

***ENVIRONMENTAL REVIEW OF THE GREEN PLAN AND
INCLUSION OF ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT
ASPECTS WITHIN THE
SECOND NATIONAL DEVELOPMENT PLAN OF NAMIBIA¹***

**FUNDAMENTAL ISSUES AND THREATS
TO SUSTAINABLE DEVELOPMENT IN NAMIBIA²**

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(A) Introduction

The purpose of this paper is to highlight and examine major issues that arise in connection with Namibia's development over the coming years. These issues may be seen as constraints or threats to the country's efforts to embark on a sustainable development path. But if properly addressed and targeted as areas of prime importance for innovative policy development and implementation, the issues may turn into opportunities for sustainable development (SD).

While each individual issue appears fundamental to SD in its own right, no one issue stands alone. In fact, it would be futile to consider and tackle any issue on its own, in a separate and isolated fashion. There are many inter-linkages such that the issues must be examined and addressed together as a system. This is reflective of the complex and integrated nature of the SD challenge.

Below we present and characterize a set of 12 fundamental SD issues, in no particular order. Each issue is examined roughly along the following lines:

- a) a brief analysis aimed at explaining the significance of the issue in the context of Namibia's past, present and future development;
- b) identification and characterization of some of the major linkages to other issues, also examining what these linkages may imply for effective strategy and action toward SD;
- c) options for what might be done in the way of strategy, policy and action to come grips with the issue (and its linkages to other issues), trying to turn constraints and threats to SD into opportunities for SD -- in the light of what is already being done by the government and other actors in terms specific policy development and programme initiatives.

(B) The issues and threats -- how they are linked and what they imply for SD

The following set of 12 fundamental but inter-linked issues have been identified as posing significant threats to sustainable development in Namibia:

- i) Economic growth and industrialisation -- ecological constraints and impacts;
- ii) Poverty and inequality -- disparities between the rich and the poor;
- iii) Water -- a limited resource for human use and economic growth;
- iv) Land -- low human carrying capacity and inappropriate distribution, tenure and use;
- v) Biodiversity -- an endangered foundation of human life and livelihoods;
- vi) Population growth and settlement patterns -- more people sharing a limited resource pie;

- vii) Human resources – a lack of human capital for socio-economic advancement;
- viii) Governance -- the need for changing institutional approaches to resource management and for safeguarding human rights, democracy, peace and security;
- ix) Economic policy and management framework -- the need for a stable macro-economic environment and for unleashing private initiative and entrepreneurship
- x) Regionally and globally shared natural resources – the risk of increasing competition for regional resource access and the adverse local impacts of global environment change;
- xi) Knowledge for sustainable development – the need for harnessing existing knowledge and generating new knowledge
- xii) Culture, communication, attitudes and lifestyles – the need to develop a shared vision and values for sustainable development

Below, each of the 12 issues is examined regarding its significance in the evolving Namibian context, its linkages to other issues, and what needs to be done to encourage more sustainable development, in the light of past and present strategies and actions pursued by the Government of the Republic of Namibia (GRN) and other Namibian role players.

i) Economic growth and industrialization -- ecological constraints and impacts

Sub-issue 1

Strong economic growth – one of Namibia’s four national development objectives – poses a threat to sustainable development, because it may lead to an over-exploitation of the country’s limited and fragile renewable natural resource base – as reflected in processes such as land degradation, water over-consumption, erosion of biodiversity, and fish stock depletion. The risk of resource over-exploitation is greater in Namibia, since the country’s overall economic activity is concentrated in the natural resources (primary) sector -- any further economic growth puts immediate extra pressure on the country’s limited and fragile natural resource base.

Sub-issue 2

If and only if Namibia’s precious renewable resource capital is maintained in quantity and quality through sound and sustainable management can economic growth be sustained and sustainable development be attained. To maintain renewable resource capital and counteract the risk of resource over-exploitation, there is a need to pursue a dual strategy of a) setting up mechanisms to encourage consumptive resource users to re-invest in the natural resource base and b) decoupling economic growth from natural resource use, by increasing the value of economic output per unit natural resource input. Options under the latter component include:

- * greater emphasis in economic activity on manufacturing (secondary sector) and service provision (tertiary sector);

- * encouraging local value adding through domestic processing of primary export goods;
- * promoting more efficient use of scarce or expensive resources, like water and energy;
- * increasing sustainable economic output from land, through land use diversification on freehold and communal land;
- * importing products whose production is intensive in the use of scarce natural resources;
- * general emphasis on recycling, re-use and waste reduction in production and consumption.

Sub-issue 3

Unlike land, water, fish and biodiversity (renewable resources), Namibia's rich mineral resources are non-renewable. Hence, sustained mining activity will, by definition, deplete mineral resources in the long term. Even though the contribution of the mining sector to national GDP and export earnings has declined significantly since independence, Namibia is still quite dependant economically on the mining sector. There is a need, therefore, to develop a long-term strategy for further economic and industrial diversification.

Sub-issue 4

Strong economic growth and expanded industrial activity will inevitably result in adverse environmental impacts, such as water and air pollution, liquid and solid waste generation, and land contamination. These impacts carry significant economic and social costs which threaten to undermine economic growth and sustainable development. Hence there is a need to limit environmental impacts and associated socio-economic costs, by encouraging pollution prevention and mitigative measures where necessary. Environmental management and EIA legislation about to be passed by the Namibian parliament will be a useful tool in this endeavour..

Sub-issue 5

Problems of resource over-exploitation and adverse environmental impacts arising from economic growth may cloud prospects for sustainable development, but at Namibia's stage of development, sustainable development could not be achieved without sustained economic growth. What is at issue is not economic growth as such, but the nature and patterns of growth that is most conducive to ecologically (and socially) sustainable development. The challenge is to find the right balance between economic and environmental (and social) objectives and to integrate economic and environmental (and social) criteria in making appropriate choices.

Economic growth versus sustainable development – ecological and social issues and linkages

No one seriously questions the need for strong and sustained growth as an essential pre-requisite for sustainable development (SD) in the independent Namibia. Economic growth is needed, *inter alia*, to:

- reduce widespread and often abject poverty among the majority of the population and achieve a more equitable distribution of income, wealth and access to resources in the country (**issue ii**);
- generate the necessary economic opportunities and benefits for a fast growing national population (**issue vi**); and

- provide the necessary employment opportunities for a fast expanding labour force, being swelled by rapidly rising numbers of young people in search of jobs and livelihoods.¹

Only in the long-term, with population growth dropping, population size stabilizing, and poverty and inequality diminishing, might it be possible to think of and promote low-growth, or no-growth, scenarios for SD.

There is thus little doubt that in the short and medium term, sustained economic growth is an inevitable ingredient of any SD effort in Namibia. What is open to debate, however, is the nature and pattern of economic growth that would be most conducive to or at least compatible with SD in the country. Clearly, reducing poverty and putting growth and development on a more equitable footing, as much as possible, must be part and parcel of any growth strategy toward SD (**issue ii**). This important 'social equity' dimension is already reflected in the set of four main objectives pursued under Namibia's National Development Plans (see footnote 1).

Of no less importance to SD is that Namibia's fragile natural resource base and ecological life support systems be maintained or enhanced. Strong economic growth may pose threats to SD, unless mechanisms are put into place to prevent unsustainable natural resource exploitation and where necessary, restore already over-exploited ecosystems and habitats. It is imperative that the precious renewable natural resource capital be managed judiciously and not used up or degraded irreversibly. Indeed, care should be taken to use available 'dividends' accruing from this capital, within natural short-term rates of resource replenishment, for maximum economic productivity and benefits.

Environmental management and impact assessment (EIA)

Similarly, the environmental impacts from expanding economic activity and industrialisation must be contained and managed in ways compatible with SD. The economic (and social) costs of environmental impacts must be balanced against the economic and social benefits from the activities generating the impacts. Comprehensive environmental legislation -- the Environment Act -- will shortly be before the Namibian parliament. This legislation once passed, will enshrine important environmental management principles and mechanisms, including environmental impact assessment (EIA), prevention and mitigation methods and procedures. The relatively low level of industrial activity in Namibia at present provides an excellent opportunity for a well guided and monitored industrialisation process. EIA legislation will be an important tool to monitor the environmental impact of economic activity and to prevent the establishment of polluting industries.²

The mining sector already has had environmental management regulations in place which have provided a measure of environmental self-regulation of ongoing mining operations. Yet abandoned mines and mine tailings in different parts of the country -- relics from past operations -- remain serious local environmental hazards. Use of an Environmental Investment Fund -- a mechanism enabling consumptive resource users to re-invest in the resource base -- has been proposed to finance the clean-up.

Role of renewable natural resources in economic growth and sustainable development

Key renewable natural resources which are particularly critical to sustained economic growth and SD in Namibia -- and currently at risk of overexploitation -- include:

- ☐ water (issue iii);
- ☐ land (issue iv), including land-based resources like wildlife, trees and pastures;
- ☐ biodiversity (issue v);
- ☐ marine fish resources -- very rich, but seriously depleted as a result of severe over-fishing by foreign fishing fleets in the 1960s, since independence Namibia's fish stocks have been making a partial recovery, thus

¹Achieving sustained economic growth, creating employment, eradicating poverty and reducing (income) inequality have been and remain the four major -- and closely inter-twined -- development objectives of Namibia's National Development Plans -- the Transitional National Development Plan (1991-94), the First National Development Plan (1995-2000), and the Second National Development Plan (2000-2005) currently being crafted, into which the present Environmental Review is meant to feed.

²See Trade and Industry Issues and Options Paper, April 2000.

allowing cautious expansions in fish off-take. Responsible for some 5% of national GDP (**check??) and approximately 10% of exports (**check??), now more sustainably managed, and emphasising local value added through domestic fish processing, the fish sector is likely to remain an important contributor to national economic output and job creation. However, various problems -- such as intensifying international competition for canned fish supply, over-capitalisation and diminishing competitiveness of the national fishing fleet and sea bed diamond mining -- threaten the economic sustainability of the country's marine fisheries.

Role of non-renewable natural resources -- mining of minerals -- in economic growth and sustainable development

While renewable natural resources – like water, land and fisheries -- can and should be managed sustainably, this is not possible, per definition, for non-renewable mineral resources – even though rising market prices for minerals and improved mining technology may -- and often do -- increase economically exploitable resources (reserves) and hence extend the time horizon over which known resource deposits become depleted. Here, the challenge is one of judicious exploitation of reserves. In the short- to medium-term, the level of mining activity and investment into new mining ventures will be determined by international market prices for key minerals (diamonds, zinc, uranium, gold, etc) as well as by already operating or firmly planned mines. The long-term challenge is to make the rate of exploitation consistent with national macro-economic needs (foreign exchange, employment, etc) and to promote economic diversification by providing incentives for investing some of the profits from mining operations in sectors other than mining.

Namibia has long been – and to a significant degree still is – a classical case of a small economy dominated by the exploitation of key minerals, increasingly currently dominated by diamonds most of which are now recovered from the sea bed. Over the past 100 years, mining activity has fueled accumulation of wealth in Namibia, which has placed the country within the middle-income category of developing countries (annual per capita GDP of some \$1300 US equivalent).¹ However, the wealth has been very unequally distributed; and as a capital-intensive activity², mining has done relatively little to create jobs and raise the living standards of the majority of the population (**issue ii**).³

Since independence, the share of the mining sector in GDP and export earnings has fallen significantly⁴, while the importance of diamond mining has risen sharply in relative terms.⁵

¹The aggregate annual per capita income figure of \$1300 US hides gaping income differentials. The vast majority of the population subsists on annual incomes of typically less than \$100 US.

²The recent development of small-scale mining activities in the semi-precious stone and dimension stone sectors have opened some possibilities for less capital-intensive and more labour-intensive forms of mining.

³This is not to deny that work in the mines by male members of rural households has allowed a number of these households to have access to valuable cash and diversify income streams and that cash remittances by migrant mine workers has been an important source of livelihood for some of the poorest female-headed households in the rural areas.

⁴From an average of 22.7% during 1983-1990 to an average of 11.9% during 1991-1998 for the mining share of

Nevertheless, Namibia is still quite dependant economically on mining. Furthermore, recent innovations in mining technology and attendant shifts of diamond mining activity toward recovering huge hitherto unexploited diamond reserves on the offshore sea bed as well as the discovery of additional Zinc and Copper reserves⁶ reserves promise good prospects for the mining sector in the medium-term future. This should provide a comforting margin of maneuver and afford an opportunity to plan ahead with making strategic investments for further economic diversification. Yet there may also be a danger that the currently relatively rosy prospects for the mining sector may assuage any sense of urgency to tackle the issue of diversification any time soon.

Re-investing in the natural resource base and decoupling economic growth from the consumption of renewable natural resources

Namibia's formal economy generally has a large and direct dependancy on the country's fragile and very limited natural resource base. Most of the manufactured goods consumed are imported (in fact, some 60% of GDP is imports), and virtually all of the exports are primary products. The risk is that further economic growth will put immediate extra pressure on the natural resource base. To counteract this unsustainable trend, a dual strategy should be pursued -- a) creating mechanisms to enable consumptive resource users to re-invest in the natural resource base; and b) decoupling economic growth from natural resource use, by increasing the value of economic output per unit natural resource input. An example of a re-investment mechanism is the Environmental Investment Fund in the mining sector. Various options exist to decouple economic growth from natural resource consumption:

- a) shifting economic activity from the primary sector (mining, fisheries, etc) to the secondary sector (manufacturing) and tertiary sector (services like tourism, information and communication technology services, etc);
- b) encouraging greater value added through domestic processing of primary products destined for export or substituting for products currently being imported from abroad;
- c) encouraging more efficient use of scarce or expensive resources, like water (**issue iii**) and energy;
- d) increasing the sustainable economic output from land, through land use diversification, based on appropriate land use planning and policy incentives;
- e) importing (rather than trying to produce at home) products whose production is intensive in scarce natural resources like water (e.g. rice or irrigated horticultural crops); and

GDP, and from an average of 65.2% (1983-1990) to an average of 44.0% (1991-1998) for the mining share of export earnings. (see Mining Sector Issues and Options Paper, 24 May 2000).

⁵Diamond mining accounted for an average of 44.0% of mining sector GDP and an average of 42.3% of mining export earnings, in the period 1983-1990. These percentages have risen to 69.0% and 66.4%, respectively, for the period of 1991-1998 (after independence).

⁶Including additional reserves at the Rosh Pinah Zinc mine, the new Skorpion Zinc Deposit, and the potential development of the Haib Copper deposit.

f) general emphasis on recycling, re-use and waste reduction in production and consumption.

Under (a), the GRN has pursued the expansion of a fledgling manufacturing sector, through incentives for the establishment of manufacturing enterprises. Manufacturing now accounts for 14% of GDP (figure for 1998). An Export Processing Zone (EPZ) has been set up, but the number of jobs created seems to have been relatively modest⁷. In recent years, the tourism service industry has been one of the most dynamic and fastest growing sectors in the Namibian economy, but this has more to do with proper land use planning and granting resource use rights over wildlife to local landowners and communities than with shifting away from natural resource based economic activity. The fishing industry has invested in domestic processing capacity and pursued exports of canned fish (example for b).

Under (c), recent policy initiatives in water demand management have focused on cost recovery and more efficient use of urban bulk water supply (**issue iii**). The potential for (d) is illustrated by the switch from livestock-based agriculture on some of the commercial farms or from pastoral land use systems in selected communal land areas, to wildlife-based tourism on farms or within conservancies, encouraged by policies of granting exclusive wildlife use to private land owners (in the 1970s) and more recently (in the 1990s) to conservancies (**issue iv**).

Relating to (e), some 40% of all water in Namibia is used in irrigated agriculture; it may make more sense to import irrigation-intensive horticultural products (like tomatoes and onions) than to produce them at home (**issue iii**). And finally, much more could, at all levels and in all sectors, be done in the way of re-cycling, re-use and waste reduction, alleviating pressure on the assimilative capacity of the fragile environment to absorb pollution and wastes (f).

ii) Poverty and inequality – disparities between the rich and the poor

Sub-issue 6

Poverty and inequality directly contribute to – and result from – the over-utilisation of the natural resource base (grazing and arable land, trees and wood land, fish and water resources, etc). Poverty and environmental degradation processes often interact in ways that reinforce both -- the well-known ‘vicious cycle’ or ‘downward spiral’ of poverty and environmental degradation. Poor and rich people alike put pressure on the environment – the poor for need (they depend on natural resources for survival), the rich for greed (they tend to adopt resource-intensive consumption patterns and lifestyles). Thus, both poverty and inequality hinder sustainable development; and the extent of poverty and inequality in income and assets are indicators for unsustainable development. Namibia has one of the worst (most highly skewed) income distributions in the world, as measured by the Gini coefficient. There is a great need, therefore, to reduce poverty and inequality. The most important (partially inter-linked) avenues to achieve this are:

- improving (social) service delivery to the poor;
- re-directing investment patterns to open up a greater range of ecologically more friendly economic

⁷By and large, the EPZ has pursued a low-skill low-wage strategy.

- opportunities and livelihood options for the poor;
- promoting entrepreneurial drive and small-scale enterprise development;
- de-regulating the business environment to unleash the absorptive potential of the informal sector; and
- flexibilising the formal labour market to increase employment options and opportunities.

Each of these avenues for poverty reduction requires a great deal of institutional innovation.

Sub-issue 7

Inequality exists not only within society at large, but also at the local community level and within households. All of these dimensions of inequality are strongly represented in Namibia, and all of them are obstacles to sustainable development. Intra-household (gender) inequality, in particular, is widespread and generally reflected in an imbalance between rights and responsibilities among different household members – men, women and children. For instance, women usually have fewer rights (of access to/use of land, finance, inheritance, decision-making processes, education, etc) and resources (time, cash, etc) than men, while often forced to shoulder greater responsibilities in production and reproduction -- particularly in the case of female-headed households, a widespread phenomenon in the poor communal areas in Namibia. Imbalances in rights, resources and responsibilities associated with gender inequality are often big obstacles to sound natural resources management, better education (especially among women), improved household productivity, socio-economic advancement and thus sustainable development at an aggregate level. For these reasons, there is a great need to reduce gender inequalities in Namibia.

Poverty and inequality – the problem

Poverty and inequality are a serious threat to sustainable development. At independence in 1990, Namibia inherited a highly fragmented, stratified and dualistic society, polity and economy. Poverty eradication and greater equality have been two of Namibia's four major development objectives, but the problem persists. The country has one of the worst distributions of income, wealth, and access to resources in the world. Namibia's Gini coefficient – a measure for difference in income between the richest and poorest segments of society¹ – is 0.7, even worse than South Africa's (0.67) and Sierra Leone's (0.63)). Poverty is concentrated within the populations living on rural communal land (majority), among the farm workers on commercial lands, and in the urban informal sector -- while the elite is largely urban based.

There is also an intra-household (gender) dimension to inequality in Namibia. As a rule, women have fewer rights and resources than men, while often forced to shoulder greater (productive as well as reproductive) responsibilities – women in the many female-headed households in rural areas (from which migrant workers originate) are particularly burdened and vulnerable. Gender

¹The Gini coefficient is 0 when all people have the same income (totally egalitarian society). At the other extreme, a Gini coefficient of 1 means that one person alone earns as much as all the rest of society together.

inequality manifests itself in different forms: differential access to resources, inheritance structures favouring men, women more excluded from decision-making processes affecting their lives, etc.

Poor and rich people alike put pressure on the environment -- the poor for need, the rich for greed. Both poverty and inequality tax the environment and hinder sustainable development. Poor rural people, for instance, are often forced to over-use their local natural resource base for survival – the vicious cycle and downward spiral of poverty and environmental degradation. By contrast, the affluent urban and rural elites often adopt resource-intensive consumption patterns and lifestyles which are equally not conducive to sustainable development.

Options for addressing poverty and inequality

Poverty can be addressed:

- directly -- through 'gender-sensitive' provision of services and transfer payments such as pensions, education, health, water, energy, housing and agricultural extension; and
- indirectly -- through 'gender-sensitive' pricing (of services), investment promotion, taxes and subsidies, and other macro-economic incentives (creation of an enabling environment).

Service provision to the poor (low-income difficult markets) can be done in a variety of different ways, involving the public and private sector as well as the end users. This is a field where institutional innovation is needed – exploring different kinds of public-private partnerships (e.g. in water service provision), different forms of intermediation linking consumers, financial institutions and technology suppliers (e.g. in energy service provision), and different levels and mechanisms of cost recovery, depending on ability-to-pay and willingness-to-pay patterns among the consumers.

The issue of (poverty-reducing) investment patterns -- on the part of the rich and poor -- and how to encourage the right kinds of investment patterns, deserves much attention as well. For example, investment among the wealthier cattle owners in the communal lands often goes right back into livestock, with negative effects on the poor and increased pressure on communal rangeland (**issue iv**). Mechanisms for discouraging this kind of behaviour are needed, including more diversified local investment opportunities and greater access to financial markets for the richer communal farmers and secure exclusive group tenure to give the poorer communal dwellers more control over how their rangeland is used and by whom (leaving open the possibility of their leasing out grazing use rights to outsiders). As well, there is a need for channeling the investments of the urban rich into opportunities that reduce poverty and improve the environment.

Direct or indirect poverty alleviation measures, if not done appropriately, may have some undesirable side effects. They may contribute to natural resource over-use and environmental degradation, as when access to water (**issue iii**) or fodder (**see issue iv**) is provided at subsidized prices or for free. Alternatively, poverty alleviation measures may hold back economic growth, as with government transfer payments to the poor (through pensions or a progressive tax system) which may redistribute income but run the risk of reducing capital accumulation for needed investment. Or, economic growth may be capital-intensive -- the rule, rather than exception to

date in Namibia -- using up much capital that could be invested in more employment-intensive ways.

For purposes of promoting sustainable development, probably the best form of poverty reduction consists of stimulating employment-intensive and diversified economic growth in regions and sectors directly affecting the poor-- whereby special assistance may be provided to the poor in a gender-sensitive fashion, in terms of agricultural extension services, access to inputs, subsidized credit, technical assistance to build capacity, etc. Various mechanisms may be used in Namibia to achieve more employment creation per unit of incremental economic output:

- ☐ making formal-sector labour markets more flexible -- by relaxing downward wage rigidity and other measures;
- ☐ promoting entrepreneurial drive and the development of small- and medium-scale enterprises (SME); and
- ☐ de-regulating the business environment so as to allow the informal sector to evolve more freely and thus contribute to greater (unskilled) labour absorption.

Policies of decentralization and devolution of authority over natural resource management make sense and should be pursued from a point of view of poverty reduction because they will tend to strengthen local-level institutional capacity, increase the participation of the poor, and stimulate local-level retention of benefits and cash incomes (**issue viii**). Education, capacity building and skill development is key to improving the standard of living of the poor (**issue vii**). The combination of greater cash incomes and better education tends to bring enhanced poverty reduction pay-offs, whereby the whole effect is greater than sum of the individual effects. Options of reducing poverty and inequality through resettlement (**issue iv**) of poor black farmers on white commercial land are often constrained by lack of water, the degraded state of the land, and/or need for complementary farming inputs. In the longer-term, careful introduction and use of modern information and communication technologies and Systems (ICTSs) in poor rural areas may help transform these areas, reducing poverty and inequality (**issue xi**).

At the same time, there are processes at work within poorer rural areas which are likely to increase social stratification and inequality within these areas. For instance, communal grazing lands are increasingly being sub-divided and more landless people created in the process, as influential local people fence off the better parts of the commonly held land. This calls for secure exclusive group tenure rights for the poorer farmers to have more control over their land -- as mentioned earlier in this section (**issue iv**).

In order to combat poverty and inequality and achieve employment creation, the GoN has devoted considerable resources to sectors like education and health as well as to policies promoting industrialization. Nevertheless, the situation has not much improved. Perhaps the country lacks a comprehensive poverty strategy with links to areas like population growth (**issue vi**), economic growth (**issue i**), human resource development (**issue vii**) and other issues.

iii) Water – a limited resource for human use and economic growth

Sub-issue 8

Scarcity of water is a key constraint to meeting essential human needs, sustained economic growth and sustainable development in Namibia. Strong population growth, rapid urbanisation and expanding national economic output all place increasing demands on a resource that is already under stress. Fast rising water demand and growing water scarcity pose both a direct and an indirect threat to human and economic well-being -- lack of water for direct human and industrial consumption on the one hand and for essential ecosystem services and human life support systems on the other. There is a need to reduce future pressure on precious water resources by managing human and industrial water demand and by promoting high value-added economic uses of water (importing, wherever possible, low value-added water uses and water-intensive goods and services).

Sub-issue 9

A case in point for current very low value-added water use in Namibia is irrigated crop production – a sector responsible for as much as 40% of all water consumption in the country. Crop irrigation, if done on unsuitable land, can -- in some areas in Namibia does -- have undesirable environmental impacts, including water-logging and soil salinisation. A suitable combination of two approaches -- incentives for more water-efficient irrigation technologies (e.g. use of drip irrigation) and discouraging domestic production in favour of imports by charging for hitherto ‘free’ water -- could go a long way in limiting further increases in water use and preventing land degradation associated with irrigation.

Sub-issue 10

Given growing water scarcity and stress in the country, it is imperative to abolish water subsidies, move away from strategies of expanding water supply to meet projected water demand (supply-side water management), vigorously embrace demand-side water management approaches, and develop mechanisms to encourage more efficient use of water. Saving one liter of water is almost invariably less costly to society than supplying an additional liter of water. Developing new water supply sources or large-scale water transfers (Karstveld Aquifer, Water Desalination Plant, Water Pipeline from Okavango to Windhoek) should be a last resort. A variety of demand management methods exist and a suitable combination of them should be adopted:

- recovering the cost of water supply -- in urban and rural areas;
- beyond that, raising water prices to reduce water demand -- especially in urban areas;
- awareness building on water conservation options (e.g. keeping swimming pools covered);
- promoting more efficient end-use technology (e.g. improved irrigation technology);
- encouraging active participation of users and beneficiaries in regulating water access and managing use – particularly important in rural areas (e.g. water point committees);

Sub-issue 11

Water use among domestic households is highly skewed – between urban and rural areas and within urban areas. This is a reflection of inequalities in income and access to services. Perhaps half of the rural population still does not have adequate access to water (and even fewer to basic sanitation). Equity considerations call for a continuation of government efforts to provide greater access to safe and reliable water supplies for the rural poor, while encouraging greater user participation and local water management by water committees. But the increased water supply

should not interfere with traditional patterns of resource management (cattle movements) and respect ecological realities (no irrigation on unsuitable land).

Water scarcity, and use patterns

Namibia is the driest country south of the Sahara. Low to very low mean annual rainfall¹, high variability in rainfall², and very high evaporation rates³ combine to severely limit water supplies. All of the country's interior rivers are ephemeral – they don't carry any surface water for much of the year. The only perennial rivers are shared with neighbouring countries⁴ (see **issue x** on managing shared natural resource).

Scarcity of water is a key constraint to meeting essential human needs for water and food, and beyond that to enhancing economic growth, development and quality of life. It is not surprising, therefore, that early settlement and urbanization patterns in the country were strongly influenced by the geographical distribution of reliable water sources⁵ (see **issue vi** on population growth and settlement patterns).

Even though population density is very low by international standards⁶, strong population growth and urbanization (**issue vi**), economic growth and industrialization (**issue i**), are all making increasing demands on Namibia's very limited water resources. Policies and actions to reduce poverty and inequality (**issue ii**) may well add further to these demands. It is not unlikely that water demand, if left unchecked, would double or triple over the coming 2-3 decades.

While most of the water is -- and for the time being will be -- consumed in crop irrigation, currently the fastest growing demand for water occurs among urban domestic households. In terms of relative amounts of water used, irrigation (some 40% of the total) is followed by livestock watering (about 25%), urban households (close to 20%), rural households (just above 10%), and finally mining, industry and commerce (together less than 5%).

¹Ranging from 15 to 700 mm, with only 8% of the country receiving more than 500 mm per year – the minimum considered necessary for rain-fed agriculture.

²Generally, the lower mean precipitation levels are, the more variable rainfall becomes.

³Evaporation rates from open water are 5 to 18 times higher than mean annual rainfall (MWCT, 1992).

⁴The Cunene, Kwando and Chobe Rivers on the northern border, and the Orange River on the southern border.

⁵The urban centres of Windhoek and Grootfontein, for instance, grew and expanded at sites of once strong artesian springs, and the coastal settlement of Swakopmund was able to evolve into a larger town on the mouth of the ephemeral Swakop River by relying on its underground alluvial water supplies (MWCT, 1992, p. 9).

⁶Less than 2 people per square km, but unevenly distributed.

Ecosystem services of water

An essential basic additional ‘use’ of water, sometimes not accounted for in water consumption breakdowns, is the ecological use of water to sustain critical ecosystems and habitats in Namibia. Examples of essential ecosystem use of water are rivers and wetlands such as the Kuiseb River and the Cuvelai Wetland system -- latter includes fish, recharge, Etosha Pan, and soil moisture and humidity for crop production). Water flow and recharge in the Kuiseb catchment are threatened by a myriad of small upstream farm dams.

Irrigated crop production – getting more value from less water and reducing adverse environmental impacts

Irrigated crop production in Namibia is a very profligate and low value-added water use, because water is used ‘free of charge’ and irrigation methods are wasteful of water. Furthermore, small-scale irrigation has resulted in adverse environmental impact, such as water-logging and soil salinisation. Charging for irrigation water to discourage domestic production of food products that might better be imported, incentives for more efficient irrigation technology (e.g. drip irrigation), and careful selection of land and soils where to do irrigation, would go a long way to reduce water consumption growth and land degradation.

Water use equity

Water consumption among domestic households is highly skewed, reflecting inequalities in income and access to services (**issue ii**). High-income urban households may use 25 times more water than rural households (usually supporting a higher number of dependents) with easy access to water (a nearby standpipe or well).⁷ Despite efforts to improve rural water supplies, perhaps half of rural households still do not have adequate access to water.⁸

Equity objectives (**issue ii**) call for the continuation of government programmes to provide greater access to safe and reliable water supplies for the rural poor. The stated goal is to reach 80% of the rural population by the year 2010. Care must be taken, however, that increasing supply does not turn out to counterproductive, as when extra water supplies are not in line with traditional cattle migration patterns and local carrying capacity and hence result in overstocking and overgrazing around new water points, or when expanded but inappropriate irrigation causes water logging and soil salinization. Non-conflictual water access and use in communal areas also depends on legitimate and secure tenure arrangements being in place, whereby water rights are inextricably bound up within broader multi-resource tenure systems (**issue iv**). The establishment of local water committees to manage water use reflect government efforts toward greater decentralization of decision-making power and devolution of rights and responsibilities over natural resources management (**issue viii**).

⁷(NEPRU, 1997, p.13)

⁸‘Adequate access’ is defined as a water source being available within 2.5 km from the homestead.

Water supply sources and limits

Unreliability of supply from rainfall has motivated efforts to draw upon groundwater and river water. More than half of all water consumed comes from underground, with over 80% of this underground water being used for rural and agricultural purposes. Groundwater reserves are now fully committed and in some areas over-exploited. For example, a combination of water abstraction and upstream dam construction caused the water table at the mouth of the ephemeral Kuiseb River in the period of 1974 -1988 to drop from 1 to 8 meter below the surface, a process which threatened biota and people relying on the ephemeral river aquifer. A few larger dams and thousands of small dams on commercial farms capture a sizable but unknown proportion of available runoff for different application, and present a risk to downstream economic and ecological water uses.

Moving from supply-side to demand-side water management

The traditional supply-side approach and practice, namely expanding water supply to meet rising water demand (rather than managing that demand) leads to over-exploitation of the scarce and already largely committed water resources and presents a threat to economic growth and sustainable development (SD). Linked to this, the long-standing policy of subsidizing water consumption encourages profligate and wasteful use of water and stimulates extra demand for water which puts extra pressure on limited water resources. But from an economic point of view, it can be shown that saving one liter of water is almost invariably less costly to society than supplying an additional liter of water. Thus it makes economic as well as ecological sense to seize upon water saving opportunities.

Highest priority should be given to objectives of promoting more efficient use of existing water supplies, taking a demand-side approach and actively managing water demand, and involving water users more directly in the management of water service provision. A variety of mechanisms and methods may be used to achieve these objectives, including:

- phasing out subsidies (or cross-subsiding where appropriate to improve social equity);
- recovering the cost of water supply;
- creating price and other incentives for reduced consumption;
- improving water end-use technology;
- developing alternatives to water-intensive development options and practices (like importing food whose domestic production requires irrigated cultivation); and
- encouraging the active participation of beneficiaries in regulating water access and managing use (particularly in communal rural areas); and
- generally developing improved legal and institutional regimes for sustainable exploitation of precious water resources.

What the Government of Namibia has already done on water demand management

The Government has started to take steps in this direction. It has:

- ☐ privatized bulk water supply, creating the private utility Namwater, who are implementing a policy of gradually removing subsidies for high-income urban households within a 5-year period (1996-2001), toward full cost recovery;

- ☐ put in place an innovative municipal sewage water recycling plant in Windhoek, thereby stretching water supplies to the fast-growing capital as well as promoting waste recycling;
- ☐ developed and begun to implement a new institutional framework for community participation in rural water supply and sanitation, encouraging the creation of regional-level Central Water Committees, Local Water Committees and Water Point Committees (Rural Water and Sanitation Policy of 1993); and
- ☐ put emphasis on capacity building and training, at national and local levels, to fully implement the new Policy.

Further steps in water demand management

Beyond these initial steps, in the longer-term farther-reaching demand management options should be actively pursued, such as:

- * raising urban bulk water prices high enough to achieve demand reductions, beyond full cost recovery, while keeping progressive tariff structures in place to (cross-)subsidize low-income consumers so as to redress existing inequalities;
- * implementing demand-driven approaches and cost recovery principles in rural areas, commercial and communal¹;
- * assess the economic and ecological pros and cons of irrigated crop farming versus importing water-intensive food products;
- * developing and implementing a policy on water quality – it is almost as important to conserve water quality as to conserve water quantity; and
- * pursue demand-side approaches in shared water management, as part of a proper national cross-sectoral strategy for cooperation with other riparian countries on joint transboundary water management.

It is expected that the recent Namibia Water Resources Management Review (1999-2000) will recommend some of the incentives and mechanisms required to move forward on these and other options.

Expanding water supply – the last resort

In addition to water demand management and greater water use efficiency, the third tier of the government strategy remains the increase of water supply by developing new sources, coupled with expensive inter-regional water transfer to water deficit areas, as necessary. Several large-scale projects are on the drawing board or at planning stage:

- tapping the extensive Karstveld limestone aquifer 400 km northeast of Windhoek;
- constructing a pipeline connecting the capital to the perennial Okavango River far in the north; and
- deploying a sea water desalination plant near Swakopmund - Walvisbay.

These projects are capital-intensive, may have significant unpredictable ecological impacts, and are hence controversial (particularly the Okavango pipeline). Such large new supply initiatives should arguably be considered a last resort, after all feasible demand-side options have been exhausted.

iv) Land – low human carrying capacity and inappropriate distribution, tenure and use;

Sub-issue 12

Land, the basis for existence and survival for the great majority of Namibians, is very unevenly

¹Already, new government policy expects elected local water point (management) committees to pay 100% of the water supply costs within 10 years (Blackie & Tarr, 1999, p.13).

distributed – some 65% of the population live in the communal areas making up 40% of the land, while less than 10% of the people live and work on freehold farm land (some 6,300 farms) comprising 45% of the land. Such inequality in access to land is not compatible with sustainable development and also carries considerable conflict potential. Some resettlement has taken place since independence (on the basis of the Agricultural Commercial Land Reform Act (1995), but there is an urgent need for an expanded, accelerated, and comprehensive land redistribution and resettlement programme that avoids confrontation and conflict, promotes cooperation among stakeholders, involving them in the process, and takes into account the following aspects:

- * using sound economic and ecological criteria;
- * using suitable combinations of market-based mechanisms, government intervention, private initiative, and donor support to acquire and transfer land;
- * earmarking sufficiently large contiguous areas for resettlement, so as to avoid geographic atomisation and socio-cultural isolation among resettlement areas and families, and in order to exploit economies of scale in infrastructure provision;
- * establishing appropriate land tenure structures, including group tenure, on former freehold land;
- * setting up necessary physical and social infrastructure on resettlement land -- to be financed by government and from external sources;
- * giving re-settlers enough ongoing support (inputs, extension services, etc); and
- * selecting families for resettlement on the basis of need, with a view to a more representative cross-section of Namibian society ending up living on former freehold land.

Sub-issue 13

The current land tenure distribution – 45% of the land is freehold, 40% communal land, and 15% state land – is a legacy of the colonial past. New land tenure forms are needed in both communal and freehold land to help address threats to sustainable development associated with the current situation. Indeed, continued concentration of nearly half of Namibia as freehold land in the hands of a few thousand white farmers is unsustainable and must be redressed (see sub-issue 12 on land redistribution and resettlement). As well, widespread land degradation, the ‘spontaneous’ fencing off of common rangeland, growing de facto land concentration and inequality in the communal lands pose serious problems which must be addressed. There is a need for land tenure reform, in particular a need for introducing systems of group tenure rights.

In today’s communal lands, well-defined local group tenure rights could give poor local farmers and the landless a basis for greater security of tenure (by being able to exclude others), incentives to invest, livelihood options, and locally driven decision-making. (The Communal Land Bill, under discussion for years, has not yet incorporated group tenure rights -- nor addressed the issue of fencing.) In those portions of today’s freehold land which may be earmarked for resettlement, group tenure rights could bring about similar advantages. And even the possibility of several relatively large individual farms on marginal arid freehold land joining forces to establish more viable collective structures of resource management (e.g. ‘commercial conservancies’) may have merits.

Tenure reform must go beyond any single resource like land or wildlife (see below). Different resource tenures – governing water, grazing resources, trees, wildlife and land – and related benefit streams, livelihood systems, and relevant formal and informal local and external institutions, are inextricably linked..Without comprehensive tenure reform, it will be difficult if not impossible to address problems of poverty and inequality, access to land, and land resource degradation.

Sub-issue 14

Namibia's arid and variable climate severely limits land productivity and human carrying capacity, and crop production opportunities in particular. Long-standing land use patterns on freehold farm land as well as communal land -- predominantly extensive livestock husbandry -- have contributed to environmental degradation and unsustainable development. Economically and ecologically inappropriate incentives (e.g. subsidised water provision) to privileged white freehold farmers under the previous regime led to poor land management and over-stocking on private farms. Likewise, subsidies to communal livestock keepers (e.g. free water provision, drought subsidy, etc), among various other factors, have put pressure on communal pasture resources and encouraged over-stocking in the communal areas. Nevertheless, there are indications that deforestation and reduced arable land fertility has entailed an even higher economic cost than rangeland degradation.

There is a need to promote appropriate land uses -- and proper land use planning, to determine most appropriate land uses, based on sound economic and ecological criteria. Subsidies to livestock keeping have given this land use an inherent edge over other land uses in Namibia. Nevertheless, wildlife-based tourism on private freehold farmland in recent years has been the fastest growing land use and economic activity in the country. Wildlife tenure reform (to grant exclusive wildlife use rights on private farmland), declining farm subsidies (especially since independence), and diminishing farmland productivity (in part due to bush encroachment) have combined to usher in this form of land diversification, even though wildlife-based tourism is still far from enjoying level playing field with livestock keeping.

Sub-issue 15

At least four different ministries – MLRR, MRLGH, MAWRD and MET – are involved in land issues, from different perspectives – which highlights the need for harmonisation of objectives and policies and close coordination of actions. Ideally, coordination of land-related matters should be done by local institutions with an integrated development vision. There should be common institutional framework across sectors for all community-based initiatives in order to avoid a proliferation of sector-based community committees and institutions.

Current land allocation and access

The great majority of Namibians depends on land for their existence -- it is imperative to maintain the quality of land to ensure quality of life. Yet access to land continues to be extremely unevenly distributed – a legacy of the colonial past and apartheid policies – with some 65 % of the population concentrated in the communal areas (making up 40% of Namibia's total land area) while slightly less than 10% of the people live and work on some 6,300 commercial farms (covering 45% of total land area and owned by approximately 4200 individuals)¹. The remaining 15% of land are proclaimed state land – mostly protected areas (about 13%), but also some restricted mining area (2%)..

¹The remaining 25% of the population lives in urban areas.

Land redistribution and resettlement

Inequality of land allocation and access (across individuals, groups and regions as well as on a gender basis) is not compatible with sustainable development (**issue ii**). One of the stated post-independence policies to redress unequal land allocation has been the resettlement of black communal farmers on commercial farm land acquired by the state. The Agricultural (Commercial) Land Reform Act of 1995 provides for the government to expropriate land where the owner has multiple holdings or ‘excessive’ amounts of land, where the owner underutilizes or abandons land, or where land is required for resettlement. The same Act also made provisions for a Land Tax (on commercial land) – to be introduced in the near future – aimed at discouraging underutilization of commercial land and sale of such land for resettlement.

To date, it appears that relatively few people have been successfully resettled.² Problems have included lack of capacity and skills among re-settlers to manage the newly acquired land adequately, physical constraints on the new land like unavailability of water, and lack of complementary government support such as proper extension service, subsidized credit and provision of inputs. Only half of the funds allocated for land acquisition over the past five years (N\$100 million) has actually been spent³.

There is an urgent need to accelerate and expand land redistribution, in a non-confrontational way by involving all stakeholder groups more closely in the process, using sound criteria, developing effective mechanisms, and adopting transparent procedures. The land redistribution and resettlement programme should have some of the following characteristics:

- using market-based mechanisms, government intervention, private initiative, and donor support, or a combination thereof, to acquire and transfer land;
- encouraging the identification and development of sufficiently large contiguous resettlement areas in different parts of the country, so as to avoid atomisation of resettlement areas and socio-cultural isolation among re-settled people, and in order to exploit economies of scale in infrastructure provision;
- allowing re-settled families to establish appropriate land tenure structures, including group tenure, on former freehold land transferred to them;
- equipping resettlement land with the necessary physical and social infrastructure financed by government and from external sources;
- providing re-settlers with the necessary support (inputs, extension services, etc); and
- targeting potentially interested communities and selecting candidates for resettlement on the basis of need and equity considerations, and with a view to a more representative cross-section of Namibian society establishing themselves on former freehold land.

Land resource tenure reform

The current distribution of land tenure forms – 45% of the land is freehold, 40% communal land, 15% state land (thereof 13% protected areas and 2% restricted mining area) – is a legacy of

²According to Mukwaita Shanyengana, Director of Resettlement and Rehabilitation of the GoN, some 34,000 Namibians have been re-settled (out of a total of 243,000 who are in need of resettlement) since independence – 27,200 people on freehold land and 7,200 on communal land (Source: The Namibian, Friday, 19 May 2000, p.3). The proportion of people that resettle successfully is not clear, however.

³Source: The Namibian, 05 April 2000, p.3 (“Land Bill article irks Ithana”).

colonial socio-political decisions, rather than a result of an application of sound economic and environmental criteria. The present land tenure distribution gives rise or contributes to serious sustainable development problems. For instance, it is unsustainable -- and easily seen as illegitimate -- that nearly 50% of Namibia's land is owned as freehold by a small number of white commercial farmers (just several thousand). As for the communal lands, widespread land degradation, the 'spontaneous' fencing off of common rangeland, growing de facto land concentration and inequality pose serious problems which must be addressed.

New land tenure forms are needed in both communal and freehold land to help address these threats to sustainable development. In particular, land tenure reform should introduce new forms of group tenure rights. In today's communal as well as on present and future resettlement lands, well-defined local group tenure rights could give poor local farmers and the landless a basis for greater security of tenure (by being able to exclude others), incentives to invest, livelihood options, and locally driven decision-making (with development funds being accessed locally, rather than through higher-level intermediaries). And there may be advantages in several large individual farms on marginal (arid) freehold land joining forces to establish more viable collective structures of resource management (e.g. 'commercial conservancies') -- a possibility that has been talked about.

Land tenure reform in the communal lands has been pursued by the GoN through the so-called Communal Land Bill which has been debated for years, but is still not ready to be passed. While this Bill has welcome elements -- such as the strengthening of women's rights to manage and inherit land -- it is seen to continue to have serious shortcomings in its present form. These include the failure to address the fencing of common grazing lands by influential communal farmers and the absence of group tenure rights.¹

Progress in sustainable wildlife use, on commercial as well as communal land, underscores the importance of resource tenure reform (**issue iv**)². Secure, exclusive and legitimate resource tenure is a sine qua non for sustainable resource use and management. But tenure reform must go beyond wildlife resources. In the communal areas, different resource tenures -- governing water, grazing resources, trees, wildlife and land -- and related benefit streams, livelihood systems, and relevant formal and informal local and external institutions, are inextricably linked..Without comprehensive tenure reform, it will be difficult if not impossible to address problems of poverty and inequality (**issue ii**), access to land, and land resource degradation.

Land use patterns and planning

Generally, there is a need to promote appropriate land uses, and prior to that if necessary, to carry out proper land use planning to determine which land uses are most appropriate, in any given local area or region. Unfortunately, for a variety of different reasons, there is often not a level

¹The Bill was recently (in May 2000) sent back as unacceptable to Parliament by the National Council.

²Resource tenure may be defined as 'the bundle of rights and duties governing access to and control over resources which provide a stream of benefits to the holders of the rights' (Bruce, 1993).

playing field for different land uses to compete on an equal footing. In fact, economically and ecologically inappropriate land uses may get promoted (e.g. through subsidies) while superior land uses may face disincentives (e.g. taxes). Namibia is no exception – as is evidenced by long-standing subsidies for livestock keeping and disincentives for wildlife and tourism (often the superior land use in arid environments). Nevertheless, wildlife-based tourism has become one of the fastest growing sectors in Namibia (see below).

The vast majority of the rural population engages in and derives their livelihoods from agricultural activity. The country's arid and variable climate and ecological conditions severely limit the potential for crop production³ -- not surprisingly, extensive livestock husbandry has been the predominant land use system, in both freehold and communal areas. Land productivity in communal lands has been low, as most households farm near subsistence levels, often being net food consumers. Consequently, food insecurity has been a serious problem. But the dynamics of the communal land use systems seems to be changing, since aggregate productivity and marketed output has begun to rise sharply, albeit from a low base.

Freehold land

Even though overall agricultural market production is relatively small (less than 10% of GDP), freehold farms are important sources of exports (to South Africa and the EU) -- mainly meat, meat products, live cattle and small stock -- accounting for 15% of foreign exchange earnings (**issue i**).

Under the previous regime, freehold farmers enjoyed privileges and subsidies (water, drought aid, etc) which in many cases contributed to poor management and overstocking. In recent years, declining subsidies have led to diversification into game farming and tourism activities. About 7% of all freehold farms now offer game hunting safaris and many more offer basic (eco-) tourism services. Increasing economic benefits from wildlife has given freehold farmers a stake in wildlife conservation and sustainable use. The more recent establishment of wildlife conservancies is trying to achieve combined conservation and livelihood objectives in a similar fashion on communal land (**issue v**).

Many freehold farms, particularly in the northern section of the commercial areas, have been afflicted by increasing bush encroachment.⁴ Such habitat degradation has significantly reduced the carrying capacity for grazing stock, but conversely augmented fodder resources for browsers.

Communal land

In the communal lands, a variety of factors have combined to put increasing pressure on pasture

³No more than approximately 5% of the country's total land area is suitable for rain-fed crop production, most of this land being in the north, particularly the northeast (Caprivi Region).

⁴There is no direct relationship between bush encroachment and grazing pressure. Several other factors may play a role as well (MWCT, 1992, p. 49).

resources in many areas over the past years and decades:

- Reduced herd mobility -- over the years, traditional nomadic and transhumance pastoralism has given way in many areas to (more) sedentary forms of pastoral land use systems, as herd movement has been increasingly restricted or discouraged by colonial policies (national borders, wildlife conservation areas, commercial farms, etc) and more recently by widespread 'defensive' fencing to privatize (create enclosures in) the grazing commons (reflecting the erosion of traditional authorities) and engineered water supply points encouraging settlement around them. The resulting sedentarization process has meant increasing inability of herds to track shifting grazing resources, following spatial and temporal variations in rainfall. The reduced herd mobility puts pressure on pastures and risks overstocking and overgrazing in those areas where animals and people end up settling permanently.
- Provision of rural water supply -- in order to fight poverty and marginalization in the communal lands (**issue ii**), the GRN made it a priority to build rural water supply and sanitation infrastructure in these areas (**issue iii**). Increased water availability per se did not enhance overall livestock or human carrying capacity, but often had the opposite effect of causing or exacerbating degradation of limited pasture resources around the water points.
- Other subsidies -- livestock husbandry in communal areas has been subsidized in many ways.⁵ In particular, drought aid has provided fodder, transport and grazing subsidies, without requiring herders to de-stock. These subsidies provide incentives to keep larger herds than otherwise possible and thus lead more easily to overstocking.
- Absence of alternative savings and investment mechanisms and options – traditional herders keep livestock as a stock of wealth and for reasons of social status, not as a source of regular income. Domestic animals are slaughtered mainly for social functions, never for cash alone. Available savings are usually invested in more livestock, as other forms of investment (crop cultivation, education, shops, etc) are not accepted or available. From this perspective, it is rational to maximize herd size; this way, it is also ensured that more animals survive periods of drought. In 'modern' circumstances where mobility is increasingly limited, herds are often stationary and pasture more confined, traditional practices are widely believed to have become inappropriate, leading to overstocking and overgrazing. It is argued that to prevent range degradation (desertification) herders should be encouraged, through incentives and education, to change their behaviour toward considering alternative investments, diversifying assets, and thus greater de-stocking, particularly in the initial stages of droughts.
- Fencing – in recent years, 'spontaneous' or 'defensive' creation of enclosures through fences erected on (usually the better parts of) common grazing land areas has become widespread in the communal areas, with little if any government response. Various reasons have been given to explain this phenomenon: the traditional authority of tribal leaders to allocate land and regulate resource access has been eroded since independence while the new local government structures do not have the capacity to fill the gap; influential local people exploit this power vacuum to take the law into their own hands; traditional leaders seeking to pre-empt the possible prohibition of money-for-land transactions in the forthcoming Communal Land Bill, accept pay-offs for sanctioning the creation of fenced enclosures. Whatever the combination of forces behind the fencing, the process obstructs herd mobility even further and may leave increasing numbers of poorer families effectively landless. Increasing land concentration, herd concentration and social stratification within the communal areas, if unchecked, will handicap efforts to reduce inequality and poverty (**issue ii**) and contribute to environmental degradation..
- Absentee herd owners – large herd owners, some of them living far away in urban centres, normally hire people to tend their herds, paying wages corresponding to herd size. Such contracting arrangements may contribute to resource pressure and degradation, as they provide short-term incentives for the hired herders to maximize herd size.
- Lack of grazing tenure security – in the communal areas, exclusive use rights (and duties) over selected pieces of land were conferred upon households by the tribal authorities for cultivation only, while grazing areas were kept as open-access common land. Open access to grazing land is a recipe for resource

⁵In terms of veterinary and quarantine services, price support, income tax breaks, rent-free land, free water, and fodder provision during drought.

degradation, as there is no incentive to anyone to invest in maintaining the resource.

It is quite clear that the combination of these factors impacts negatively on communal pastures and is responsible for increasing grazing pressure and a fair amount of range degradation. Nevertheless, rangeland may be less degraded than it appears and on average perhaps less degraded than crop and woodlands. Indeed, desertification (land degradation) in Namibia has been estimated to cost rural households some N\$ 1 million per year in lost subsistence or cash production, but the majority of this is from lost access to wood products (deforestation) and reduced arable land fertility, not from lost livestock productivity⁶.

Local initiative and inter-sectoral coordination on land management

Because of the multi-faceted nature of land, it is not surprising to find several government line ministries dealing with the land issue from different perspectives – Ministry of Lands, Resettlement and Rehabilitation (MLRR), Ministry of Regional and Local Government and Housing (MRLGH), Ministry of Agriculture, Water and Rural Development (MAWRD), and Ministry of Environment and Tourism (MET). These ministries have different but overlapping jurisdictions with respect to land – which makes it indispensable to harmonize land-related development objectives, policies and targets and carefully coordinate actions to achieve agreed objectives (**issue viii**).

Ideally, different government services and ministerial activities relating to land should be coordinated through local institutions which have an integrated local development vision and can access development funds directly, not through intermediaries. Community-based approaches to land management and the management of other sectors should be based on a common institutional framework and pro-active cooperation between sectors in extension, so as to avoid a proliferation of sector-based community committees and institutions.

v) Biodiversity -- an endangered foundation of human life and livelihoods

Sub-issue 16

Biodiversity – variety at genetic, species and ecosystem levels – is a foundation of human existence and livelihoods. Conservation and sustainable use of biodiversity in different sectors and ecosystems -- drylands, wetlands, wood lands, marine fisheries, crop cultivation, etc -- is therefore indispensable to sustainable development and quality of life. However, increasing human pressure on the existing life support systems is causing widespread genetic erosion and loss of diversity at species, ecosystem and sectoral levels – also in Namibia. This is a serious long-term threat to sustainable development.

Sub-issue 17

The traditional approach to biodiversity conservation was to set up protected areas. But in

⁶(Quan et al, 1994)

Namibia protected areas, even though they cover some 13% of the country's land area, are not representative of the country's biodiversity. Increasing emphasis has been placed on biodiversity conservation through sustainable use outside the protected areas. This is consistent with a philosophy of integrating nature conservation with the basic development needs of the local people. The greatest success story of this new approach in Namibia has been wildlife conservation through sustainable use on freehold farmland and more recently on communal land (conservancies). Not surprisingly, wildlife-based tourism has become a very dynamic and fast growing type of enterprise on freehold farm land in Namibia. Granting exclusive use rights over wildlife to freehold farmers -- and more recently to communal farming communities -- was essential to establishing the value of wildlife to the farmers and has greatly contributed to the conservation and sustainable use of wildlife.

Sub-issue 18

While according to the Global Convention on Biological Diversity (CBD) states have jurisdiction over genetic resources within their borders, there is a need for carefully regulating access to genetic resources, balancing related interests among different stakeholders – local groups, private sector, researchers, etc – and promoting the equitable sharing of benefits from the use of genetic resources. These principles are anchored in the CBD and will be prominent in Namibian legislation on Access to Genetic Resources which is being developed.

It is critical, in particular, for such legislation to help ensure continuing access by local people to natural products (fruits, medicinal plants, essential oils, etc) that the people have collected in the wild since time immemorial (use benefits), because these natural products are essential to their food security and livelihood. The commercialisation of natural products -- still in its infancy in Namibia -- has great potential for large cash benefits, in addition to the use benefits already enjoyed by the local people. But the risk is that local knowledge is exploited by outsiders or lost otherwise and that downstream actors in the marketing chain appropriate the lion's share of the benefits and it is therefore critical to ensure that a fair share of the benefits accrue to the local people.

Protected areas

Namibia's system of protected areas – 13% of the total land area – does not adequately cover and represent the country's biodiversity. There is now a recognized need for biodiversity conservation outside the protected areas -- by closely involving local people in resource management and by having them benefit directly from the use of biodiversity. Government efforts have shifted to putting in place a suitable legal and institutional basis -- notably innovative resource tenure legislation (**issue iv**) -- for achieving this.

Sustainable wildlife use outside protected areas

This new approach to biodiversity conservation and sustainable use has been successfully developed and implemented in the case of animal wildlife resources. Long-standing conflicts between wildlife (particularly predators) and domestic animals were resolved on commercial

farms, when the previous regime introduced legal provisions in the mid 1970s to grant exclusive rights of wildlife use to commercial farmers. Suddenly, wildlife turned from a liability into an asset for the farmers and they realized the resource value and potential benefits to be earned. A thriving game hunting and tourism industry started to develop, and it was in the interest of the farmers to conserve wildlife through sustainable use. Today, 90% of large game is found on commercial farms, some 450 out of 6300 commercial farms have acquired game hunting licenses and many more are offering eco-tourism services. Wildlife-based tourism has become the most dynamic and fastest growing economic sector in Namibia (see also **issue iv** on land use diversification).

The success of wildlife conservation and use on commercial land spawned efforts to introduce a similar approach on communal lands. In the mid 1990s legislation was introduced to grant suitable agglomerates of communal 'communities' (so-called conservancies) exclusive use rights over wildlife use and over the benefits from wildlife utilization, under the conditions that representative local management committee had to be established and an acceptable management plan had to be developed. The government undertook to provide necessary technical assistance. To date, nearly 30 conservancies have been established or in the process of application, most of them interested in eco-tourism and wildlife resources permitting, game hunting. Some of the established conservancies already have accumulated significant cash revenues and are

Wetlands

A surprisingly large proportion of Namibia's habitats are wetlands within drylands – 4% of the country's total land area. These wetlands include floodplains (like the Etosha Pan or the Cuvelai drainage system in Owamboland), the 'linear oases' of ephemeral rivers petering out in the coastal desert band, riverine forest ecosystems and river estuaries. Because of the permanent or temporary presence of water, wetland ecosystems tend to be rich in biodiversity, but at the same time are under pressure and in some cases over-exploited from relatively dense and fast growing human populations (**issue vi**) that have settled in close proximity. Many of these people's food security and livelihoods depend in significant part on small-scale artisanal freshwater fisheries.

Biodiversity in other natural resource sectors

Biodiversity play a fundamental role in other natural resource sectors as well – such as marine fisheries, wood lands, and cultivated systems. Maintaining biodiversity in all of these sectors contributes to long-term ecosystem stability and resource productivity. Inappropriate policies and market pressures may maximise short-term productivity at the expense of diversity and hence longer-term productivity, as when certain marine fish species or crop varieties fetch higher prices or are otherwise preferred over others and all attention focuses on these species or varieties, at the expense of others.

Natural products – natural fruits, medicinal plants, essential oils, etc – collected from the wild play a very important role in (poor) rural people's food security and livelihoods. A wide variety of such natural products exists and that variety is essential to the wellbeing of the local people. The commercialisation of natural products is in its infancy in Namibia, but the potential is enormous. One of the few examples of established international trade of natural products from Namibia is

Devil's Claw, a medicinal plant. Access-to-genetic-resources legislation is critical to the commercialisation of natural products.

Access to genetic resources and sharing of benefits from the use of genetic resources

Aside from the conservation and sustainable use of biodiversity, other central issues -- anchored in the Global Convention on the Conservation of Biological Diversity (CBD)-- are how to regulate access to genetic resources and how to promote equitable sharing of benefits from the use of biodiversity. The CBD gives states jurisdiction over the access to genetic resources within their borders. But there is a need to balance the rights, responsibilities, and interests of different stakeholders – including local people, private companies, and researchers – and the benefits accruing to the different stakeholders. Legislation on Access to Genetic Resources is in the final stages of being developed.

vi) Population growth and settlement patterns – more people sharing a limited resource pie

Sub-issue 19

Namibia's population is very small in relation to the country's physical size. Nevertheless, Namibia's relatively high (but due to the AIDS epidemic somewhat reduced) population growth, its very uneven population distribution, and rapid urbanisation as a result of rural-to-urban migration, taken together, pose a major problem to sustainable development, because the country's resource base (natural, financial, human) is so limited. Improved resource management may help sustain a larger population in any given area, but ultimately limits in human carrying capacity would be reached. Hence, in order to move toward sustainable development, it is necessary (but not sufficient) to stabilise the population, nationally and regionally.

Sub-issue 20

Population growth drives – and is driven by – other factors and conditions, most importantly poverty, lack of education (especially of girls and women), and health & nutrition. This suggests clear entry points for bringing population growth down -- poverty reduction, education of girls and women, maternal and child health and nutrition. There is considerable evidence worldwide that improvements in the standard of living brings about reductions in family size. Likewise, it is well known that better education levels, particularly better basic education for girls and women, goes along way in reducing fertility – the average number of children that women will have during their reproductive years. Improved maternal and child care, as well, can be of help in reducing perceived needs for larger families.

Namibia's population policy may not be aggressive enough in its targets and time frames for reduced population growth. But whatever the set targets and time frames, ultimately it may be progress (or lack thereof) in economic growth, poverty reduction, education and governance that will determine success or failure of the population policy.

High population growth – and a limited resource base

Namibia has a very small population (only about 1.8 million people) and is one of the least densely populated countries -- the national average is less than 2 people per km. But since the human carrying capacity of this arid country is very limited, the small population size and low population density do not mean there is no problem of population pressure. Far from it, the country's fertility rate⁷ is high (around 5.5 children per women), making for a high overall population growth rate and a very youthful population structure creating a lot of momentum for further population growth.

The national population growth rate is estimated to be just above 3% p.a., but this figure does not seem to take adequate account of the fast growing numbers of AIDS-related deaths. There are indications that the AIDS epidemic is already cutting national population growth down to around 2% p.a.

Nevertheless, the population is expanding quite fast (doubling time of 22 years -- or with AIDS-deaths accounted for, perhaps around 35 years) and this is bound to put increasing pressure on economic resources and labour markets (**issue i**), on social service provision (**issue ii**) as well as on the already largely exploited -- and in some areas over-exploited -- limited natural resource base. All of these effects threatens sustainable development in the longer run.

Skewed population distribution – putting pressure on particular areas

The concern over population growth is put in perspective -- and further heightened -- by the very uneven population distribution, a legacy of colonial and apartheid policies. Of the country's population, 60% of the people are amassed in the northern communal areas, two thirds thereof in the four north-central regions (former Owamboland). Within this particular region, half of the people (nearly 30% of the entire Namibian population) are squeezed into the Cuvelai drainage zone (the Oshanas) -- an area less than 1% of the country's land area. This extreme population concentration in one area, coupled with poverty (**issue ii**), has already led to widespread and visible deforestation, soil erosion and over-exploitation of water in this area.

Rural-to-urban migration fueling urbanisation

A third dimension of the population issue relates to large internal migration, specifically rural-to-urban migration – often motivated by the lack of resources and poor quality of life back home and the lure of perceived opportunities in the urban destination areas. Most of the migrants do not improve their lot but end up in poorly serviced 'informal settlements' at the outskirts of towns, often swelling the ranks of the urban unemployed and adding to urban poverty (**issue ii**). This process is reflected in rapid expansion of urban centres.⁸ Current average urban population

⁷Fertility rate is defined as the average number of live births to women of reproductive age.

⁸Between 1981 and 1991, Windhoek's population grew by 46%, Rundu's by 911% and Katima Mulilo's by 3000% (Byers, 1997, p.12).

growth rates are in the range of 5-6%.⁹

Limits to population expansion

All three above-noted facets of the population issue threaten the natural resource base and sustainable development (SD), overall and specifically in particular affected areas (like the Oshanas or urban slums). Better management of resources – human, financial, biophysical, etc – may help sustain a larger population in any given area, but ultimately limits in human carrying capacity would be reached. Population stabilization, both nationally and in the regions, is a necessary (but not sufficient) requirement for SD in the long term.

Mechanisms to tackle problems population growth and urbanisation

A variety of factors -- poverty (**issue ii**), lack of education (**issue vii**), poor health & nutrition levels (**issue vii**), lack of access to fertile land (**issue iv**) and clean water (**issue iii**), poor sanitary conditions, etc – contribute to and are exacerbated by population growth. Conversely, a variety of respective mechanisms -- generally aimed at social and economic advancement -- can be used to address the problem. The well-known reinforcing relationship (reinforcing in a positive or negative sense) between population growth and poverty suggests that population growth can be reduced by improving the standard of living of the people. Improved population education, and in particular basic education for girls and women, can go a long way in bringing fertility levels down. Better maternal and child care provision improve child survival chances and thus reduce perceived needs for larger families to compensate for the risk of losing offspring. And efforts to build awareness and improve services in contraception and family planning -- preferably integrated with HIV/AIDS prevention programmes -- can have a direct impact on family size.

In order to tackle the rural-to-urban migration issue and linked problems of rural-urban and regional disparities and uneven development, empirical evidence suggests that economic planning, social service delivery and government administration policy should move away from centralized control along traditional sectoral lines toward more decentralized approaches. This entails devolution of state powers, functions and resources to the regional and local level, and emphasis on area-based planning and integrated regional and local development (**issue viii**).

Implications for national population policy

Recent GRN policy initiatives -- the National Report on Population of 1993 and the National Population Policy for Sustainable Human Development of 1996 -- broadly go in the direction outlined above. But there are concerns that targets for the reduction of fertility and population growth and other demographic objectives may not go far enough to adequately address the population threat to sustainable development. Furthermore, declared government policies of decentralization and integrated regional and local development are widely viewed not yet to have gone much beyond intention to implementation. In the final analysis, it will arguably be issues of

⁹(NEPRU, 1997, p.32)

governance (**issue viii**), poverty (**issue ii**) and economic progress (**issue i**) that will determine the success or failure of Namibia's population policy.

vii) Human resources – a lack of human capital for socio-economic advancement

Sub-issue 21

Despite considerable efforts since independence to redress past inequities in education and training,

Namibia still lags behind neighbouring countries in educational output and level of education, and strong social, gender and regional disparities in educational outputs and levels remain. Lack of skilled labour and limited human resources continue to severely constrain private sector development and public sector capacity. Strategies and policies for education, training and capacity building should pay attention to:

- the long-term nature of human resource development;
- the continued role of outside expertise, while local capacity is emerging;
- the need for developing local management capacity -- as well as technical skills -- so that outside expertise can be properly directed and managed;
- the need for creating a professional and economic environment in which local human capacity is retained and utilised in the country, rather the going abroad (brain drain);
- economic development that builds on people's existing skills, also in the informal sector;
- skill development that matches the needs of the economy;
- opportunities for sharing regional educational facilities and centres of excellence with other countries, rather than doing it all at home;
- special management and technical training and capacity building needs arising at the local and regional level in connection with processes of decentralisation and devolution of authority; and
- designing affirmative action policies in such a way that they contribute to lasting human resource development and genuine empowerment, rather than serving extraneous purposes.

Sub-issue 22

Along with education and training, health and nutrition are essential to human capital formation. The prevention of environmental diseases (malaria, gastro-intestinal problems, respiratory diseases, AIDS, etc) and adequate access to primary health care are critical aspects for human resource development.

While malaria and dysentery continue to dominate mortality in poor rural areas, nationwide AIDS has become a major threat to human resource development, human wellbeing, economic prosperity, and sustainable development. AIDS-related illness and death eliminates income earners and household livelihood sources, wipes out past investments in education and training, reduces the quantity and quality of the national labour force, taxes the local and national health care system, and puts pressure on community- and household-level resources to care for the ill and absorb the effects of death. Clearly, AIDS constitutes an enormous drain on human and economic resources, at local and national levels. Concerted efforts in awareness building and education, primarily but not exclusively among the young people, are required to halt the further spread of AIDS.

The legacy -- and the Government response since independence

At independence, Namibia inherited a fragmented, profoundly inequitable and discriminatory education and training system, a largely unskilled labour force and a population whose vast majority lacked even basic education. Over decades, colonial and apartheid policies had developed and perfected a system which concentrated education and employment opportunities on the white minority, while denying these opportunities to the black majority. Access to health care and other social services was similarly stratified and inequitable.

Since independence, the GRN has made substantial efforts to redress this untenable situation. Around one quarter of the government budget has been destined for the education sector, aimed at enhancing education infrastructure, enrolment rates and the number of qualified teachers, and reducing out-of-school rates for children (particularly high among some groups like the San), drop-out rates of enrolled children and teacher absenteeism. The lion's share of resource allocation to education -- approximately half of the total -- has been rightly focused on primary and basic adult education, and been attentive to gender aspects (need for education of girls and women). Impressive progress has been made in 10 years, but Namibia still lags behind neighbouring countries in educational output and level of education, and strong social, gender and regional disparities in educational levels and outputs remain.

Strategies and modalities of human resource development

Lack of skilled labour continues to severely hinder private sector business expansion and limited human resource base still significantly constrains public sector capacity. Education, training and capacity building needs to be further intensified at all levels. It must be emphasised, however, that human resource development is a long-term process. The public sector, private businesses and civil society organisations must be kept running, while local capacity and expertise is emerging. This will continue to require outside expertise and the Government of Namibia should openly acknowledge this and support efforts to attract the right kinds of foreign advisors. Namibia should focus on developing management capacity as well as technical skills, so that outside expertise can be directed and managed.

Human resource development policies and strategies should also be attentive to the following needs:

- to utilise and retain existing and emerging human local capacity in Namibia – it must be professionally and financially attractive for qualified local professionals to stay and work in the country and the economy must be able to generate the necessary work opportunities;
- to build on existing capacity in the country's informal sector -- and develop economic activities that build on local people's existing skills;
- to promote skill development that matches the needs of the economy, through incentives and awareness building; and
- to make use of regional educational facilities and pool resources with neighbouring countries to establish or upgrade regional centres of excellence for training, research and related activities.

Decentralisation and related human resources needs

Decentralisation of government powers and functions to the regional and local levels (**issue viii**) are opening huge new needs to build the necessary capacity at those lower levels. In the same vein, devolution of authority and responsibility over natural resource management to the local community level -- such as is happening through the formation of water point committees (**issue iii**) or the establishment of wildlife conservancies (**issue iv**) -- is creating strong demands for training and capacity enhancement to build the technical, management and business skills for communities to be able to run these local institutional structures more effectively.

Affirmative action policies

For all the efforts to level inequality (**issue ii**), the gap in skills and capacity between previously disadvantaged and previously privileged people cannot be closed overnight. Significant discrimination and segmentation in the labour market, at the work place and in other spheres of everyday life, still goes on. Advancement of formerly discriminated people (on the basis of race, gender or otherwise) is a principle anchored in Namibia's Constitution, and affirmative action policies and programmes have been pursued to put this principle into practice. While affirmative action policies are understandable and necessary, care must be taken that they do contribute to genuine investment in lasting human resource development and sustainable human empowerment, rather than serving as a disguise for preferential treatment or as a reward system offering benefits within a strategy of co-optation¹⁰. There is a need for a coherent, transparent and forward-looking policy framework in this difficult domain.

Human health and nutrition as a pillar for human capital formation

Along with education and training, health and nutrition are cornerstones of human capital formation. Achieving adequate individual and household nutrition levels is closely linked to the capacity of households to ensure food security, through agricultural production and/or food purchase. Obviously, access to income opportunities (**issue i**), education and skills, as well as access to land (**issue iv**) are central here.

On the health side, human health tends to be correlated with environmental health. The prevention of environmental vector diseases (notably malaria, gastro-intestinal and respiratory diseases) and other diseases (most importantly HIV/AIDS) as well as access to adequate primary health care are critical aspects for human resource development. While environmentally mediated diseases like malaria and dysentery still dominate mortality in many poor rural areas, in recent years, nationwide the single most important health factor and a major threat to economic prosperity and sustainable development has been the scourge of HIV/AIDS.

AIDS – a threat to human capital formation and sustainable development

Namibia suffers from one of the highest HIV levels anywhere, and infection rates are still rising.

¹⁰(NEPRU, 1997, p.28)

Fast increasing AIDS-related deaths are driving up overall mortality rates and diminishing average life expectancy in the country. Perhaps more important, those most at risk from HIV infection tend to be in the economically active age range.

Each AIDS-related acute illness followed by death in that age class eliminates an actual or potential income earner and thus (part of) a household livelihood source, wipes out past investments in education and training, reduces the quantity and quality of the country's labour force, taxes the country's health care system, and puts pressure on the resources of a particular household and community to care for the person and then adapt to her loss. Clearly, this represents an enormous drain on human and economic capital and resources, at both local and national levels.

There is little doubt that HIV/AIDS is currently one of the major threats to sustainable development (SD). Concerted efforts in awareness building and education are required to inform the general population -- young people in particular -- and effect changes in those inter-personal attitudes and practices which have encouraged the spread of HIV/AIDS.

viii) Governance -- the need for changing institutional approaches to resource management and for safeguarding human rights, democracy, peace and security

Sub-issue 23

The decentralisation and democratisation of government decision-making and administrative functions and processes is widely seen as a necessary condition for more effective regional and local development. But such decentralisation is being pursued rather cautiously in Namibia, as decisions on local-level issues are all-too-often still handed down by respective line ministries. Devolution of rights and responsibilities over natural resource management to the local -- e.g. wildlife conservancies or water point committees -- is part and parcel of the general desentralisation trend. The process of political and administrative decentralisation and the devolution of resource management functions to the local level raises some important issues and needs:

- ☐ the respective roles of regional government and local government/ local communities -- don't entrench another bureaucracy at the regional level, but decentralise right down to the local level;
- ☐ the need for local-level integration of sectoral institutional frameworks for resource management and service provision -- this process should ideally, and may in the longer term in practice, be driven from the local level, by institutions with a local development vision; and
- ☐ inter-sectoral harmonisation of policies and inter-sectoral coordination of policy implementation at the national level -- e.g. on land redistribution, tenure reform and use.

Sub-issue 24

Good governance and effective policy development require the active participation of key stakeholders in civil society and within the private sector. There is a need for a stronger, more pro-active and articulate civil society actively seeking to influence the state's legislative and

policy agendas and outcomes.

In policy implementation and programme management, various forms of public-private partnerships (PPP) -- joint ventures, outsourcing, franchises, build-operate-transfer (BOT), etc -- hold great promise for more efficient and effective models of resource management and service provision.

For instance, outsourcing of management tasks to private sector organisations enables the government to clearly divide up potentially conflicting responsibilities -- such as programme management and programme control -- assigning them to different institutional actors, for improved overall effectiveness and efficiency. This way, the government can focus on regulation and control, while leaving management functions to the private sector. PPP also provide scope for harnessing ideas and resources from a wider range of institutional actors. There is considerable room for innovation in Namibia on partnership approaches to effective resource management and service provision.

Sub-issue 25

Upholding principles of human rights, civil liberties and multi-party democracy is part and parcel of good governance. Namibia's Constitution – one of the most progressive ones anywhere – constitutes a crucial anchor for these important principles. Sustainable development requires, *inter alia*, the

- strengthening of the institutional framework for their fair and equitable implementation of the above principles;
- creating an enabling environment for better representation and greater participation of stakeholder groups in governance and policy development and implementation; and
- providing incentives for policies to build on informal as well as formal institutions

Sub-issue 26

Regional conflicts, crime, and domestic violence currently are sources of human insecurity in Namibia and constitute a drain on the country's resources. Whatever the historical and structural causes for these sources of insecurity, peace and security must be ultimately attained, as a pre-requisites for sustainable development.

Regional context

Throughout Africa, over the past few development decades, it has become abundantly clear that the state has not been successful in centrally managing local resources, using different forms of command-and-control procedures. Specifically in the management of natural resources, lack of local involvement, lack of government attention to local community perspectives and interests, and elite attitudes of 'saving nature from the people' have often meant disrespect for management rules set by the state and resulting natural resource degradation¹.

¹For example, proclaimed state forests reserves may be invaded by local people in search for food and other resources.

In recent years (late 1980s and 1990s) ubiquitous macroeconomic adjustment programmes and widespread political and administrative reform on the continent have combined to:

- emphasise 'lean government' and a 'hands-off' role for the state²;
- promote greater democratisation and decentralisation of government;
- promote private enterprise as a motor behind economic growth and development (**issue ix**);
- advocate a stronger role for civil society, as a political counterpart and partner of government; and
- encourage civil society organizations (NGOs and CBOs) to become more outspoken in articulating their constituencies' concerns and needs, including issues and conflicts concerning the management of natural resources.

Decentralisation process in Namibia

Such economic, political and administrative reforms have also been initiated in Namibia, but perhaps more cautiously than elsewhere on the continent. In particular, the process of decentralization and democratization of decision-making processes has not gone very far yet, as little central government power, functions and resources have been effectively devolved so far to the regional government level, not to mention the local government level. The notions of integrated regional development and area planning, while being supported in principle³, have yet to be implemented in practice. Patterns of public investment and decision-making authority are not yet in line with the policy objectives of regional development (leveling regional disparities) (**issue ii**). The urban centres and the central region (Khomas Region) continue to receive a disproportionately high level of attention and public funds, in areas like education or health.

In part, the slow speed of effective decentralisation and development in the regions is a problem of lack of administrative capacity and technical expertise at the lower government tiers. But the government also seems to have been somewhat reluctant to devolve central power in earnest, as all too often decisions on local-level issues are still handed down by the respective national line ministries. Nevertheless, in the area of resource management and services provision, some ministries have introduced innovative mechanisms to devolve authority to the local level. Well-known examples are community rights over wildlife use and management (conservancies) and community management of water resources (three tiers of water committees at regional and local level).

Key issues for effective decentralisation in Namibia

The process of decentralisation of political and administrative decision-making and devolution of authority over natural resource management to lower levels in Namibia raises several important issues:

- ☐ the respective roles of regional government and local government/ communities;
- ☐ the need for local-level integration of sectoral institutional frameworks for resource management and service provision; and
- ☐ inter-sectoral harmonisation of policies and inter-sectoral coordination of policy implementation at the national level.

²This has sometimes resulted in reductions in technical and management capability of the central state machinery and therefore by default in a greater role in local natural resource management being given to society and local communities.

³For instance, by NDP1 (***)check this).

First, concerning the role of regional government, it is very important to avoid the pitfall of creating and entrenching a(nother) level of bureaucracy -- which would hinder, rather than help, local entrepreneurial and management initiative. It is likely that in most cases local groups would see regional government as just as far removed from their own realities as central government. It is crucial therefore that authority over local resource management be devolved right down to the lowest level possible and that the organisation of managerial and technical capacity building processes and necessary support services be driven from the lowest level. This implies that the role of regional government should be one of contributing to an enabling policy environment for local action, complementing the role of national government. It is conceivable that over time, as regional government capability increases, higher-level administrative and policy development functions are increasingly transferred from the central to the regional level.

Second, there is a tendency at present for each line ministry to create its own local level institutional structure for resource management, service provision, and related capacity building. Conservancies (under MET tutelage) and water point committees (under MAWRD tutelage) are examples that have been mentioned before. Yet other local structures may be created in connection with teacher training to service local schools, local health service provision, etc. With all these local structures emerging, there is a risk of local institutional fragmentation – and a corresponding need for integrating sectoral institutional frameworks, or at least developing mechanisms for local-level integration of sector-based systems. Ideally, the integration process should be driven from below, by local institutions, and these local institutions should be able to access financial and other resources directly, without higher-level intermediation (see **issue iv** for land). But given the extremely limited local human resources, this bottom-up vision can only be realised in the long-term. For now, typically the same few local people with greater skills and capacity will be called upon to help develop and manage local-level sectoral structures, thus providing some level of coordination and integration by default rather than by design.

Third, at the central level, inter-ministerial cooperation in policy development and implementation has been variable, and the capacity for effective harmonisation of inter-sectoral policies and for coordination of policy and programme implementation is still limited¹. Yet most if not all environmental and sustainable development issues concern more than one sector and ministerial portfolio. The question of 'land' is a case in point (**issue iv**). As mentioned under that section, land is a central issue to at least four different ministries -- the Ministry of Land, Settlement and Rehabilitation; the Ministry of Regional and Local Government and Housing; the Ministry of Agriculture, Water and Rural Development; and the Ministry of Environment and Tourism. Policy development and implementation affecting land (re-)distribution, tenure reform and use (viz. the forthcoming Communal Land Bill) no doubt concerns all four ministries and requires active collaboration on defining an appropriate policy framework and coordinated monitoring in the implementation phase.

¹A Mid Term Review (1997) of the First National Development Plan (1995-2000) highlighted the lack of inter-sectoral coordination as one of the weaknesses of NDPI.

Partnership approaches to policy development and programme implementation

Decentralisation and inter-sectoral coordination are not the only essential ingredients for better governance and improved policy development. Another key element is the readiness and capacity of government to engage with a variety of stakeholders within the private sector (**issue ix**) and civil society. The development of relevant and realistic policies requires input from all potentially affected parties. Different mechanisms and fora like review committees, task forces and public debate may be used to achieve broader input and feedback. There is a need for a stronger, more pro-active and articulate civil society actively seeking to influence the state's legislative and policy agendas and outcomes.

In policy implementation and programme management, various forms of public-private partnerships (PPP) hold great promise for more efficient and effective models of resource management and service provision. Such partnerships may involve, for instance, arrangements whereby the government outsources (sub-contracts) specific management tasks to private organisations, like the management of particular public assets (e.g. national parks) or essential social service provision (e.g. water, energy and waste management).² A well-known example of a public-private partnership is the contract between the Ministry of Regional and Local Government and Housing (MRLGH) and Northern Utilities under which the latter manages electricity service provision within northern communal areas on behalf of the former.

Outsourcing of management tasks to private sector organisations enables the government to clearly divide up potentially conflicting responsibilities -- such as programme management and programme control -- assigning them to different institutional actors. This way, the government can focus on regulation and control, while leaving management functions to the private sector. Such a separation of responsibilities improves overall programme effectiveness and allows the government to streamline (and downsize) the public service, cutting down on public expenditures, while focusing on a more clearly defined duty – and enhancing public sector capacity to carry out that duty better. PPP also provide scope for harnessing ideas and resources from a wider range of institutional actors. There is considerable room for innovation in Namibia on partnership approaches to effective resource management and service provision.

Upholding human rights, civil liberties and democracy

Namibia's Constitution – one of the most progressive ones anywhere – constitutes a crucial anchor for important principles of human rights, civil liberties and multi-party democracy. Upholding these principles and ensuring their proper implementation requires strong and independent legislative and judiciary branches of the state as well as a vibrant and dynamic civil society, as a stakeholder and partner of the state. Safe-guarding the above-noted fundamental principles, strengthening the institutional framework for their fair and equitable implementation, creating an enabling environment for better representation and greater participation of stakeholder

²Outsourcing may involve performance contracts defining measurable performance indicators and targets and making continuing contractual partnership dependent on what is agreed to be satisfactory performance.

groups in governance and policy development and implementation, and providing incentives for policies to build on informal as well as formal institutions, are all indispensable pieces of the 'jig-saw puzzle' called sustainable development.

Safeguarding peace & security for the country and its citizens

Regional conflicts and national security

Without peace and security there can be no sustainable development. While the Southern African region as a whole has had its share of liberation struggles and civil strife within newly independent countries, Namibia (since independence) has enjoyed relative peace and stability. However, the country's recent military involvement in two major inter-linked regional conflicts in the region -- associated with civil war's in the Democratic Republic of Congo and in Angola, respectively -- has brought peace and security issues back onto the national political and policy agenda and at the same time highlighted some difficult security trade-offs.

Any benefits in national (as well as regional) military and economic security that Namibia might reap in the longer term as a result of its participation in the conflicts come at the expense of significant economic and human security losses already accruing locally and nationally. Involvement in the two conflicts is responsible for much increased military expenditures, is putting pressure on government finances and contributing to increased budget deficits³ (see **issue ix**). In addition, the Angolan conflict is causing substantial social and economic costs in Namibia's Kavango and Caprivi Regions -- in loss of human security and life, health care costs, damaged social and physical infrastructure, foregone tourism and transport revenue, and reduced economic output. Whatever the evolution of the regional conflicts and cost-benefit trade-offs over time, ultimately peace and security are pre-requisites for long-term sustainable development.

Crime and domestic violence

Aside from regional conflicts, other threats to equitable and sustainable development in Namibia lie in rising levels of community- or neighbourhood-level crime and household-level domestic violence, mainly against women and children. Whatever the historical reasons and structural causes behind crime, lawlessness and violence, they cause substantial human insecurity and social and economic costs -- in terms of lost income, health care costs, heightened fear, more gender inequality (**issue ii**) and reduced quality of life. Crime and domestic violence also remain an obstacle to greater re-conciliation, social and cultural integration, and to the development of a shared vision and values toward sustainable development (**issue xii**).

ix) Economic policy and management framework -- the need for a stable macro-economic environment and for unleashing private initiative and entrepreneurship

³Early in 2000, the GRN submitted to parliament a supplementary budget which mostly covered increased military expenditures and raised the overall budget by some 30%.

Sub-issue 27

A stable macro-economic environment is vital to economic growth, poverty reduction, and sustainable development. A sound economic policy and management framework needs to be put in place for the purpose of achieving and maintaining such a stable macro-economic environment. The present trend toward greater imbalances in the economic environment poses a threat to economic growth, poverty reduction, and sustainable development. The increasing imbalances become manifest in indicators such as:

- growing government budget deficits;
- growing trade imbalances; and
- uncertainties regarding foreign direct investment.

There is a need to counteract these adverse trends in order to maintain macro-economic stability.

Mechanisms include:

- cutting 'non-essential' government expenditures;
- increasing exports by adding value to primary export goods through domestic processing;
- seizing on opportunities for import substitution; and
- attracting direct foreign investment by offering a stable enabling environment.

Sub-issue 28

Private sector development in Namibia is underdeveloped but will be crucial to economic growth, poverty reduction and sustainable development. Fiscal and monetary incentives (such as tax breaks, subsidies and low interest credits) may be created to encourage private enterprise development, in particular the development of small and medium enterprises which create more employment per unit economic output. There is also a need to promote entrepreneurial activity by de-regulating the business environment and encouraging informal sector activity (**issue ii**).

Stability of macro-economic environment

Without a stable macro-economic environment, it is difficult if not impossible to sustain economic growth, reduce poverty, and move toward sustainable development. There is a need for a sound economic policy and management framework which can keep the various building blocks of the macro-economic environment in balance. Various indicators can be used to measure the stability of the macro-economic environment in terms of how balanced (or imbalanced) it is.

These indicators include:

- ☐ the government budget -- balance between tax revenues and expenditures;
- ☐ the trade balance – balance between income from exports and expenditures on imports;
- ☐ the balance of payments – balance between (export income plus direct foreign investment) and (expenditure on imports and transfer payments abroad, such as repatriation of profits by trans-national companies).

These balances are coming under pressure and accordingly macro-economic stability is threatened, as follows:

- the government budget currently is significantly in the red and budget deficits are growing. Currently, one of the main reasons behind growing budget deficits is increasing military expenditure in connection with

military engagement in two regional conflicts (see **issue viii**). On the revenue side, there is the threat that the tax revenue coming in via the Southern African Customs Union (SACU) -- currently about 15% of total tax revenue -- will drop significantly, as a result of the recent trade deal between South Africa and the European Union under which levels of import duties (including those of SACU) are to fall. A growing budget deficit and rising government debt (domestic and foreign), in turn, could mean higher tax rates, inflationary pressures, and reduction in the government's ability to financially sustain social and economic service and development expenditures.

- There is a significant trade imbalance, and is worsening rapidly – from 10.6% of GDP in 1999 to an estimated 15.3% in 2000. Namibia's economy is very open, relying strongly on trade. Import and export ratios for 1998 were 66.5% and 54.1%, respectively. Dominance of primary commodities (minerals, fish, meat, live animals, etc) in total exports and high incidence of consumer and capital goods in imports indicate the low level of industrialisation in Namibia. Rising trade imbalances and foreign exchange deficits put pressure on Namibia to increase exports (e.g. by adding value to primary commodity exports through domestic processing – see **issue i**) and/or reduce imports through import substitution.
- Foreign investors tend to be very concerned about macro-economic stability and peace, so the growing government deficit and trade imbalance and regional conflicts spilling into Namibia pose a threat to direct foreign investment. Along with the growing trade balance deficits, this puts pressure on the balance of trade.

There is a need to stabilise the macro-economic environment by:

- ☐ reducing budget deficits, primarily by cutting government expenditure;
- ☐ reducing trade imbalances, by increasing exports through domestic value adding and by seizing on opportunities for import substitution; and
- ☐ attracting direct foreign investment by improving the macro-economic environment and the security situation.

Economic incentives to private sector initiative and entrepreneurship

Private sector development in Namibia is underdeveloped but will be crucial to economic growth, poverty reduction and sustainable development. Fiscal and monetary incentives (such as tax breaks, subsidies and low interest credits) may be created to encourage private enterprise development, in particular the development of small and medium enterprises which create more employment per unit economic output. There is also a need to promote entrepreneurial activity by de-regulating the business environment and encouraging informal sector activity (**issue ii**).

x) Regionally and globally shared natural resources – the risk of increasing competition for regional resource access and the adverse local impacts of global environment change;

Sub-issue 29

A major proportion of the Namibia's natural resources are shared with neighbouring countries -- including regional river basins, transboundary wetland areas, marine ecosystems and fisheries resources cutting across national borders, and wildlife moving across political boundaries. Local human livelihoods and national economic growth in Namibia are substantially dependant on national and local access to these transboundary natural resources as well as on their continuing

integrity, yet Namibia does not have exclusive control over them and hence cannot manage them in isolation. In a regional context of growing populations, expanding economies and increasing resource pressure, there is a clear risk of increasing competition and resulting conflict among neighbouring countries over key transboundary resources like shared rivers, wetlands and marine fisheries. This highlights the need for evolving cooperative approaches to the management of shared natural resources. Cooperation may entail some -- and ideally should include all -- of the following mechanisms:

- information exchange -- e.g. sharing data on shared ecosystems like the Benguela system);
- joint research -- e.g. joint studies on the Benguela system by Namibia, Angola and South Africa (already happening);
- harmonisation of policies -- e.g. in the case of shared rivers: downstream user rent payments for upstream management services coupled with upstream fines for upstream mismanagement (excessive water diversion, water pollution, etc); or harmonised water demand management policies;
- coordinated policy implementation -- e.g. joint monitoring of shared downstream - upstream river water use; or coordinated monitoring and adjustments to water demand management regulations.

Political will as well as technical and managerial capacity among all countries involved are pre-requisites for successful cooperation. Problems arise where there are significant differences between some of the countries in the extent of political will and/or the level of technical and managerial capacity available. Successful management of shared natural resources may catalyse stronger ties between neighbouring communities and countries and contribute to broader regional integration.

Various bi-lateral and multi-lateral agreements over transboundary resources -- and associated institutional structures -- exist to which Namibia is a party, but the effectiveness and clout of these agreements and structures varies. Also, Namibia does currently have a proper national cross-sectoral strategy in place to enable it to participate in shared watercourse negotiations in an effective and efficient manner.

Sub-issue 30

Two major phenomena of global environmental change – the depletion of ozone in the stratosphere and climate change resulting from global warming – are likely to produce considerable local impact in Namibia, whereas the country's ozone-depleting and greenhouse gas emissions are too small to contribute appreciably to global emission which drive these phenomena of global change. The most visible initial regional climate effects of global warming in Southern Africa are likely to be more frequent and intense extreme weather patterns as well as progressive sea level rise. In the longer term, climate change is expected to render Namibia's climate (even) hotter, drier and more variable. The country's ecosystems and economy is considered extremely sensitive to the effects of climate change -- and highly vulnerable because of its limited resources. This is a clear threat to sustainable development.

There is a need for identifying cost-effective adaptive management approaches, national disaster response strategies as part of development planning, and building the potential effects of increasing weather variability and progressive sea level rise into strategic and project-level assessments feeding as part of development planning.

The country's capacity to cope with the expected impacts of global warming and climate change will be largely determined by its capacity to make progress toward sustainable development. It is difficult at this point to pinpoint with any certainty what policies and actions to pursue, but as a first approximation the following guidelines may be useful:

- * those approaches, strategies, policies and actions that would take the country closer to a sustainable development path in the absence of the global warming threat, are also likely to better equip the country to deal with climate change under global warming. The specter of climate change thus becomes an additional strong incentive for positive change, by giving Namibia one more powerful reason to do what is required to achieve sustainable development -- a 'win' situation can thus be turned into a 'win-win' situation; and
- * whenever there are choices between development approaches, strategies, policies and actions, it is wise to try and go for those options which enhance, as much as possible, the diversity, flexibility and adaptability of economic, ecological, social, institutional and political systems. Diverse, flexible and adaptable systems increase the capacity to manage the effects of global warming and climate change.

The management of transboundary natural resources in the region

Natural resources being shared by one or more countries in a region like Southern Africa cannot be optimally and sustainably managed, unless these countries actively cooperate and join forces. At a minimum, there should be information exchange between involved countries, including the sharing of data and information on ecosystem properties, monitoring efforts and the effectiveness of resource management systems. Beyond that, the respective countries could coordinate policies and actions relating to the shared resources or better still, partner up in joint research, monitoring and policy development and implementation. The feasibility and prospects of coordinated efforts - - and even more so joint action -- depends on the political will and institutional capacity of all involved countries¹. These ingredients are often not there, or at least not equally present among those countries involved, and many problems may arise in negotiations. Even information exchange can be difficult, where the necessary culture of communication and transparency is missing.

An issue of key importance to the whole Southern African region is joint or coordinated management of transboundary water resources. Most water resources in the region are shared between countries and water is fast becoming a crucial regional security issue, given its increasing strategic value. Recognizing the degree of water inter-dependency in the region and the potentially explosive nature of the water issue, the Southern African Development Community (SADC) has embarked upon a strategy of regional cooperation. A Regional Protocol on Shared Watercourse Systems was signed in 1995 to cooperate on the management, development and utilization of the shared water basins, and to ensure food security. The Protocol provides for the establishment of regional institutional mechanisms to deal with the issue². SADC's own institutional limitations so far have limited the effectiveness and clout of the Protocol. For instance, SADC could not resolve a dispute between Namibia and Botswana over access to Okavango Basin water, a case which was subsequently referred to the International Court of

¹Problems can arise when the involved countries' are not all equally committed politically or do not have comparable institutional research, monitoring and management capacities.

²Regional institutional mechanisms are to be set up at three levels: a Joint Permanent Technical Committee at the level of government; a River Commission for each of the shared river basins in the region; and eventually a full River Authority for each shared water basin.

Justice. Nevertheless, the SADC water initiative is valuable as a framework for addressing shared management issues in the region and could gain strength in the future³.

Successful joint management of shared natural resources may have a variety of positive side benefits which can contribute to closer ties between individual countries and broader regional integration. For example, successful local management of a shared river basin and watershed involving members of the same ethnic group living on either side of a national border cutting across the area, may strengthen ties within the ethnic group as well as between the respective countries. Or, transboundary conservation areas which enhance ecological processes across larger systems, may spawn regional economic markets in tourism.

Some shared ecosystems and resources that are key to Namibia

A major proportion of Namibia's key natural resources -- and the ecosystems associated with these resources -- are shared with neighbouring countries. These include perhaps most notably marine fisheries and fresh water resources (as well as fresh water fisheries) in rivers basins forming, or cutting across, national boundaries to the north and south. The country's rich marine fisheries owe their productivity to the Benguela Ocean Current Ecosystem (see **issue i**) which is shared with Angola to the north and South Africa to the south. Namibia has control over fishing within the Exclusive Economic Zone (EEZ), but fish populations straddle EEZs and national borders. In order to safeguard the integrity of this important marine ecosystem and in order to manage marine fish stocks sustainably, it is critical to actively cooperate with the two neighbouring countries in research, monitoring and management.

Happily, two large ongoing projects involving the three countries and supported by the Global Environmental Facility (GEF) already provide mechanisms and a framework for collaboration. The Benguela Current Large Marine Ecosystem (BCLME) project which is being coordinated from an institutional base located in Swakopmund, supports ecological research aimed at improving knowledge and understanding of the Benguela Current ecosystem properties and their susceptibility to change as a result of outside influences. The Benguela Environmental Fisheries Interaction and Training (BEFIT) project focuses on training and institutional capacity building, with a view to improving environmental awareness and capacity to integrate environmental aspects into fisheries policies and operations, among key individuals and institutions operating in the three countries' fisheries sector. Regional agreements on fish stocks are still outstanding.

Namibia's shared perennial rivers on the northern and southern national boundaries -- the Cunene, Kwando and Chobe Rivers on the northern border, and the Orange River on the southern border -- present similar needs and challenges of cooperation toward more effective and sustainable management options. These needs and challenges relate to shared water management as well as to the management of 'shared' (transboundary) pollutants carried by river water (water quantity and

³See (Krugmann, 1998), particularly the section on "Transboundary Water and Regional Security: From Conflict to Cooperation and Sustainable Management" (pp.155-159).

quality issues)⁴. Yet other important river basins and watersheds exist which cut across Namibia's border to Angola and Botswana and whose sound management is critical to Namibian national and local interests. The Okavango River Basin – shared between Botswana, Namibia and Angola – is being contemplated as a potential source of water for Namibia, to be transferred to Windhoek via pipeline (see **issue iii**). The Okavango River basin is also comprises the important Okavango Delta flood plane in northern Botswana which serves critical ecological functions and is economically valuable as a tourist destination. These different and competing demands on the resources of the Basin underscore the importance of coordinated or joint management. Some discussions to this effect -- as yet unsuccessful and inconclusive -- have been held between the three countries.

The Cuvelai Drainage Basin supplying the Oshanas area in North-Central Namibia with precious water and fish resources (see **issues iv** and **v**) is another example of a critical shared ecosystem involving resource interdependency between countries and hence in need of coordinated or joint management. The Oshanas habitat serves as life support system for nearly 30% of the entire population of Namibia, depending for seasonal water replenishment on the headwaters of a variety of partially ephemeral rivers originating in Angola across the border. Maintenance of the quality of the upper drainage area in Angola is essential to the local livelihoods of currently more than a quarter of all Namibians.

Existing agreements and institutional structures governing transboundary resource management

a) Water

Post-independence Namibia has become a party or signatory to various bi-lateral, multi-lateral and international agreements on transboundary water which have led to the establishment of different institutional mechanisms tasked with developing and implementing principles and procedures for coordinated action. These include⁵:

Bi-lateral and multi-lateral agreements

- ☐ Permanent Joint Technical Commission (PJTC) between Angola and Namibia on the Cunene River – established in connection with a bi-lateral agreement reached in 1990 (the major priority of PJTC is the development of the Epupa Dam);
- ☐ Joint Operating Authority between Angola and Namibia reinstated in 1990 in Lubango (dealing specifically with the Gove and Ruacana hydropower stations on the Cunene);
- ☐ Joint Permanent Water Commission between Botswana and Namibia – established in 1990, it has dealt with the Okavango River and the Kwando-Linyanti-Chobe river system in the Zambezi River basin;
- ☐ Permanent Okavango River Basin Water Commission (OKACOM) between Angola, Botswana and Namibia – set up in 1994, overseeing development in the Okavango basin;
- ☐ Permanent Water Commission between Namibia and South Africa – established 1992, in Noordoewer; since 1994 (re-integration of Walvis Bay) it has concentrated on the Orange River Basin; but establishment of Orange River Basin (to be composed of all riparian states) is at an advanced stage;
- ☐ Joint Irrigation Authority (parastatal) involving Namibia and South Africa, set up 1992 as a result of Treaty of Vioolsdrift and Noordoewer to operate irrigation project located on both sides of Orange River;.

⁴Transboundary air pollution is an analogous problem, requiring coordinated management of air pollutants and air quality in upstream and downstream countries.

⁵(NWRMR, 1999), Section D, pp.48-69

- ☐ SADC Protocol on Shared Watercourses, signed in 1995 (see previous discussion under this section).

International framework agreements

- ☐ Zambezi Action Plan – involving Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe; and
- ☐ UN Convention on the Law of Non-Navigational Use of International Watercourses

Despite participation in these agreements, Namibia does not currently have a proper national cross-sectoral strategy in place to enable it to participate in shared watercourse negotiations in an effective and efficient manner. This must be remedied.

b) Other resources

Furthermore, Namibia is a party to a variety of regional and international conventions which govern, or at least deal with, transboundary movement of natural resources or waste (associated with ecological processes or economic trade). These include:

- ☐ The Global Convention on the Protection of Migratory Species;
- ☐ Convention on International Trade of Endangered Wildlife (CITES);
- ☐ Basel Global Convention and Bamako Regional Convention to ban the export or import of hazardous or toxic substances;
- ☐ The Montreal Protocol on Ozone Depletion;
- ☐ Global Framework Convention on Climate Change (see below);
- ☐ Global Convention on the Conservation of Biological Diversity¹ (see **issue v**): and
- ☐ Global Convention to Combat Desertification² and Manage the Effects of Drought (**issue iv**).

As a party to these and other conventions, Namibia undertakes to expand or adjust its national policies to reflect the national and international commitments entered into under these conventions.

Global environmental change – ozone depletion and climate change under global warming

Humankind presently faces two major global (as opposed to worldwide) environmental problems: a) global warming of the earth's atmosphere and resulting climate change; and b) stratospheric depletion of ozone and resulting increases in the intensity of UV radiation at the earth's surface.

Global climate change is a major long-term threat to sustainable development anywhere in the world, Namibia included. Carbon-dioxide and other 'greenhouse gases'³, predominantly from industrial activity (mainly burning of fossil fuels) but also, if to a much lesser extent, from agricultural activity (livestock and crops), have been accumulating in the atmosphere. This change

¹ On some issues of biological diversity in Namibia, see issue #4.

² On the phenomenon of desertification or human-induced land degradation, see issue #4.

³ 'Greenhouse gases' are gases that absorb light in the infra-red range (much of the earth's 'low-temperature' radiation), while being transparent to light at higher frequencies (virtually all of the sun's 'high-temperature' radiation).

in gaseous composition of the atmospheric has been giving rise to the ‘greenhouse effect’ – increased absorption by the atmosphere of the earth’s infra-red radiation and consequently an increase in the average surface temperature of the earth, both on land and on the ocean -- an effect now readily discernible).

This greenhouse effect, in turn, is likely to change the global climate in the long term, unless drastic reductions in global greenhouse gas emissions are achieved very soon⁴. The initial effects of global warming will consist of a progressive rise in the sea level and in greater and more frequent instabilities and fluctuations in regional and local weather patterns, within what arguably has already become a ‘semi-artificial’ climate⁵. More intense El Nino and La Nina Southern Oscillation events, related extreme weather phenomena, like periodic floods and droughts can be expected to affect Namibia and Southern And Eastern Africa more often and more intensely in future.

Coping with adverse local impacts from climate change under global warming

As a country with a very small population and a limited industrial base, Namibia’s contribution to global greenhouse gas emissions will remain negligible (less than 0.1% of global emissions, if a world average per capita emission rate is assumed). There is little if anything that Namibia can do alone to influence the rate of global emissions. It is nevertheless important for Namibia as a party to the Framework Convention on Climate Change to demonstrate political commitment to greenhouse gas emission reductions. Happily, at present Namibia is not a greenhouse gas source at all, but actually a sink, essentially because of the carbon being trapped as bush encroachment on northern freehold land progresses.⁶

While greenhouse gas emissions does not pose a problem, Namibia, as other countries, will be exposed to the impacts of climate change if and when it occurs. This raises two important questions:

- i) What are the likely impacts of climate change in Namibia? How vulnerable is Namibia to climate change?
- ii) What c/should Namibia do to reduce her vulnerability to climate change and to deal more successfully with these impacts?

⁴Opinions differ as to the necessary emission reductions and the time frames within which to stabilize greenhouse gas emissions at the required lower emission levels. Agreement on mandatory emission reductions and time frames has yet to be achieved under the Framework Convention on Climate Change.

⁵Large increases in carbon dioxide and other greenhouse gas concentrations in the atmosphere have arguably changed the ‘natural’ climate to a significant degree already.

⁶(DRFN, 1999), Report 3.

Namibia's recent Country Study on Climate Change¹ came up with the following final conclusion:

“Namibia is extremely sensitive to global warming and, due to human resource, institutional and financial constraints, is considered highly vulnerable to the effects of climate change. The direct impacts of global warming on each of the economic sectors have the potential to create ripple effects on each other, ultimately reducing productivity, sustainable development options and social stability. If, as currently suggested by some regional scenarios, the country's climate continues to become hotter, drier and more variable (with the exception of the Caprivi, where it may become wetter), it is clear that marginalized rural and urban populations will suffer the most”.

The same study made the following recommendation regarding options for adaptation to climate change and disaster preparedness:

“More extreme weather events (both droughts and floods) are likely to characterize Namibia's future climate and it is important to identify cost-effective adaptive management approaches. National preparedness regarding extreme events and secondary impacts that accompany them (including the threat of bio-invasions, disease epidemics, reduced food security and increased rates of human migration) is required and national disaster response strategies should become an integral part of Namibia's sustainable development planning.

Development planning, particularly at the strategic and project levels must take cognisance of the potential impacts of climate change. For example, the allocation of land for specific land-use must consider the potential effects of increasing climatic variability. Similarly, risk assessments within project-level environmental assessments must consider the possibility of increased frequency of large flood events.

The country's capacity to cope with the expected impacts of global warming and climate change will be largely determined by its capacity to make progress toward sustainable development. Capabilities to check population growth, revive and sustain economic growth while respecting ecological limits, reduce poverty and inequality, manage natural resources (particularly water) sustainably, prevent land degradation and biodiversity erosion, evolve effective and flexible governance systems, cooperate with neighbouring countries on shared resource management, improve access to information, enhance generation and sharing of knowledge, ensure domestic and regional stability, peace and security, and develop a shared vision and values for sustainable development, will all become even more crucial with an increasing need for adapting to the local and regional effects of global warming

Policy options to cope with local climate change impacts

The uncertainties of what will happen as a result of global warming and climate change remain great, thus making it very difficult to decide at this point precisely what policies to develop and what action to take, sector by sector². But as a first approximation, the following rough guidelines

¹(DRFN, 1999).

²A number of more detailed but still rather hypothetical suggestions (on the basis of plausible 'what if' climate

can be suggested:

- * those approaches, strategies, policies and actions that would take the country closer to a sustainable development path in the absence of the global warming threat, are also likely to better equip the country to deal with climate change under global warming. The specter of climate change can thus be turned into an additional strong incentive for positive change, by giving Namibia one more powerful reason to do what is required to achieve sustainable development -- a 'win' situation can thus be turned into a 'win-win' situation; and
- * whenever there are choices between development approaches, strategies, policies and actions, it is wise to try and go for those options which enhance, as much as possible, the diversity, flexibility and adaptability of economic, ecological, social, institutional and political systems. Diverse, flexible and adaptable systems increase the capacity to manage the effects of global warming and climate change.

Ozone depletion – the problem and the response

The other major global environment problem – ozone depletion and resulting increases in UV exposure – constitutes a much less pervasive, complex and uncertain threat to sustainable development than global warming. Nevertheless, the consequences for Namibia -- whose UV exposures will be greater than in many other countries in the lower latitudes -- are significant, in terms of the human health effects and ecological impacts. Significant links and overlaps occur between the effects of climate change and ozone depletion, for which reason national strategies and actions should be integrated and coordinated.

Following ratification of the Montreal Protocol on Ozone Depletion, the GRN established an Ozone Office in the Ministry of Trade and Industry to regulate the emission of ozone-depleting substances from industry. However, it is not clear how effective this measure has been, since there has been no monitoring of compliance.¹

xi) Knowledge for sustainable development – the need for harnessing existing knowledge and generating new knowledge

Sub-issue 31

Knowledge is essential for sustainable development. A great deal of relevant knowledge already exists, but there is a risk that existing knowledge is not accessible, shared widely or managed well and hence does not optimally contribute to sustainable development.

In order to address this risk,

- the government must ensure free and ready access to knowledge in the public domain, as a fundamental right and resource;
- this implies that civil society should have access to public-domain information to participate in decision-making;
- some information and knowledge in the private sector must be protected as intellectual property – through systems including patents, copyright, trademarks, plant breeders rights, certification and labeling – so as to stimulate investment (ensuring adequate returns), innovation, private sector development and economic growth. The government should facilitate intellectual property protection through appropriate domestic legislation and enforcement of rights as well as in international negotiations and agreements.
- local (indigenous) knowledge held by rural communities about their environment should be protected -- through systems protecting indigenous resource rights -- to ensure continuing community access to and benefits from this knowledge, community development, environmental conservation and sustainable use of natural resources (this issue is addressed, for instance, in legislation on access to genetic resources being developed in Namibia);
- there is a need to promote a culture of communication and information sharing in Namibia, to which increasingly widespread use of modern information and communication technologies could contribute and which might also help make Namibian society more cohesive.

Sub-issue 32

Worldwide, modern computer-based information and communication technologies (ICTs) are transforming the way people and organisations access, use and share information, communicate and network with each other, and do business locally and globally. ICTS are also a fundamental driving force behind rapidly globalising financial markets and economic trade, as well as behind improvements in the efficiency and productivity of entire national and international industries.

Further, ICTs have the potential to:

- allow poorer countries to ‘leapfrog’ in their development efforts catching up faster with more advanced countries;
- contribute to the democratisation of political structures and processes and a stronger more homogeneous civil society by providing a greater range of people and organisations, including hitherto marginalised groups, with equal access to information and by putting them in closer touch with each other;
- enhance information sharing, networking and partnership building; and
- improve coordination, planning, monitoring and decision-making within a decentralising government.

There is a risk that Namibia – and Africa more generally – will be further marginalised in the

¹Sector-Based Issues & Options Paper – Trade and Industry, April 2000.

current global information and communication revolution and hence not be able to fully exploit the potential benefits of ICTs for sustainable development. To counter this risk, Namibia should pursue aggressive policies of promoting the use of ICTS in urban and rural areas, building the necessary infrastructure and enhancing connectivity. A national comprehensive and integrated information and communication policy strategy should be developed for that purpose.

Sub-issue 33

Even though a lot of useful knowledge exists, there are significant knowledge gaps which need to be addressed through appropriate new biophysical, socio-economic and policy research. Research policy should be guided by the following considerations:

- the government should provide an enabling environment in which research and inquiry is generally encouraged at all levels;
- research priorities should be determined and incentives should be provided for the kind of research that the country needs;
- in all research activities supported in Namibia or on Namibian issues, links to Namibian institutions and research capacity building among Namibians should be promoted; and
- there should be no rigid controls on the participation of outside researchers.

Sub-issue 34

Sound sustainable development planning and implementation is not possible without appropriate monitoring efforts. There is a need for more systematic and comprehensive:

- Routine gathering of background data to compile regular statistics – for instance, climate and weather data, or the population census;
- Monitoring of impacts of policies, programmes and projects using performance indicators.

Knowledge systems

Knowledge is essential for sustainable development. It is important, however, to recognise that there are distinct systems of knowledge which must be handled differently to contribute to sustainable development. At least three knowledge systems can be distinguished -- knowledge in the public domain; intellectual property in the private sector; and local 'informal' knowledge (often called indigenous knowledge) at the local community level. Each of them must be harnessed in a distinct fashion for Namibia to move toward sustainable development.

Knowledge in the public domain

Much information and knowledge is, or should be, in the public domain. This includes, for instance, results of research supported from public funds or public policy related information. Information and knowledge in the public domain should flow freely and everybody (individuals members of the public and stakeholder groups) should have ready access to it. The government should uphold the right of free and ready access to public information and ensure that information associated with legislative processes, policy development and decision making is not unnecessarily restricted. Civil society should have access to information in the public domain to properly participate in decision-making.

Intellectual property in the private sector

Some of the knowledge generated in the private sector may be protected by systems guaranteeing intellectual property rights to stimulate investment, innovation, private sector development (see **issue ix**) and economic growth (see **issue i**) -- driving forces behind sustainable development. Unless potential innovators and private sector organisations know that their innovations, product development, and identities can and will be protected -- yielding an adequate return on investment (e.g. through profits from sales or from royalties), they may not make the necessary investments in the first place. There is a need for private-sector innovators to have access to appropriate intellectual property rights protection systems – patents, copyright, trademarks, plant breeder rights, certification and labeling. The government should facilitate that access through appropriate legislation and enforcement at home and in international trade negotiations.

Local knowledge systems

Some of the local knowledge held by rural communities about their own local environment and natural resource base (including a wide range of indigenous plants and animals) is a result of century-long processes of incremental ‘informal’ local innovations in land resource management and crop cultivation. These processes have been crucial to the conservation and sustainable use of the local natural resource base. Local knowledge must be protected so that the local people can derive due benefits from that knowledge, and continue their role as guardians and sustainable users of the local environment. In the absence of such protection, the local knowledge may be – and has often been – exploited by outsiders for their own gains (like trans-national corporations in the commercial development of medical drugs, pharmaceutical products, etc).

The need to protect local knowledge about biodiversity, in particular, is being addressed in legislation currently being developed in Namibia to regulate access to genetic resources and the equitable sharing of benefits from the use of these resources (see **issue v**). Commercial systems of intellectual property rights protection tend to be inaccessible (financially and otherwise) to local communities. For this reason, there are ongoing international efforts to define more appropriate systems of local community rights -- collectively known as ‘traditional resource rights’ -- and develop mechanisms for their protection.

Access to and sharing of existing knowledge

A lot of data and information on the environment and on sustainable development issues and options already exists in Namibia. But this information may not be easily accessible, or available in the right form, to those who need it for planning and decision-making. Conversely, those who generate and/or process data and information (researchers in a broad sense) may not share it widely enough with all those who could use it.

There is a need to promote a culture of communication and information sharing, focusing especially on the youth, to ensure that existing information and available knowledge reach those who need it. Efforts to nurture such a culture could also contribute more generally to shaping a

more cohesive civil society (**issue xii**). Modern computer-based information and communication technologies and systems (ICTSs), increasingly widespread and especially popular among the youth, could play an important role in this connection.

The role and impact of ICTs in information access, sharing and communication

Worldwide, these ICTSs are transforming the way people access, use and share information, and communicate with each other, at work as well as at home. They can be very important catalysts for making knowledge available and putting people and institutions in closer touch with each other. Computer-based networking, all the way from local to global levels, is opening new horizons for fast and efficient ways of information sharing and partnership building for improved coordination, planning and decision-making, at all levels and among different 'communities' and groups of stakeholders.

The fast expanding global Internet (the World Wide Web) allows easy access to an ever greater array of information sites (Web sites), to all those who have access to it¹. Already, a very significant and fast growing proportion of international business and commerce, from financial transactions to ordering books, takes place in 'cyberspace'. ICTSs are raising the efficiency and productivity of entire national and transnational industries, and in some of the industrial countries, electronic shopping is already fast becoming a routine. It has also been argued that ICTSs:

- nurture a culture information sharing;
- contribute to the democratization of political structures and a stronger civil society by providing a greater range of people with equal access to information; and
- allow poorer countries, at least in principle, to 'leapfrog' in their development efforts, allowing them to catch up with more advanced countries.

The need for ICT development and policy in Africa and Namibia

Africa south of the Sahara generally lags far behind the industrial countries in participating in the global information and communication revolution. Poor or non-existing telecommunications infrastructure, insufficient incomes amongst the vast majority of the population, and widespread poverty and inequality are severely limiting access to and benefits from ICTSs for most African countries.

As a middle-income country with comparatively good infrastructure, Namibia is perhaps in a better than average position, even though the country is a relative newcomer to ICTSs. In recent years, the country has established reasonably good access to the Internet and by now is able to rely on a reasonably efficient set of Internet Service Providers. As access to and the capacity of ICTSs are enhanced further in the country, these modern information and communication resources could, if used strategically and wisely, make a very important contribution to economic growth and sustainable development. The GRN should prioritize ICTS development and related infrastructure investments in the country, carefully examine policy options that encourage strategic use of ICTSs in efforts to foster economic growth and sustainable development, and develop a comprehensive

¹Computer networking and Internet access requires a computer, a modem, a telephone connection and a dial-up account with a local Internet Service Provider – all in all very affordable to high and medium-income earners, but prohibitively expensive and out-of-reach in terms of missing basic telecommunications infrastructure to the vast majority of low-income households.

and integrated national information and communication policy (NICP).

Information & communication equality – promoting ICTs in low-income rural areas

One great challenge for such a policy would be to prevent ICTSs from contributing to further marginalization of the vast poor rural populations who have no access whatsoever to these new technologies and systems and are usually cut off information and communications flows elsewhere. If ICTS access and use remained restricted to higher-income urban areas, this would inevitably lead to greater urban-rural inequalities and greater regional disparities (**issue ii**). Therefore, a cornerstone of any NICP would have to be the promotion of access to ICTSs in low-income rural areas, through strategic infrastructure development and innovative (and initially subsidized) schemes to provide rural populations with access to ICTS and foster related learning and capacity building processes.

The role of ICTs in inter-sectoral policy coordination and political-administrative decentralisation

In the near term, ICTS development in Windhoek could greatly contribute to improved inter-sectoral coordination at the national government level, by linking all central government departments (as well as possibly key outside stakeholders) in computer-based local and wider area networks and by encouraging communication and information sharing. In the longer-term, ICTS development in the regions could strengthen efforts to decentralize and devolve authority to regional and local levels (see **issue viii**), by inter-connecting government units at all levels and by building the capacity of local government structures and local communities to access relevant information beyond their limited realm and to actively contribute to higher-level policy and decision-making processes. At the rural community level, ICTSs could be introduced and used to strengthen local institutional capacity for local-level sustainable resource management and income generation -- in initiatives like the wildlife conservancies and water point management -- by providing easy means of communication with -- and ready access to relevant information in -- the outside world, and by allowing ongoing computer-based networking among conservancies or water committees to exchange experiences.

Knowledge gaps – the need for research

While a great deal of relevant information is already available in Namibia which could be used and shared more effectively, there are significant gaps in knowledge required to manage resources sustainably and move toward sustainable development. These gaps call for more applied research – ecological, socio-economic and/or policy research – on a variety of topics relating to one or more of the sustainable developments issues and threats discussed in this paper. Any attempt to draw up a list of research topics would be beyond the scope of this paper.

Research policy should be guided by the following considerations:

- the government should provide an enabling environment in which research and inquiry is generally encouraged at all levels;
- research priorities should be determined and incentives should be provided for the kind of research that the country needs to be carried out;

- in all research activities supported in Namibia or on Namibian issues, links to Namibian institutions and research capacity building among Namibians should be promoted; and
- there should be no rigid controls on the participation of outside researchers.

Monitoring the impacts of development policies, programmes and projects

Finally, natural resource management, development planning and related decision-making can not be done without proper monitoring of the bio-physical and socio-economic environment, at different levels and scales, and of the impacts of policies, programmes and projects being implemented. Monitoring will comprise the routine collection of bio-physical and socio-economic data relating to a basic set of variables -- such as rainfall, water use in households, wildlife populations, fish stocks, human population numbers, concentration and distribution, school enrolment levels, disease incidence, land use, gender roles in rural households and in the labour market, employment patterns and economic output of goods and services.

In addition, there will be a need for monitoring of the impacts of particular policies, programmes and projects, on the basis of certain indicators, in order to assess performance toward given objectives. Monitoring techniques and data gathering efforts should be commensurate in accuracy and cost with the nature and objectives of the planning and evaluation purposes which they are meant to serve. Generally, this means that monitoring methods should be as simple, robust and cost-effective as possible, particularly where planning and management responsibilities are devolved to the local level. Careful consideration should be given to opportunities of involving local communities in monitoring efforts – and in building the necessary local capacity for this purpose.

xii) Culture, communication, attitudes and lifestyles – the need to develop a shared vision and values for sustainable development

Sub-issue 35

Sustainable development is fundamentally about shared values and a shared vision. Yet despite undeniable progress in achieving reconciliation and molding a more unified nation, Namibia is still quite segmented culturally, stratified socially and dualistic economically.

The challenge is to build a culture of (inter-)communication and stronger bridges of mutual understanding and common interest, so as to overcome cultural, social and economic fragmentation and shape a more cohesive, if culturally diverse, society. Accepting this challenge will start to lay the basis for sustainable development.

Sub-issue 36

In the past, the environmental concerns of the rich and the poor were as disparate as their incomes – dependence on the environment for survival on the one hand and appreciating the environment for its scenic, recreational and leisure values on the other. This contributed to elite-dominated

environmental decision-making not reflective of the perspectives of the poor and to potential conflict and environmental degradation.

However, recent advances in wildlife tenure reform and wildlife-based tourism on communal land (conservancies) have linked the conservation interests of the rich with the economic needs of the poor. Such linkages make it possible to build bridges and develop shared economic and environmental interests and objectives across disparate groups, thus allowing better conservation and sustainable use of the environment and better economic prospects for the poor, and moving away from conflict to cooperation and partnerships.

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Going beyond common business interests, a shared vision for sustainable development will ultimately require general agreement on common core values and attitudes regarding equity and environment. These shared values include, but are not restricted to:

- respect and open-mindedness toward other people and cultures;
- maintaining human rights, democracy, social and gender equality and justice;
- maintaining biodiversity as well as cultural diversity;
- avoiding wasteful use of natural resources and resource-intensive lifestyles.

Awareness building and education to imbue these values must begin with the youth, at home and in the schools.

The challenge to overcome societal fragmentation

Namibia is still a rather fragmented – culturally segmented, socially stratified, and economically dualistic -- country, even though undeniable progress in achieving reconciliation and molding a unified nation has been achieved. This poses a great challenge to achieving the required consensus and common outlook in society to move toward sustainable development. Cultural segmentation, social stratification and economic disparities generally tend to weaken civil society and the economy, and have implications for environmental conservation and natural resource use and management.

Linking environmental and business interests among disparate groups

In the past, the concerns of the poor and the rich concerning the environment were as disparate as their incomes. The (rural) poor, being directly dependent on their environment for their survival and livelihood, viewed it as an essential life support system. By contrast, the rich, generally being sheltered from the environment for their well-being, tend to emphasize the environment's scenic, recreational and leisure values. Nature conservation for the elite amounted to 'saving nature from the people'.

In recent years, significant advances have been made in linking nature conservation interests of the rich and powerful with economic interests of the rural poor. By granting rural conservancies rights of exclusive use of and benefits from wildlife, for instance, the wildlife resource is conserved for hunting, tourism and other interests of the rich. This way, the rural people themselves become the

custodians of precious natural resources. By linking the different interests of disparate stakeholder groups, through mechanism like resource tenure reform, it is possible to develop shared 'business' interests and objectives, thus moving from conflict to cooperation and partnerships.

Toward shared core values on equity and environment

The cultural diversity among the different people of Namibia -- an asset which should be maintained -- implies differences in ways and means of relating to each other and the environment and different perspectives on future development. Nevertheless, a shared vision for sustainable development -- going beyond self-interest and shared interests -- will require shared core values and attitudes on equity and environment. These may include (but not be restricted to):

- respect for other people and cultures;
- open-mindedness, trying to understand other points of view, avoiding preconceived notions and prejudices, as much as possible;
- working toward social and gender equality and justice;
- maintaining biodiversity as well as cultural diversity;
- avoiding wasteful use of natural resources, like water;
- avoid resource-intensive lifestyles (for the rich);
- promoting waste recycling, reduction and reuse and keeping the environment clean waste and pollution

Such core values and attitudes must be inbued in the young people, through education and awareness building at home and in school. How to reach a point where parents and schools throughout the country pass on the right kinds of shared core values and attitudes is perhaps the greatest challenge of all.

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