

The Role of Biological Diversity and Sustainability in the Conservation and Preservation of the Environment

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Abstract

The World Summit on Sustainable Development took place in Africa last year. In 1992, UNCED aimed at formulating a way forward and to provide a layout for what was called sustainable development. The future was supposed to be based on developments, which take the natural environment into account. However, very little evidence is available to show that this happened or will happen on a sufficiently large scale.

Conservation and preservation of nature are regarded as one of the available means to save the planet. One important aspect in this regard is biodiversity. Due to the dwindling resources and the deterioration of the natural environment, conservancies were suggested. Referring to Namibia, this article examines whether conservation and preservation of Nature can be achieved. In order to accomplish this, philosophical issues are employed to identify the basis for sustainability and the role of biological diversity. A critical look is taken at the term sustainable development.

Introduction

Despite the worldwide debate surrounding issues regarding sustainable development and sustainability, very little concrete results are available. The degradation of the natural environment, the air, and water is continuing, the human population is growing rapidly in most parts of the world. This is the outcome of not changing from the current non-sustainable human activities, which are based on particular economic and political systems originating in the North. The situation is aggravated in Namibia, the driest country south of the Sahara. Arid and semi-arid conditions provide a particular challenge in the promotion of biodiversity and sustainability.

The WSSD in 2002 showed that hardly anything tangible has been achieved in the practical implementation of so-called "sustainable development" since 1992. The future also looks not promising. This indicates a problem with the understanding and comprehension of the concept. The Namibia Nature Foundation (2002) put it as follows:

The main objective of Rio was to demonstrate how sustainable development issues could be integrated into planning and implementation. To do this, and help guide countries in the process, a 40 chapter 800 page Agenda 21 document was developed and adopted. This is a non-binding document, which shows how sustainable approaches can be built into all facets of life, all sectors

of society, at all levels, for all habitats and ecosystems and be part of all current and important issues and challenges. It essentially called for a paradigm shift – a new way of approaching and managing things, one in which money issues, people issues and ecological issues are all carefully considered with their mutual long-term best interests in mind.

However the NNF (2002) points out that:

There was no roadmap provided with Agenda 21, there were no targets. There were no indicators to help people, organizations and countries evaluate whether they are being successful or not. As a result, some people and organizations (and even countries) did nothing. Fortunately, others were more motivated and original, and a host of different ideas and approaches were initiated in different parts of the world.

In order to explain the relationship between conservancies, biological diversity and sustainability, it is necessary to consider some questions. The central questions for this paper are:

- But what is biodiversity?
- How does biodiversity work and how are biodiversity and sustainability linked?
- What is the role of “development” and human actions in the process of conserving and preserving nature?

In order to understand the issue of biodiversity, it is necessary to look at the basic foundation needed to support sustainable processes. This can then be used to investigate the role of conservancies and protected areas. The latter are regarded as playing a role in the development of areas, communities or countries. Therefore the relationship between development, biodiversity and the role of conservancies will be considered. The first step is to look at what biodiversity means and its importance.

Biodiversity

According to Miller (1996:A43) biological diversity is the variety of different species, genetic variability among individuals within each species, and variety of ecosystems. This includes all animals, organisms and plants, in other words everything that can be called *LIFE*. Similarly the World Bank (2003) states:

“Biodiversity - The variability among living organisms from all sources, including land based and aquatic ecosystems, and the ecosystems of which they are part. These include diversity within species, between species, and of ecosystems. Diversity is the key to ensuring the continuance of life on Earth. It is also a fundamental requirement for adaptation and survival and continued evolution of species”.

Biodiversity is the result of a complex global holistic system, which is needed to support life. Holism is, according to the Concise Oxford Dictionary (1991), the theory that wholes are to be regarded as greater than the sum of their parts. Towards the end of the 1960s, the philosopher-scientist, Arthur Koestler, has proposed the term “holon”, to describe wholes within nature, made of its own parts, yet itself part of a

larger whole (Sahtouris, 1995). The term is derived from the Greek *holos* meaning "whole" and *on* meaning "part" or "particle" (Schactman, 1994).

The key characteristic of a holon includes its individuality in order to maintain the set order in the tree structure, but it also submits to the demands of the whole tree structure. A universe of holons within holons represents a holarchy, one original whole that formed ever more complicated smaller wholes within itself. Holarchy is a term also coined by Koestler, by combining the Greek words *holos* and *hierarchy*, which denotes a hierarchically organized structure of units or entities that are called holons (Funch, 1994).

"Nature teaches us that order can be maintained through change even, when necessary, through disastrous change" (Sahtouris, 1995). The imperfections of nature can be explained by looking at climate changes over a million years. World climate has changed several times as a result of what is known as the ice ages. They occur roughly every 200-250 million years (Waugh 1996:90). The reasons for these fluctuations have not yet been determined. The current rise in world temperatures could be the result of the global warming-up process (a warm phase or interglacial), or the result of man-made interferences such as emissions. Ice ages are only a few degrees colder than the average temperature, but for sensitive creatures they are extreme (Sahtouris, 1995). According to Maasch (1997), earth is currently experiencing an ice age, despite the fact that a warm interval between two periods of glaciation is at present occurring. If global temperatures increase faster than the natural rise in temperatures, then humankind's activities are indeed affecting the global climate and life on earth. By 2100 a rise of 3.5 degrees Celsius is predicted by scientists (Wines 2000:32). The specter of Earth adapting to human-induced climate change and the uncertainty over how these effects spin out over the next decades is unsettling, as not all plants and animals will be able to make the seasonal shift (Feroohar & Guterl 2002:39).

Throughout the millennia changes in the natural environment have occurred. Natural processes require time to evolve, i.e., to change into a new and more suitable stage of being. A more rapidly induced process would mean disaster, as natural processes will not be in a position to adapt fast enough to these circumstances. This would lead to changes of continental climates, the extinction of species and ecosystems, reduced food production, and possibly increased disease and famine in desert areas as water supplies disappear (Wines 2000:32). Rising sea water levels would flood coastal regions and islands would disappear. Between 52 and 57 million years ago the Earth was in a different state. The polar regions were temperate, trees grew in both the Arctic and the Antarctic, and alligators lived in areas at 78 degrees North.

More recent examples illustrate the changes in the number of plant and animal species in the southern and northern parts Namibia, i.e., the regional biodiversity. In the first case, when James Backhouse visited Warmbad in 1840, he found an irrigated garden with five fig trees, 'indian-corn' (maize) and potatoes (Backhouse 1844: 552). Backhouse (1844: 558-559) also reported that zebras, giraffes and ostriches were found in the area. "Lions are not numerous in this part of Great Namaqualand; three had been killed at Nisbett [Warmbad] within six years" (Backhouse 1844:559). Since then, the ecology of the region around Warmbad has clearly changed over the last 160 years. In 1844, the Rev. Ridsdale observed that "Zebras, quaggas or the wild ass; the eland, the gemsbok, the springbok, and other species of the deer or antelope are numerous, and the springbok, after the rains have fallen and the young grass appears, unscared by the prevalence of fire-arms, still frequent the country in vast numbers" (Ridsdale 1883:65). The author also pointed out that elephants, rhinoceri, camelopards, indeed all the larger animals, have retired from this part of Great Namaqualand, and have gone considerably to the northward, so that they are never seen now; but leopards and panthers, wolves, jackals, and the hunting hyaena, or wild dog, are still numerous (Ridsdale 1883:64).

At present however, due to poaching, expansion of agricultural areas and increase of human population, the number of wildlife decreased significantly and many species became locally extinct. "Only Springboks seem to have adopted well in the present condition of the area as well as smaller animals such as Steenbok, Spring Hare, Caracal, etc. Numerous feral horses are also found within the conservancy [//Amaseb]" (NDT 2003:1)

In the north of the country, the degradation of the environment was made visible from space in 1983 (see DRFN & SIDA 1992:4). A NASA image shows the disturbed area south of the Angolan border, whereas north of the border vegetation is still abundant. Furthermore, there is no wildlife in the north-central part of Namibia. The only concentration of animals is found in the Etosha National Park, where overpopulation of specific animals is "controlled" by humans. Elephants, for example, are regularly culled when resource restrictions are apparent, for example during a drought.

Going back into history, woodlands once existed in the central-northern region. In 1866, a 60 kilometers (37 miles) wide belt of mopane forests was recorded. Fifty years later these woodlands were about 40 kilometers (25 miles) wide, and in the 1950s only a 10 kilometers (6 miles) wide belt was left. Nowadays there are no woodlands left. This is the result of the growth of the human population and their unsustainable activities. Especially in the western parts of the region, the formerly tall and single-stemmed mopane trees have been replaced with short, multi-stemmed coppice (DRFN & SIDA 1992:38).

“One of the very obvious reasons is over-exploitation of living resources. The selective elimination of certain species in persecution or introductions of any alien species also disturb the ecological balance ultimately resulting in the loss of biodiversity” (Suryya & Qadeer, no date).

There are many examples of decline and destruction of the biosphere. Nearly all of this can be contributed to human activities. This begs the question: How does Nature maintain biodiversity on a sustainable basis? This is explained by the autopoietic philosophy.

Sustainability of biodiversity

In a holistic system everything and everyone is connected to everything and everyone. This mutual interdependence is crucial for sustainability. Sustainability is a holistic concept. If one part or one holon fails or is destroyed, Nature is capable of filling this niche – over time. How this is happening cannot be explained precisely at present, but certain principles can be distinguished. To explain the phenomenon of sustainability the philosophy of autopoiesis provides answers.

The holistic ontology highlights the need for processes (or parts) to supplement each other and to integrate these processes to form a whole, thus reinforcing the developmental practices and achievements. The part-whole relationship found expression in the philosophy of autopoiesis. It shows that sustainable development can only be achieved if all components are considered simultaneously and integrated into one holistic framework. A fragmented or “piece-meal” approach will not contribute to the achievement of sustainability.

Autopoiesis is a neologism introduced in 1971 by Maturana and Varela to designate the organization of a minimal living system (Varela 1992:5). The term combines the Greek terms *auto* (self) and *poiesis* (creation, production). Autopoiesis provides a basis for the exploration of different components and their relationships as part of the organization of the living. The functioning of the various parts of an organism, such as cells, is used to explain sustainability on the micro scale. Holism and autopoiesis both refer to parts, which constitute the whole. Autopoiesis provides an understanding of sustainability on the micro scale and provides clues to be considered on the macro scale. “An autopoietic system is self-producing and self-maintaining. It must constantly change or renew itself in order to stay the same...” (Sahtouris, 1995).

This self-maintaining process is explained by the functioning of an organism such as a cell. Cells are packages in which living matter houses itself. They contain and connect autopoietic systems by enclosing them in open boundaries – membranes which allow materials and energy to be exchanged with the environment (Sahtouris, 1995). The author compares Earth with a cell, “the whole Earth is a giant cell

within whose boundary membrane other smaller cells multiply, die, and are recycled in such a way that the whole need not grow”.

To exist, a system requires a living space. This space is required to sustain the system and its components. Any degradation of or damage to the living space can result in the cessation of activities of the system. The system must change or becomes extinct as its basis for existence and its sustainability is no longer granted. This is evident in many countries, where for example, environmental degradation has led to hardship of communities, which are no longer able to sustain their traditional livelihoods that in the past were to a large degree autonomous and largely self-sufficient. According to Varela (quoted by Whitaker 1995):

“An autopoietic system is organized (defined as unity) as a network of processes of production (transformation and destruction) of components that produces the components that:

Through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produced them; and 2. Constitute it (the machine) as a concrete unity in the space in which they [the components] exist by specifying the topological domain of its realization as such a network”.

Maturana and Varela (1980:xix and 138) describe a unit as an entity distinct from a background, the sole condition necessary for existence in a given domain. A unity is a simple unity that defines through its properties the space in which it exists and the phenomenal domain, which it may generate in its interactions with other unities. "The relations between components that define a composite unity (system) as a composite unity of a particular kind, constitute its organization" (Maturana & Varela 1980:xix). These relations determine the dynamics of interaction and transformations, which it may undergo as such a unity, constitutes the organization of the system (Maturana & Varela 1980:137).

These natural processes form the basis of biological diversity and the maintenance of sustainability. However, two non-autopoietic processes nowadays endanger sustainability of biodiversity. First, globalization has already resulted in the introduction of alien species in regions and countries far away from the origin. Second, biotechnology in cooperation with the globalization of trade and commerce makes “possible the wholesale reseeding of the Earth's biosphere with a laboratory-conceived second Genesis, an artificially produced bioindustrial nature designed to replace nature's own evolutionary scheme” (Rifkin, 1997).

Global trade had and has an impact on biodiversity in various ways as shown by the globalization of crops such as potatoes, corn (maize), or carrots. The introduction of alien species and crops has changed the ecology. For example, in southern Namibia, two species, which originally came from America, spread

throughout the region: *prospis glandulosa* and *prospis velutina*, also known as *mesquite*. It was introduced in South Africa in the 1940s as a source of fodder for cattle (Kaiser, 2003). In the meantime *prospis* has, in Southern Africa, been declared an invader species.

The second statement is becoming a moral issue. Biotechnology is praised as the solution for the future. But what will happen if something goes wrong? There are already allegations of transgenic "contamination" of crops. For example, reports from Mexico in the beginning of 2002 proclaimed advantages of biotech include the production of tissues, drugs and bioengineering in agriculture. Nature is losing out and with it the processes, which have made Earth sustainable – up to now. The question is whether the advantages will prevail or whether biotech will damage the whole planet. The apparent progress is part of the crisis management to cope with the human overpopulation and the requirements of the exploitative economic system. It is a gamble with the future, because the so-called advantages are not based on autopoietic processes. They are human-made, artificial. Can an artificial world be sustainable? The promotion of unnatural processes and products raises the question about another moral issue. There is a lot of talk about human rights. What about the rights of the other millions of species and their development? In other words, what about the right to life of all species.

“Development” and the conservation of biodiversity

What is development? It usually refers to the western political and economic systems, thought, and the culture of particular interests. Economic development or growth, according to the World Bank (2003), is the process by which a country increases its ability to produce goods and services. The prevailing global capitalist system is one of the main reasons for the decline of species, the degradation of the environment, poverty, and many other global problems, which are exacerbated by a supportive political system. Both systems are based on Western interest and philosophies.

The capitalist system is characterized by its need to expand, to create and exploit new markets. Without this expansion the system will collapse. An example is found in Cameroon, where logging is responsible for the degradation of the environment, the loss of biodiversity and the destruction of the livelihood of the indigenous people living there (WRI, 2000). An illusion is propagated that economic development will ultimately benefit all. An euphemism called sustainable development is nowadays used to cover-up reality, which is not more than crisis management.

The Brundtland Commission formulated the best-known version of a definition of “sustainable development”. The important part of the definition in the context of this paper reads as follows (WCED 1987:43): “development that meets the needs of the present without compromising the needs of future generations to meet their own needs”. Victor Munnik (2001:1) emphasizes that the Brundtland

Commission's definition poses an immediate problem, namely that "the needs of the present are not being met. This has been called "poverty". Poverty has worsened on a continuous basis, so have pollution and environmental destruction.

The Brundtland Commission (WCED 1987:11) also pointed out, that in many parts of the world, human population growth rates cannot be sustained by available environmental resources. These growth rates are outstripping any reasonable expectations of improvements in housing, health care, food security or energy supplies. Therefore urgent steps are required to limit extreme rates of (human) population growth. Rifkin (1998) points out that:

Humankind, then, faces three crises simultaneously - a dwindling of the Earth's nonrenewable energy reserves, a dangerous buildup of global-warming gases, and a steady decline in biological diversity. It is at this critical juncture that a revolutionary approach to organizing the planet is being advanced, an approach so far-reaching in scope that it will fundamentally alter humanity's relationship to the globe.

The unprecedented growth in both human population and consumption has resulted in an unprecedented environmental crisis (McNeill quoted by Sanderson, et al. 2000:891). According to E.O. Wilson it would now take four Earths to meet the consumption demands of the current human population, if every human consumed at the level of the average US inhabitant (Sanderson, et al. 2000:891), or three planets to attain the standard of Great Britain (BBC Earth Report, 31 July 2002).

According to Joel E. Cohen (Earth Institute News, 2003) by the year 2050, the earth's present population of 6.3 billion is estimated to grow by 2.6 billion. Therefore "We cannot continue the exceptional growth of this last half century without experiencing consequences." However, no major changes are being promoted. The conventional definitions, focusing on social, economic and ecological aspects, represent primarily the Western views and interests. A few examples of criticism may suffice (Earth Chronicles, 1995):

1. "Sustainable development?" (Prof. David Inman)
2. "It's a contradiction in terms. We can either have sustainability or we can have development" (Don Malcolm)
3. "To me, sustainable development is an oxymoron. It's like military intelligence. The two don't go together" (Ernie Dyck)

Conventional definitions of sustainable development are oxymorons, which support the established Western interests as shown in the usage of ridiculous terms such as sustainable economic growth, sustainable finance, sustainable urbanization, or sustainable mining. An oxymoron cannot be

implemented. The term “sustainable development” is merely a feel-good concept to cover-up the non-sustainability of the globally dominating political and economic systems.

The conventional interpretation also supports the saying: the more things change the more they remain the same. Except for isolated (non-holistic) small initiatives, the question has to be asked what has really changed as a result of sustainable development initiatives? As the WSSD has shown: hardly anything. Therefore the oxymoronic nature of the term “sustainable development” is making a mockery out of sustainability. However, if the term is redefined to provide for the concerns expressed, sustainable development could make sense. The redefinition of sustainable development reads as follows:

Sustainable development is the process of moving away from non-sustainable systems in order to achieve a balance between usage of resources and the natural production thereof based on antipoetic conditions, i.e., sustainability.

Evidently this requires enormous changes in human behavior, attitudes and societies. These changes have to be based on ethical and philosophical requirements to be successful. However, changing non-sustainable mindsets is the major challenge. The achievement of sustainable development is impossible as per conventional understanding. Several attempts are made to protect or preserve the environment, and to promote (as per conventional definition) sustainable development, by creating conservancies. What is the role of conservancies and protected areas?

Conservancies and protected areas

Suryya and Qadeer (no date) answer the question “Why conserve biodiversity?” as follows:

“One of the reasons is ethical. All these species on Earth have not been created by man and he does not have a right to eliminate something, which he cannot create. The world Charter for Nature adopted by the General Assembly of UN in 1982 emphasizes that ‘every form of life is unique, warranting respect regardless of its worth for man’ and ‘it should be protected for its own sake’ ”.

Human history is littered with examples of environmental destruction. Wherever humans have appeared, changes in the natural environment have occurred. As long as only a small population existed this was not always devastating. Only those who did not read the signs of the time perished. There is a lot of knowledge regarding these civilizations. However, who is learning the lessons from history? Karl Marx wrote: history is repeating itself, first as tragedy and then as a farce (Friends of the Earth, 1997).

The decline of any species or biome has multiple causes. Conservation biologists have summarized these factors under the acronym HIPPO (Wilson 2002:50):

1. Habitat destruction
2. Invasive species
3. Pollution
4. Population
5. Overharvesting

To consider conservancies and conservation efforts in isolation disregards the global effects of the current non-sustainable lifestyle of the majority of the world's population. Local interests and endeavors hardly solve worldwide problems. Facts such as air pollution can influence biodiversity away from the source. This was made visible by NASA's Terra spacecraft of air pollution plumes moving across the globe (see NASA, 2001). The ozone layer has already been damaged. Acid rain has been experienced. What about other possibilities? The complexities of the biosphere and the various interactions and interdependencies are not yet fully understood. It can be doubted whether humans will ever understand these complexities on a global scale or even on a local scale.

Conservancies are, *inter alia*, a means to provide employment and income to local communities by utilizing the natural resources of a delimited area. According to the Department of Environmental Affairs (2002c), a conservancy consists

“of a group of commercial farms or areas of communal land on which neighboring land owners or members have pooled resources for the purpose of conserving and using wildlife sustainably. Members practice normal farming activities and operations in combination with wildlife use on a sustainable basis. The main objective is to promote greater sustainable use through co-operation and improved management. Conservancies are operated and managed by members through a Conservancy Committee”.

Namibia's Community Based Natural Resource Management (CBNRM) Program seeks to improve the quality of life of rural Namibians by empowering people to care for their natural resources and to derive benefits from these resources. The CBNRM Program is (DEA, 2002a):

1. A natural resource management and conservation program - it promotes wise and sustainable management of natural resources, and encourages biodiversity conservation by creating the necessary conditions for sustainable use of natural resources
2. A rural development program - it seeks to devolve rights and responsibilities over wildlife and tourism to rural communities, thereby creating opportunities for enterprise development and income generation

3. An empowerment and capacity-building program- it encourages and assists communities and their local institutions to develop the skills and experience to sustainable development and pro-actively pilot their own futures.

Community based conservation has been regarded as one-way of protecting the environment and providing employment. Namibia has seen endeavors in this regard. The emphasis is on making money from conservation, not to keep the environment in its pristine state. This is impossible as tourist and vehicles have an impact on the environment. As the case of Namibia shows, all conservancies are limited by fences and borders – human-made obstacles, which limit the movement of wildlife and other organisms. Living organisms, according to autopoiesis, require space to live, but they are kept in restricted areas called conservancies. This is one principle, which is in conflict with the sustainability of biodiversity.

An example from Zimbabwe illustrates additional limitations and constraints of conservancies, such as:

- “The people have to have a means of subsistence before they start receiving income from the scheme.
- Communal areas are deforested and may need to be boosted in terms of vegetation if carrying capacity is to be improved.
- The idea of differential benefits for differential benefits may not be accepted especially from the point of view that it will widen further the gap between, the haves and have nots.
- Infrastructure for setting up conservancies is expensive (chalets, dams, boreholes, fencing, buying in wildlife). The envisaged contributions may not be sufficient to raise the initial capital required.
- The assumption that income from the scheme will be higher than the income and opportunity cost of the foregone agricultural activities may not hold true.
- It may not be easy to identify and delineate and limit membership to the conservancy (absentee husbands, children).
- It may be difficult to keep away external political influences.
- Land tenure may not be interchangeable in future” (ESS, 2002).

The question is whether natural resources can be utilized in a sustainable way, or whether conservancies are merely crisis management, trying to preserve an isolated part and not the whole. Patches of land, for example in Namibia (see DEA, 2002b) to protect, conserve, biodiversity are not holistic. These microreserves are better than nothing, but they are no substitute for macro- and megareserves where whole biotas exist (Wilson 2002:146). In a holistic system, there is no independence. Everything is connected to everything and therefore cannot be stopped at a fence. The destruction of one part or one

holon impacts on the viability of other holons. If these processes continue, large-scale damage is inevitable, due to the snowball effect.

To prevent further damage and decline in biodiversity, David Attenborough in the BBC series "Living Planet" summarizes the World Conservation Strategy's major principles:

1. We shouldn't so exploit natural resources that we destroy them.
2. We shouldn't interfere with the basic processes of the earth upon which all life depends, in the sky, on the green surfaces of the earth, and in the sea.
3. We should preserve the diversity of life.

Conclusion

Earth has been an extraordinary place, because of its biological diversity. This diversity is the essence of life. In order to continue life, sustainability has to form the basis for its continuation. Humans however, have interfered in natural processes, have damaged and destroyed biomes, have created an artificial and unsustainable way of life. The environmental crisis has been acknowledged, yet without following-up with any major changes to the current unsustainable lifestyles. One outcome of this situation is a lot of talk and little action to protect and conserve what is still available. This absurd situation is now called sustainable development.

With regard to sustainability, there is too much empty talk and too little in-depth deliberation about required changes and to avoid the hijacking of the concept by special interests. This has led to a confusion of terminologies in order to protect these special interests. The large number of definitions of "sustainable development" is one point in case. The acceptance of the ideal of sustainable development is not surprising, "since it is interpretable in so many different ways. It fits nicely into political soundbites compared with its predecessor "ecodevelopment"; it is something with which everyone can agree, like "motherhood and apple pie" (Pearce et al, quoted by Kirkby et al. 1995:2). A serious shortcoming in the debate surrounding sustainability is that this situation is not challenged.

Biodiversity is an imperative to maintain sustainability on Earth. Without the biosphere, Earth would become like the Moon or Mars - a desert. Then the issue of sustainability is academic - because there is no life. In order for biological diversity to maintain life, and therefore sustainability, space is required.

Urbanization and economic activities such as agriculture do not contribute to sustainability as they promote standardization, waste, pollution, overexploitation of natural resources and the elimination of natural assets. Conservation and preservation efforts try to safeguard certain areas, which have been

damaged or are endangered, will not succeed unless humanity changes from its unsustainable lifestyles to sustainable lifestyles. The impact of these “solutions” will remain weak and isolated. A study by Brashares and colleagues in 2001 showed that 98% of the variation in extinction rates in national parks in Ghana over a 30-year period could be explained by the size of the park and by the number of people living within 50 km of it. The result was: the higher the density and the smaller the park, the higher the extinction rate (Sanderson et al. 2002:892).

The history of modern humans has shown the inclination for standardization, monocultures, shortsightedness, and disregard of the limited resources on Earth. Modern humans are incapable to produce sustainability. Most lack the relevant ethics, autopoietic capabilities, and the will to change from an unsustainable way of life to a sustainable one. Human greed, reflected in the money economy, is the driving force in non-sustainability. In other words, whenever money is involved in “development”, sustainability flies out of the window. The discussion surrounding sustainability has to emphasize what Terri Meyer Boake (no date) describes as: "Sustainability: It's not a 'Topic' but an 'Attitude'".

Biodiversity on Earth is the result of Nature's evolution over millions of years. These processes are now endangered because of one species! Conservation and preservation efforts usually take place in rural areas, which have been damaged or endangered by human influences. It is crisis management. It is doubtful whether this can restore the original state of Nature. Urban areas are usually excluded from these considerations. However, the Namibia Nature Foundation (NNF, 2002) makes the following claim:

“In essence, conservancies are nothing more than rural Agenda 21 programmes or, alternatively, Local Agenda 21 initiatives are nothing more than urban conservancies”.

Urban conservatories?

The anthropocentric belief in the infallibility of modern humans and their technological advances is dangerous. Modern humans and humanity have “so far played the role of planetary killer, concerned only with its own short-term survival. We have cut much of the heart out of biodiversity” (Wilson 2002:102). Therefore to claim that modern humans can contribute to sustainability is either a dream or a fabrication. The “Rio Declaration On Environment And Development” (UNCED, 1992) states:

“Human beings are at the centre of concerns for sustainable development.

They are entitled to a healthy and productive life in harmony with nature”.

To achieve sustainability, the anthropocentric view has to be changed. It should read: Life is at the center of concerns for sustainable development.

The unprecedented escalation in both human population and consumption in the 20th century has resulted in environmental crises never before encountered in the history of humankind and the world (McNeill quoted by Sanderson, et al. 2000:891). The problem is created by one species - humans. The

British environmental group ARK illustrated this situation, where Mother Earth voiced her concern about mankind (NBC TV, 1991):

"I am your mother after all...
It's your behavior I am worried about, dear.
Lately I think it's got worse and worse, hasn't it?
Don't forget, I know you.
I knew you before you could even walk.
Actually in those days I was a beauty myself...
Covered in forests and full of life.
We were just one big happy family –
me, the animals and you.
And then YOU got civilised ...".

A Speaker from the floor also illustrates the emphasis on Life during the WCED Public Hearing, Sao Paulo, who observed:

"You talk very little about life, you talk too much about survival. It is very important to remember that when the possibilities for life are over, the possibilities for survival start. And there are peoples here in Brazil, especially in the Amazon region, who still live, and these peoples that still live don't want to reach down to the level of survival" (WCED 1987:40).

It has been stated again and again that the so-called developing world should not emulate the Western model of "development". An alternative is required, which takes the limitation of earth into account and therefore biological diversity and its contribution to sustainability. The issue of sustainability is then also becoming a moral issue. This issue is however conveniently sidestepped to protect the economic and political powers of the day – in the name of "progress". Progress means wealth for a minority and crumbs for the rest. According to Gerber (2000) the only form of wealth that can sustain nations is wealth derived from biodiversity. He refers to four fundamental ecosystem processes that sustain biodiversity: the water cycle, mineral cycle, community dynamics and energy flow.

The dominant anthropocentric views are not supporting sustainability. On the contrary, they are promoting the destruction of the natural environment and the people living there. Oduaran (2002:14) explains:

"Globalization and globalizing agents have continued to offer an acronym known as TINA (Martin, 2001) mind set. TINA means 'there is no alternative'. But Africa can develop its own alternatives, for example, in letting the world know that we hope to pursue humanism which is of a central value to all Africans. Maybe, at a later stage, we can join in globalization. May be not".

The situation in Africa is reflected by most of the HIPPO factors. This is contrasting the situation a few hundreds years ago, when many communities lived a relatively sustainable lifestyle. With the arrival of northern interests this situation was rapidly transformed into poverty, exploitation, and environmental degradation. Only a few sustainable examples still exist, for instance in the Amazon and Congo basins, or the Ovahimba in north-western Namibia. What can be done to protect these peoples, their environment, culture and their knowledge?

Conservancies are not able to restore a destroyed environment to its former glory as illustrated by the conditions in Namibia. They can preserve some of the remaining fauna and flora to a certain extent. They are feel-good efforts, trying to protect some natural elements and create employment. This is crisis management, which has nothing to do with the promotion of sustainability. Conserving or protecting the natural environment is a noble cause. However, the problem is that isolated attempts to protect and conserve the natural environment, only slows down the destruction of biodiversity in a small area. A part cannot be a whole or substitute for a whole. It cannot exist alone or in isolation. This makes the protection and conservation of biodiversity on a global scale even more difficult.

The current dominant extractive economic system is and remains destructive. It promotes, *inter alia*, urbanization and commercial agriculture in order to grow. Both activities destroy the natural environment and with it sustainable natural systems and biodiversity. A destructive system or lifestyle cannot be sustainable, because it is not autopoietic. Are small-scale solutions, such as preservations and conservation efforts, in the context of a global problem feasible? Humans cannot and will never be able to create sustainability or biodiversity. The only solution would be if humans become a *primus inter pares* species, similar to those remaining traditional communities who are still able to live a sustainable lifestyle, or in other words – living in harmony with nature. Therefore it can be concluded that only small human settlements, which do not damage the natural environment, can be sustainable when conservation and preservation are part of the local culture. Current efforts to preserve and conserve are merely crisis management attempts. Without biodiversity there is no sustainability, and without sustainability there is no Life. There is no alternative.

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