Governance is typically defined in terms of the operation of governmental structures, but from an environmental point of view, it would be more useful to take the ecosystem or the landscape as the starting-point, rather than the government unit. Start on the ground, trying to define what is optimum for the purpose of effective management of that ecosystem in a practical way (which will doubtless include some form of redefinition of governance roles),

rather than focusing on governmental architecture for its own sake. We have learned that the latter often has little effect on resource-use and management decisions on the ground.

3.5 Tenure and Resource Rights

- Historically the colonial and post-colonial State has turned what had been self-regulating, resource-managing communities into open-access systems. Generally the State has neither technical capacity nor political legitimacy to effectively regulate and establish use-limits (as was exercised in traditional systems). Is the only solution to revert again to clearly-defined local responsibility?
- Land and property rights are deeply-rooted issues and not well understood; policy prescriptions are sometimes facile and lack solid understanding of local nuances or cultural norms, and as a rule, not enough testing and practical experience is applied. Yet if done well, approaches such as CBNRM have strong positive effects on governance, economic empowerment and sustainable natural resource use.
- In southern Africa the relationship between people and natural resources (trees, animals) has changed greatly during the past 50 years. Although there is great interest in ecotourism, what does it have to offer with respect to the relation between Africans and wildlife? Can the rather limited scope of programs such as CAMPFIRE be broadened to begin rebuilding a healthy economic and ecological relationship between Africans and their natural environment?
- A hypothesis needs to be tested, on the link between security of resource tenure through mechanisms such as CAMPFIRE, and a consequent desire for smaller families once the primary economic incentive for more children – economic insecurity - no longer obtains.

3.5.1 Land hunger and potential conflict

- The example of Rwanda holds serious lessons for southern Africa. Already, land hunger is a reality in some places, and the trends point to greater stresses around this issue: for example, Zambia has had disputes over local boundaries, Malawi faces stresses due to a declining fish catch, and almost everywhere there is pressure to reclaim land from parks and protected areas.

3.5.2 Strengthening control over access

- Africans believe in, and respect, ownership – whether individual or communal. If the State asserts ownership of land, forests, etc., people will believe these are actually "non-owned" assets. Local chiefs or other local authorities are far more capable of representing the concept of ownership than any central government entity.
- Africans have respected the concept of private land ownership, although this was not a traditional concept. When Zimbabwe's Land Commission was holding public hearings, it was not so much the land held by white farmers which was eagerly sought by rural people, but the land held by the government forestry commission. This ostensibly "public" land was widely viewed as being without a true owner and thus available to meet local needs.
- Zimbabwe's Traditional Leadership Bill could be significant, making it easier to integrate a whole set of environmental problems (water, energy, wildlife, land-use) around the theme of access and use of natural resources. These issues have been getting attention, and there has been a push to decentralise (and also to privatise) at the same time, but the unifying theme has been missing, with the partial exception provided by the CAMPFIRE program.
- Mozambique is going to experience significant change in the coming years, with strong

pressures for investment and new kinds of activities appearing in a country with a very weak institutional base, particularly in the countryside. Village assemblies may become central players in many resource-use decisions, perhaps with significant levels of authority being ceded to them by the central government. In the past the communal areas have had few formal mechanisms available other than cooperatives; what other options are being considered?

- In the past land was seen as something that could be owned, but models such as CAMPFIRE have developed a form of community proprietorship similar to a shareholding company. One unanticipated consequence is that members may become reluctant to “dilute the value of their shares” by admitting new members. This is a new phenomenon, and while the improved resource management benefits may outweigh the drawbacks, these problems can be significant, especially where new settlers are concerned.

3.5.3 Natural resource management

- The boundaries which once defined sectors such as “agriculture,” “conservation,” and “natural resource management” are often misused, and tend to obscure important realities. In most cases we are really speaking of the management of a bundle of resources which do not neatly separate into such categories.
- Since we are trying to develop local-level capacity to directly manage resources as a way of producing better environmental outcomes, it is critical to learn how to boost resource managers’ ability to think about options with a long-term perspective and even to consciously consider alternative scenarios.

3.6 Regional and Cross-border Issues

3.6.1 Management of regional resources

- In discussing this region, one should bear in mind that proximity doesn’t necessarily mean similarity: countries often take different views of resource-use issues (e.g., Zambia “breaking ranks” at CITES). This complicates regional approaches. Namibia’s approach to cattle is very different from Botswana’s, which has led to tensions and recriminations about responsibility for disease outbreaks and mitigation.
- For environmental purposes it’s useful to begin thinking of the region as a set of linked ecological units, and trying to study and manage them from that perspective, rather than as a collectivity of political units. The river basin commissions represent a first step in this direction, though they mistakenly focus most of their effort on regulation of water supply and demand, and neglect the broader ecological realities. Not only is there an issue of a shared resource to be managed (treating water flow much the same as power on an electric grid), but a full array of ecological factors interacting in complex ways.
- If it were possible (politically and practically) to harmonise land-use policies along the region’s borders, everything of importance (to conservation) would fall into place. But existing structures such as SADC are rigidly compartmentalised along traditional sectoral lines (agriculture, mining, etc.). Can cross-border approaches successfully evolve from existing politically-defined groupings, such as river-basin commissions, to develop more effective management units (spatial development initiatives, cross-border parks)?
- Regional monitoring of wildlife (and later, of other shared resources) would be a good starting-point for shared management. There has been a modest start in this direction with respect to monitoring of elephant populations but not enough followup.

- In some cases the provincial governments are more accustomed to working informally with counterparts across the border on shared-resource issues; in South Africa provincial governments have been given more autonomy to manage cross-border issues.

3.6.2 Regional leadership issues

- Environmental NGOs in southern Africa are grouping around IUCN as a regional focal point as a means of side-stepping national sensitivities over the perceived tendency for South Africa almost inevitably to take leadership in every sphere.
- Harmonising regional policies would be very useful, but is difficult to do when national contexts vary so significantly. Some form of baseline agreement may be necessary, in which the countries agree what it is they are trying to achieve with respect to the environment (a certain level of water flow/quality, a certain size of wildlife population ranging a certain territory), then focus on specific policies which influence the achievement of these targets; this may be more realistic than a broad-brush attempt to harmonise a panoply of policies (which are often almost intractable even within a single country).
- Anyone can identify regional issues, but it's much harder to figure-out which of these can be addressed with regional approaches. The SADC model hasn't been very dynamic, but there are great sensitivities around pushing forward with other models, and whose ideas are being put forward.

3.6.3 Regional trade and economic integration

- Trans-shipment of listed timber species under CITES appears to be a growing phenomenon, with the WTO agreement resulting in a decline in inspection. For example, wood from Mozambique is shipped to Malaysia via Durban: Mozambique has no export controls, yet the timber does not technically enter South Africa, which no longer has the right to inspect and regulate such trans-shipments. Regional coordination may be necessary, but no framework exists for such a system.
- A key challenge for the future is how to consolidate development in poorer areas of southern Africa, which has broadly similar resource types and pressures on the natural environment. Ironically, the arrival of peace and stability may now be bringing new environmental pressures through accelerated investment in roads, ports, factories etc. across borders which were previously very restricted. At the same time, public sector budget cuts are probably reducing the flow of resources to less-favoured areas, while private capital rushes in to more attractive zones. Population movements could be one result, bringing a series of economic, social, and legal issues with them: it is not clear how governments plan to deal with such a scenario. Also, much of the new economic activity is in areas (i.e. Mozambique) with minimal technical and regulatory capacity to address environmental problems.

3.6.4 SADC and 'Spatial Development Initiatives'

- South Africa's Spatial Development Initiatives (SDI) may offer a model for integrating many sectors around a specific project, such as an investment zone or a transport corridor. Some of these are cross-border efforts, and may become a more-favoured approach to coordination than the rather bureaucratic SADC structure which often seems unable to move. But other countries are sensitive about South African leadership of such initiatives, thus they may cling to SADC. It is easier within a governmental framework to maintain at least the appearance of equality, ensuring that each country has a certain number of offices, research centres, and so forth. How can we acknowledge the realities of different capacities and move on to attack real problems?

- South Africa's peculiar history is a significant determinant of what can and cannot be done in the region; for example, the development corridors (within South Africa) are in many cases designed as measures to undo the handiwork of apartheid; by the same token, the country's leadership is reluctant to play too forceful a role in the region because of the militaristic nature of the previous regime. So there may be more leadership exercised through setting of examples, leaving other countries free to adopt or adapt what they find useful and appropriate to their situation and preferences.
- Within SADC most environment and land-use responsibilities (including water) are within the portfolios of Lesotho and Malawi. In addition to limitations in the area of technical capacity, SADC's institutional arrangements have never succeeded in treating environment as a cross-cutting issue. Maybe a new organising principle such as "sustainable development" could be found to replace the current sectoral jurisdictions, but at present this concept seems to be all things to all people.
- Structures such as SADC have not made good use of capacity-building inputs from donors, in part due to high staff turnover rates as well as institutional complications. It would be better to work with existing in-country agencies, and try to spread the work throughout the region.

3.7 Environmental Assessment

- Laws mandating the use of EIAs (environmental impact assessments) present serious capacity problems. In South Africa there is now a massive EIA backlog, with 30 to 40 new applications per month, and litigation is now coming into the picture as well. How will countries like Botswana cope with such a situation (even though at lower absolute levels)?
- Rapid progress is being made to mandate EIAs for new investments, but the capacity to process these in a timely way is uncertain. Already a few cases have been decided by default as government agencies were unable to provide the necessary documentation in time.
- In the southern African context not everyone is convinced that the U.S. approach to EA's is practical, entailing intensive and somewhat legalistic review of specific projects one by one, often involving complex and lengthy litigation. Broader strategic environmental assessments may be more useful, to establish targets and limits for a sector as a whole, for example to determine how many power plants may be acceptable and their total level of emissions, rather than focusing on each new plant in isolation from the total impact.
- NGOs may be more likely to participate in broader sectoral reviews or processes which establish long-term targets, as compared to participation in EA's which may entail advocacy for or against a specific project or plant. Many NGOs are still nervous about advocacy and governments tend to react negatively to criticism of the type taken for granted in industrialised countries.
- Donors have been slow to catch-up with the shift from EIA and regulatory approaches to broader environmental management approaches. South Africa, with the greatest level of technical capacity, is also where this shift is the most pronounced. The other countries may be expected to move in a similar direction, but there the donors could perhaps play a more important intellectual leadership role.

3.8 USAID and Other Donors

3.8.1 Donor trends

- With the end of apartheid in South Africa and budget pressures at home, many donors are now cutting-back, and regional approaches may be the only viable option in many cases.

While this has obvious efficiencies, it may lead to less-detailed understanding of country-specific issues and opportunities on the part of donor staff. In some countries, USAID may become the only donor agency retaining a significant local presence, giving it more sustained contact with policy-makers and technical agencies, and thus a stronger potential leadership role.

- Donors are leaving some of the countries of southern Africa, and rising incomes in some of the countries makes them ineligible for many donor programs; can the region as a whole become a recipient of donor assistance in place of bilateral programs?

3.8.2 The role of USAID: strengths and weaknesses

- USAID has been perhaps the most significant donor in the area of decentralisation and tenure issues. CBNRM was the vehicle in this region, which demonstrated the importance of reforming governmental roles beyond the technical and local interventions of such programs as CAMPFIRE. It would be important now for USAID to build on its institutional expertise and help link the new transfrontier work (i.e. protected areas) to the CBNRM network.
- USAID has been the keeper of much CBNRM knowledge; other donors are often not as well versed in this issue. How can AID share this knowledge more effectively?
- USAID has an effective, well-targeted capacity-building approach in its NGO “STRENGTH” program; how can such skills be applied to actual decision-making situations intimately linked to issues of policy and power, such as in the natural resources arena?
- USAID seems to have little flexibility within its SO’s (Strategic Objectives) which appear arbitrarily defined, not well-linked to country priorities. Even high-level US policy statements of intent seem unable to become translated into USAID actions at the SO level. For example, the US-South African Binational Commission has a committee on water and the environment, yet for some reason USAID seems not be well-linked to this – though it is a high-priority for the country.
- South Africa would like to see the environment given higher priority for USAID, perhaps through a new SO, but how should this idea be pursued? Could USAID respond to a simple policy/priority statement from the South African side, or is a long process of formal evaluation needed before deciding to either expand or spin-off the existing SO, which is in the area of housing? There’s a very fine line between ‘urban’ and ‘environmental’ issues, and the way USAID has defined categories doesn’t fit South Africa’s present governance structure. Can’t USAID be more flexible and more responsive to priorities as the host country defines them?
- USAID’s role in CBNRM in the region has perhaps run its course; the model is now being pushed in places where it is not really wanted, while plenty of local expertise exists to carry in on those areas in which demand exists.
- USAID doesn’t work enough with government decision-makers and policy-makers in the process of developing programs: especially in the regional NRMP program, USAID has tended to sidestep this group.

3.8.3 Areas for future programme consideration

- Further improvements in the area of NRM require major changes in assumptions about governance and accountability, not the current process of incremental reforms and changes here and there within the system. USAID funding has significantly raised the profile of these issues, but the agency now needs to “bite the bullet” and make a major effort to ensure that higher-level political leadership - including the SADC level - wrestles with these issues. We

need to know, what is the Council of Ministers' position on this? But this kind of initiative requires senior-level intervention.

- USAID should probably remain engaged in the area of CBNRM but should modify the form of its involvement, shifting from direct implementation to increasing local capacities and skills, as with its excellent regional NGO program. USAID could help to ensure that the region has a critical mass of talent and scholarship around this topic which is the best long-term assurance of sustainability. An incipient network exists now, but the potential dynamics of this network haven't been sufficiently tapped and challenged. Bridging the gap between anglophone and francophone Africans working on these topics is another long-term challenge which could benefit from more sustained support by USAID.
- USAID believes that its comparative advantage as a donor is in the area of community-based natural resources management, yet southern African countries believe that they have broad strengths in this area and it isn't clear how much value-added USAID still has to offer. On the other hand, the US is uniquely relevant to southern Africa, as a large continental power between two major oceans with very long coastlines. So the US should be doing more in the region on coastal-zone management and marine issues, which are badly under-served by the donor community as a whole.
- South Africa may have more to learn from other countries, for example countries with heavy dependency on coal-based industries, such as Poland, than it can learn from more advanced economies such as the U.S. Could the U.S. support a kind of "trilateral" approach, in which it would help support a process for South Africa to learn from the experience of a third partner, without assuming that the transfer must be directly from the US to South Africa? The EPA's approach seems to be less restrictive and more straight-forward, more willing to consider alternatives; the same is true of the US Park Service, which has done some creative partnerships involving Indian tribes in the US and management of indigenous lands in South Africa.
- Coastal resources are a major issue for South Africa, and the U.S. historically-black colleges and universities now have a program with South African universities to train 1,000 people in fisheries management, meteorology, etc. Programmes of this type need to be broadened and brought more directly into USAID's strategic planning.

3.8.4 Donor coordination

- Donors should see their role as developing meaningful partnerships, including with other donors. Taking coordination to a more useful level would require donors to explore opportunities for co-financing, or agreements on shared responsibilities. So far there has not been a great response to this idea from most donors.
- Donor coordination could be strengthened, though it is not clear what is the willingness to actually implement this. Furthermore, governments are not necessarily keen to see better coordination among donors, so the incentives for improvements are not very strong.
- Health appears to be the best-coordinated sector in this region. By comparison, environment and natural resources has been a much more fragmented and poorly coordinated area, not only among donors but within governments as well.

Annex A. Abstracts of key documents and reports

1. SADC Policy and Strategy for Environment and Sustainable Development: Toward Equity-Led Growth and Sustainable Development in Southern Africa. SADC Environment and Land Management Sector Coordination Unit (SADC-ELMS), Maseru, Lesotho, 1996.

This SADC policy document summarizes a process began in 1993 with a series of national-level consultations in the various SADC member countries, culminating in an October 1994 workshop in Harare to review the draft policy statement. The policy statement, approved by the SADC Council of Ministers in August 1996, led to two institutional changes important for SADC's portfolio in environment and natural resources management. The first entailed elevating ELMS from one of eight sectors grouped under the Food, Agriculture and Natural Resources (FANR) Sector into a fully-fledged sector reporting to the Council of Ministers, while the second involved the spinning-off of the Water Resources Sector, previously lodged under ELMS, as another new SADC sector, coordinated by Lesotho (see SADC, p.v).

The 1996 SADC policy document begins with a clear identification of policy problems as the source of environmental degradation in southern Africa:

In the SADC region as elsewhere, unsustainable development has been and remains largely driven by economic and sectoral policies which are too narrowly conceived and focused and particularly neglect the adverse impacts on the poor majority and the environment. Conventional 'react-and-cure' responses simply cannot keep up with the escalating pace and scale of environmental degradation. (SADC 1996, p.vii; emphasis in the original)

The SADC document identifies Agenda 21 as the starting point for elaboration of environmental priorities for the southern Africa region, but notes the need to place greater emphasis on equity issues underlying decisions on development. SADC notes that of the 2,500 recommendations for action from Agenda 21, sustainable livelihoods for the poor is "only one of 131 priority programmes." "In Rio, poverty alleviation got far more attention in plenary speeches than in the plan of action" (p.25).

Agenda 21 unfortunately does not provide "a new basis for a new deal for the majority of poor people and countries." Alleviating the poverty of the majority of the 128 million people in the region remains the overriding goal and priority... The critical missing link is equity. ...Throughout the SADC region the poverty of the poor majority remains the main cause and consequence of environmental degradation which in turn undermines the possibilities for future growth... The national development and international aid policies which fail to reach, involve and benefit the poor majority are the problem. ...policy changes to achieve greater equity for sustainable development are needed in national economic policies, agricultural policies, land tenure laws and policies, human settlement policies, health policies and even wildlife and parks policies. (p. vii-viii; emphasis in the original).

The SADC analysis views environmental degradation and poverty as linked aspects of the failure of national development and external aid policies and programmes to reach and expand the choices of the poor majority of people" (p. 13). The main components of the 1996 SADC policy framework are summarized here (the complete list is very extensive, and should be consulted in the original form to appreciate the scope of this proposal).

(a) Environmental Policy Goals

- To protect and improve the health, environmental and livelihoods of the people of southern Africa with priority to the poor majority
- To preserve the natural heritage, biodiversity and life supporting ecosystems in southern Africa;
- To support regional economic development on an equitable and sustainable basis for the benefit of present and future generations.

(b) Complementary / Functional Goals

- To strengthen the analytical, decision-making, legal, institutional and technological capacities for

achieving sustainable development in southern Africa

- To increase public information, education and participation on environmental and natural resources management for sustainable development
- To expand regional integration and global cooperation on environmental and natural resources management for sustainable development.

(c) Key Environmental Policy Areas

- Land Management
- Water Resource Management
- Food Security
- Energy & Sustainable Development
- Population and Human Resources
- Sustainable Human Settlements
- Manufacturing & Sustainable Development
- Mining & Sustainable Development
- Health & Sustainable Development
- Natural Resources Management & Biodiversity

(d) Key Environmental Policy Support Areas

- Environmental Information and Education
- New Partnerships for Sustainable Development
- Environmental Law & Sustainable Development
- Environmental Monitoring, Assessment and Reporting
- Economics of Sustainable Development
- Institutional Strengthening & Capacity Building

(e) Strategic Categories

- Assessing environmental conditions, trends & progress made & needed for sustainable development
- Reducing significant threats to human health, ecosystems & future development
- Breaking away from unsustainable to sustainable development for the benefit of present & future generations
- Managing shared natural resources on an equitable & sustainable basis
- Accelerating regional integration & capacity building for sustainable development

(f) Objectives

- To make the best & sustainable use of regional land resources
- To control & reduce desertification
- To maintain and improve surface & groundwater quality in the SADC region
- To make equitable, efficient & sustainable use of shared water resources in the region
- To improve sustainable agricultural production, productivity & diversification in the region
- To secure regional & household food security
- To reduce & avoid adverse impacts of agrochemicals on human health and ecosystems
- To anticipate & mitigate the effects of floods and drought on agriculture, ecosystems & the rural poor
- To ensure long-term viability & sustainability of agricultural production
- To assess & reduce the impacts of transboundary air pollution
- To expand use of affordable & more efficient wood stoves
- To develop environmentally sound & affordable options to fuelwood & for lighting for poor majority
- To reduce population pressures on environment & resource base
- To improve the environmental & living conditions of the poor in human settlements
- To ensure affordable housing for the poor majority
- To ensure adequate & affordable public transportation
- To promote more energy efficient & cleaner production technologies
- To ensure adequate worker health & safety
- To control the movement & disposal of hazardous wastes
- To ensure foreign investment & trade supports sustainable development
- To reduce pollution & environmental impacts of mining operations
- To maintain basic health & environmental quality in the SADC region
- To protect & improve regional biodiversity
- To make sustainable use of land & wildlife, especially in semi-arid areas
- To increase local participation & net benefits in wildlife management
- To maintain sustainable wood production, watershed & habitats
- To make sustainable & expanded use of freshwater fish resources
- To make sustainable & expanded use of marine fish resources
- To improve public understanding & support

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- for environmental programmes
 - To strengthen public & private sector cooperation
 - To strengthen regional NGO networks & cooperation with governments
 - To involve youth in local environmental protection & improvement efforts
 - To ensure equal access in the region to legal protection & remedies
 - To strengthen regional role & application of international environmental law
 - To avoid or resolve environmental disputes in the SADC region
 - To monitor environmental quality & resource use in the SADC region
 - To ensure local & regional development is environmentally sustainable
- Source: SADC 1996, pp.34-41
- To expand environmental research & improve testing facilities
 - To report regularly on regional environmental conditions & trends
 - To make development more economically, socially & environmentally sustainable
 - To influence private decision-making in support of sustainable development
 - To monitor & report on national & regional progress toward sustainable development
 - To secure environmental improvement for sustainable development
 - To expand & make the best use of environmental expertise in the region

2. State of the Environment in Southern Africa: a Report by the Southern African Research & Documentation Centre (SARDC) in collaboration with the World Conservation Union (IUCN) and the Southern African Development Community (SADC), 1994.

Described as “the first comprehensive regional study” of the environment in southern Africa, this influential document can be seen more as a textbook than as a study a “tool for decision-makers to use in developing appropriate agendas for action;” “It is not an academic or policy study, but is intended to give an overview of the current ‘state’ of the environment in southern Africa” (p.xix). The document is based in part on a large environmental database for the region, compiled by SARDC, as well as a series of draft technical reports which were discussed and refined at workshops held in Zimbabwe in 1993 and 1994 (pp.317-320) The report provides wide-ranging discussion of issues such as population growth, urbanization, land degradation, fisheries depletion, water supply and water pollution, energy needs (including fuelwood), and biodiversity conservation, as well as the indirect environmental effects of armed conflicts; although not explicitly described in terms of relative priorities, these are presented as the region’s overarching environmental issues. The report does not present conclusions or findings per se, but the introductory chapter “Regional Overview: People and Environment” suggests that the central environmental problem facing the region arises from depletion of the natural resource base:

Often there is a cost to human ingenuity, as shown throughout this book. An increase in the efficiency of fishing to feed more people may result in overfishing, leaving less food later on. Improvements in farming methods may allow more people to live on a piece of land, but there may be too many people for the amount of water available, putting strains on another resource. Many resources are being depleted and renewable resources are often used much faster than they can be replaced. The exhaustion of renewable resources (such as soil, trees and water) is the primary environmental concern facing southern Africa (p.17; emphasis added)

Other points noted in the SARDC report include:

- Population growth – Echoing an earlier report by SADC-ELMS, SARDC notes that “increasing population is multiplying the effects of all environmental problems in the region.” The needs created by population growth “create a sizeable draw on natural and financial resources. Sooner or later...the resources cannot be stretched any further.” (p.1)
- Urbanization – “In southern Africa, the rate of urban growth is now more than double the rate of population growth... Urbanisation at today’s rapid levels can cause tremendous problems... While there is no obvious way to improve these problems immediately, slowing down ‘urban drift’” (p.8)

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- Land degradation – “About 20% of southern African soils needs some degree of rehabilitation, and the degradation and loss of productivity is increasing. Most of the degradation is caused by overgrazing... Poverty compounds the problem because farmers can't afford to fertilise... ..soil in the region is being 'mined' for its essential nutrients.” (p.9)
- Fisheries – “Fish protein is in high demand but the projections indicate that production will have to increase by 550,000 tonnes by the turn of the century to meet the increasing demands...” (p.11)
- Water supply – “Inadequate supply of water...could be a limiting factor on development in southern Africa.” (p.11)
- Water pollution – “Pollution from sewage is a growing problem as urbanisation increases... ..exposing people to diseases such as as diarrhea and cholera. ...Industrial pollution, subject to little enforcement or monitoring, effectively decreases the amount of available fresh water by making supplies unfit for use.” (p.12)
- Energy – “Competition for water for hydroelectric power has already created tensions... As demand for both electricity and water increases, choices will become harder to make. ...The southern Africa region has very large coal reserves...These could provide fuel for electricity generation, although the environmental cost of mining and burning coal is high. Already this is causing localised pollution problems... The question will be how to provide energy without degrading the environment. ...The potential for energy conservation in the urban and industrial sectors is high, but does not seem to be a policy focus.” (pp.12-14)
- Fuelwood – “...per capita fuelwood consumption in the SADC region is among the highest in the world. ...The fuelwood demand in the region is seen as unsustainable, due to the growing number of people and the clearing of forests and woodlands for agriculture.” (p.12)
- Biodiversity – “The demand for land, water, food and energy has reduced the wild plant and animal life in southern Africa. ...There is a direct connection between increases in the human population and loss of wildlife habitat, so this trend will most likely continue until such growth stabilises.”(p.14)

3. Southern Africa Beyond the Millennium: Environmental Trends and Scenarios to 2015. Barry Dalal-Clayton, International Institute for Environment and Development, March 1997.

This study was prepared for the Swedish aid agency SIDA as part of a forecasting process examining trends in various sub-regions of the world to the year 2015. The draft report was discussed at SIDA-funded workshops convened in Stockholm in March 1996 and in the Okavango Delta in May 1996; the Botswana meeting was co-sponsored by IUCN-ROSA and IIED. A key input into the SIDA analysis was the SARDC State of the Environment in Southern Africa document (which is described above). Clayton-Dalal also draws upon earlier forecasting exercises (Brian Huntley, Roy Siegfried and Clem Sunter, 1989; Clem Sunter, 1992) which were specific to South Africa and focused primarily on economic and political choices facing a post-apartheid nation.

In close parallel to the influential Sunter (1992) report, which elaborated “high road” and “low road” scenarios for South Africa’s political and economic future (Clayton-Dalal, pp.59-64), the analysis for SIDA extends this forecasting approach to the region as a whole, also broadening the analysis to include the detailed environmental trends documented in SARDC (1994). For the southern Africa region, therefore, Clayton-Dalal presents two sharply contrasting scenarios:

- a “doomsday scenario” at one extreme, with increased conflict, extensive environmental degradation and human misery,” (p.65), and
- a “sustainable future” scenario, at the other, in which economic growth will gradually improve, peace and security will prevail, regional cooperation will be enhanced, and [National Sustainable Development Strategies] will play an increasingly influential and key role...” (p.73).

On balance, the report suggests that the most likely outcome lies between these extremes, which

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are compared to the swing of a “sustainability pendulum;” the challenge therefore is to identify actions and policies which can help to nudge this pendulum away from the direction of unsustainability, and in the direction of greater sustainability. In assessing the merits of these scenarios, the report notes that some phenomena, such as population growth, haven’t “built momentum” which complicates the task of reversing present negative trends, and in addition, many of the necessary changes will take years to have a marked effect” (p.65).

On the other hand, the report points out that the region enjoys some advantages compared to other parts of the world: i.e. the survival of “relatively extensive areas of ‘untransformed land (forests, woodlands, wetlands, etc.). The issue is to manage the growing pressures on these resources.” and “Pollution is mainly a localised problem in the region, whilst in the North many countries face widespread and severe problems.” (p.ii). The report ends with a series of recommendations for governments and donors, summarized below:

- plan for uncertainty (adaptive planning)
- encourage and support sustainable development strategies
- continue to support democratization
- adopt and promote participatory approaches
- focus on institutional development and building capacity for environmental management
- plug the information gap and seek hidden information
- support education
- commission research on livelihood strategies
- encourage and support drought-proofing and disaster preparedness planning
- seek to resolve inequity over land tenure and resource access rights
- facilitate the water-sharing debate
- support pollution-free projects and assist the development of EIA capacity
- promote resource-conserving agricultural practices
- promote and support biodiversity conservation, and community-based approaches
- seek out policies and processes that work
- invest in energy conservation
- invest in long-term phasing out of fossil fuels
- invest in waste recovery and disposal technology (pp.81-85)

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ANNEX B. Potential activities for FRAME: Data-sharing, Information Technology, and the Internet

Data-sharing, Information Technology, and the Internet

- Data issues are an Achilles heel for climate research; not only are agencies reluctant to freely share their data, but they are increasingly under financial pressures to recover costs through a more commercial approach to data dissemination. Furthermore, it's not clear how new protocols under the World Intellectual Property Organization will influence data-sharing procedures, but there could be serious restrictions. In the meantime, South Africa recently lost 20 years' worth of climate data in a flawed computer-archiving initiative, which it is now trying to manually reconstruct. Similar problems have occurred elsewhere in the region. Climate modelling and forecasting requires ready access to these datasets, so the quality of cooperation on this issue could have significant impacts.
- Web pages are being tested as ways of generating broad feedback on strategies and projects, in addition to stakeholder workshops. Information-sharing (including use of the Web) is building rapidly in southern Africa, more than in other regions such as Asia. This strengthens transparency and helps build cross-border partnerships.
- Little attention is being given to the data and information requirements to support environmental management. Governments stand to lose many of environmental cases simply because of the inability to produce necessary information in the required form and within the required timeframe. This is an entirely new issue in the region which could quickly become critical as new environmental regulations are set in place.
- Bureaucratic procedures (research permit applications often taking months for processing) and commercialisation pressures (to generate revenue through sale of data) pose problems for access to data essential for environmental management.
- Countries such as Botswana, with donor support, have made heavy investments in remote sensing and GIS analysis, but there remains little application of such resources for policy, monitoring, or other purposes except storing of the data once acquired. Neffective demand for such data yet exists.
- In South Africa, Environmentek (CSIR) plans to use virtual reality to model the Maputo Corridor Spatial Development Initiative (SDI). Along with the "Environmental Foresight" scenario-development process (a Dephi-forecasting process run by a group under the Department of Art, Culture, Science and Technology), these approaches may identify unrecognized problems and broaden opportunities for input from non-specialists earlier in the investment decision process.
- CD-ROM is going to be the crucial bridging technology for the next decade. It's easy to share large datasets via CD, while land-lines won't have the bandwidth to move large volumes of data or to provide access to a site-specific archive. But the software needs to be more intuitive, more familiar, for ex. using Netscape as a browser to access data on a CD which mirrors a Web site.
- Building a stand-alone GIS centre automatically dissociates its products from the policy process; instead these tools need somehow to be physically and administratively close to the policy-makers. Perhaps daily GIS-based briefings could be given to ministers, for example, in the fashion of the White House daily briefings for the President. The present mindset is that these technologies are not yet appropriate for Africa, but in fact great investments have already been made in this area and much data already exists, it is just now being used.
- South Africa's new constitution pushes environmental decision-making down to the provincial

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and local levels, and this requires new tools. Computer simulations can illustrate visually the effects of a new dam, for example, as was recently done in Lesotho, using available digital elevation data and relatively simple techniques. This method should be more interactive, but already the potential is clear and the approach has been well received in communities who probably wouldn't be able to handle a large set of EIA documents.

- There needs to be a better understanding of the role of information and data in policy-making, as well as access to information. Donors have sometimes gone overboard with large, ambitious data projects, most of which are unsustainable and will eventually collapse. Providing useful information to decision-makers when it is needed is far more important than constructing huge electronic databases which remain outside the policy process.

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Annex C. The FRAME Approach

In the course of the FRAME team's field interviews, a number of comments and suggestions were offered which pertain to the FRAME activity rather than to southern African environmental issues and priorities. These are presented below, and will be among the items tabled for discussion at the FRAME consultative meeting scheduled for December 1998 in Maputo, Mozambique.

- FRAME should try to more systematically document processes and approaches that work in addition to the more technical lessons learned about projects. For example, approaches to policy development, and other qualitative information. The USAID R#(Results Reporting and Resource Request") system seems to ignore processes, focusing instead on numeric targets.
- FRAME could help USAID track ongoing results in completed projects, especially in close-out countries, say for a period of 5 years. There may be important lessons in those countries which are now being missed.
- FRAME shouldn't limit itself to a 1- or 2-step process such as a workshop, but should see its role as an iterative process, say 6-to-8 steps. Travel is costly, but having an "intellectual scribe" keeping the ideas flowing would be more useful than a one-off workshop whose proceedings take up to a year to emerge. FRAME should provide support for this "scribe" process.
- Could FRAME's Web page serve as a link to environmental information and datasets, and help build networks of other information users in the region?
- Is it cost-effective for USAID to try to maintain analytic capability in-house through FRAME? Would it make more sense to commission specific, topical studies as-needed?
- It's best to avoid gathering people for workshops to discuss something as open-ended as "What should we do?" A better approach is to identify specific topics which people can agree need to be addressed. FRAME could support specific analytic activities at the regional level which the governments might not have supported on their own initiative. For example, it would be fairly easy to compile a regional-level land-cover map "stitching together" the existing national-level coverages. For understanding regional trends, this would be a very powerful tool and wouldn't need much technical, financial or institutional support.
- Like FRAME, governments in the region need indicators on environmental trends. At the same time, governments have not done an adequate job of sharing the information they already have, while NGOs, which generally have a somewhat more holistic approach, face serious resource and capacity constraints, so the end result is the same: information is sparse and not shared.

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Annex D. Persons Interviewed

Botswana

Donor Agencies

- USAID: Oliver Chapeyama; Albert Merkel; Elizabeth Soderstrom; Doug Ball (SO3 consultant)

Government Agencies

- Dept. of Wildlife & National Parks: Joseph Matlhare, Deputy Director
- Dept. of Meteorological Services: Gladys Ramothwas, Director, David Lesolle, Principal Meteorologist/Deputy Director
- Energy Affairs Division, Ministry of Mineral Resources and Water Affairs: Antlepeigo, Principal Energy Officer
- Nat'l Conservation Strategy (Coordinating) Agency: Edward Karkari, Principal Natural Resources Officer

University/Research Institutes

- National Institute of Research: Dr. Kgathi, Dr. Gupta, Dr. Mopelwe, Sr. Research Fellows
- Botswana Institute for Development Policy Analysis: Jarlsaksen Exec. Director

Other Official Agencies

- SADC: Mandla Madonsela, Sr. Economist

NGOs and Consulting Firms

- ECOSURV: Michael Murray-Hudson, David Parry, Oshadi Mosinyi
- Chemonics: Pauline Wynter, NRM Advisor; Richard Smith, Chief of Party
- IUCN: Ruud Jansen, Country Representative
- Int'l Rivers Network: Steve Rotherth
- Kalahari Conservation Society: Joanne Addy, CEO
- DANCED: Peter Lukey

Individuals/Consultants

- Robert Buzzard, NRM specialist
- Mandi Rukuni, former chairman, Zimbabwe Land Commission

Lesotho (mission curtailed due to civil unrest)

- M.R. West, Joint Permanent Technical Commission, Lesotho Highlands Water Project

South Africa

Government Agencies

- Dept. of Environmental Affairs and Tourism:
 - Tanya Abrahamse, Deputy Director-General
 - Pieter Botha, Deputy Director-General, Species Conservation
- South African Weather Bureau: Mike Laing, Director: Climatology
- Ministry of Foreign Affairs, Directorate of Environment: Marthinus van Schalkwyk

NGOs

- TRAFFIC/WWF: David Newton
- Group for Environmental Monitoring: Jessica Wilson, Programme Manager, Global & National Environmental Policy
- IUCN: Saliem Fakir (FRAME team member)

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Donor Agencies

- World Bank: Osseynou Diop, MELISSA Project
- USAID: Carleene Dei

Research Institutes

- CSIR
 - Div. of Water, Environment and Forest ("Environmentek"): Robert Scholes, Graham von Maltitz
 - Virtual Reality Center: Koffi Kouakou, Co-director,

Zimbabwe

NGOs

- Zimbabwe Trust: Robert Munro, Champion Chimoye
- Southern African Regional Policy Institute for Policy Studies (SARIPS): Sam Moyo, Director of Studies, Sapes Trust
- WWF: Norman Rugava, Ivan Bond, Russell Taylor
- Environment Resource Centre for Southern Africa (ERCSA): Clever Mafuta, Mats Kullberg, Elton Laisi, Tendayi Kureya
- IUCN: Reford Mwakalagho, Carmel Lue Mbizvo
- Zambezi Society: Dick Pitman
- CAMPFIRE Association: Stephen Kasere

University/Research Institutes

- Marshall Murphree, prof. emeritus, Centre for Applied Social Studies, University of Zimbabwe

Private Sector

- Confederation of Zimbabwe Industries: David Corri, former chairman, Environmental Committee

Donor Agencies

- USAID: Charles Cutshall
- Royal Norwegian Embassy/NORAD: Wenche Gulnes

Individuals/Consultants

- Simon Metcalfe, community resource management specialist

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ANNEX E. COUNTRY REPORTS

1. Namibia - Brian T. B. Jones

Report to IRG on environmental priorities in Namibia for the FRAME SAEP Project.

Brian T. B. Jones, Windhoek, 13.11.98.

1. Namibia's environmental, socio-economic and political context.

Namibia is a vast country on the south-western coast of Africa with a total land area of approximately 825 000sq km. It is bordered by Angola to the north, Zambia and Zimbabwe to the north-east, Botswana to the east and South Africa to the south. Namibia is the driest country south of the Sahara, with average rainfall varying from above 600 mm in the north east to less than 25 mm in the Namib desert to the west. Rainfall is erratic both temporally and spatially leading to large localised differences in precipitation and large fluctuations from one year to the next. Evaporation reaches 3 m annually over much of the country. Drought is a regular occurrence and the usual effect of El Nino events. The only perennial rivers are on the northern and southern borders and are shared with neighbouring countries. Even in the wetter north-east conditions are marginal for rain-fed crop growing and irrigation-fed crop growing is uneconomical, because of high inputs required by poor soils.

The shortage of water is the main limiting factor on Namibia's economy, which is almost entirely reliant on natural resources. Commercial agriculture, mining, fishing and fish processing, manufacturing and tourism are the important sectors of the economy, with strongest growth expected in fishing and fish processing, tourism and manufacturing (Dewdney 1996). Namibia has a population estimated at 1,6 million, with an annual growth rate of 3%. Almost two-thirds of the population live in the northern regions. In the arid areas of the west and south, population densities are extremely low. Two-thirds of the population live in rural areas and are directly dependent upon the soil and living natural resources for their livelihoods (Brown 1996). By far the highest proportion of the workforce is involved in subsistence agriculture. In 1992, per capita GNP was US \$1 670, but income distribution is highly skewed between urban and rural households. The quarter richest households consume over 70% of total consumption (NPC undated). Namibia gained independence from South Africa in 1990 and the legacy of apartheid and colonialism is still evident in the wide gap between rich and poor, unequal access to land and natural resources and poor education, health and housing for the rural majority.

Land distribution in particular has been skewed by the country's colonial history. Under German rule from 1884 to 1915, white settlers appropriated much of the central part of the country, and began the process of developing "reserves" for black tribal groups (du Pisani 1986). The South African Administration, which replaced the German colonial government under a League of Nations Mandate, continued this process and consolidated the reserves into a system of black homelands based on South Africa's own apartheid policy (du Pisani 1986). In many instances the land allocated to black tribal groups was amongst the least suitable for crop growing and livestock farming, constituting large parts of the arid north-west and of the Kalahari sandveld in the north east.

At independence from South Africa in 1990, 40,8% of the land had been allocated to the homelands, which supported a population of about 1,2 million, while 43% had been allocated to essentially white commercial farmers. 13,6% was allocated to conservation and a small percentage was unallocated land. This situation has been modified only slightly since independence with a small number of wealthy black farmers purchasing commercial farms and a small number of commercial farms being purchased by government for resettlement purposes.

Commercial farmland is held under freehold title, while the State owns communal land. Residents

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of communal land have usufruct rights over the land and its resources such as grazing. Under the South African colonial administration land allocation was the function of government officials. In practice, traditional leaders believed that communal land was owned by the chief or the king and have always allocated land in terms of customary law (Corbett and Daniels 1996). However this de facto allocation of land by traditional leaders has been eroded by post-independence government policy. The erosion of the powers and status of traditional leaders has combined with other factors to create in most cases an open access situation on Namibian communal land. Without secure and exclusive group tenure over communal land, many residents are unable to guard their land against appropriation by wealthy individuals and settlers from other areas.

The SWAPO Government which came to power in democratic elections in 1990, and which gained a two-thirds Parliamentary majority in 1994, has publicly committed itself to multi-party democracy, a mixed economy and to decentralisation of decision-making. A decentralisation policy sets out government functions that should be shifted to Regional Councils created after independence. There is no administrative unit below the Regional Council except for municipalities. The Regional Councils currently have little power, no authority to raise revenue and virtually no officials of their own. Within the ruling party and within the higher echelons of the civil service there are competing ideological tendencies representing on the one hand democracy and decentralisation, and on the other, command and control through centralisation.

2. Environmental issues, problems and priorities in Namibia

The above brief synopsis of Namibia's environmental, socio-economic and political context provides the foundation for understanding environmental issues, problems and priorities. There is consensus among Namibian and outside environmental experts that while a number of key proximate causes of environmental problems and threats can be identified, the root causes are located in the government policy and decision-making arena and the country's socio-economic conditions. This consensus is reflected in Byers (1997) and Dewdney (1996) and in the interviews carried out as part of this consultancy.

Byers (1997) summarised the findings of an extensive survey of environmental issues, problems and priorities carried out in Namibia which involved a review of relevant documents, interviews with key individuals and workshops. The survey identified four key environmental threats:

- ◆ depletion of water and aquatic resources
- ◆ desertification and land degradation
- ◆ loss of biodiversity and biotic resources
- ◆ decline of marine fisheries

The survey then identified a number of proximate causes of these environmental threats:

- ◆ overexploitation of water resources
- ◆ overgrazing and unsustainable range management
- ◆ lack of adequate protection for some key ecosystems
- ◆ overexploitation of marine fish stocks

However, the survey concluded that these proximate causes were in fact symptoms of other more fundamental problems and therefore identified key root causes of environmental threats:

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i) lack of secure and exclusive tenure over land and resources at the local level

- the open access situation on much of the communal land is a disincentive for sustainable management and promotes over use of resources. Secure and exclusive group tenure over land and resources along with effective management institutions is required before communal land can be managed sustainably. This is an issue of national level policy formulation.

ii) limited intersectoral co-ordination at national level

- a range of policies and activities regarding the macro economy, the environment, and resource and land allocation, planning and use, often conflict with each other because of the tendency to think sectorally and promote a particular form of land or resource use without consideration for its broader impacts. Even within a single ministry, different departments might be pursuing conflicting approaches or activities that duplicate the efforts of each other. This again is a question of policy and approach of the national level government.

iii) limited human resources and capacity for sustainable planning and management at all levels

- limited human resources are to a large extent a result of the small population. There is fierce competition for qualified, skilled and experienced personnel and usually government loses its best people to the private sector. It is necessary to build capacity at national, regional and community level to plan for the sustainable use of the land and its resources. However, it is not simply a question of training people to improve capacity, but finding enough people to be trained in a particular field to serve the different needs of government, private sector and communities.

iv) insufficient information or knowledge transfer for sustainable development

- while a great deal of knowledge about the Namibian environment exists, there are a number of key gaps requiring more applied research on climate and hydrology; biodiversity issues; rangelands productivity, resilience and carrying capacity; natural resource economics and other social dimensions of resource use; and the dynamics of the Benguela Current system. Simple techniques need to be developed for monitoring environmental change and feeding this information into effective planning processes.

v) limited international agreements

- due to the nature of shared resources such as water and fisheries, agreements are required with neighbours concerning exploitation limits, shared management and research.

vi) population growth

- while improvements can be made to the management of land and natural resources enabling more people to achieve sustainable livelihoods, the high population growth clearly places limits on the ability of the land and its resources and other economic sectors to support people. Government policy interventions are required to deal with poverty and population growth, but economic growth is also an important part of dealing with population growth.

All the above issues are receiving some degree of attention in Namibia, which has, for example,

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government-led programmes on desertification, biodiversity, community-based natural resource management, environmental profiles, sustainable range management, and environmental legislation reform. However, each of these issues requires long-term attention as well as additional activities and awareness, particularly at the national policy making and decision-making levels.

The information provided by the interviews conducted as part of this consultancy should be analysed against the above context. All interviewees had participated in the Byers survey and their views on environmental problems generally focus on the issues identified above. Each interviewee was asked three questions, backed by follow up questions where appropriate. These questions were:

- a) What do you think are the key environmental priorities facing Namibia at present?
- b) Do you think these priorities will change in future, what about for instance, increasing urbanisation and "brown" environmental problems?
- c) Do you think Namibia has any environmental priorities that it shares with neighbouring countries and that fit in to some sort of regional pattern?

All interviewees agreed that a key priority is policy review and reform by government on a number of key issues, while there is also recognition that in some areas technical interventions are also a priority. Heyns in particular focuses on the need for sound fiscal policy as a foundation for economic growth which he believes is important for solving many of the rural environmental problems. There is consensus that Namibia's key priorities are linked to land and resource use and allocation in the rural areas. Three of the interviewees placed heavy emphasis on desertification as a priority, while Kruger had some doubts as to whether land degradation is as bad as is assumed. This reflects the need for good research and monitoring to test some of the assumptions made about land degradation in the absence of hard evidence. Tarr focuses particularly on the need for strategic planning incorporating environmental assessment processes. A particular point raised by Brown, is the need for the development of a qualified, skilled and experienced cadre of young southern African environmental managers and scientists who can provide future leadership in this field.

Although urban environmental issues are likely to increase in significance with increased urbanisation, these problems are unlikely to eclipse those of the rural areas. Namibia is unlikely to develop large urban areas based on heavy industry, which can support large numbers of migrants from the countryside, although there is potential for the further development of manufacturing industry, particularly in the north where the greatest part of the population is located. Each interviewee identified sustainable use of shared water resources as a particular priority for regional co-operation, and in this context there was a particular emphasis on catchment management. There was also emphasis on the transfrontier management of broader resource management areas encompassing, but not limited to, protected areas.

The following is a summary of each individual interview:

Dr Chris Brown, Director of the Namibia Nature Foundaton (an environmental NGO) and former head of the Directorate of Environmental Affairs in the Ministry of Environment and Tourism.

Addressing desertification in its broadest context is probably the greatest environmental priority for Namibia. Dry lands are fragile and take long to recover from degradation and the largest scale degradation comes from unsustainable farming and settlement activities. A key issue affecting desertification is the provision of water in rural areas and Namibia's dependence upon ground water.

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Priority activities for dealing with desertification:

i) Community-based natural resource management

Brown sees this as a sustainable land-use programme at local level, rather than a wildlife programme as most southern African CBNRM programmes are currently characterised. CBNRM programmes need to be promoted which focus on creating a policy and legislative framework which enables local community institutions to take collective decisions on the management of resources on communal land. These approaches need to promote integrated planning of land and resource use by community institutions which have rights over range, forest, water, wildlife (and where appropriate, inland fishery) resources.

ii) Provision of appropriate information for planning

Information is required which can identify high-impact areas of the country and direct interventions such as protection or rehabilitation. It is important not just to generate information but to make sure it is put to use. This can be done at national level, but also at local level if CBNRM institutions are functioning.

iii) Rehabilitation of degraded areas

Little has been done in southern Africa generally on rehabilitation of degraded areas. The main area of focus in the past for rehabilitation has been some wetland areas. Nearly all southern African countries have degraded dryland areas which need rehabilitation measures.

Brown believes a second important priority is to analyse how and why decisions are made about resource allocation and use. What incentives and disincentives are provided by government policy for appropriate use of resources? There is not enough rigorous analysis of the direction in which existing policies are driving resource allocation and use patterns. Some effects of policies are subtle and need close monitoring. Government policies need reviewing and redefining in a way that can provide support systems to society which are sustainable.

The existing provisions in Namibia for the carrying out of Environmental Impact Assessments are very important for making sure that new policies, programmes and projects contribute to sustainable development and can be used retrospectively to assess what has been done in the past. This can then lead to the identification of rehabilitation or corrective measures. But the capacity is needed to carry out this analysis.

Brown believes a third priority is transfrontier management of resources, particularly outside of protected areas, although this is difficult in practice. It is already happening through a number of joint commissions with neighbouring countries on water management, but the real focus needs to be on catchment management. This, however, runs into problems of countries insisting on their sovereign right to decide what happens within their own country. It is relatively easier to agree on management issues on for instance a river which is a common boundary. It is more difficult to get countries to accept responsibility for downstream effects of poor catchment management.

Looking to the future, Brown believes that urban environmental issues will become significant because the main urban centres in Namibia are growing at more than 10% annually. Where strong planning capacity exists, such as in Windhoek, and the coastal towns of Walvis Bay and Swakopmund, rapid urbanisation can be managed. But in the north, where new municipalities have only just been formed in the areas of highest population, the management of waste, the provision of clean water and affordable energy and health issues will be important. Municipalities will need to understand the issues and priorities and institute appropriate measures. These can

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include small scale activities such as using the unemployed to develop and manage designated garbage sites, the provision of communal shower and toilet facilities where there are concentrations of informal settlements, etc. But job creation is also important. While urbanisation takes pressure off the land, it needs to be managed.

Brown does not see general environmental pollution as a big issue currently or in the future. Existing and proposed policy and legislation such as a new Environmental Act and EIA provisions should enable pollution to be dealt with routinely. The new provisions will give government real teeth to deal with pollution for the first time.

He believes a crucial priority which is essential to underpin all environmental activities in southern Africa, is the development of a cadre of young environmental scientists and managers who can take the lead on environmental issues in the future. Emphasis needs to be placed on providing appropriate people with the training and experience to take the lead, not just in government, but in the private sector and at community level. An important step in doing this is to make the environmental field more attractive to young graduates, through, for example, governments giving it more weight and status and providing competitive salaries and training opportunities.

Bertus Kruger, Deputy Director: Training and Projects in the Department of Agriculture and Rural Development in the Ministry of Agriculture, Water and Rural Development (MAWRD). Former national co-ordinator of the MAWRD's Sustainable Range and Animal Development Project.

Kruger believes degradation of Namibia's rangelands is a key environmental priority. The issues requiring attention are not overgrazing and overstocking but land tenure and the opportunity for communities to manage resources themselves. A big challenge is to develop community-based resource management institutions that can manage the resources within their own area. This will go a long way to enable local people to deal with issues such as illegal fencing by individuals which is threatening the ability of the land to maintain the current population, and is likely to increase the number of poor and landless.

Kruger sees the pressure for more land as a key issue on the commercial farmland as well. A typical cattle farm in the central part of the country is about 5 000 ha, but in Namibia's arid and highly variable climatic conditions, this is not sufficiently large to be regarded as an economic unit. Land degradation, particularly through bush encroachment is a key issue in the commercial sector.

Kruger believes water management to be an important environmental priority. While the management of the perennial border rivers is important, attention must also be given to the ephemeral rivers of the interior. Here catchment management is important because of downstream impacts, which in the case of several rivers are economic as well as environmental because of the dependence of coastal towns and industries on aquifers from these rivers. The provision of water on communal rangelands is also a key issue. The provision of new boreholes and open ground dams as part of donor funded range management projects needs to be carefully monitored for environmental impacts.

Kruger does not believe that agriculture alone will be able to support the increasing population in rural areas. If the urban economy does not grow at a rate that can absorb migration from rural areas, then a major effort needs to be launched to provide alternative income generating opportunities for people in rural areas. Potential exists for this in the wildlife and tourism sectors in certain parts of the country, but other possibilities need to be developed and explored.

Key regional issues concerning Namibia identified by Kruger are the management of the shared perennial rivers, tourism and other economic activities in the Caprivi and Kalahari Sandveld areas, and the Namibian fish resource which is shared with South Africa and Angola and susceptible to El Nino events. Another issue is the movement of livestock across national borders

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which has implications for the spread of animal diseases. This is particularly prevalent in areas where borders bisect one ethnic group and there is frequent movement by people visiting relatives across the frontier.

Kruger does not see Namibia's environmental priorities changing much in future, although he believes that water management will become even more important as the country struggles to find enough water to meet its needs. He thinks the effects of desertification have been somewhat over-emphasised. Arid systems are resilient, and although there might be a change to fewer species of grass on the rangelands, degradation is perhaps not as great as assumed. He questioned the level of environmental awareness within government in general.

Dr Piet Heyns, Director of Research in the Department of Water Affairs, Ministry of Agriculture, Water and Rural Development.

Heyns took a broad brush approach to environment issues, particularly emphasising the links between what he called bad government policy and legislation, economic problems and environmental problems. He cited a range of government actions that he believed contributed to economic problems, including the failure to adequately reduce the size of the government service, unwise government investment in failing industries and inappropriate infrastructure, and labour policies that allowed unions to bring down viable industries. He envisages continued economic downturn leading to further unemployment, a growth in squatter camps around the urban areas, with increases in waste management and health problems, and further pressure on natural resources in the rural areas. Heyns is against huge investment in rural areas. Government policy should be to promote job creation in urban areas to get people off the land in order to reduce the effect of desertification, which he sees as the biggest problem facing the country.

He believes the communal farming lands are not productive because people are carrying out subsistence farming and not farming commercially. He thinks there are too many people for the communal lands to support.

Heyns believes access to the provision of water from Namibia's shared perennial rivers will become a matter of survival and the issue of abstracting water from the Okavango River will become even more controversial than at present once Namibia begins piping water from the river. He believes catchment management of the shared perennial rivers is particularly important. Potential irrigation and industrial development in Angola upstream from Namibia and Botswana could have significant effects on the quality and quantity of water in the Okavango River. Groundwater in Namibia is already being over utilised despite efforts to manage the resource scientifically. Ultimately the government will have to move away from the continued abstraction of water from aquifers in the western ephemeral rivers to supply the coastal towns and industries. The only solution, although costly, is desalination.

Peter Tarr, Acting Head: Directorate of Environmental Affairs in the Ministry of Environment and Tourism. Also responsible for Environmental Impact Assessment policy and legislation and environmental management issues.

Tarr sees the main priority as being to promote and develop integrated strategic environmental, development and land use planning at national and regional level. This is crucial because of the lack of inter-sectoral co-ordination and co-operation. Such integrated strategic planning should provide government and the private sector with a framework within which to develop activities at a regional level. The planning needs to look at the most appropriate forms of development and land use for particular areas of the country and incorporate the whole suite of resources available i.e. land, water, grazing, forests, fish and wildlife. Unsustainable land use is taking place because of lack of strategic planning and a lack of environmental awareness in government. In order to facilitate planning appropriate information needs to be generated. This is being done for example

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through the Directorate of Environmental Affairs' environmental profiles project in the northern regions, which will be followed by a land-use plan.

Most resource-based problems issues in Namibia, such as water demand and supply can be resolved through a proper strategic planning process linked to the appropriate use of Environmental Impact Assessments. For example, a recent environmental audit of a donor-driven drought relief programme based on borehole water provision showed that the programme failed because no strategic analysis and planning had been carried out. The problems revealed by the audit were lack of access to grazing, land tenure issues and lack of access to livestock markets and not a water shortage. A simple shift in government policy to full cost recovery of water supply would do much to reduce misallocation and misuse of water, dispelling the illusion that irrigated farming is an economically viable activity.

Tarr sees the devolution of decision-making over land and resource use to the lowest appropriate level as a second major priority. At local level communities need rights over the full suite of resources on their land, as well as exclusive and secure tenure over the land itself. Government at national level needs to provide a planning framework within which lower levels of decision-making can operate. This issue of devolution of decision-making is linked to notions of democratic governance.

He believes that economic growth is important for environmental health as the land cannot support the growing population. Government policy needs to promote the development of manufacturing in towns in the regions and alternative forms of off-farm income generation through the growth of the wildlife and tourism sector. Mechanisms need to be found to allow the informal sector to develop without significant environmental costs. This is particularly true in the mining sector where informal miners have little incentive to be environmentally sensitive.

Tarr expects urban issues to grow in significance due to the rapid urbanisation taking place at the moment. The creation of Economic Processing Zones with major tax incentives for investment should be considered for the Ondangwa-Oshakati complex in the north, where there is the greatest labour force. The proclamation of new towns in the former homelands will allow for land ownership in these areas, previously a constraint to business investment.

With regard to regional issues, Tarr sees the need for regional strategic planning for shared water systems under the SADC umbrella. He believes SADC protocols can help ensure individual country compliance with agreements. Transfrontier resource management should be promoted that goes beyond cross-border protected areas. An example is the current exploration of a three country development plan between South Africa, Namibia and Angola embracing the management of shared rivers, adjacent protected areas, tourism opportunities, infrastructure development, environmental research and monitoring.

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2. South Africa – Saliem Fakir

Notes on Environmental Issues in South Africa

Saliem Fakir (IUCN-South Africa)

Contributions to the USAID Frame Mission (3-15 August 1998)

These notes are merely cryptic and provide an overview of the main environmental issues in South Africa. They are meant to assist the Frame team in formulating strategic issues as part of a regional programme.

Introduction

South Africa compared to other Southern African states has a duality to its environmental problems. On the one hand it has a highly urbanized sector that creates its own atypical urban sector related problems. On the other hand it has, particularly in the former homelands, considerable environmental problems related to poor natural resource management regimes.

Since the inception of the new government in 1994, considerable progress has been made in the policy and institutional front. In the policy front key policy positions have been generated. They are: a national policies for environmental management, biodiversity, integrated waste management and pollution control, climate change, and very recently a draft national Bill for Environmental management with far reaching implications have been tabled for debate in parliament. In addition other sectoral departments such as water, forestry, agriculture, minerals, energy, trade and industry have also included policy measures as part of their own sectoral programmes.

One could regard the interim period as a period of conceptualisation and debate over policy and ways to integrate environmental programmes intra-and inter sectorally. The next phase is to translate policies into action plans and implementation.

At the institutional level, environmental management is a concurrent competency that is shared by national, provincial and local government. Therefore with the new constitution there is great potential to create decentralised forms of environmental governance. As of yet the delegation of powers and authorities for various segments of environmental functions need to be decided and confirmed. The capacity to manage environmental issues at all spheres of government can be considered to be weak. To meet the imperatives of policy and legislative objectives considerable investments needs to be placed in human resources, integration and consolidation of information systems, and improvements in administration.

The other important development since 1994 is that the level of public participation in environmental issues is unprecedented in the history of South Africa. All policy processes have involved in one form or the other extensive public input. This has created a greater sense of ownership, and at the same time enriched and enhanced the issues that are dealt with in each of the policy areas.

Critical areas of concern

Conservation

Conservation issues in the form of protected area regimes and wildlife management have always been the mainstay of South African environmental management programmes going back over

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several decades. In Africa, South Africa has perhaps the best maintained protected area regimes, and has considerable scientific and technical expertise in wildlife management. Proportionally investment in conservation has always been much higher, and is still the case today, compared to investment in other areas such as pollution control, waste management etc.

However, funding for conservation is declining or continues to remain static. Conservation issues under the apartheid regime have either involved the displacement of people, or have prevented rural poor from accessing resources within protected areas for the purposes of livelihood generation.

This has all started to change with the ushering of a democratic government, and where poverty and people-centered issues gained an ascendancy in environmental policy. In addition with a land reform programme on the go, several land claims have been lodged by communities in protected areas. Conservation authorities are forced now to address and find solutions to community based issues. For instance, the South African National Parks for instance has established with the support of Danish funding, a social ecology unit to address community based issues and assist in resolving resource conflicts.

Given these dynamics the way in which protected areas are managed in the future will depend on how successfully they integrate people centered issues. In addition, protected area regimes are also seeking to diversify their income sources and branch more extensively into hunting and eco-tourism ventures. It is not clear what kind of impact this will have in the future on conservation practise as a whole.

At the macro level, transboundary protected areas are also being considered and promoted. Already, a protocol, which is still to be signed, exists between Botswana and South Africa, linking the Kalahari Gemsbok, and the Gemsbok parks, perhaps making it the second largest protected area regime after the Kruger Park. These transfrontier park programmes will grow in importance with time. Some of the Spatial Development Initiatives, which are agro-tourism based are also looking into transfrontier park models for business opportunities and community involvement.

Urban Issues

As of yet South Africa still has to institute a good urban environmental programme. The problems faced by urban centres are numerous, and the critical areas of concern are waste management, pollution control, the creation of green spaces, greater environmental awareness, and introducing more energy efficient programmes.

The problem in urban centres are exacerbated by the fact that local municipalities are weak. The widespread culture of non-payment has placed local governments in deficit and debt, preventing them from making any real investments in the environmental sector. This has also meant that the maintenance of infrastructure is sub-minimal, and no new investments are expected in the near future. Typical budgets for local government environmental management units are in the range of R1-2 million per annum.

As population numbers grow, and informal settlements increase the problem of waste disposal will reach crisis proportions. For instance, some cities, such as Durban and Johannesburg are facing problems with waste management, and the storing of hazardous waste. The problems of waste disposal and the location of poor communities close to hazardous waste dumps have always earned the ire of environmental NGOs concerned with human and environmental rights. In places like Gauteng, traffic congestion and air pollution need to be addressed if a collapse in the system needs to be prevented.

The only real programmes that are being funded to create sustainable cities are those funded by ICLEI, and the Danish government's Green City programme in Midrand. To deal with development, provincial and local governments can make use of the Environmental Impact

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Regulations that were promulgated in November 1997. Given the current climate of funding and capacity within provincial and local governments, urban environmental problems are likely to increase if not reach crisis proportions.

Energy Sector

South Africa's energy production is almost entirely coal based. Given current reserves, and the relatively cheap source of coal, coal will continue to dominate energy production perhaps right up to the year 2030. The dominance of a cheap energy source creates very little incentive to invest extensively in renewable energy sources and even energy efficiency programmes. Despite grid electrification poorer households in urban and rural areas continue to use extensively wood, coal, gas or paraffin as alternate sources of energy. The only renewable source of energy that is used quite extensively in poor rural areas is woodfuel.

There has been relatively little investment in renewable energy sources, and grid electrification will continue to dominate. Renewable energy sources such as solar energy are more appropriate for very remote rural areas where the cost of installing grid electrification is too high. The cost of installing PVC systems is still regarded to be far too high and accessibility of the technology is still remote for most people.

In the former homeland areas woodfuel availability is still a problem. During the apartheid era, extensive denudation of woodlands took place due to forced overpopulation of these areas. In many of these areas the regeneration of biomass is still important as rural populations rely on woodfuel for the supply of household energy despite the availability of other energy sources.

At the production level, energy production is neither efficient and environmentally friendly. The energy sector is generally regarded as a major source of pollution, in particular air and water pollution. The energy industry is slowly taking steps to improve this situation through the implementation of systems such as the ISO14001 and other self-regulatory measures. As far as energy efficiency goes, this is fairly non-existent except through a pilot energy efficient light bulb project which is being implemented by the major energy utility Eskom. Given that GEF funding is accessible through the Climate Change Convention, further projects like these will emerge in South Africa.

With the signing of the Climate Change Convention, South Africa is obliged to undertake measures to reduce and mitigate against the further production of Green House Gases (GHGs). South Africa in terms of the Convention has undertaken an inventory of all its emissions of GHGs. The results so far show that in 1990, South Africa was in the top 20 emitting countries in the world, responsible for just over 1% of the global emissions. The emission rate per person in South Africa is estimated to be 10.1 tons of carbon dioxide equivalent per person per year which is above the global average.⁴ Currently, under the FCCC, a number of joint implementation programmes are being undertaken by South Africa through the support of GEF funding. For instance, a US-South Africa programme on carbon credits is in existence and is being implemented with the support of Eskom.

Trade and Environment Issues

As South Africa's economy increasingly opens up to global markets, and various trade agreements are being entered into with the US and Europe so are South African exporters becoming accustomed to environmental obligations which are linked to trade obligations. In the absence of clear government policy on this matter, companies have undertaken to institute their own measures to meet consumer demands and preferences in first world markets. The opening up of trade is having positive spin-offs in that greater awareness between trade and

⁴ See Discussion Document on Climate Change, National Climate Change Committee, April 1998.

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environmental issues is increasing. This is particularly the case in the Forestry industry where forestry companies seek certification of their products from international bodies such as the Forestry Stewardship Council to be able to better market their products overseas.

At the regional level trade and environment issues still require considerable attention. Generally, both in South Africa and the region there is not sufficient capacity to deal with these issues. There is a need for more research to develop an understanding of the relationship as to how environmental issues can affect trade, and in turn how trade policies can impact on the environment. These relationships are poorly understood. The Department of Trade and Industry has established an environmental unit, which for all purposes is totally ineffectual.

Natural Resource Management (NRM) Issues

NRM issues have always been of concern, in particular land management and soil conservation. However, there was very little consideration given in the past to socio-economic concerns in NRM. Compared to other Southern African states South Africa is a late comer as far as integrating socio-economic concerns and using participatory methods in natural resource management go. One could also categorise NRM issues at two broad levels: there are issues over allocation and access, and there are issues regarding the use and management of these resources. In recent years, question of access and allocation have taken prominence.

Land, water and biodiversity management still continue, and will continue to be important priorities for the next 5-10 years in South Africa. This is so as land reform is likely to expand, urbanization will eat into rural landscapes, and water demand will grow as the population size and economy grows.

To address the problems of land management close co-operation is taking place between the Dept's of Agriculture, Environment, and Water Affairs and Forestry through the initiation of the South Africa version of the land-care project, and the desertification programme. In addition the department of Water Affairs and Forestry is developing its own guidelines and strategy for land management in the forestry sector. It is interesting to note that there is a great deal of emphasis on local level management in all these policies in recognition of the fact that the State cannot bear overall responsibility and burden for the management of these resources. In addition, there is a concerted effort to move away from a command and rule system to an incentive base system to encourage farmers and communities to institute better systems of land management and conservation.

As regards water resources, there has been a total overhaul as regards the legal status of water. Water now is a state asset doing away with private and riparian rights systems. The new water Bill recognises the importance of integrated water resource management. The Bill provides a basis for the development of catchment management areas, the development of demand side instruments, and the requirement that water for the purposes of ecological functioning be maintained. In addition the Department of Water Affairs and Forestry has embarked on the largest programme of alien plant removal in the world over the last 3 years with apparently dramatic impacts on water supply and flow in rivers.

As regards CBNRMs, the implementation of these programmes is a relatively recent experience and to a large extent they are based on eco-tourism models. The emergence of CBNRMs must also be seen in the context of the fact that in black areas local government is weak, and there is no real rural development programme. CBNRMs supported by NGOs and other external NGOs in effect play the role of government, in that they not only deal with CBNRM issues, but as part of the CBNRM programme are also forced to take on other development issues. The net effect is that there is always a danger that people driving CBNRM processes can be stretched, and play the role of both facilitators of CBNRM and proxy local governments. It is questionable whether one can adequately address the CBNRM problem without having simultaneously addressed the rural development concerns which are often paramount to the success or failure of CBNRMs.

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While there is a need for better resource management and local level decentralisation, it is a question whether CBNRMs are always the best of options. These are dependent often on good local level organization and the existence of strong social capital.

Most CBNRMs in South Africa are conservation related, and there are interesting approaches and models emerging in the farming and forestry sectors. The only real tenure regime that creates an enabling environment for CBNRMs is the Common Property's Association Act. Other tenure reform measures to secure both individual and collective tenure rights are being put in place by the Department of Land Affairs.

Conflict Management

As the profile of environmental issues increase and legislative mechanisms for litigation and dispute resolution are given effect environmental conflict management will become very important areas of focus in the future. Conflict management is regarded as a far more cost effective way to deal with issues than go the litigation route. And, for resource poor communities this is often a better option than be engaged in long-drawn out court battles.

Already, in the last 4 years there have been numerous environmental conflicts, spanning the areas of conservation policy, waste management, water and land allocation, fishing rights, pollution etc. Capacity to deal with these conflicts both in and out of government is thin. At the regional level too conflict management will need to receive some priority.

Fisheries and Coastal Zone Management

The fishing industry like other resource use and allocation is characterised by the fact that it is a monopoly industry. The rights over fishing quotas has still be addressed adequately, and disputes over these rights for smaller fishing companies have often led to violent protest and demonstrations. The National White Paper, and the National Marine Resources Bill attempt to deal with both fishing rights and the management of fishing in a sustainable manner. There are also considerable issues around inland fishing and especially the protection of aquatic biodiversity that needs to receive policy attention.

As regards coastal zone management a national policy process is on its way. South Africa has one of the largest coastal areas in Southern Africa stretching some 3000km or so. Coastal Zone management is a major priority in South Africa as these areas tend to be neglected. The idea of a coastal zone policy is to generate a more comprehensive piece of legislation that is able to deal with all aspects of coastal zone resources, and to ensure that development that takes place along coastal areas is sustainable.

Planning Capacity

To improve on environmental management, there is a recognition that without a good planning system and tools the integration and co-ordination of various programmes at the vertical and horizontal levels of government is significantly weakened. Tools that are being proposed are Integrated Environmental Management, Environmental Implementation Plans, Environmental Management Frameworks at a provincial level, and the use of Natural Resource Accounting. Many of these planning tools are still in their infancy and require good databases and information networks to make them effective.

South Africa in relation to the region

South Africa's position with relation to the region is unique. Its own environmental problems are a reflection of its relative economic status in SADC and the fact that it has had a history of apartheid. It also has more human and financial resources to tackle some of the major

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environmental problems, even though capacity within South Africa is slim compared to its size and the location of this capacity in terms of geographical location.

In certain areas, South Africa will have to co-operate with its neighbours, in particular issues concerning water, and transboundary conservation. South Africa can also learn a great deal from regional states particular on issues around NRM, and so can its neighbours learn a lot about how to deal with urban based problems from South Africa. The major avenue for developing regional consensus is through SADC, but also through bilateral and tri-lateral arrangements.

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3. Zimbabwe – Simon Metcalfe

NOTES ON ENVIRONMENTAL ISSUES IN ZIMBABWE

Simon Metcalfe- Consultant

Contribution to the USAID Frame Mission (120 August 1998)

INTRODUCTION¹

Zimbabwe is a tropical landlocked country situated in south central Africa (area 389,000 km²) the same latitude as Paraguay in South America and Queensland in Australia. The central watershed, dividing the Zambezi (north) and Limpopo/Save (south) river basins and the Eastern Highlands broadly determines the landforms. Aridity increases from east to west and also from the higher altitude centre of the country to the lower lying north and south. Most of Zimbabwe is plateau (600-2,300 meters) draining fairly rapidly into the flat lowlands which are vulnerable to siltation build-up (e.g. Save River).

The climate and weather of Zimbabwe are moderated by altitude, aspect and proximity to maritime influence from the Mozambique Channel. The influence of the midcontinental high pressure ('Botswana Upper High') induces calm sunny days from May to September (dry winter season) and the passage of the InterTropical Convergence Zone brings stormy unsettled weather (October/January to April). The national mean average rainfall of 685 mm encompasses regional variations from over 2000 mm in the east to less than 600 mm over quarter of the land area in the south and south east. Seasonal variations can have a drastic impact on cropping and forage production (livestock and wildlife). Only the Zambezi River maintains a significant dry-weather flow during the most acute conditions of drought. Normally, most rivers flow perennially but this has been disrupted by serious soil erosion and siltation problems in the Save River catchment.

The climax vegetation throughout Zimbabwe would be forest. This has been modified by fire as well as by conversion by crops, pasture and exotic trees. Less than a tenth remains under closed canopy forest while about a half retains patchy tree cover on grazing land. Altitude, rainfall and soil fertility primarily determines vegetative variety with (Miombo (highland) and Mopane with Baobab features in the lowveld, being the two most extensive woodland types.

Zimbabwe has a diverse tropical fauna with 122 fish species, 153 reptile, 640 bird and an unknown but huge number of insects. Greater concentrations of eagles occur than anywhere else in Africa (17 species). The country is endowed with at least 250 mammals including the charismatic carnivores and herbivores, which represent a major tourist resource.

Technically, land use in Zimbabwe has been summarised with reference to the well established Natural Regions and Farming areas map. It derives agroecological potential from a sophisticated combination of rainfall total and incidence:

- Region I- Eastern Highlands, high/reliable rainfall. Slopes susceptible to erosion. Intensive dairy, crops, plantations, fruits, vegetables and maize in valleys;
- Region II- Intensively cropped (mainly commercial) farmland in northeast plateau area (700-1000mm).
- Region III- Semi-intensive cropping (irrigation) with livestock. Midlands area. High proportion of communal land.

¹ Sections I to 4 of these notes draw from "The Southern African Environment: profiles of the SADC countries" by Sam Moyo, Phil O'Keefe & Michael Sill. Earthscan. London. 1993

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- Region IV - Semi-intensive cropping subject to seasonal rainfall variation. Hot, lower land situated north and south of semi-intensively cultivated land. Semi-intensive rangeland (livestock/wildlife). High proportion of communal land.
- Region V - Not suited to cropping without irrigation (450mm). Extensive animal husbandry and multispecies land use. Significant commercial irrigation (sugar) in south-east lowveld. High proportion of area under communal or protected area status (national parks).

2.0 HUMAN-ENVIRONMENT RELATIONSHIP

Land was not a scarce resource prior to the twentieth century. Periodic drought was the principle natural constraint of production ameliorated by recourse to a wide variety of wild food sources. European settlement during twentieth century heralded intense competition for hunting, mining and agriculture resources leading to alienation of the access rights attached to them, backed by the power of the maxim gun belonging to the new settler state structure. The peasant population was displaced onto less fertile soils as choice land was appropriated. Population growth compounded land pressure, which increasingly has had economic, environmental and demographic implications. In addition to land and resource rights being alienated to commercial operations the state alienated substantial tribal lands to itself in the form of wildlife and forest reserves.

In addition, the development of the cash economy has had a great impact on the traditional knowledge systems of the past. Efforts by the settler government to "improve" peasant conservation were always tainted by political factors, non-compliance being a form of popular resistance. Commercial farming during this period enjoyed considerable state support and subsidy as well as conservation extension through the formation of Intensive Conservation Areas. The nationalist reaction to land alienation, as well as the sociopolitical rejection of the emergent African elite, deeply involved the rural people in the 1970's. The overriding phenomenon in the country was the sense of dualism- commercial and communal land; market and subsistence economy; black and white, democratic and traditional governance.

The new nationalist government (1980) promoted growth points and rural service centres in the deprived communal areas and attempted to use resettlement as the mechanism to address landlessness and unsustainable population density resource ratios. By 1990 some 8% of the land was devoted to resettlement, a significant effort but not in relation to the perceived need for equitable land distribution. The land issue remains as "hot" as ever with as much rhetoric as reality, at the political and technical levels. Issues of land reform and tenure remain central to Zimbabwe's efforts to establish sustainability at the ecological, economic and sociopolitical levels. The Communal Areas Management Programme For Indigenous Resources (CAMPFIRE) was introduced in 1989 and is generally regarded as a success. It has been an exemplar to similar initiatives in the region but is becoming enmeshed in issues of decentralisation, devolution, tenure, governance and equity.

Population pressure on poorly endowed communal land has resulted in an overall loss of canopy cover in some areas. Combined with soil erosion and river siltation has led to degraded landscapes, severely in the case of the Save catchment. The fact that most African farmers are still concentrated on overcrowded communal lands remains the driving force for a process of land reform which will preoccupy the country in the coming years. An institutional challenge is the need for property rights regimes which can adapt across the spectrum from communal to private rights of access for resources which are both divisible (arable land) and joint (grazing, wildlife, forest, rivers).

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3.0 ENVIRONMENTAL ISSUES

Resource conflicts in Zimbabwe are largely the outcome of pressure on limited resources. This is well illustrated by the relationship between population pressure and land use practices.

3.1 Population

By 1990 Zimbabwe had some nine million people, half under the age of 14. This high dependency ratio strains the resources of households, as well as state. In 1982 the population density was 19,3 people per km², a 48% rise from 13 per km², in 1969. The high population densities in some communal land has led to extreme land fragmentation, deforestation and soil erosion, factors which have contributed to rural-urban drift. Between 1969 and 1982 the urban population growth rate averaged 5.4% per annum, above the 3% population growth rate. The 1990's have seen this drift increase as a consequence of population growth and frequent drought. Since the establishment of 'tribal trust' lands, now communal areas, they have been exploited as labour reserves, turning able bodied men into labour migrants with the reserves providing a social security system to which men return in infirmity, unemployment or retirement. Due to lack of security in the urban areas most migrants opt to run two homes. The prevalence of split families has retarded rationalisation of land redistribution in the communal areas. However, migrant workers remit funds to "home" areas for subsidy and investment. This "straddling" of the cash and subsistence economies is a major part of rural Zimbabwean livelihood strategies and a driver of rural socio-economic stratification.

It is no accident that the serious degradation of the Save catchment area coincides with some of the heaviest communal population densities living in a high risk area; a very negative heritage of the land apportionment legacy. Finally, it is tragic to report that the very positive gains in lowering infant mortality in the 1980's have been largely undone by the Aids pandemic. Aids has also burdened everyone with the awful dependency of Aids affected families without "breadwinners".

3.2 Land Use Practices

Until independence in 1980 land tenure was characterised by 3 main regimes:

- State lands(15%) held in trust by government for preservation and development of their resources;
- Commercial land(36%) as freehold with a clearly defined land market (32% large scale mainly white owned and 4% small scale (black owned);
- Communal land(42%)

Following independence a further category of resettlement land, excised from commercial land, has been developed covering, so far, some 7% of the country. The interplay between communal, commercial, state and resettlement tenure will be an important aspect of the country's land reform programme for some time to come. The present tendency appears to be a weakening of being replaced by less secure state derived leases and permits for resettlement farmers.

The land issue dominates the sociopolitical arena in Zimbabwe, along with serious macroeconomic constraints. The desperate need remains for sustainable growth that would provide employment and reduce pressure on the finite resource of land and natural resources. Few people deny that access to productive land in Zimbabwe needs to be more equitable but serious questions of transparency, tenure and technical capacity remain. The equity issue is not fully debated outside of political rhetoric as to those objectives related to poverty alleviation and those of economic empowerment. At times the issue of productivity seems obscured by conflict and contestation in the political arena. The Land Acquisition Act allows government to ignore market forces in acquiring farms but that would only part of the resettlement cost. Government's dependence on donor participation means that pragmatism and expediency will mellow the reform process.

CAMPFIRE has informed the issue of common property resource management in communal lands and could provide significant lessons for the resettlement programme as well. Although household stands and arable lands are susceptible to individual private property the management of grazing, woodland and water resources in resettlement areas require joint management approaches. Unfortunately, CAMPFIRE, despite its conceptual reach has become typecast as a communal wildlife management approach rather than a holistic one. It is almost inconceivable that the three departments responsible for specific natural resources (wildlife, forestry and natural resources), situated in a single environment ministry could develop programmes for communal areas with so little reference to each other. If coordination within one agency is so difficult what prospect is there for coordination between ministerial agencies. It would seem that the only

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hope for co-ordinated development is through the process of decentralisation through local authorities. However, decentralisation of administration without devolution of land rights merely leads to another form of centralisation at the district level.

There is conceptual dissonance between governance and tenurial issues in communal areas where tenure is placed in the institutions that represent the people (Councils and Chiefs) and not in the people themselves. Were land rights to reside primarily with the people they would be more able to hold the institutions that represent them accountable. At present Councils and Chiefs are able to contest rights between each other without the full recognition that both institutions need to be accountable to the people that actually access and manage the resource base.

Zimbabwe's Land Tenure Commission produced a report (1994) for government based on wide consultations with the stakeholders. However, government has not brought the report back to the people for their consideration but has rather taken parts of it and left out critical bits. For example, government has accepted the report's recommendation that village and ward committees were not effective and should be linked more closely to traditional structures. However, the advice that tenure should be linked to these structures has not been as readily accepted and been left with District Councils. Local governance institutions, whether statutory or customary, without a clear relationship to land rights, including common property rights, remain hollow and dependent.

4.0 ENVIRONMENTAL PROBLEMS

Environmental constraints cause most of Zimbabwe's environmental problems, for example:

- Development may be in the wrong place e.g. cultivation on steep slopes at streambanks;
- Insensitive development pollutes air, water and soil reducing biodiversity e.g. exotic crops and livestock;
- Natural opportunities such as multispecies production systems may seem less competitive because of poorly defined access rights and subsidies e.g. beef export and veterinarian subsidies;
- The removal of vegetative cover, especially for cropping systems, reduces nutrient cycling, causes decline in soil fertility, exposes soil to heavy rain and direct solar radiation, generates soil erosion, reduces soil moisture and damages its structure;
- Vegetative loss reduces infiltration of rainwater, accelerates runoff carrying soil particles that build up as sediment in dams and rivers, reducing water quality and availability. Many dams have lives of less than 15 years while boreholes reduce the water table. Given much of Zimbabwe's semi-arid status this process is leading headlong toward desertification. Given the phenomena of global warming this process is further accelerated. The Upper Save catchment serves as a dire warning to Zimbabwe;
- Indigenous knowledge systems (including resource governance) of communal people are largely ignored by technical extension workers. Local Communities cannot be aware of the scale factors which are so significant in the process of ecological collapse. Management has to be connected from the household right up to the regional level and so far this is problematic. At the catchment level a "tragedy of the commons" situation persists, reinforcing the need for CAMPFIRE and related programmes like DEAP (District Environmental Action Plans) social forestry, land use planning and grazing schemes linked horizontally and vertically. Once again, the importance of secure tenure (access rights, property rights, ownership etc.) is a critical issue.

4.1 Soil

Two sets of environmental management problems arise:

- Designing land use systems appropriate to local soil conditions, and;
- Combating soil loss and degradation.

The Zambezi escarpment is at high risk while the upper Save catchment in the north east requires rehabilitation, a desperately uphill effort. Severe actual erosion as compared to potential is more related to human activities than natural vulnerability. Land degradation in communal areas is fuelled by population growth increased livestock numbers and the reduced productivity of already degraded land. The annual cost of soil erosion has been calculated at US \$1 billion at rates of 0.15 to 0.5 tonnes per ha per annum. This is Zimbabwe's most serious physical problem and the greatest threat to the realisation of sustainable development.

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4.2 Water Resources

Fully utilised the annual increment of surface water flow available for use would suffice for a population two to three times more than that of 1990 a projection until the year 2020. Three critical water supply constraints are:

- Geographical disparities in water availability in relation to population distribution;
- Rainfall variability;
- Ability and willingness to pay for water.

As a country with a seven month dry period mechanisms to deal with temporal and spatial shortages are well developed. Crises occur during drought and during 1999-2002 reached crisis proportions, particularly in the south. Dams are regarded as a solution but the siltation problem has not been resolved. Most dams are constructed without adequate information or effective conservation of the catchment area. If the catchment basin lies in a communal area rapid siltation tends to occur. The siltation of dams and contamination of watercourses with runoff containing fertiliser and dung encourages the colonisation of water bodies by aquatic weeds. This is a problem Lake Chivero (Harare's water supply) and Lake Kariba and has led to long public debates on the appropriateness of mechanical, chemical and biological control methods.

4.3 Forest Products

Four of Zimbabwe's eight rural provinces are fuelwood deficient areas are more than half of Zimbabwe's districts. Zimbabwe's forest cover is being reduced at a rate of 1.5% per year and stocks in communal areas were halved between 1963 and 1978 and have probably halved again since then. Trees are cleared for cultivation and heavily used for fuelwood, home construction and fencing. The devegetation of semi-arid lands has serious implications for production systems (climate, fertility and availability of forage resources). National parks and forest reserves contain 40% of the woody biomass stocks but supply barely 3% of national wood requirements. Resource access conflicts between resource poor communal areas and comparatively resource rich commercial farms and protected areas are likely to increase.

4.4 Pastoral Resources

The cropping of pasture faster than the natural rate of regeneration produces overgrazing. This simple definition disguises a complex relationship between variable rainfall, forage production and regeneration. Key resource areas (e.g. riverine and wetland areas for dry season forage) which are patchily distributed across the landscape are critical zones for management of resource access. The management problems are compounded in communal areas where grazing is communally accessed by privately owned stock. CAMPFIRE has added a further dimension to the issue by introducing access to communally owned multispecies, which could complement or compete for forage with livestock. Communal grazing management programmes have severely underestimated the institutional challenge of managing mobile (cattle) and fugitive (wildlife) resources together across a temporal and spatial domain which crisscrosses local territorial and administrative management units. To await herd reduction by natural processes however, is an intolerably negative and wasteful non-management approach that implies acceptance of the ecological consequences of overgrazing, notably soil erosion. Despite climatic early warning systems communal stock management lacks the authority to ensure stock levels (grazing demand) relate to forage availability (supply).

4.5 Wildlife

Zimbabwe is the custodian of a large proportion of southern Africa's wildlife, a responsibility rather than a problem. However, human population growth and land pressure means that wildlife has to compete for its access to habitat with crops and livestock. In the long run even the protected area 'islands' may not be safe. Given this threat exacerbated by others, inter alia, the consequences of tsetse eradication, foot and mouth veterinary restrictions, Zimbabwe has responded by addressing communal wildlife property rights issues. The effect of granting landholders use rights under the 1975 Parks and Wildlife Act has been a huge policy success, with wildlife habitat becoming more secure and even growing. However, considerable differences in conservation motivation exist. Intrinsic values or biodiversity, promoted in the 'north', have to contend with the need of rural people to meet livelihood needs and commercial farmers to improve productivity. Lessons from the wildlife sector, commercial and communal, are that the

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combination of local access rights (proprietorship) and resource use values provides the greatest incentive for wildlife to be conserved through its utility values. Utility without proprietorship is not sustainable as it supports an exploitative "freerider" approach. Community-Based Management of Natural Resources (CBNRM), starting with CAMPFIRE, has been a phenomena in the southern Africa region (Zimbabwe, Zambia, Namibia, Botswana), establishing possibilities for the following:

- Multispecies production systems (cattle and wildlife);
- Wildlife production systems;
- Common property tenure reform;
- Landscape management at regional levels;
- Improved governance;
- Positive linkages between land use and conservation management;
- Trans-tenure co-management (intercommunal, commercial, state) conservancies;
- Trans-boundary co-management of biodiversity, watersheds, ecosystems etc.

CBNRM has raised some critical socio-political issues over access and fair distribution of value. Within communal areas cattle "barons" may seek to privatise forage access for their stock while the stockless poor prefer access for their common stock (wildlife). Between communal and commercial neighbours ecological and economic sustainability is threatened by socio-political factors presently manifesting through land reform pressures, poaching and fence cutting. The Department of National Parks and Wildlife Management is increasingly seen as both a referee and a competitive party and policy. Policy is becoming opaque on the delicate continuum between decentralisation and recentralisation toward the "fortress" (monopoly) approach of government. In addition, affirmative action policies are being implemented in terms of market access to the resource and while not inherently negative can lead to lack of transparency, corruption, low productivity and increased concern for short-term windfalls.

The conservation of biodiversity rather than biological resources provides a different order of challenge. The latter implies that resources valuable to humans will be conserved and overtime biodiversity would simplify through coevolutionary processes. Conservation of biogenetic diversity and plant genetic material poses a different type of problem linked to north-south equity as beneficiaries are likely to be shareholders of pharmaceutical and agrochemical companies. The entire issue of intellectual property rights has a long way to go within countries and between them.

4.6 Pollution and Waste Disposal

This is an area of critical preventative action. The problems have not hitherto been perceived as critical but there is a rapidly growing appreciation that "brown" environment issues are reaching proportions such that the country will soon be reacting to issues, as in the "green" sector. Population growth, urbanisation and industrialisation drive problem. Areas receiving increased attention are:

- Emission of fumes;
- Dumping and burning waste;
- Impact of mining e.g. disfigured landscape, reclamation, effluent, residues etc.;
- Eutrophication of reservoirs from discharge of untreated sewage and fertiliser runoff has promoted weed growth in watercourses;
- Storm water run-offs from towns contribute high concentrates of lead (exhaust fumes), phosphates and nitrogen;

Drinking water standards, particularly in urban areas, has been in the news lately. It was felt that a standard was needed against which potable water could be tested. Because of its wide reaching impact this standard and the accompanying test methods are potentially the most important standards to have been published lately. In this and other areas the Standards Association of Zimbabwe has been important.

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Pest management presents two environmental problems the pests themselves and the adverse consequences of their control. Pests can range from elephant, rodents, birds, common flies and tsetse flies. Control of elephants has led to negotiations from the village to the global level (CITES). Control of tsetse flies has involved use of DDT as well as the opening up of the fragile Zambezi escarpment and valley floor to enhanced land use pressures that threaten both wildlife and the ecosystem itself.

With global market liberalisation and the dropping of trade tariffs environmental quality factors are becoming increasingly important. Exporters must now pay attention to the environmental "bill of health" that their products carry, or risk exclusion. Large companies are leading the process while medium and small businesses lag behind.

5.0 THE ENVIRONMENT AND THE LAW

Zimbabwe is presently involved in an environmental law reform process. There are currently over 20 environmental laws administered by at least 8 different ministries. These laws were developed to meet specific needs at a certain time and in particular context. The existing system is essentially one of "command and control" with a focus on regulation, enforcement and police powers. Public involvement and responsibilities that correspond to rights of use and access must now complement this system. The system relied too much on state bureaucracy whose grasp is now recognised to be beyond its effective reach. There were gaps in the system, as laws did not include EIAs, environmental audits and compliance with international obligations.

The proposed Environment Act is a framework law that is intended to guide all legislation affecting the environment. Other Ministries, apart from the Ministry of Mines and Environment (MMET), will continue their role but would be given direction in the Act.

The objectives of the new Environment Management Act are:

- greatly improve the legislative foundation for environmental management in Zimbabwe;
- overcome the weaknesses and fragmentation of existing legislation;
- generally deal with environmental issues across the different sectors, including basic principles of environmental management and sustainable development; and
- enhance the MMET's role as the lead environmental agency.

The advantages of a framework approach are said to be:

- it approaches the environment as an integrated system to be managed on the basis of principles, policies and plans and coordinated at national and local levels;
- it allows ministries to meet the intent and purpose of the law while playing an important role in environmental management;
- it provides a more rational and comprehensive approach to the legal regulation of the environment;
- it is more likely to promote coordination and integration of environment and development policies;
- it can facilitate more effective enforcement and compliance with environmental agreements.

The Environmental management Act is based on 10 fundamental principles as follows:

- sustainability and consideration of the development needs of current and future generations are the cornerstones to environmental management;
- our dependency on a complex and diverse ecosystem requires management approaches that integrate economic, social, cultural and natural environments;
- anticipating and preventing negative environmental impacts is less costly and more effective than correcting problems. This is particularly relevant when considering our limited understanding of nature;
- our ability to monitor, evaluate and ultimately sustain our environment depends upon setting effective and practical environmental standards;
- monitoring environmental quality and controlling pollution must be supported by high quality

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laboratories which may be run by state entities or private individuals on a cost recovery basis;

² This section draws from "Zimbabwe Environmental Law Reform: the way forward". NWET 1998

- the effectiveness of environmental legislation and co-operation in environmental management depends upon a fair yet effective system of penalties and incentives which encourage sustainable development and focus the burden on those that abuse the environment;
- all Zimbabweans should have a constitutional right to a clean and healthy environment and share an obligation to keep it that way;
- effective and efficient environmental management relies upon a well coordinated and integrated system of institutional arrangements;
- our ability to make wellinformed decisions concerning the environment is dependent upon meaningful public participation in the environmental management process;
- Zimbabwe's domestic law must recognise and seek to implement environmental conventions to which the Government of Zimbabwe is a party.

6.0 WEAKNESS OF PROPOSED ENVIRONMENTAL MANAGEMENT ACT

The draft bill, by not providing a new vision, direction, commitment or mechanism for effective co-ordination, does little more than "tinker" with the existing Natural Resources Act. It retains many "command and control" features and the principles are not identified as part of the law reform process. Clear decisionmaking processes, inclusive of stakeholders, with incentives are not defined. Responsible devolution to communities is not well dealt with particularly as environmental rights and responsibilities are not allied to the issue of land (tenure, reform, use and equitable access). The lack of relationship between environment and social, economic, cultural and power relations goes, for example, far beyond local authority bound Natural Resource Committees accountable to a Natural Resource Board.

Criticism has been made on the following points:

- Tenure regimes are a most important factor posing a threat to sustainable environmental management. This is the lesson from the regions most successful environmental programme (CAMPFIRE, CBNRM) yet is not well articulated in the proposed Act.
- Decision making arrangements:
 - Public participation. The management systems created pay only lip service to public participation and remain centralised, consultative and low in accountability and transparency. (Consultation is too dependent on the discretion of the Minister).
 - Administrative authority, Accountability, Transparency. The Minister does not have to give reasons for his policy. The decision whether or not to act on the consultations is purely discretionary with no adequate means for the public to contest environmental decisions.
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 - Inadequate rights of access to information. Access to information forms the basis of effective public participation and is not adequately addressed.
 - Ensuring Compliance. In the absence of strong state monitoring and enforcement capabilities the creation of positive incentives is necessary. The notion of an Ombudsman would allow for the avoidance of criminalisation, to reinforce the underlying notion of cooperation.

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³ "Comments on the Draft Environment Management Bill. Jennifer Mohamedaterere; Julie Stewart and Welshman Ncube; IUCN ROSA. Harare. June 1998

- Monitoring and Enforcement. Reporting should be part of management and legislation should support such initiatives (e.g. ISO 14000 in market products, CAMPFIRE monitoring, farmers returns etc.). Government can be suspected of using monitoring to regulate from above while reducing efficiency in management and raising costs unnecessarily (e.g. wildlife reporting under SI 26 of 1998).
- Sanctions. Courts require flexibility of negative sanctions to address the wide range of misdemeanours.
- Gender. A commitment to gender equality and equity is not reflected in the proposed Act.;
- Institutions. The manner in which the Environment and Natural Resources Board is constituted and its relationship with the Minister is problematic. The role of the Department of Natural Resources is not clearly defined and raises capacity issues. The institutional framework does not encourage consultative, transparent and incentive led processes. The Board could perform two distinct policing and judging functions:
 - Policy formulation, investigation and monitoring, and;
 - Quasi-judicial body to hear and settle disputes.
- Relationship with other legislation. The Act does not take the opportunity to harmonise managerial approaches and provide for an efficient institutional framework e.g. linkages between tenurial, governance and environmental management institutions.
- Compliance with international conventions. This is given too little attention and requires further attention with reference also to transboundary issues e.g. waste, pollution, biological and cultural diversity, river systems etc.;
- Development of regional protocols. To achieve its objectives the Bill needs to address regional cooperation issues related, inter alia, to ecosystems, wildlife, hydro-electricity, transboundary conservation areas, watersheds and river systems.
- Conflict resolution and management mechanism. Conflict management is one of the primary issues that environmental legislation must face and the new Act does not do this sufficiently. It is important to be able to operate in a judicial and quasi-judicial mode in order to manage disputes better.

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4. Malawi – Glyvyns Chinkuntha

Date: 21 September 1998 15:27
Subject: Frame Report

Frame Report by Glyvyns Chinkuntha

PRELIMINARY MEETINGS/ INTERVIEWS

1. Introduction

a) A FRAME team comprising Emily Collins, Fred Swartzendruber both from USA and myself from Malawi was in Southern Africa on a mission to summarise the region's environmental priorities from both a country and regional perspective. The team's assignment was to cover Botswana, Lesotho, South Africa and Zimbabwe. I joined Fred and Emily in South Africa on the 9th of August 1998 after the other two had already been to Botswana.

b) A visit to Lesotho the following day, 10th August was marred by a civil unrest there that had brought the government machine to virtual halt. An aerial impression of the country's terrain, and casual interaction with private individuals left no doubt as to the enormity of Lesotho's fair share of the region's environmental breakdown. Formal meetings and interviews with relevant parties were of course doubtlessly going to enable the team to construct an informed appraisal of the country's environmental scenario.

c) I returned to Malawi on the 15th of August as Fred and Emily proceeded to Zimbabwe to wind up the exercise there. The only country where all the three of us worked together was South Africa. My report on this exercise is accordingly very likely to be fragmented and fairly generalised.

2. Itinerary in South Africa

a) The itinerary in South Africa brought the team face to face with some of the country's top brass environmental managers and 'watchdogs', notably, Dr. Tanya Abrahamse and Dr. Peter Botha both of the South African department of Environmental Affairs and Tourism, M. Kofi and Dr. Diop of The Centre for Science and Industrial Research. We also had the opportunity to meet and talk to officials of the Meteorological Department and last but not least an official from the Ministry of Foreign Affairs.

b) I would strongly suggest the inclusion of either Dr. Abrahamse or Dr. Botha of the South African Department of Environmental Affairs and Tourism, then M. Kofi of the Centre For Science and Industrial Research or its Director, and a Director of Environmental Affairs from each SADC member country.

c) I wish to express my gratitude to the International Resources Group for including me in the South African FRAME team. Last but not least, my compliments to M. Salim Fakir for his very vital surveillance services without which the team could have suffered major setbacks.

Long live FRAME !

3. Malawi

3.1. Background Information

3.1.a. Malawi, a member country of the twelfth nation Southern African Development Community, SADC, lies between two geographical subregional blocks, ie, the eastern and

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southern blocks. It has a tropical climate within the dictates of latitudes 9 degrees 22' and 17 degrees 03' south of the equator. In common with other tropical members of SADC, Malawi has in the past taken her own fair share of such of the regional block's weather vagaries as severe droughts, severe flooding and the ENino phenomenon. It is bounded by Tanzania in the north, Zambia to the west and Mozambique to the east and to the south. It has a population running at twelve million people.

3.1.b. Malawi has rich natural sources including some of the most fertile soils for cultivation in Southern Africa. It has immense forest resources, abundant water resources dominated by Lake Malawi, and a remarkably diverse fauna and flora which if properly exploited can support sustainable development for the country.

3.2. The Environmental Landscape

In the course of exploiting these resources for economic development, however, the country has had to face up to the challenge of narrowing the gap between degradation of her natural resources on the one hand and sustainable production of food and economic growth on the other. In fact the government of Malawi has been so concerned about the deterioration of resources and degradation of the environment that it has had to come up with two major instruments of reference for Policy and Action. These are:

3.2.a. The National Environmental Action Plan (NEAP). Neap describes the environmental situation existing in Malawi and outlines Environmental strategies, measures and programmes necessary for promoting the conservation, management and sustainable utilisation of the country's natural resources.

3.2.b. The National Environmental Policy. This document provides an overall structure against which relevant sectoral environmental policies can be reviewed to ensure that these are consistent with the principles of sustainable development.

3.2.c. Malawi's Vision 2020. Environmental and natural resource management issues have become so pressing that a whole chapter has been allocated to them in the national long-term study called MALAWI VISION 2020 that is expected to help the Malawi government, the private sector and the society of Malawi in general, to improve development management through consensus on a set of national development goals, policies and strategies.

3.2.d. Environmental Impact Assessment. This document outlines the basis for the environmental impact assessment process in the country. It is expected that through this process improved standards of living for Malawians can be achieved and the nation can support, protect and manage its environment more sustainably. The legislative support and protection of Malawi's environmental interests shall be provided by this bill. The mandate to formulate an environmental policy is enshrined in the Malawi Constitution.

3.3. International Obligations

Malawi endorses and adheres to internationally accepted principles of the 1972 Stockholm Declaration and the 1992 Rio Declaration as adopted by the United Nations Conferences. She is a signatory to the following environmental conventions:

3.3.a. The Convention on International Plant Protection.

3.3.b. The Convention on Wetland of significant Importance

3.3.c. The Convention concerning the protection of the World's cultural and natural heritage.

3.3.d. The Convention on the conservation of Migratory Species of Wild Animals.

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- 3.3.e. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- 3.3.f. The African Convention on Conservation of Nature and Natural Resources.
- 3.3.g. The FAO International Undertaking on Plant and Genetic Resources.
- 3.3.h. The United Nations Convention on the law of the seed.
- 3.3.i. The Montreal Protocol for the Protection of the Ozone Layer.
- 3.3.j. The Convention on Biological Diversity.

4. Key Environmental Issues

4.1. Through the NEAP process, environmental degradation in Malawi has been thoroughly analysed and environmental issues identified, with the following as key issues:

- 4.1.a. Soil Erosion
- 4.1.b. Deforestation
- 4.1.c. Water resources degradation and depletion
- 4.1.d. Threat to fish resources
- 4.1.e. Threat to Biodiversity
- 4.1.f. Human habitat degradation
- 4.1.g. High population growth
- 4.1.h. Air Pollution
- 4.1.i. Climate Change

4.2. The first two key issues,ie, soil erosion and deforestation receive Malawi's highest priority treatment on account of the country's heavy dependence on agriculture for both its economy and food security. With 80% of Malawi's population cultivating for survival in the rural areas and 60% dependent on fuel wood for energy, their impact on the environment can be enormous.

4.2.a. Soil Erosion

Soil Erosion is one of the major types of land degradation that pose a biggest threat to sustainable agricultural production, and often leads to contamination of water resources. Soil loss through erosion is estimated to average 20 tons per ha per year, resulting in a social cost of around US\$ 165 million for the poor country. The social cost is reviewed in relation to 1) Declining soil fertility and loss in crop yield. 2) Sedimentation and siltation of rivers and reservoirs. Fertile low-lying areas, for instance, may become unproductive due to the deposition of infertile sand, and siltation may decrease a river's hydropotential and hamper generations of electricity; Malawi's shire river is one example.

4.2.b. Deforestation

The major cause of deforestation in Malawi are agricultural expansion, followed by demand for wood fuel from households, tobacco leaf-curing, brick burning, fish curing, and construction

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works. While the demand for fuel wood keeps rising, sustainable supply of wood progressively lacks behind, leading to severe deforestation which in turn leads to erosion.

5. SADC

5.1. Consistency of Priorities within the Region

Apart from South Africa whose population is fairly concentrated in metropolitans, the majority of SADC countries that have a high proportion of their population condemned to the rural areas have a lot in common of these country key environmental issues and priorities. This bears particular reference to subregional clusters of countries like Malawi, Tanzania, Mozambique and Zambia, the ring of countries surrounding South Africa, and, last but not least are countries bordering around the Caprivi Strip.

5.1.a. USAID Portfolio for Southern African countries has a crucial role to play in facilitating the intricate process of managing and collaborating the necessary environmental management issues of the region. Southern Africa, characterised by a number of ecological zones that hardly correspond to political boundaries urgently needs that collaborative role of USAID on these transboundary environmental issues and priorities on the strength of the NEAPS of beneficiary countries.

5.1.b. Enhancing Food Security

USAID Portfolio should, among other roles, aim at helping the regional block to achieve food security. Greater attention should be focused on sustainable agricultural production through the inclusion of flood plains and wetlands for agricultural production. USAID should consider more direct capacity building in the rural natural Resource Managers themselves.

5.1.c. Alleviation of Poverty through demand driven Community based income generating activities

USAID policy should target grassroot communities more directly through capacity building for environmentally positive income generating activities. These would include: Fruit and Vegetable production, Agroprocessing and Ecotourism.

5.1.d. Urban Pollution

USAID policy should focus greater attention on pollution control and improved urban living conditions, with financial inputting in the municipal administrations of cities and townships.

Countryside Pollution

In the countryside, greater attention should be paid to balancing conservation of the environment with more sustainable agriculture. As a matter of fact, these measures would also help towards land reform, food security, soil conservation and rehabilitation and preparedness for droughts/ other climatic variabilities. Greater support to integrated management of coastal zones will also be required for such countries as South Africa, Namibia and Mozambique.

6. Recognising Environmental Partnerships And Networks

6.a. USAID is certainly not alone in the quest for appropriate answers to environmental questions and problems afflicting the region. It is of utmost importance that USAID acknowledge the presence of such prominent partners as the World Bank and various NGOs at regional as well as country level. Co-operation for the purpose of coordinating and collaborating programmes for the entire regional grouping cannot be overemphasised.

6.b. The South Africa Situation: The unique position of South Africa with its system of a central/provincial administration, each with its diverse environmental research and management institutions could be exploited by all SADC partners as a model for the management of environmental issues on a country by country and on a

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regional basis.

SADC solutions to the region's environmental problems may not, after all, lie far from South Africa's own solutions to her provincial problems. USAID and the entire SADC have a lot to draw and learn from South Africa's long and rich experience in tackling and managing her past and contemporary national environmental challenges for the benefit of the regional block.

GlyvynsChinkhuntha August 1998

DOCUMENTS CONSULTED

1. TOWARDS ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT IN SUB-SAHARAN AFRICA (A WORLD BANK AGENDA)
2. MALAWI NATIONAL ENVIRONMENTAL ACTION PLAN
3. MALAWI ENVIRONMENTAL IMPACT ASSESSMENT
4. MALAWI VISION 2020
5. MALAWI ENVIRONMENTAL POLICY
6. A STRATEGIC ASSESSMENT OF USAID/MALAWI'S NATURAL RESOURCE MANAGEMENT