

# Structural Adjustment and National Environmental Strategies: What Interactions? Notes from Namibia

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Achieving higher economic growth for today's population at the cost of an unproductive natural habitat for future generations is not acceptable. No time should be lost in putting in place, country by country, environmental action plans and in mobilising broadly based popular support for their effective implementation. Extensive community-based programs to plant trees are also urgently required.

— World Bank, *Long-Term Perspective Study*

Pula! Pula! Pula!  
(Water! Wealth! Well Buying!)

— Botswana Invocation

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## 1 Adjustment/Environmental Interactions

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Structural adjustment is important. Increasingly it is perceived as an approach to prioritisation, coherence testing, resource mobilisation and allocation, stabilisation and growth within a context of market force managed production bolstered by state provision of basic services, infrastructure and an enabling climate for individual, community and enterprise initiatives. Whether under World Bank rubrics or not, it is increasingly central to actual economic policy and praxis in a majority of sub-Saharan African (SSA) Polities and to most applied economic/political economic analysis of or on SSA. Structural Adjustment Programmes (SAPs) are central to a majority of countries' annual and medium term macro policy instruments and operations.

Environmental protection/regeneration is also important. Looking only at economic consequences, present levels of ecological damage will create serious new macroeconomic constraints and barriers to adequate household livelihoods within a generation. In many cases it is need (national for exports to ensure overall economic survival as well as household to provide food and fuel to keep members alive) which drives degradation. That poses a dilemma — how to enable less poverty and less ecological damage to coexist now, to avoid irretrievable future environmental (poverty in particular), physical degradation and macroeconomic costs.

If environment is viewed as a separate late add-on to

the main goals of national Structural Adjustment/Transformation programmes, it will be underfunded and underintegrated into main lines of action. This has been demonstrated in the relative failure of Social Dimensions of Adjustment as a parallel, ameliorative project kit approach and its shift (in Bank as well as national thinking and — to a degree — action) to placing production by poor people, provision of basic services and (tentatively) selective safety nets as major poverty reduction priorities to be incorporated within main sectoral and macroeconomic priorities and programmes.

## From Structural Adjustment to Ecological Programming?

But that case does not necessarily demonstrate that general Structural Adjustment (SA) analysis and programming is a promising entry point to building up, articulating and acting on the ecological front. In the abstract SA is heavily macroeconomic at resource allocation level and highly generalised micro-economic at the more detailed analysis one. To deduce ecological strategy from either is likely to prove more than a little difficult and as argued extensively by Mearns [1991] more than a little inaccurate.

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## 2 The Structural Adjustment Approach to Environment

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### General Propositions

Ecological policy based on Structural Adjustment as entry point begins with three basic propositions. First, increased price (reward) for a product will result in increased production of that product. Second, increased resource allocation to producing something (e.g. agricultural research) will result in higher output. Third, increased efficiency in resource use will lead to increased output, especially of the products on whose production the efficiency increases are centred.

These are valid and powerful propositions. However, their applicability in any particular case rests on the applicability of certain assumptions.

First — external (to the actor) costs and benefits are low (e.g. the prudent irrigation water user gets most of the gains and the imprudent bears most of the costs of his/her actions). Second — non-material resource

constraints (e.g. knowledge) are relatively few and relaxable. Third — resources for investment now to achieve future gains can be mobilised (e.g. a hill farmer can — if output prices justify — borrow resources to terrace to sustain/increase yields). Fourth — changes in output level/technique carry low perceived and actual catastrophic risk level (e.g. either hybrid seed trebling yields in normal rainfall years does not also quarter them in drought ones or does not take place at the onset of a drought cycle). Fifth — individual and social valuation of future, as weighed against present, gains are roughly the same (e.g. the peasant household which must grow a crop to eat this year values future gains from erosion protection similarly to society as the trustee of future generations and is able to act on that valuation).

Unfortunately in applied environmental policy and praxis these assumptions are open not only to particular exceptions but also to doubts as to general applicability.

### And Their Articulation

From these general propositions it is perfectly possible to articulate to the probable environmental (or other) impact of particular SA policy instruments. From there it is possible to work out the ecological significance of a specific Structural Adjustment Programme instrument by instrument and — less clearly given aggregation and interaction problems — overall.

This has been done in the case of Malawi. The various contributions have been synthesised and then summarised in tabular form by Mearns [op cit]. The initial impression is of an analytical framework of very considerable articulation, explanatory and projective power capable of providing a large number of insights and opportunities for action. Such a systematic exploration can identify dangerous policies, new opportunities, and the support (or otherwise) instruments adopted for non-ecological reasons can give to ecological strategy articulation and praxis. Doubts arise when it is suggested that it is also a convenient entry point for constructing national environmental strategies and programmes.

### SAPS as Ecopolity Systems: Some Limitations

First, the SA based analysis indicates directions rather than quantifiable estimates of how much, how fast, and how adequate to the needs/goals specific to the sector concerned.

Second, considerable uncertainty as to results arises in some cases. For example, price changes will alter crop mixes and production techniques. If shifts reduce trees relative to field crops and surface cover intercropping relative to spaced row single stands, the direct ecological results are likely to be negative whatever the indirect ones of more income available for all uses.

Third, in general the ecological results of SAP instruments can be expected to be incremental and slow.

Fourth, the environmental impact of SAP instruments is a side effect not the major reason for their adoption (with some exceptions in the case of forestry). This implies that their adequacy is unlikely.

Fifth, for the general incentives flowing from SAP instruments to be effective, specific resources and contexts (enabling environments) not contained in nor deducible from the instruments themselves are likely to be necessary. For example, neither budget balancing nor reducing implicit taxes and explicit subsidies has uniform or predictable results on all types of producers. The problems are particularly acute — as the Bank's *Long Term Perspective Study, 1989*, cogently stresses — for poor peasant households producing largely for self-provisioning. For them, quick, visible output gains and initial techniques requiring primarily off-season labour time plus specific physical inputs with low cash cost appear to be a virtual *sine qua non* if higher crop, tool, seed and fertiliser prices packages are not to raise barriers to producing for sale and affect household self-provisioning output negatively.

Sixth — the interaction of multiple instruments with different impacts is difficult to aggregate and depends substantially on the speed and sequence of instrument application. For example, ending fertiliser subsidies by itself is likely to reduce their use (especially by poorer farmers on poorer soils) with negative consequences to soil fertility and crop yield sustainability. Introducing competition and/or marketing cost/profit margin compression increases grower incomes and is likely to result in enhanced fertiliser purchases. If the second is sequenced to lead the first the net effect may be positive environmentally; if the first is the lead instrument, the reverse is likely.

Seventh — and perhaps most crucial — the cases in which the deductions from the general propositions through specific instruments to actions will be wrong (i.e. the direction of change will be the opposite of that expected) are not trivial. Some are counterintuitive (that is, normal economic logic is neither dominant nor is it complementary to the dominant logic on which the relevant decisions are made). Most are not genuinely counterintuitive but result from specific contexts in which the specific economic logic of the actors posits actions other than those generally predictable.

This critique should not be read as a case for the World Bank to 'get out of the environment business'. The Bank's Environmental Department is not solely — or even primarily — concerned with SAPs. (Indeed field experience with SAP construction in SSA suggests its involvement is extremely peripheral.) Its strength with respect to assessing the ecological and environmental

consequences (positive or negative) of particular projects and programmes and in identifying ways to manage and to enhance or offset them would appear to be both greater and more readily enhanceable than its direct contribution (as opposed to environmental vetting and monitoring) of SA and SAPs *per se*. In other words, it should work primarily from micro and field levels outwards and upwards not inwards and downwards from macro and desk levels.

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### 3 An Alternative Approach

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Therefore a case can be made for an alternative route to interaction. This would be country based for analytical and strategic purposes, although necessarily built up from zonal and local sub-contexts, nationally and cross country coordinated when appropriate (e.g. Okavango water management at some levels requires coordinated strategic planning and action by Angola, Namibia and Botswana).

Its starting point would be environmental themes, issues, trends as they related to/were perceived by households, civil society and governmental units as decision takers. One such issue might be water, water with sub-categories of use allocation and levels, preservation of supplies, augmentation of flows, erosion, and pollution. This accepts the premise that for most human and human institutional actors the ecological environment is a set of resources whose importance lies largely (although by no means wholly for persons, households and civil society units with strong cultural or religious beliefs in respect to some or all aspects of nature) in its contribution to their present and future well-being. It also accepts that most decisions affecting environment will not be free standing but integral to multi-faceted decisions/actions (e.g. which fields to crop, graze, fallow using what techniques) which are taken for reasons which are not merely, solely or even primarily ecological.

Broad environmental protection/management/regeneration perspectives and some rules of thumb for what to do (and **not** to do) in the presence of imperfect data whether data is adequate or not, to inform decisions which will in fact be taken can be articulated moderately quickly and potentially in operational form. The problems of articulation (specific cases, specific data, specific techniques, specific monitoring) are fairly standard in the sense that they are not radically different in kind from those relating to, e.g. crop production or primary health access development. Those of interaction may be — or may seem to be because they are inadequately perceived and acted on in respect to other themes. The dominant one is physical/natural ecology and human environment. The human environment of most of sub-Saharan Africa (urban as well as rural) is one of poverty and of urgent, immediate need for more resources to achieve a humanly acceptable standard of life. If environmental

themes and actions do, and can be seen to, address these realities positively they can get on agendas from personal/household to cabinet/presidential; otherwise they have little chance.

Environmental policy and practice is highly decentralised in two senses. Its themes/programmatic areas crosscut sectoral lines, e.g. purity and preservation of flows of water relates to Agriculture and Livestock, Industry, Mining, Urban Affairs. Further, it is in direct contact with and directly affected by the actions of most or all households as well as by those of key enterprise, governmental and civil society decision-takers. From this flow several operational/institutional implications:

- 1 a strong unit to handle data collection, analysis, strategic formulation, policy and programme design and to shape perceptions, as well as to catalyse, coordinate, and monitor action is likely to be both feasible and necessary but an operational line ministry to carry out programmes across a wide array of technical and sectoral lines is not;
- 2 community support and operational involvement is necessary if many aspects of protection (e.g. wildlife), management (e.g. water) and regeneration (e.g. tree-shrub-bush cover) are to be implemented beyond large actor enclaves;
- 3 neither main line ministries nor communities (and their member households) can afford to give priority to ecological protection, management and regeneration unless they are convinced that not doing so will have high medium term costs and that doing so is possible using technically (including time required) and economically feasible means and will yield palpable benefits (e.g. larger crops, tourist related payments, more water to allocate);
- 4 therefore, a network from community/household action through line operating bodies to central decision-taking units (with a sub-chain in the other direction to large operating units such as mines, irrigation schemes, fishing fleet operators) serviced and catalysed by the ecological unit is potentially feasible whereas a normal sectoral top down, single dominant actor one is not. Presumably the unit should be in a key central ministry — where exactly depends on the structure and dynamics of the specific state.

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### 4 Toward a Rural Namibian Eco-Environmental Strategy

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#### The Unforgiving Land

Environment, at least as a social science or a political process, is about human beings as well as about ecology in the narrower sense. To apply Adam Smith on the incompatibility of sustained national wealth and human misery — no ecological zone can be

healthy and sustainable the majority of whose residents survive in misery and extreme need.

Namibian ecology is basically that of semi-arid to desert lands: fragile, easy to damage, hard to restore. The human condition is — for most rural Namibians — one of severe to absolute poverty in an institutional context and economic structure which (even post-apartheid and with independence) offers no easy ways out.

Namibia is a very large country with very little good land. Over half is desert or economically void mountains. The balance is largely low carrying capacity — from 30 ha per large stock unit in the South to 7 to 10 in the North. Under 10 per cent of the usable land can be cropped without irrigation — a band across the North 200km deep; the highland kaarstveldt and a lesser artesian area on the east central Kalahari margin; on the Windhoek-Coast highway where mountain water percolates and — with irrigation — at Mariental and on the Orange River. In no case is local rainfall alone adequate — seepage from perennial rivers, seasonal floods and or mountain fed aquifers are at least as important in each zone.

75 per cent of the land usable for livestock or crops is owned by about 2,700 settler and 300 black families and supports about 50,000 farm workers and about 200,000 dependents. 25 per cent of usable (but 75 per cent of croppable) land is 'communal' with about 100,000 complete and 100,000 divided families holding rights to portions of it.

Two realities — of ecological fragility and of human need — interact. In the North more people on the same land area have pushed beyond the margins of ecological sustainability of soil and of vegetation. Need, not greed, is the destructive dynamic so far as the rural households are concerned, although the ultimate cause is past European rancher greed for land.

In the Centre and South, many ranches built on underpaid labour do not earn plausible returns on resources used and often have pushed the ecology to or beyond the tipping point into secular degradation. In the 1890s many ranches near Windhoek had seasonal open water and neither erosion gullies, nor the compacted, impermeable surface soil that leads to them.

To argue whether worker need or rancher greed/need is key is to miss a basic reality: no ranching system which cannot provide decent living conditions (including income, housing, nutrition and access to basic services) to its working households, a positive return on capital used and production patterns ecologically friendly enough to halt/avert secular degradation can be sustainable.

Namibia is inherently short of physically and economically accessible water. The total urban

household, mining, industrial, rural household, livestock and crop demand consistent with 4 and 6 per cent growth and non-desert water use norms is beyond economically viable and ecologically sustainable flow levels. Hard choices have to be made by use and by location. To seek to avoid them by drawing down stocks (as appears to be happening now in the Kaarstveldt and other artesian areas) is to delay facing unforgiving future ecological limits.

### **Pula, Pula, Pula! — First Steps and Steps to Avoid**

Namibia's ecology is damaged, not irrevocably destroyed. There are limits to carrying and self-regenerating capacity, but they can be increased. Judging from conversations, the press and the Independence Day Parade floats, environmental concern in Namibia is real and fairly widespread; an enabling climate necessary, even if not sufficient, for environmental protection and regeneration.

What is needed now is to develop a coherent, articulated, informed strategy in relation to sustainable environment which includes both the ecological and human condition strands.<sup>1</sup> Because that will necessarily take time, a set of preliminary guidelines and caveats may be useful:

- 1 be cautious in the absence of clear evidence of ecological safety — delaying a safe gain is less damaging than incurring an irreversible loss (e.g. block new water pumping from reservoirs which are clearly or probably already being drawn down faster than the recharge rate until a better model is built up and tested);
- 2 where practicable halt ecological degradation now; at the least take action to slow it and set target dates for halting and beginning to reverse it (e.g. initiation of suitable seedling distribution and household tree and bush planting programmes) acceptable to rural households;
- 3 give urgent attention to ecologically friendly means of increasing the livelihood sustaining capacity of both the small and the large scale farming/ranching sector (e.g. holistic grazing systems to lengthen rotation to shorter, more intensive use [see Otzen 1990] and surface water points to allow new grazing areas in north to reduce pressure on core cropping areas);
- 4 view trees-bushes-shrubs in the context of silviculture and farming/ranching systems (including their livelihood effects) not only from forestry, fuel supply and ecological preservation perspectives;

<sup>1</sup> The strategy for a country with substantial forest zones in which deforestation was demonstrably affecting soil quality and domestic climate (and contributing measurably to the global greenhouse effect) — say Ghana — would not be the same as for Namibia. In Namibia tree and bush loss is significant because it threatens sustained usability of land and of households fuel supplies, but it threatens neither domestic nor global climate significantly.

- 5 build up a national (and local) water flow, stock and potential augmentation inventory (inventories) and enumerate present uses to allow 20 year perspective programmes for water development, allocation, charging and use and in the interim seek to halt expansion of unsustainable national and, local uses;
- 6 in parallel, proceed with water use/supply/protection agreements with Angola, Botswana, Zambia, Zimbabwe and South Africa in respect of border rivers and trans-border drainage/basin systems;
- 7 review global experience of large, medium and small scale irrigation with a view to determining sustainability (with special reference to soil salination) and viability and defer large and medium scale expansion until clear evidence and analysis is to hand while experimenting in respect to small scale and, probably, small or medium Orange River margin pump or weir schemes;
- 8 evaluate shifts in production pattern and price policies (e.g. to encourage mixed farming, oilseeds, urban market 'truck gardening', silviculture) in environmental and livelihood as well as physical supply and food price/food security terms;
- 9 collect data on experience and research in other SADCC countries with a view to adaptation and field testing;
- 10 recognise that, except for beef and karakul, rural production is unlikely ever to exceed 3 per cent of GDP or 1 per cent of domestic savings and therefore it neither is nor will be central to the macroeconomic dynamics of Namibia. Therefore ecological viability and livelihood enhancing (not narrower physical or financial surplus) targets can and should be the central ones.

### **Ecology: Elements, Threats and Building Blocks**

It is relatively easy to draw up a check-list of threats and elements but remarkably difficult to articulate them — especially briefly — in a policy and programme focused way. Data is scarce, scattered, and full of gaps. Namibia is not homogeneous. To write specifically on land quality, use, carrying capacity, present situation, trends and future prospects/portents without specifying whether one is talking about the Kaokoveldt, the Oshana Country, the Okavango Valley, the Eastern Caprivi, the Otavi Highlands, Gibeon or the Orange River potentially irrigable zone makes limited sense. On each count these areas diverge greatly. Ecological aspects cannot be abstracted from human aspects if one is concerned with future pressures and possibilities. Creating an ecological paradise at the expense of rural residents is neither practicable administratively nor politically, while sustaining rural livelihoods by ecological destruction is at best a short run expedient.

The key factors are land, water, vegetation, air, sea and wildlife/ 'wilderness'. The threats to them include overuse and pollution leading to, e.g. erosion, salination, fertility decline, quality degradation (in plant populations), desertification, poisoning (e.g. via polluted — including saline — water and airborne chemicals/radiation/dust), and destruction of stocks (of fish or wildlife).

Of these the sea — i.e. slaughter catching of fish, shellfish and marine mammal stock problem — poses an important and specific problem. However, the ecology of Namibia makes it virtually totally separate from other rural ecology and livelihood issues. Air pollution's flashpoints in Namibia are the Rossing and Tsumeb mineral processing and smelting complexes which are limited area, specific, technically (but expensively) soluble problems little related to rural environment in general.

Wildlife/wilderness issues affect agriculture but in somewhat special ways because the basic issue is normally what land should be dedicated to which. In most cases the two uses are not mutually compatible on the same piece of land. It is at the margin that trade-offs arise between ranching and wildlife preservation for tourist viewing and/or wilderness preservation. These are unlikely to be for small areas: in few parts of Namibia is the use of up to 5,000 ha to protect a scenic attraction likely to have a high agricultural opportunity cost and rarely is such a small area viable by itself for wildlife. The Skeleton Coast/Etosa corridor to link the two main wildlife preserves, illustrates the nature of the real and difficult choices likely to arise between extensive ranching and wildlife conservation, and is probably the most quantitatively significant and temporally urgent of them.

Wildlife and wilderness areas need to be protected and serviced — not merely zoned — if they are to survive. To the extent that costs can be covered from visitor revenues without the visitors themselves wrecking what they come to preserve, no inherent problem arises. To the extent that Namibian wildlife and wilderness are seen as a global and national heritage with claims on resources in their own right, problems of priority to that heritage versus priority to survival and development needs of poor Namibians arise.

Land itself is not scarce — good quality and especially croppable land is. Redistribution will not solve that: the 250,000-300,000 large farm workers and dependents are, if anything, more than can be supported on that land and Northern 'demand' for mixed farming land cannot be met because very little exists. Most ranching land cannot (or cannot subject to economic viability) be converted to crops or even to mixed farming with a significant crop component.

Water, as noted, is both absolutely scarce and expensive to collect and transport. Increasingly this

constrains both agriculture and agricultural household supplies and development of alternative urban and mining livelihoods. Both water conservation and allocation improvement are therefore crucial.

Vegetation at risk includes trees/bushes and pasturage. Lessened poverty is crucial to restoring the first and a combination of holistic rotational pasture management with bringing pasturage now unusable because of the absence of surface water or the presence of poisonous plants into use are key to the second.

A special issue is intercropping game and cattle/sheep. To be economically viable as a general practice this requires a qualitative shift in export market links. As it is, almost certainly, environmentally valid in many parts of Namibia, building them is a commercial priority.

### Human Environment and Ecology

Improving rural livelihoods/access to services and housing conditions to avert tidal waves of in-comers to urban areas is a necessary strategic priority given plausible urban livelihood growth rates and limits to urban infrastructure investment. Reconciling this with ecological damage reduction and reversal is not going to be easy. Pretending there is no such priority will have even more negative environmental consequences.

Rural inequality characterised by cramming large numbers of households or fragments of households into small areas of often marginal land with next to no attention to raising household sector productivity has been a recipe for growing environmental degradation as population in these areas rises. That is the underlying historic dynamic of much of what South Africa described as 'homelands' or 'second tier authority' areas.

These areas are characterised by need-driven ecological degradation. Need for fuel for fodder, for crops to eat, for livestock to eat and to sell rising with population, force overcollection of bush, overcutting of trees, overgrazing, and cultivating too continuously with too little return of nutrient to the soil. In analysing and acting on this type of downward spiral two dead end roads need to be avoided: 1) seeking to enforce ecological sustainability by fiat and force which is unlikely to succeed and is certain to immiserize poor people further; 2) saying that the ecological damage is not the poor people's fault but that of a grossly inequitable resource access pattern (true enough) and that therefore nothing can or needs to be done (false, especially as the burden of the ecological damage will fall primarily on the next generations of poor people).

The large ranching/mixed farming sector initially typified the economy of greed — stolen land, cheap (**de facto** forced — by single channel labour recruitment and barriers to commercialisation of

African production) labour, limited ecological awareness, proprietor levels of consumption vastly higher than those of workers which were near to or below the absolute poverty line, and master-servant type labour relations. Reconciliation should not mean shaking fists (or more lethal weapons) over the past, but it must not mean declining to analyse it and its heritage and failing to act to transcend it. Worker livelihoods need to be raised and households reunited — for human and political reasons and also to retain a labour force. Overstocking and under-investment in pasture maintenance and improvement need to be halted. The issue is — how? There are no longer (and historically have usually not been) large profit margins to meet these costs. Ranch proprietors, in general, do not have incomes above the professional-managerial-medium sized entrepreneurial average and often have sizeable debt burdens and low cash balances. Clearly either income (ranch cash and worker self-provisioning) must be enhanced or costs cut or both.

Routes which would reduce employment and raise capital intensity and scale are open to question economically and would make a serious negative contribution to adequate livelihood creation priority. Turning the land back to 'traditional' ranching would lower costs, but also output, with very doubtful gains to worker livelihood. Work team based approaches (or conversion to Botswana model large and medium scale ranches) could be viable if adequate knowledge, experience and skills were available. They are not available today — at least for broad front conversion. The status quo is not viable except in the very short run.

Superimposed on these two long term problems is that of the war displaced persons. The most visible — especially from a capital/major city perspective — may be those returning from abroad. However, the majority of displacees — especially the majority of desperately poor people among them — are internally displaced people from the districts loosely describable as the Ovambo and Kavango rural areas. These at their 1989 peak numbered up to 300,000 whereas rural oriented external returnees probably number well under 50,000. The end of the war and therefore of sales of goods and services to the RSA occupation forces (and now to UNTAG) has sharply reduced urban and peri urban formal and informal employment. Many of these people need to be able to return to their homes. But they cannot return without systematic enabling support — tools for agriculture and for house building, seeds, implements, household utensils, food until the harvest, and core livestock to rebuild that aspect of mixed farming. And unless there are systematic family sector household friendly programmes for reversing tree/bush destruction and soil depletion, their return cannot be made compatible with environmental stabilisation and sustainability.

## 'Pula, Pula, Pula'?

This sketch cannot constitute a complete environmental programme for rural Namibia. Its aim is much more modest:

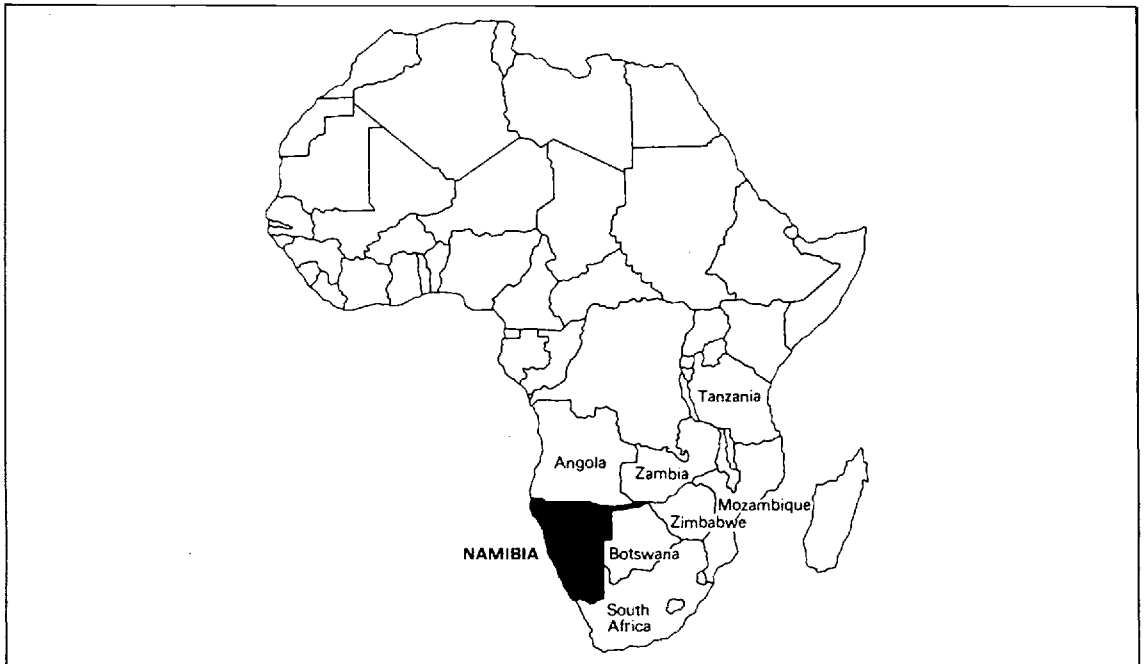
- 1 to demonstrate the negative and systematic interactions of ecological degradation and human poverty in Namibia;
- 2 to identify the most serious environmental/ecological risks and downward dynamics in rural Namibia today with special reference to agriculture;
- 3 to suggest how one can ask questions about these risks/downward dynamics which direct attention toward humanly and ecologically sustainable answers — and to ask some of those questions;
- 4 to suggest some initial, partial answers which — if implemented — could improve environmental/ecological dynamics and buy time for articulating fuller strategies based on additional data and analysis.

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