A Strategic Framework for Sustainable Development

In terms of UNESCO's
Man and the Biosphere
(Mab) Program

United Nations
Educational, Scientific and
Cultural Organization

Man and
the Biosphere
Programme

Cape Winelands
BIOSPHERE
RESERVE

With a focus on the Greater Stellenbosch located
in the Cape Winelands Biosphere Reserve.
Western Cape, South Africa

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The purpose of this report is two-fold. On the one hand, it provides a perspective on, and summary, of the current statutory and policy frameworks within which sustainable development should be considered and promoted in the Stellenbosch municipal area (having regard for its location in the Cape Winelands Biosphere Reserve). On the other hand, it addresses the need and a structured methodology (model) for the private sector to help give effect to sustainable development through project planning, design and implementation. The methodology, developed by this office, is referred to as a Sustainable Development Initiative (SDI). The premise for the SDI approach is that sustainable development does not take place on its own – it is given effect and is funded by initiatives taken by individuals, organizations or institutions. The optimization of success depends on the degree of inclusivity.

Sustainable development is defined in different ways but is generally considered to be development that improves human well-being and the integrity of the environment through the efficient use of resources. The efficient use of resources should include the just use of such resources as the latter provides the ethical foundation upon which resource use is founded.

In the report it is argued that sustainable development can be effectively and justly promoted through projects which are planned and implemented with sustainable development as a central goal. Sustainable development cannot be optimized in a "business as usual" environment and a structured intervention and co-operation is required to achieve optimal efficiency. The implementation of projects creates the opportunity for people to work together, to built trust and to develop a greater understanding of how to address sustainability challenges that local people face in a global context.

In project planning, design and implementation it has to be taken into consideration that, while the need to recognize socio-economic development and the fragility of the physical environment in developmental processes is well documented in international literature, and is generally appreciated, the ethical environment which determines human behaviour and the impact of the latter on sustainability, is neglected and requires constant vigilance.

A leading international programme for sustainable development, which encapsulates such a holistic and integrated planning and implementation approach, is UNESCO's[1] Man and the Biosphere (MaB) Programme that has been evolving over the past 41 years. The latter is a programme of international, strategic planning and co-operation dealing with people-environment interactions across the globe. It is given effect through the establishment and efficient management of biosphere reserves which are terrestrial and/or marine areas internationally recognised for their unique environmental qualities. Biosphere reserves provide a framework for the creation of partnerships for knowledge sharing, research, monitoring, education, training and participatory decision-making.

On 18 September 2007 the Cape Winelands Biosphere Reserve was listed by UNESCO on the World Network of Biosphere Reserves following on the endorsement of an international agreement by the Western Cape Government and Stellenbosch Municipality as well as all the other local authorities located within or partly within its boundary. This biosphere reserve is currently one of 598 biosphere reserves forming the World Network of Biosphere Reserves across 117 countries. The establishment of the Cape Winelands Biosphere Reserve has created an unique opportunity for the people of Stellenbosch and environs to promote and give practical effect to sustainable development within an internationally-endorsed policy framework incorporating clear direction for decision making.

Sustainable development in the biosphere reserve should be considered in context of government policies and programmes on the national, provincial and local spheres. National Government has, through the Department of Environmental Affairs, promoted the implementation of the MaB Program nationally since 1994. The Western Cape Government has likewise implemented the programme since that time and has formally integrated the objectives of the MaB Programme into its socio-economic and spatial/design policies since 2001. Stellenbosch Municipality has incorporated the MaB principles in socio-economic and spatial planning since 1994 and has played a leading role in the planning and listing of the Cape Winelands Biosphere Reserve since 2002.

The promotion of sustainable development should also be considered in context of the most recent United Nations Conference On Sustainable Development, commonly known as the Rio + 20 (20-22 June 2012). The latter focused on two main themes namely the green economy in context of sustainable development and poverty reduction and the institutional framework for sustainable development. Rio+20 provides an international context within which the South African National Framework for Sustainable Development and associated policies and strategies should be considered. This is similarly applicable to a range of policies and strategies of the Western Cape Government pertaining to sustainable development. In the latter regard the Western Cape Government's 110% Green Initiative, that has the objective to develop the province as the Green Economic Hub of Africa, provides provincial direction.

With regard to the need to promote an integrated approach to sustainable development locally, in context of international initiatives and programmes, it is important to note that Stellenbosch Municipality has incorporated the MaB Programme into its Integrated Development Plan (IDP) which provides a framework for inter- and intra-institutional and organizational co-operation and agreements.

A number of co-operative agreements between the municipality, Stellenbosch University and community organizations have been concluded over the years. From a partnership and co-operative perspective, the Hope Project of Stellenbosch University, which is rooted in three core functions – teaching and learning, research and community interaction and academic initiatives that serve human needs, is of great significance. This inspirational initiative demonstrates how sustainable development can be promoted in a manner that has profound positive and measurable impacts that are scaleable from the local to the international level. Furthermore, both the municipality and Stellenbosch University are large investors into infrastructure, building projects and the improvement of human well-being and the natural environment in support of sustainable development in Stellenbosch municipal area. Projects are co-ordinated and aligned by the municipal and university departments responsible for planning and implementation on an ongoing basis in terms of formal agreements.

To the above must be added broad based initiatives to promote inclusive socio-economic development such as the Stellenbosch 360 Heritage project initiated and promoted jointly by the municipality, university and local communities.

In addition, the Greater Stellenbosch is home to a number of national and international companies of high standing who have made, and are continuing to make, outstanding contributions to the well-being of the area. Their initiatives and support is often aligned with a range of municipal, university and community initiatives and projects. The SOS (Strengthen Our Society) initiative recently launched by REMGRO and the Greater Stellenbosch Development Trust, which aims to assist community and welfare organizations with financial, strategic planning and associated systems and which aims to create a framework for broad based business and community participation, is most encouraging.

Greater Stellenbosch can also be proud of the many community and environmental initiatives, programmes and projects that have been undertaken by community organizations, and people from all walks of life over the years. Having regard for the decisive role the natural and built heritage plays in the promotion of sustainable development in the area, the unique contribution Stellenbosch Heritage Foundation has made over decades, in promoting a culture of care and responsibility and which has great practical value, is recognised as exemplary.

Two clear common denominators present themselves. Firstly, the sharing of the bedrock values upon which sustainable development is built is broad based and secondly, Greater Stellenbosch is located in an international biosphere reserve which provides the international context within which sustainable development can be promoted locally. A unique opportunity therefore presents itself to co-ordinate socio-economic and environmental initiatives, aimed at promoting sustainable development, within the framework of the MaB Programme.

The alignment of core objectives, interests and action plans would, in the above context, contribute greatly to the development of a culture of sustainability locally and further afield. The latter is an imperative for sustainable development in the long run. It is also an imperative to recognize that the bedrock values upon which sustainable development is built is, in essence, ethical. The UNESCO's MaB Program subscribes to the notion that ethical values[2] form the basis of decision-making and action in accordance with an ideal accepted in a given moral system. It is accepted that, what makes ethical values different from all other values, is their overriding character. They articulate an imperative or a 'must' that cannot be escaped by anyone who subscribes to them and they are converted into practice through principles and rules (UNESCO 2010). The two pillars of sustainable development i.e. the promotion of human well-being and the enhancement of the integrity of the natural environment, are founded on ethical values. The principles and rules through which these values should be given effect, include the just and efficient use of resources (capital) in accordance with legislative and official policy frameworks.

An ethical domain therefore forms the keystone for sustainable development. In the UNESCO/UN publication referred to under footnote 2 and 3 below it is argued that, if the imperative or 'must do' that flows from an ethical value is denied, then that value and its importance itself is denied. Such a denial is therefore not a matter of arbitrary choice. Accordingly, as is stated in the latter publication, the ethical domain is circumscribed not only by the value choices made by humans, but also by the critical weighing of the expected consequences of their choices.

In Africa the latter principles are encapsulated in the concept of Ubuntu which, as a moral system, is embedded in South Africa's Constitution and therefore also in public policy. This view is borne out by a Constitutional Court judgment[3] a number of years ago when the court resolved that public policy is informed by the concept of Ubuntu and that "Notions of fairness, justice and equity, and reasonableness cannot be separated from public policy. Public policy takes into account the necessity to do simple justice between individuals. .

The approach adopted in this report is both supportive of and consistent with public policy and with the MaB Programme provided for in such policy. In planning for the future, the point of departure is therefore, in essence, a strategic value-based and pro-active one[4]. In accordance with this approach the core interests and objectives, required to attain sustainable development, are identified and then it is demonstrated how best to achieve it. Such objectives should include the role that innovation, technology and design can play in improving efficiency and, in so doing, improving the quality of the environment and human well-being.

In this report it is argued that the efficient implementation of sustainable development is an imperative for the achievement of long-term global sustainability. For humanity to succeed in creating a state of sustainability, global climate neutrality is required (i.e. the absence of the forces of climate change). A climate-neutral strategy and its practical implementation is therefore a decisively important dimension of sustainable development. A conceptual framework for the planning and implementation of such a strategy is included in the SDI methodology described in this report.

Sustainable development projects undertaken in the Cape Winelands Biosphere Reserve are potentially unique in that they could be undertaken in the international arena in accordance with an intergovernmental and international agreement between UNESCO and South Africa. Accordingly, they could serve as global models of excellence as well as proof of the achievements of local people. If such projects were to be weighed and found to be exemplary they could instil local, provincial and national pride that can be inspirational for all concerned.

Having regard for the fact that Stellenbosch Municipality endorsed the international agreement that gave effect to the Cape Winelands Biosphere Reserve, a unique opportunity presents itself for the Greater Stellenbosch to become such a global partner of excellence in promoting and giving effect to sustainable development, as is contemplated in the MaB Program.

It is however an imperative that the degree to which sustainable development is achieved (or not) be measured. It is suggested in this report that the latter should be undertaken by measuring performance in terms of the criteria of Efficiency (which balances the gains amongst different values) and Justice (which measures the gains amongst persons).

Without such measurement continued management of the sustainable development process and the improvement thereof is not possible.

A major challenge therefore lies ahead for the Greater Stellenbosch to demonstrate, on a practical level, how sustainable development can be successfully achieved on the local scale in a manner that would set new benchmarks for provincial, national and international good practice.

While the focus of this report is on Stellenbosch municipal area, it has to be recognised that, giving effect to the values, principles and objectives described above, are global imperatives for long term sustainability. UNESCO's MaB principles and strategies, aimed at promoting sustainable development, should ideally be considered as being applicable across the entire biosphere and not only in the biosphere reserves listed by UNESCO.

A common point of view is therefore promoted – one which is based upon a shared understanding of what is good and what makes sense to do locally and globally.

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1 UNESCO: United Nations Educational and Scientific [illegible]
2 UNESCO, 2010. The Ethical Implications of Global Climate Change. COMEST. SHS 2010/WS/2 France, Paris
3 Constitutional Court, C Barkhuizen v Napier 2007
4 UN-HABITAT Planning for Climate Change: A Strategic values-based Approach for Urban Planners (2010)

Executive Summary

1. THE NATURE OF THE CHALLENGE

As is well known, a fundamental challenge facing humanity is to, on a practical and measurable level, address the challenges posed by poverty, inequality, spiralling population growth and environmental degradation. In South Africa these forces are particularly acute as described in South Africa's National Development Plan (Draft published on 11 November 2011). Notwithstanding an internationally respected constitution, enabling legislation and exemplary socio-economic development and environmental policies these challenges are continuing to grow across the country.

The reason for this is complex and diverse. It is however, clear that wide spread support, to give practical effect to plans and strategies, which are required to address poverty and inequality and to reverse the cycle of environmental degradation in a meaningful manner, will only materialize if a culture is created within which it is accepted that sustainable development is an imperative for sustainability and therefore stability and prosperity.

The development of such a culture can be significantly enhanced by the implementation of projects that would make a tangible and meaningful difference to both human well-being and environmental integrity on all scales from the local to the global – the latter is a central theme of this report.

The International Institute of Sustainable Development (IISD) points out that sustainable development requires one to view the world as a system – a system that connects space and time. The IISD also points out that sustainable development encapsulates two key concepts, i.e.:

• The concept of need, in particular the essential needs of the world's poor, to which overriding priority should be given; and
• The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

This systems approach to sustainability is also advocated by all spheres of government. In the National Framework on Sustainable Development July 2008 (NFSD) it is stated that "A systems approach to sustainability is one where the economic system, the socio-political system and the ecosystem are embedded within each other, and then integrated through the governance system that holds all the other systems together in a legitimate regulatory framework. Sustainability implies the continuous and mutually compatible integration of these systems over time. Sustainable development means making sure that these systems remain mutually compatible as the key development challenges are met through specific actions and interventions to eradicate poverty and severe inequalities" (NFSD 2008).

The NFSD forms the basis of South Africa's National Strategy for Sustainable Development and Action Plan (NSSD) (Department of Environmental Affairs November 2011). The NSSD provides for its goals and strategic priorities to be given effect by structured interventions, such as strengthening sustainability principles in land use planning, the identification of headline indicators for example the reduction of ecological footprint of resource use on the globe, and ensuring the creation of the required institutional frameworks to ensure efficient implementation.

The first overarching and strategic development plan namely: 'The National Development Plan' (NDP), was tabled during a joint sitting of Parliament on 15 August 2012. South Africa's developmental challenges and objectives, for the period up to 2030, are comprehensively addressed in the plan. It is, inter alia envisaged that South-Africa's economy would have to grow three-fold in order to overcome the challenges the country is facing. However, the latter objective would have to be pursued within context of environmental sustainability and the need to address climate change.

In this report, the socio-economic and environmental challenges that the Greater Stellenbosch has to face are considered in context of the relevant legislation and

government policy, with specific reference to the role that the people of the Greater Stellenbosch can play, as a global partner, in promoting sustainable development within the framework of UNESCO's Man and the Biosphere (MaB) Programme.

The MaB Programme was established 41 years ago. It is given effect through biosphere reserves, which are defined as terrestrial and/or marine areas comprising core conservation areas, buffer zones and transition zones. Biosphere reserves have three functions a development function, a conservation function, and a logistical function.

During the past twelve years, three biosphere reserves were established in the Western Cape. The most recent is the Cape Winelands Biosphere Reserve which was listed on UNESCO's World Network of Biosphere Reserves on 18 September 2007. The Cape Winelands Biosphere Reserve is premised upon an intergovernmental and international agreement between the national, provincial and local spheres of government and UNESCO. The municipal area of Stellenbosch is located in the Cape Winelands Biosphere reserve. The municipality played a leading role in the establishment of the biosphere reserve and is in an excellent position to facilitate the evolution of the latter into a global model of excellence. It is to be noted that the Cape Winelands Biosphere Reserve share a boundary with the Kogelberg Biosphere Reserve, partially located in both the City of Cape Town and in the Overstrand municipal areas. A fundamental objective of UNESCO's MaB Programme is to establish an effective and efficient World Network of Biospheres. The epi-centre of the Cape Floral Kingdom, one of six plant kingdoms of the world, is located in these two biosphere reserves. An ideal opportunity therefore presents itself to give effect to the networking objective as contemplated in the MaB Programme, right at one's doorstep. It was envisaged by the proivincial government, more than 20 years ago that the area comprising the Table Mountain chain could qualify as a biosphere reserve. Such a listing would establish a local network system comprising the West Coast possibly Table Mountain, Kogelberg and Cape Winelands biosphere reserve including the urban areas of the greater metropolitan region, which together would create a system of co-operation of global significance, if considered in context of the Rio+20 objective to improve governance for sustainable development.

The ultimate goal of sustainable development is to contribute to global sustainability. Climate change represents a barrier that must be overcome to reach the goal of sustainability and this challenge forms an integral part of the MaB Programme. Specific focus has been placed on the latter by UNESCO in its MaB conference "For life, for the future: biosphere reserves and climate change", which took place in Dresden, Germany 28 June – 1 July 2011.

The preparation and practical implementation of a climate neutral strategy should therefore be a central objective of the sustainable development process as a whole. Such a strategy would rely on the international knowledge base that has been developed during the past number of decades, and the implementation of innovative strategies and action plans in tandem with international programmes. It is therefore imperative that the critical role that innovation and technological development and design can play in promoting sustainable development should be recognised.

In addition it has to be emphasised that, from a project implementation perspective, sustainable development has to be financed – it simply does not happen on its own. In essence, this requires an understanding that the capital required for such purpose should not, as conventional thinking dictates, be limited to monetary capital alone. To monetary capital one must add environmental, infrastructural and social capital. In order to finance sustainable development these four forms of capital should be strategically aligned and employed. The latter approach is a central principle of the Provincial Spatial Development Framework (PSDF) of the Western Cape Government. Innovative spatial/strategic, planning/design, organizational structures and specialized funding mechanisms are required to integrate and align these four forms of capital in a manner that would increase the efficient employment of capital for sustainable development.

A critical objective is to grow/enhance capital to ensure that the "whole is greater than the sum of its parts". "Surplus" capital thus created, can be employed to finance human well-being and environmental integrity in a structured and sustainable manner. Examples of the generation of such capital are energy from waste, solar energy, monetary and land grants generated by implementing innovative development plans and strategies relating to property development where the public good is served as an integrated component of project finance and resource use.

For the Greater Stellenbosch a very unique opportunity presents itself to, within context of its own policy framework, create a sustainable development model that would be exemplary on the international scale in context of the MaB Programme, having regard for the fact that the entire municipal area is located in the biosphere reserve. In the latter regard it is to be noted that Stellenbosch IDP and its Spatial Development Framework (SDF) provides for the MaB Programme to serve as the overarching framework within which sustainable development is to be pursued.

For the Greater Stellenbosch a unique opportunity presents itself to, within context of its own policy framework, undertake sustainable development in a manner which would be exemplary on all scales from the local to the international scale in context of the MaB Programme (having regard for the fact that the entire municipal area is located in the biosphere reserve). In the latter regard it is to be noted that Stellenbosch IDP and its Spatial Development Framework (SDF) provides for the MaB Programme to serve as the overarching framework within which sustainable development is to be pursued. It is however imperative that the strategy through which the above ideals are pursued is inclusive, integrated, coherent, stable and characterised by mutual respect and trust as is envisaged in the Integrated Development Plan (IDP) of Stellenbosch Municipality. In this regard the provisions made in the IDP pertaining to intergovernmental alignment, community participation, neighbourhood revitalization programme, area plans and the partnerships between the municipality and the Stellenbosch University, business and community organizations, briefly described in the overview of this report, are major enabling instruments.

It is therefore incumbent upon the private sector and communities to support the municipality and its partners in giving practical effect to sustainable development through the MaB Program. To help facilitate sustainable development in the spirit of public private partnerships, this office has developed a methodology referred to as a Sustainable Development Initiative (SDI). The principle upon which it is based is that sustainable development does not occur on its own – one must take the initiative to make it work and it has to be financed. Furthermore, a high degree of efficiency can be achieved if sustainable development is integrated into project planning, design and implementation and if innovative and appropriate organizational structures were established through which part of the proceeds of project implementation is invested into promoting human well-being and environmental integrity. Under Section 3 below a brief description is provided of the SDI methodology.
As mentioned in the overview above, the ethical foundation upon which sustainable development rests requires consideration. Consequently it would be of value to briefly reflect on the relationship between humans and the natural environment, attitudes towards progress and technology, and the culture that shapes world views. In his thought-provoking book Ecological Intelligence, Ian McCallum[1] explores the relationship between human beings and nature, and presents a compelling case for the need to develop a

greater understanding of the evolutionary bonds that interconnect all forms of life. McCallum argues that the future of humans, as an interdependent species on earth, is precarious and that it is difficult to name a force quite as threatening to the planet as growing human population which increases pressure on land and resources.

Across the globe these challenges are addressed by promoting development and economic growth which are usually expressed as Gross Domestic Product (GDP). The latter is considered the primary index for the measurement of progress. It is however the unsustainability of specific forms of development and growth which is the root cause of the problem and it is clear that human well-being cannot be adequately expressed by a GDP index only. In the 2012 edition of WWF's Living Planet Report it is shown that humans are using 50 percent more resources than the Earth can provide. The world is clearly on an unsustainable trajectory and action is urgently required to bring standards of living progress and sustainability into equilibrium. To obtain a clearer picture of progress, GDP should ideally be read together with other indices such as the Human Development Index (HDI) and the Multidimensional Poverty Index (MPI). A measurement of progress can also be improved by decoupling natural resource use and environmental impacts from economic growth, as is for example proposed by UNEP's (United Nations Environmental Programme) International Resource Panel (www.unep.org/resourcepanel/decoupling). If the above instruments are not considered, in the measurement of progress, a false sense of security regarding the progress that is being made, could arise and prevail which has been the case over millennia. In A Short History of Progress, Ronald Wright[2] traces the rise and fall of early man from the Paleolithic (Early Stone Age) hunters through successive periods of various civilizations. He shows how 'progress', time and time again, has resulted in a collapse caused by the common denominator of living beyond the carrying capacity of supporting ecosystems. He compares the progress made by the Paleolithic hunters, who learned to kill two mammoths instead of one, and then learned how to kill 200 (by driving a whole herd over a cliff), with the fishing methods of modern bottom trawlers, which he argues, is basically the same principle. Old habits die hard! Why is this so? McCallum points to the subconscious mind where emotions, prejudices and ideas are deeply entrenched and refers to the concept of the Human-Nature split where humans have placed themselves at the apex of creation. He asks the question whether humans would be willing to come off this pedestal and whether the self-destructive trend can be reversed. While doubt is expressed by McCallum that humans would give up its pedestal, he also recognises that the humans can make choices that no other creature can. 'We can choose to drift into oblivion, to turn our heads, pretending that we did not see, or we can refuse to be victims, as Oedipus[3] did. We can choose the hard path – the one that demands accountability - the one that demands that we give beauty and meaning in our own way to the Earth and to the countless living things that share it with us'.

There are signs that people are beginning to realize that the hard choices, that McCallum refers to, have to be made in order to ensure social stability, prosperity and environmental sustainability. Perhaps some encouragement can be taken from Malcolm Gladwell's book The Tipping Point[4] in which he investigated phenomena of how trends are sparked by a relatively minor input and then lead to paradigm shifts in society. The contributions made by individuals, communities and government, to give practical effect to sustainable development and exemplary working examples of the latter could contribute towards a 'tipping point' being reached that would give rise to a culture that embraces the ethos of sustainability. A new culture of sustainability should be rooted in real places and should be driven by people who make a tangible and exemplary difference to life. A historic precedent for this is ancient Athens. Bertrand Russel (1945)[5] argues that the achievements of Athens in the age of Pericles (495 – 430 BC) were perhaps the most astonishing in all history. Under the stimulus of victory, wealth and the need for reconstruction, the people of Athens produced works which were exemplary even down to modern times. Now, 2500 years later, the modern challenge is one of global sustainability. The question arises whether it is possible for modern society to produce works of lasting meaning such as ancient Athens did. If modern society believed that this is not possible or if modern society were simply indifferent, there may once again be an age of despair ahead, as was so often experienced in human history. However, it need not be. As pointed out by Mc Callum - humans have the ability to choose.

Ancient Athens proved that a global culture can have its roots in small beginnings. Opportunities to make a difference on the local scale are in abundance and mechanisms to network and communicate knowledge and success across the globe are common practice in modern times. In particular, it is encouraging to know that international commitments are in place in terms of numerous conventions, protocols and agreements to give effect to sustainable development. The World Network of Biosphere Reserves can play a decisive role in the latter regard and can help to facilitate the development of a culture of sustainability on all scales from the local to the global. Biosphere reserves therefore have a decisively important role to play in giving effect to sustainable development. The Seville Strategy[6] on Biosphere Reserves state that 'rather than forming islands in a world increasingly affected by severe human impacts, biosphere reserves can become theatres for reconciling people and nature; they can bring knowledge of the past to the needs of the future; and they can demonstrate how to overcome the problems of the sectoral nature of our institutions. In short, biosphere reserves are much more than just protected areas'.

In the Western Cape, a meaningful contribution could be made by demonstrating how effect can be given to sustainable development and global sustainability on all scales by implementing the MaB Programme. Greater Stellenbosch can help lead the way and hopefully the successes achieved to promote and give effect to sustainable development in the Cape Winelands Biosphere Reserve together with its sister biosphere reserves from Kogelberg to the West Coast could, in the future, be judged to resonate with those of Athens, in the age of Pericles.

2. POLICY AND LEGISLATIVE FRAMEWORK

As briefly mentioned above sustainable development planning, design and implementation should be considered in context of all scales from the international to the local, having regard for policy and legislation.

The current international position pertaining to sustainable development is encapsulated in the United Nations Rio + 20 conference declaration of 22 June 2012. As a UN member state South Africa's commitments are incorporated into its National Strategy for Sustainable Development and Action Plan (NSSD) covering the period 2011-2014. The latter strategy provides an overarching framework within which programmes such as UNESCO's MaB Programme, should be considered. Optimal effect to sustainable development can best be achieved if global national, provincial and local initiatives and programmes are integrated.

For example, the provincial government of the Western Cape envisaged the establishment of a clustered system of biosphere reserves in the Fynbos Biome as far back as 1991 and has since then created a statutory/policy framework for its implementation and management. Three biosphere reserves have, as a consequence, been listed by UNESCO in the province namely Kogelberg (1998), Cape West Coast (2000, extension 2003), and the Cape Winelands (2007).

In order to promote co-ordinated province-wide approaches to sustainable development and also to establish a structured framework for the planning and management of resources, provincial and local governments, over the past 15 years, prepared integrated socio-economic and spatial planning policies and plans in terms of national and provincial statutes.

The overarching legislation that governs the promotion and implementation of sustainable development in the Western Cape is the Land Use Planning Ordinance (15/1985). The Western Cape Provincial Government is however in the process of preparing new legislation that would address the challenge to give effect to sustainable development more efficiently. It is envisaged that the principles of the MaB Programme would be incorporated into such legislation.

The current planning ordinance must be read together with a number of national statutes such as the National Environmental Management Act, (NEMA), the principles of the Development Facilitation Act (DFA), the Subdivision of Agricultural Land, the Agricultural Resources Act, the Heritage Resources Act, etc.

The overarching spatial planning policy of the Western Cape is the Provincial Spatial Development Framework (PSDF) that was prepared over the period 2005-2009. The PSDF was approved as an official provincial structure plan in June 2009, in terms of the Land Use Planning Ordinance. The PSDF process was preceded by the preparation of a provincial bioregional policy in the period 1998-2001 and the subsequent approval of the Provincial Bioregional Planning Manual in 2003[7].

The bioregional planning policy was incorporated into and forms an integral part of the Provincial Spatial Development Framework (PSDF). The PSDF read together with the provincial bioregional planning manual, contains strategies specifically aimed at giving practical effect to sustainable development.

The central goal of the PSDF is to provide guidelines for the improvement of human well-being and the enhancement of environmental integrity by employing resources in an efficient and just manner. It is important that provincial policy, aimed at giving practical effect to sustainable development and growing the Green Economy, should be considered in context of the Western Cape Government's overarching 110% Green Initiative and the objective to develop the Western Cape as the Green Economic Hub of Africa. If the current polices and provincial commitments do not inform the planning and decision making processes required to enable sustainable development, the 110% Green Initiative could be seriously compromised.

It is, in particular, important that the objectives of the PSDF be considered in the above context. The PSDF differentiates between monetary, environmental, social and infrastructural capital and emphasizes that, like all guidelines, the 'PSDF must not be applied rigidly but in a developmental way that takes account of the particular circumstance of each case' (PSDF, 2009 Chapter 1.3). The PSDF stresses the need to recognise the consistency principle in socio-economic, environmental, spatial and development planning.

It is therefore important to read the PSDF together with other provincial policies, strategies and guidelines such as those on climate change, economic development partnerships on the provincial scale, and IDPs and SDFs on the district and local spheres of government. In terms of the provincial bioregional planning policy the PSDF provides for the demarcation of planning units, from the macro bio-geographical region down to the settlement and neighbourhood scales, in order to promote inclusivity and efficient public/private partnerships.

The PSDF also incorporates local scale spatial and design policies aimed at, inter alia, the promotion of the comparative economic advantages of the province and the protection and enhancement of the heritage resources vested in cultural landscapes such as the Cape Winelands. It also contains guidelines pertaining to spatial planning and design in terms of the principles of critical regionalism i.e. sense of place, nature, craft, history, and imits.

These guidelines have been incorporated into planning frameworks of Stellenbosch Municipality and are of great value in establishing co-ordinated approaches in reconciling conflicts that often arise between development and heritage concerns.

The planning and management of the Cape Winelands Biosphere Reserve is guided by an international and intergovernmental agreement between South Africa and UNESCO endorsed by all stakeholders, including the Provincial Government of the Western Cape and Stellenbosch Municipality. In terms of the agreement all signatories are obliged to give effect to the following:

• Conservation (contributing to the conservation of landscapes, ecosystems, species and genetic variation).
• Development (fostering economic and human development, which is socio-culturally and ecologically sustainable).
• Logistical support (supporting demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development).
• Bioregional Planning (Implementation and management bioregional planning principles in all projects).
• UNESCO'S MaB Programme (fostering sustainable economic and human development and environmental conservation).

Having regard for the role that Stellenbosch Municipality has played in the establishment the biosphere reserve and the provisions made in its IDP and SDF, Stellenbosch Municipality is in fact, an institutional role player on the global scale.

In both policy and legislation the spatial and design dimensions, which affect the natural and built environment, are considered as key dimensions of sustainable development. Qualitative place-making can therefore be considered as a core value of sustainability and therefore an imperative i.e. a 'must do'. As such qualitative place making can be considered as an ethical value that underpins both conservation and development. Qualitative place making as a "must do" for the Greater Stellenbosch can only be achieved in the spirit of inclusivity and co-operation.

Special measures are required to protect and enhance the visual qualities of the built and cultural landscape and the natural environment which contains it. Consideration should be given to the adoption of municipal by laws to ensure that effect would be given to the above objectives.

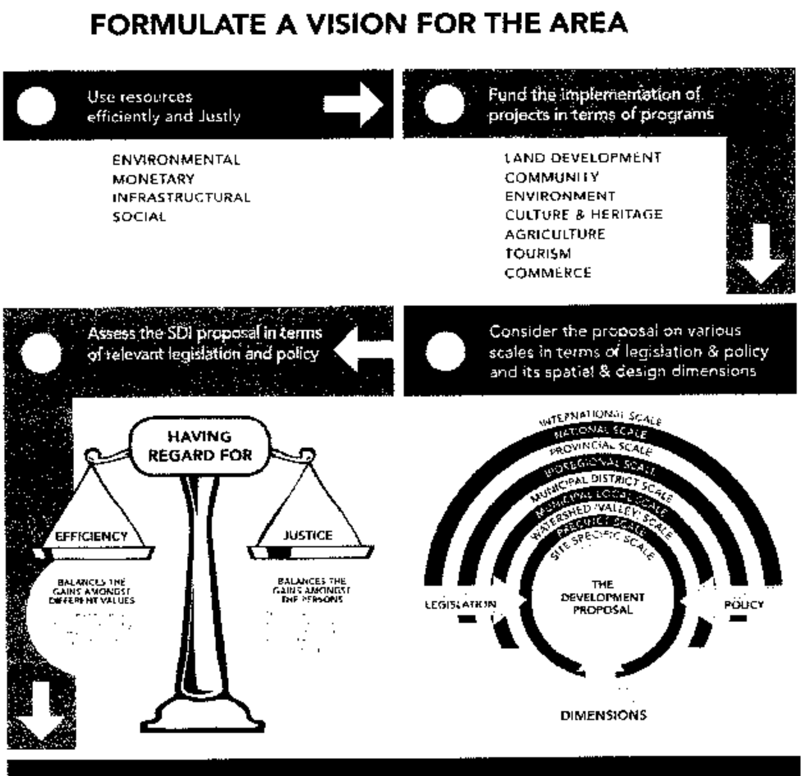
3. PRIVATE SECTOR STRATEGIES IN SUPPORT OF SUSTAINABLE DEVELOPMENT

It is incumbent on the private sector, land owners, communities and individuals to support the public sector with the planning and practical implementation of sustainable development. Having been involved in the promotion of UNESCO's MaB Programme and strategic development planning in context of the MaB principles in South-Africa and internationally for more than two decades this office has developed a bespoke planning and implementation methodology (model) for the practical implementation of sustainable development on the project level. This methodology is referred to as a Sustainable Development Initiative (SDI) and the principles upon which it is based are described and illustrated below.

3.1 IDENTIFICATION OF CORE INTEREST AND OBJECTIVES

The approach adopted in the SDI planning methodology is a pro-active value based one, having regard for the ethical values briefly described in the overview to this report and in this executive summary. In accordance with the latter approach the core objectives and interests pertaining to the planning, design and implementation of a project should be identified and then it has to be demonstrated how to achieve such objectives and interests.

STRUCTURE OF THE SDI MODEL



The figure above summarises the key aspects of the SDI model.

3.2 THE STRUCTURE OF THE SDI METHODOLOGY

Following on the identification of such core objectives and interest the SDI model provides for the employment of a structured and practical methodology to be followed to enable coherent and integrated decision making, implementation and long term management. In terms of the SDI methodology consideration is given to how resources (capital) can be employed to fund projects which are to be implemented in terms the project vision and core objectives. Specific programs are to be determined in an inclusive and integrated manner, resources should be strategically aligned and employed in a manner consistent with policy while economic drivers are created to enable sustainable development. Lastly the outcomes of the SDI should be measurable as sustainable development cannot be optimally managed unless it is measured.

3.3 CLIMATE CHANGE

The SDI model includes a strategy to address climate change and promote climate neutrality which, ultimately, sets the development frontiers for humanity. Due to the range of expertise required, this office has engaged in on-going research into the subject with the London based Investment Sustainability Delivery Consultancy (ISDC) to develop a climate neutral strategy and the financing of sustainable development. The preparation of such a strategy relies on the relevant internationally recognized knowledge base and the integration thereof with the SDI model. In addition, the SDI model includes strategies for the innovative employment of capital to improve the bankability of sustainable development projects.

3.2.1 KEY COMPONENTS OF THE SDI MODEL

1. The first requirement is to formulate a vision for the SDI project. Having regard for the central objective of an SDI, the latter has to be founded on ethical values with sustainable development as central objective. An organizational structure (e.g. Treasury Trust) should ideally be established to ensure inclusivity. The vision is then given effect through the integrated components listed below.

2. The preparation of a clear mission/strategy that should include the efficient and just use of resources (capital) vested in the SDI area. The rationale is that sustainable development has to be financed and monetary resources (money) alone cannot achieve this. The SDI strategically aligns monetary, environmental, infrastructural and social capital into a form of capital that is bankable and that can be used to finance sustainable development. The main purpose is to create economic drivers that would generate funds for the financing of both human well-being and the integrity of the natural environment. Innovative planning and design is a critical dimension for the optimilization of sustainable outcomes.

3. Implementation and funding of projects under defined programs planned and implemented in terms of clear guidelines which collectively address the key socio-economic and environmental needs and requirements of the SDI area and projects. The SDI programs are defined as strategic clusters of related activities that together achieve a specific goal.

4. The consideration of the desirability of the SDI project proposals in terms of all relevant scales, from the international to the local, and in terms of legislation, policy, and the spatial and design dimension. Qualitative place making through urban, architectural and landscape architectural design is considered an imperative for human well-being and therefore an inextricable component of sustainable development; it is therefore considered a critical dimension of the SDI Model as illustrated on the diagramme.

5. Assessing and measuring the performance of the SDI and its projects in terms of the criteria of efficiency and justice. This should be undertaken in context of statutory and policy requirements pertaining to need and desirability.

6. Implementation of the SDI through an adaptive management strategy in terms of an ISO 14001[8] Environmental Management System (EMS) that embodies continual improvement of all aspects of the SDI.

3.4 INCLUSIVITY

The two global themes emanating from the Rio+20 UN Conference namely to grow the Green Economy in context of sustainable development and poverty reduction and the institutional framework for sustainable development cannot be achieved optimally, on the local level, without the implementation of the organizational structures such as those provided for in Stellenbosch IDP.

To encourage the involvement of the general public, communities and individuals in socio-economic development, environmental rehabilitation and conservation in the Cape Winelands Biosphere Reserve in particular, the SDI model builds upon the policy direction and commitments of the Western Cape Government, its PSDF, and the bioregional planning approach incorporated therein, as well as Stellenbosch IDP. On the local scale it is to be noted that the bioregional planning approach recommends that municipalities demarcate specific geographic planning units such as settlement domains, neighbourhood areas, or where applicable, special management areas, on the scale where local interest would be best presented and participation would be most efficient. Stellenbosch IDP has created special structures for such areas to facilitate public partnerships. From the perspective of the SDI planning and development approach described above, the above municipal organizational structures are considered critical instruments for sustainable development.

The SDI model provides for supporting structures to be established at the community level and for empowering such structures by providing resources (capital) to invest into sustainable development projects. The latter can be achieved by ensuring that the planning and development projects generate resources for such organizations to enable them to promote sustainable development.

SDI planning and management is guided by the 'triple bottom line' approach that complies with the King III report on corporate governance (which generally follows the approach adopted by the Commonwealth Association for Corporate Governance). In addition, SDI planning and management is guided by the views and principles of the World Council for Sustainable Development adopted at the 2002 World Summit on Sustainable Development and affirmed in the Rio+20 UN Conference. In particular the SDI supports the World Business Council's view that 'given the scale of poverty today, the challenge of meeting present needs is urgent. Given the damage our past and present action may have upon our decedents, concern for future needs for environmental, human, social and other resources is compelling'.

CONCLUDING REMARKS

It is recognised that the term development means different things to different people and that different perceptions often give rise to polarization and conflict. Whatever one's view may be, the term, in essence, essentially implies the way in which resources are used or mobilized, managed or coordinated. While development is conventionally associated with economic processes, it should also be understood as a profoundly-political process.

Leftwich[9] (2000) defines politics to mean 'all the activities of conflict, cooperation and negotiation involved in the use, production and distribution of resources whether materials or ideal, whether at local, national or international levels or whether in the private or public domains'. He argues that 'achieving cooperation and negotiation has always been much harder where the differences between interests, ideas and preferences have been sharp and hence less compatible'. Coordinating capacity is required to steer the process to 'go this way instead of that, to do this and not that....' Such coordinating capacity must also have the ability to act if necessary.

In this report it is shown that a common objective that can unite conflicting views and reduce tension is to agree on the type of development that is to be pursued i.e. sustainable development and to agree on the ethical values upon which it is based and to give effect to it through the implementation of projects that have sustainable development as a central goal.

If sustainable development can become embedded in a culture it would shape economic and political systems that, in turn, would strengthen a culture of sustainability. For this to realize in practice, society needs working examples of sustainable development. Furthermore the private sector (business communities and individuals) should therefore support government on local, provincial and national spheres to plan and implement successful working examples for sustainable development.

While the task is vexing and complex, Stellenbosch Municipality is not standing alone. In terms of the MaB Programme, co operation and support can be obtained on all scales from the international to the local, including support by the people of the Greater Stellenbosch in a integrated manner. Of particular significance is the positive role that Stellenbosch University plays in the promotion and practical implementation of sustainable development in partnership with Stellenbosch Municipality, the private sector, and communities in general as briefly described in the overview to this report. Agreements between the municipality and the university which have been incorporated into Stellenbosch IDP, already provide the required framework for co-operation.

The Greater Stellenbosch therefore has the opportunity to contribute significantly to the development of an understanding of how the challenges of our time can be addressed and how to give practical effect to sustainable development on the local scale in a manner that would resonate positively on the provincial, national and international scales. The opportunity to do so, within context of the MaB Programme is unprecedented in the history of the Greater Stellenbosch, it is unique and profound.

The manner in which people settle the land and the way that the natural environment is modified by resource use, mirrors the values of past generations and those of the current generation. (We are what we build).

In this report, the values, principles and policies that the people of Stellenbosch have agreed should inform the way land is to be settled and resources are to be used are summarized. A strategy for improving co-operation to give practical effect to sustainable development is presented for consideration.

Consistent with the Rio+20 declarations and the key recommendation of the National Development Plan, focus has to be placed on improving governance in order to deliver on policy more efficiently than which is currently the case and to improve the institutional framework and conditions for civil society to participate in the sustainable development processes in an integrated and constructive manner.

The opportunity to promote sustainable development as provided for by the MaB Programme, has not yet been optimized in the Greater Stellenbosch. However, having regard for the exemplary progress that had been made on many fronts over the past 11 years since the Greater Stellenbosch came into being, and the fact that an international agreement with UNESCO is in place to give effect to sustainable development in a structured and integrated manner that is scalable, from the local to the global scale, the time has never been better to do so.

DF MOSS
DENNIS MOSS PARTNERSHIP

1. McCallum, I. 2005. Ecological Intelligence. Rediscovering ourselves in nature. Africa Geographic.
2. Wright, R. 2004. A Short History of Progress. Toronto House of Anansi Press.
3. In a Greek myth written by Sophocles, Oedipus who, in addition to his self imposed banishment from his kingdom, decreed that his own eyes be put out for unwittingly killing his father and marrying his mother and then defending this action (blinding himself) by claiming that he should have known and that he therefore has no excuse (McCallum (2005) pp 158 and 233).
4. Gladwell, M. 2002. The Tipping Point. How little things can make a big difference. Ustor Abacus.
5. Russel, BAW 1961. A History of Western Philosophy. [illegible]
6. UNESCO organized the International Conference on Biosphere Reserves at the invitation of the Spanish authorities in Seville (Spain) from 20 to 25 March 1995. The Conference was organized to enable an evaluation of the experience in implementing the 1984 Action Plan, a reflection on the role for biosphere reserves in the context of the 21st century (which gave rise to the vision statement) and the elaboration of a draft Statutory Frameworks for the World Network.
7. Provincial Government of the Western Cape (PGWC), 2003: Manual for the application of bioregional planning in the Western Cape. Department of Environmental Affairs and Development Planning.
8. ISO (the International Organisation for Standardisation) is a world wide federation of national ISO member bodies.
9. Leftwich, A. 2000. States of Development. On the Primacy of Politics in Developments. Polity Press.

This report focuses on strategies to give effect to sustainable development as a primary mechanism for addressing the challenges of poverty, inequality and environmental degradation. Such strategies have been provided for in official policy with focus on Stellenbosch Municipality, which is located in the Cape Winelands Biosphere Reserve that was listed by UNESCO in 2007 as part of its Man and the Biosphere Program.

A value-based approach is adopted in this report, having regard for the fact that the concept of sustainable development has a ethical foundation and that the principle of sustainability[1], in connection with development, is a shared and acceptable principle in the international arena, as it relates to the ethical challenges of climate change. It is therefore accepted that the degree to which the latter would decrease or increase is dependant on the ultimate outcome of sustainable development and that humankind has a moral duty to address it.

The figure below illustrates the structure and content of the report.

1. The need and challenge

1.1. Accelerating sustainable development

Poverty, unemployment and growing inequality with accompanying high population growth rates are threatening the stability of the country.

In a review by Prof. Sampie Terreblanche, emeritus professor at Stellenbosch University, of the National Dynamics Study (2008) approximately 50% of the South African population live in a state of chronic poverty and 40% of the country's potential work force is unemployed.

The richest 20% of the South African population receives approximately 75% of the national income while 30% of the population receives less than 4% of the national income.

NATIONAL INCOME DYNAMICS STUDY

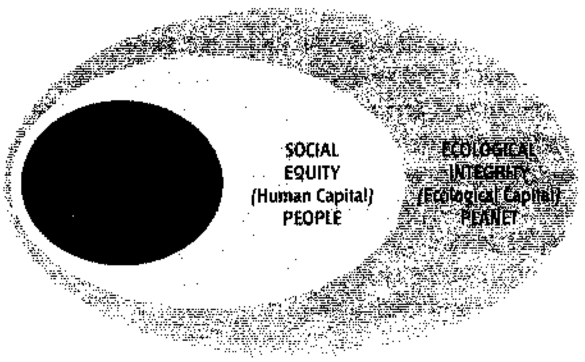
UNEMPLOYMENT	DIVISION OF INCOME	% OF POPULATION
6.4%	[illegible]	20% APPROXIMATELY 10 MILLION PEOPLE
19,8%	[illegible]	20% APPROXIMATELY 10 MILLION PEOPLE
32,1%	[illegible]	30% APPROXIMATELY 15 MILLION PEOPLE
51,7%	3,4% THE LOWER CLASS (13,7 MILLION BLACK, 52 000 WHITE, 530 000 COLOURED, 40 000 INDIAN)	30% APPROXIMATELY 15 MILLION PEOPLE

SOURCE: PROF SAMPIE TERREBLANCHE'S REVIEW OF THE NATIONAL INCOME DYNAMICS STUDY, 2008. REVENUE BASED ON HOUSEHOLD INCOME FIGURES PER CAPITA. DIE BURGER 19 MARCH 2010.

In the National Development Plan (NDP), tabled during a joint sitting of Parliament, on 15 August 2012, the above concerns are echoed.

South Africa's development challenges are comprehensively addressed in the NDP and a broad range of actions are proposed to give effect to stated objectives. Whilst it is proposed that the economy should be expanded almost three times in the period up to 2030, emphasis is also placed on ensuring environmental sustainability and the need to address climate change.

Following on the tabling of the NDP the President announced that a detailed programme for implementation would be prepared soon.



Whilst it is recognised that the Greater Stellenbosch enjoys socio economic advantages that are, from a qualitative perspective, better than national averages, the area also has to deal with "its divided past and legacy of discrimination and exclusion, impoverishment, displaced farm workers, unemployment and poverty on a significant scale" (Stellenbosch Integrated Development Plan (IDP).

According to the International Institute of Sustainable Development (IISD) sustainable development contains two key concepts, i.e.:

- the concept of need, in particular, the essential needs of the poor, to which overriding priority should be given;
- the concept of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

Sustainable development should be considered in context of the ideal to promote global sustainability, including the need to address climate change effectively. Sustainable development is, in fact, the only conduit through which a state of global sustainability can be attained. Whilst there is consensus globally that the promotion of sustainable development is a central concern of humanity,

Figure 2 (left) : The triple bottom line relationship framework (PSDF)

However, over the past forty years the United Nations has made significant progress in consolidating global policies, strategies and action plans to give effect to sustainable development.

The first major step taken in the later regard was the launch of the MaB (Man and the Biosphere) Program in 1971 by UNESCO[1]. Since then, a major milestone was the publication of 'Our Common Future'[2] (also known as the Brundtland Report) in 1987, which deals with sustainable development and the strategies needed to achieve that.

The report includes the well-known definition for sustainable development, namely development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Other initiatives taken include the United Nations Conference on the Environment and Development (UNCED) in Rio de Janeiro 1992, the Kyoto Protocol Japan 1997, the Millennium Summit New York 2000, the World Summit on Sustainable Development Johannesburg 2002, and the UN Climate Change Conference in Cancun Mexico in December 2010. UN Framework Convention on Climate Change (COP 17) Durban 2011 and Rio+20 Rio de Janeiro Brazil June 2012.

The UNCED (1992) established the main framework conventions which are guiding the sustainable development process namely:

1. Agenda 21: A comprehensive plan of action to promote sustainable development on a global, national and local level.
2. The United Nations Framework Convention on Climate Change (UNFCCC) with the objective to "achieve stabilisation of greenhouse gases in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" and;
3. The United Nations Convention on Biodiversity (UNCBD) which established an agreement and commitment by nations to maintain the world's ecological resource which is critical to sustainable development.

Rio+20 was built upon the major decisions, agreements and strategies prepared at the 1992 Earth Summit and presented an opportunity for the parties to renew political commitments to promote sustainable development and to continue to adapt and formulate plans and strategies to address global challenges such as environmental degradation, poverty, climate change, food security, resource depletion and inequality.

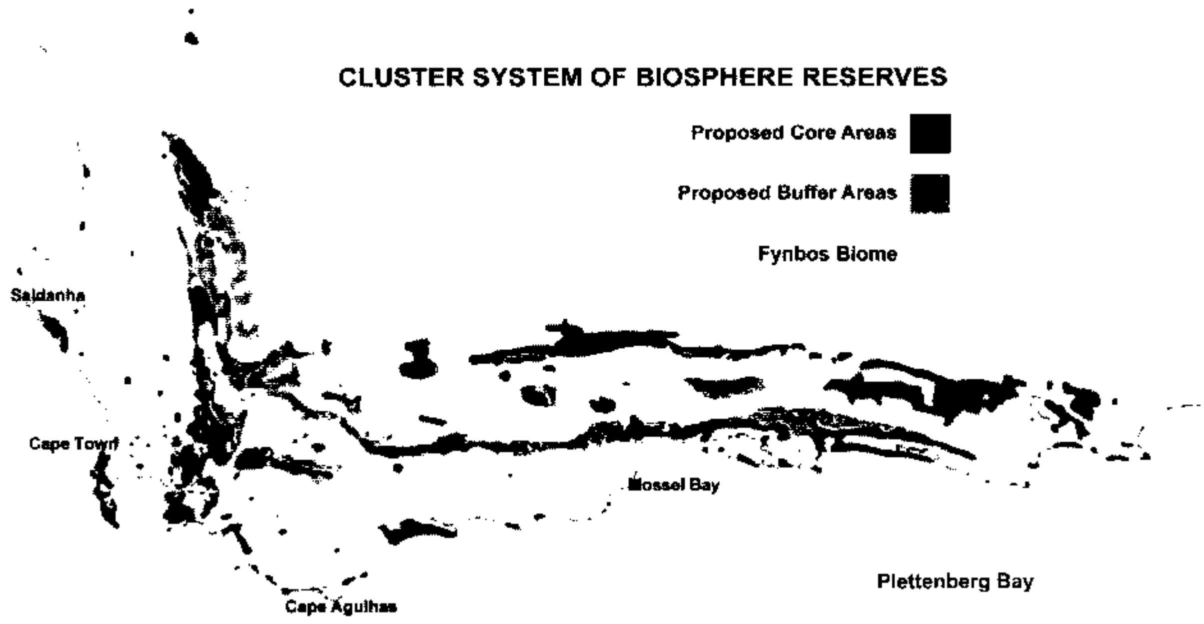


Fig. 4: Proposed Fynbos Cluster Biosphere Reserve Network (Department of Environmental and Cultural Affairs, 1991).

The conference focussed on 2 main themes:

(i) A green economy in context of sustainable development and poverty reduction
(ii) The institutional framework for sustainable development.

It also identified seven priority areas which require urgent attention i.e.:

(i) Energy
(ii) Decent jobs
(iii) Sustainable cities
(iv) Food security and sustainable agriculture
(v) Water
(vi) Oceans and
(vii) Disaster readiness

UNESCO's MaB Programme has to be considered in the above context as it serves as a model for the practical implementation of sustainable development programs and projects.

2. International context for addressing the need and challenge

2.1. Unesco's Man and the Biosphere (MaB) Program

agreement on the strategies, methodologies and processes to attain it, remains a vexing problem.
The MaB Program is a global program of international scientific, strategic planning and co-operation dealing with people-environment interactions over the entire realm of bioclimatic and geographic situations of the biosphere.

The World Network of Biosphere Reserve provides the platform for implementing the MaB Program and for creating partnerships for knowledge-sharing, research and monitoring, education and training, and participatory decision-making.

Biosphere reserves are defined as 'areas of terrestrial and coastal/marine ecosystems or a combination

thereof, which are internationally recognised within the framework of UNESCO's MaB Program.'
Each biosphere reserve is intended to fulfil three basic functions, which are complementary and mutually reinforcing, namely:

a) **Conservation function** - to contribute to the conservation of landscapes, ecosystems, species and genetic variation;
b) **Development function** - to foster economic and human development which is socio-culturally and ecologically sustainable;
c) **Logistical support function** - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.

In summary, biosphere reserves aim to provide the ecological and social framework within which government, community, corporate and other private interests, share responsibility for co-ordinating land-use planning, for both public and private land and for dealing and implementing development options that would ensure that human needs are met in a sustainable way (WRI, et al, 1992)[3]. There are currently 580 biosphere reserves globally.

The main objective[4] of biosphere reserves is to promote and test innovative approaches to sustainable development challenges. This structural framework, to promote sustainable development, is a unique asset of biosphere reserves.

Spatially, biosphere reserves consist of three interrelated zones or areas, namely the core area, the buffer area and the transition area. Only the core area requires legal protection and hence can consist of an existing protected area such as a nature reserve or a national park.
This flexibility can be used creatively and is one of the strong points of the biosphere reserve concept, facilitating the integration of protected areas into the wider landscape.

2.2 Role of the Western Cape Government in promoting the MaB program

2.2.1 Establishment of biosphere reserves

The Provincial Government of the Western Cape (PGWC) has taken the initiative to implement the MaB Program and the establishment of biosphere reserves during the early 1990's. The proposed cluster of biosphere reserves to be established across the Cape Floral Kingdom illustrated by Figure 4 (previous page) was a provincial strategy that responded to the significance of the Cape Floral Kingdom. The latter is the smallest of the world's six floral kingdoms and is largely located within the borders of the Western Cape Province. This area is recognised as an international biodiversity hotspot and includes about 9 600 plant species of which about 70% are endemic, i.e. found nowhere else on Earth (McIntosh, 2006).

During 2003 and 2009 the Western Cape government prepared draft bills on biosphere reserves that *inter alia* made provision for the establishment a provincial MaB Committee to facilitate the listing of and management of biosphere reserves across the province. In 2011 the Western Cape Government passed the Western Cape Biosphere Reserve Act (Act 6 of 2011). This act provides for the management of biosphere reserves, the preparation of framework plans, funding and regulations. The promulgation of the act is still awaited.

The provincial government also prepared the Manual for Bioregional Planning in the Western Cape (PGWC, 2003)[6] (further referred to as the Bioregional Planning Manual) to support the implementation of the MaB Program and to promote sustainable development in general.

During the past 12 years three biosphere reserves were established in the Western Cape namely the Kogelberg Biosphere Reserve (1998), Cape West Coast Biosphere Reserve (2000, extension 2003)[6] and the Cape Winelands Biosphere Reserve (2007).

Fig. 5: The Six Floral Kingdoms of the world.

2.2.2. World Heritage Sites

2.2.2.1. Natural Landscapes

CapeNature in collaboration with SANBI (South African National Biodiversity Institute) et al, facilitated the inscription by UNESCO of the Cape Floral Region Protected Areas World Heritage Site during 2004. The Cape Floral Region Protected Areas World Heritage Site was nominated as a series of different sites (serial nomination) which is a relatively new concept. Eight clusters, which together form a representative sample of the eight phytogeographic centres of the Cape Floral Region over an area of 553 000 ha, were identified and include the following (refer to Fig. 6):

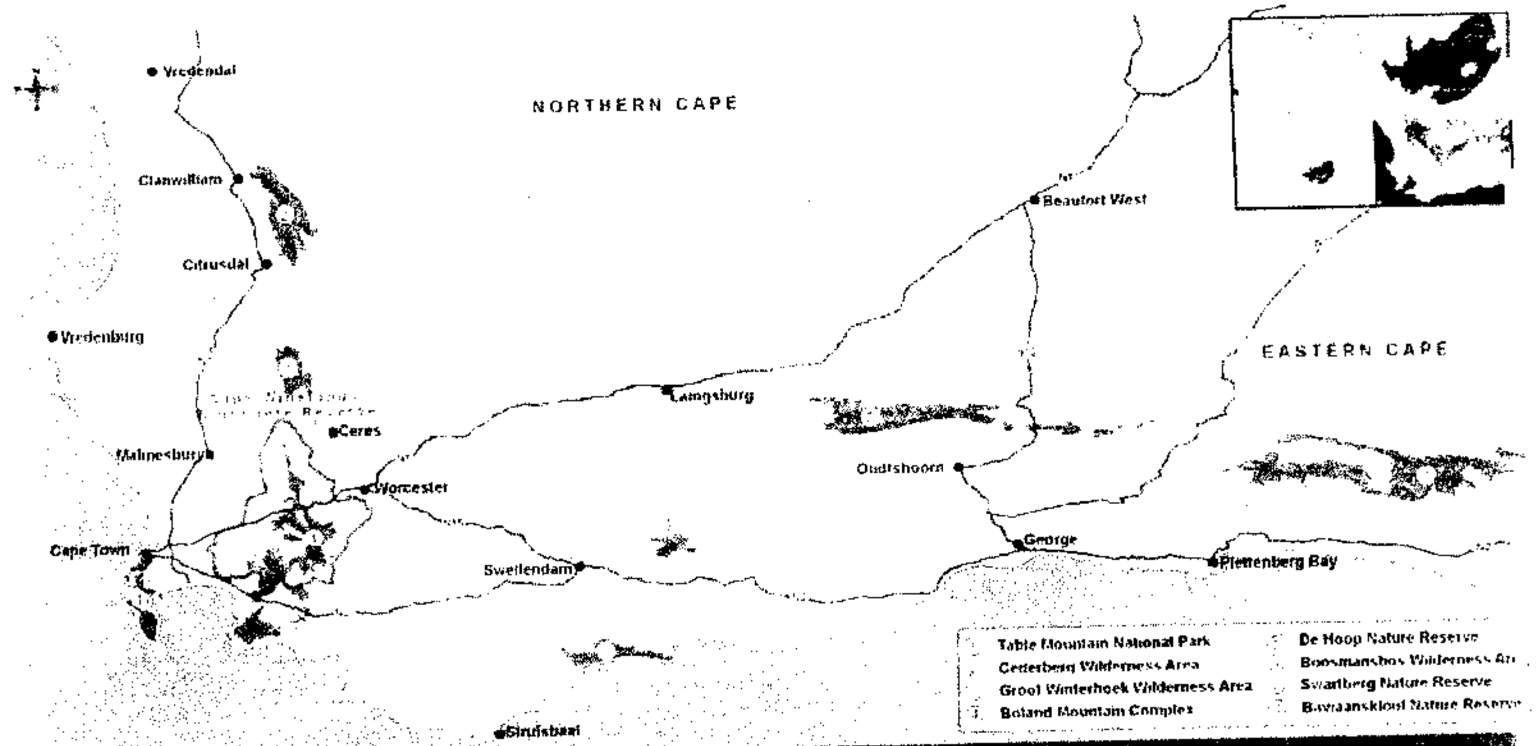
a) Baviaanskloof Protected Area (174 000 ha)
b) Boland Mountain Complex (113 000 ha)
c) Boosmansbos Wilderness Area (15 000 ha)
d) Cederberg Wilderness Area (64 000 ha)
e) De Hoop Nature Reserve (32 000 ha)
f) Groot Winterhoek Wilderness Area (26 000 ha)
g) Swartberg Complex (112 000 ha)
h) Table Mountain National Park (17 000 ha)

The Boland Mountain Complex, which constitutes the core area of the Cape Winelands Biosphere Reserve (refer to Figure 6) is acknowledged as the most important site in the Cape Floral Region in terms of floristic diversity and represents the highest concentration of threatened and locally endemic species in the fynbos biome (Indigenous Vegetation Consultancy et al, 2003). Unique opportunities exist for the above world heritage sites to be enlarged and for cultural world heritage sites to be established in the Cape Winelands Biosphere Reserve in terms of public/private agreements.

2.2.2.2 Cultural Landscapes

Stellenbosch Municipality participated in the investigations into the viability of establishing World Heritage Cultural Landscapes for the Cape Winelands as part of their studies pertaining to the establishment of a biosphere reserve during the late 1990's and early 2000. During 2006 the Cape Winelands Cultural Landscape was tentatively listed by UNESCO's World Heritage Centre. Of significance is that both the MaB Program and the World Heritage Site program fall under the auspices of UNESCO.

A unique opportunity therefore exists for the Greater Stellenbosch, being located in a UNESCO biosphere reserve within which a World Heritage Site has already



been proclaimed, to take the required steps to obtain the Cultural Landscape listing. The two conventions referred to also provide a unique framework within which the cultural heritage of Stellenbosch as a whole can be considered and managed.

2.3. The Cape Winelands Biosphere Reserve

The Cape Winelands District Municipality facilitated and funded the establishment of the biosphere reserve and is its permanent custodian. The District Municipality is inter alia responsible for the integration of the interests of all stakeholders, in particular, the various authorities involved in the biosphere reserve.

Stellenbosch Municipality played a leading role in the initiation and establishment of the biosphere reserve. Actions of the municipality included various submissions to the provincial government and the formal, written support for its listing.

2.3.1. International & Inter-Governmental Agreement

As is stipulated by UNESCOs guiding principles on biosphere reserves, the Cape Winelands Biosphere Reserve is based upon an international agreement between South Africa and UNESCO.

The signatories are as follows:

a) National Government of South Africa (represented by the Department of Environmental Affairs & Tourism).
b) Provincial Government of the Western Cape (represented by the Department of Environmental Affairs and Development Planning).
c) Cape Winelands District Municipality
d) Breede River Valley Municipality
e) Drakenstein Municipality
f) Overberg District Municipality
g) Stellenbosch Municipality[7]
h) Theewaterskloof Municipality
i) Witzenberg Municipality
j) CapeNature
k) Elandsberg Farms

All of the signatories of the application are bound by the following terms of agreement stipulated in the application to UNESCO (May, 2007) and the Spatial Development Framework Plan that has been prepared for the biosphere reserve (refer to Chapter 2.3.2 below):

(i) Conservation (contributing to the conservation of landscapes, ecosystems, species and genetic variation).
(ii) Development (fostering economic and human development, which is socio-culturally and ecologically sustainable).

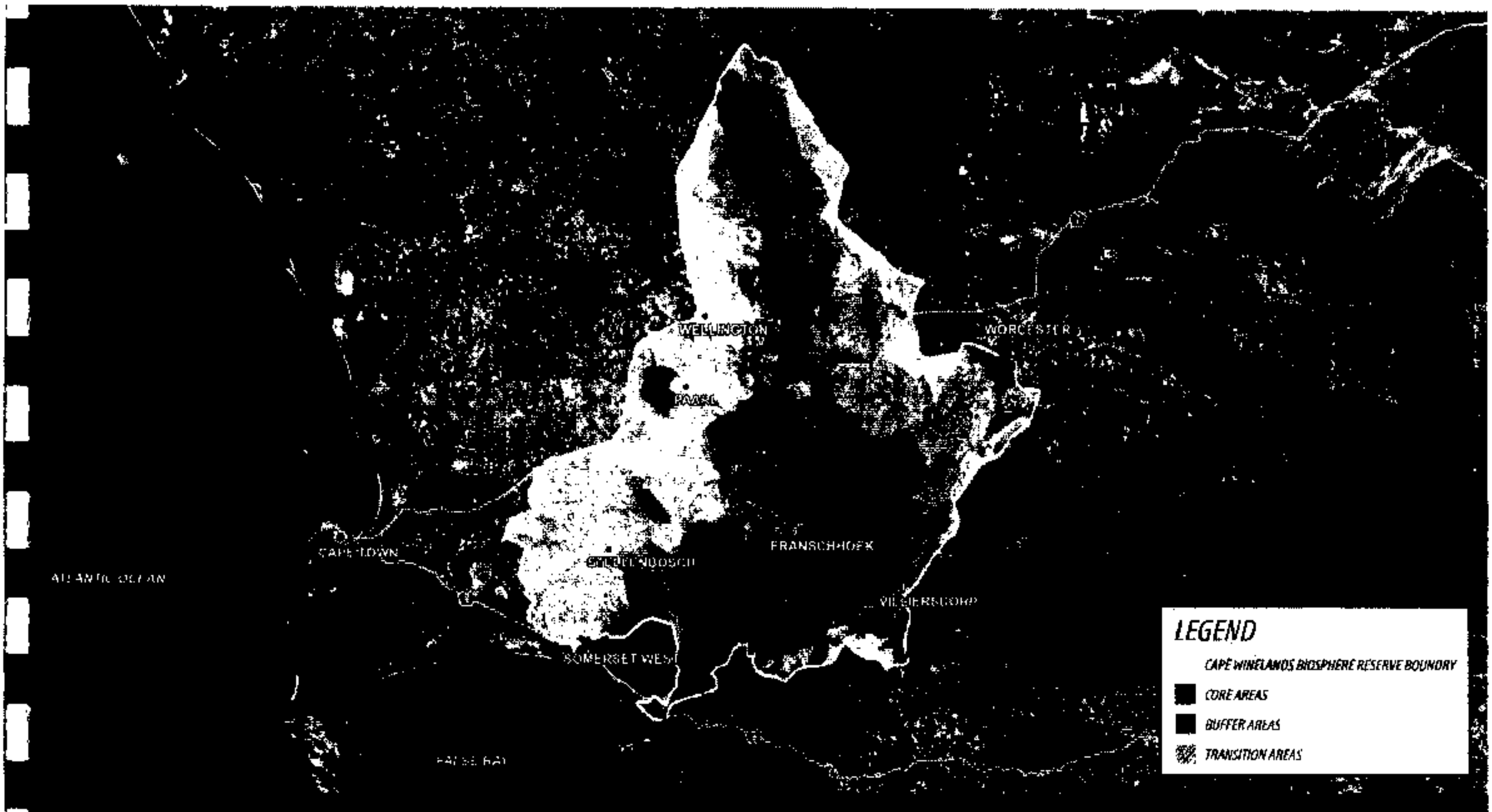


Fig. 7: The Cape Winelands Biosphere Reserve.

(iii) Logistical support (supporting demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development).
(iv) Implementation of bioregional planning and management in all projects.
(v) Promotion of UNESCO's MaB Program (fostering sustainable economic and human development and environmental conservation).

2.3.2. Legal status of the Cape Winelands Biosphere Reserve

A Spatial Development Framework Plan (SDFP) has been prepared for the biosphere reserve. The SDFP was approved by the Cape Winelands District Municipality on 29 March 2011 in terms of the Municipal System Act 32 of 2000. This gives legal status to the biosphere reserve, its broad zonation and, in particular, the inter-governmental terms of agreement cited above.

The SDFP is an implementation mechanism, in terms of the relevant statutes and policies, for the biosphere reserve and its functions as described in the UNESCO Application.
In general terms, the purpose of the SDFP is to lay down guidelines for the future spatial development of the area to which it relates in such a way as will most effectively promote the order of the area as well as the general welfare of the community concerned. As such, the SDFP serves to:

a) Indicate, in a detailed manner, the spatial implications of the Biosphere Reserve.
b) Serve as spatial plan and strategy that facilitates Local Economic Development (LED).
c) Lay down strategies, proposals and guidelines for the future spatial development of the Biosphere Reserve. This includes, without being limited to, development objectives, proposals for land reform, urban renewal, reconstruction, integration, environmental planning, and urban design so that the general well-being of the relevant local communities and order in the area are promoted in the most effective manner.
d) Promote social, economic, and environmental sustainability in an integrated and holistic manner and in accordance with the applicable legislation, policy and protocols. The SDFP has to create conditions that will facilitate economic benefit through the promotion of the comparative and competitive economic advantages of the Biosphere Reserve.

3.1 National Strategy for Sustainable Development

The need and the challenge have to, in the first instance be considered in context of the National Development Plan (NDP). As mentioned under par 1.1 above it is envisaged that programmes for its implementation would be prepared soon.

With regard to sustainable development in particular, South Africa's National Strategy for Sustainable Development and Action Plan (NSSD) (2011-2014) has to be considered in context of the NDP and, from an international perspective, in context of South Africa's policy commitments made at Rio+20.

As mentioned above, two important themes that were identified in Rio+20 are:

(i) The Green Economy in context of sustainable development and poverty eradication and;
(ii) The institutional framework for sustainable development

The latter objectives are addressed in the NSSD.

The following five strategic objectives are identified in NSSD which require consideration:

(i) Enhancing systems for integrated planning and implementation
(ii) Sustaining ecosystems and using natural resources efficiently
(iii) Promotion of a green economy
(iv) Building sustainable communities
(v) Responding effectively to climate change

The concepts of Sustainability and Sustainable Development is defined in the NSSD in a South African context. In the latter context Sustainability implies ecological sustainability which recognizes that healthy ecosystems and natural resources are preconditions for human well-being and that human being are part of nature and not a separate entity.

Sustainable Development is considered to be the process that is followed to achieve the goal of sustainability. Sustainable development implies the selection and implementation of a development option, which allows for appropriate and justifiable social and economic goals to be achieved, based on the meeting of basic needs and equity, without compromising the natural system on which it is based.

A systems approach to sustainability has been adopted in the NSSD. This is considered as one where the economic system, the socio-political system and the ecosystem are embedded within each other, and then integrated through the governance system that holds all the other systems together in a legitimate regulatory framework. Sustainability implies the continuous and mutually compatible integration of these systems over time. Sustainable development means making sure that these systems remain mutually compatible as the key development challenges are met through specific actions and interventions to eradicate poverty and severe inequalities.

The NSSD is a Proactive Strategy that regards sustainable development as a long term commitment, which combines environmental protection, social equity and economic efficiency within the vision and values of the country. NSSD marks the continuation of a national partnership for sustainable development.

The implementation of the international agreement between South-Africa and UNESCO pertaining to the Cape Winelands Biosphere Reserve can serve as an ideal platform for the promotion of such co-operation.

In the latter regard the opportunities that Stellenbosch have, to be a global partner in helping to address global developmental and conservation challenges, are extraordinarily unique.

The area of jurisdiction of Stellenbosch Municipality can become a 'theatre to reconcile people and nature, it can bring knowledge of the past to the needs of the future, and it can demonstrate how to overcome the sectoral nature of our institutions' (Seville Strategy, 1996).

Promoting sustainable development on the local scale must be considered in global context. In a recent UN Habitat report[8] it is argued that urban areas have a pivotal role in both climate change mitigation and adaptation. Strategies and approaches are required for strengthening this role.
Stellenbosch municipal area is dominated by peri-urban and urban settlements and, as such planning and management challenges are dictated by urban planning and management issues from the local to the global scale. This includes the need to address climate change and the concomitant need for adaptation.

In the above-mentioned UN report it is also stated that the main responsibility for implementing policies to address the impacts of climate change in urban areas rests with local government. It is argued that many local governments around the world have so far failed to accept and/or act on this responsibility.

The UN report singles out South Africa as an unusual case in that the latter has moved beyond risk assessment to discussions regarding what should be done to address the effects of climate change. The UN report mentions that a number of South African cities have developed plans for adapting to climate change. In this regard, reference is made to the June 2010 article of Cities Alliance: Cities Without Slums on what is being done in Durban, as well as to Cape Town's Energy and Climate Change Strategy and Cape Town's Framework for Adaptation to Climate Change.

With regard to the national and provincial spheres of government note has also to be taken of the October 2011 White Paper "National Climate Change Response Paper" of national government and the Western Cape Provincial Government's Approach To Address Climate Change (October 2011).

The central objective is to ensure that the pressing challenges referred to above are addressed in a practical way and to ensure measurable success and progress. It is emphasized that the integrated and co-ordinated conduit for success is sustainable development. As provided for in government policy the latter has to be given effect to by government in

partnership with local communities and the private sector in terms of specific policies. The Stellenbosch IDP has provided the context for this as described in the sections below.

3.2 Applicable provincial and municipal policy

Sustainable development in the Western Cape Province is promoted by the Provincial Spatial Development Framework (PSDF, 2009) as well as municipal Integrated Development Plans (IDP's) and Municipal Spatial Development Framework (MSDF's). The above policies and legislation provide guidelines and directives to help secure sustainable development. The PSDF incorporates the provincial bioregional policies and principles prepared during the period 1998-2001 and the official Provincial Bioregional Planning Manual of 2003. The stated purpose of the Bioregional Planning Manual is to facilitate the implementation of bioregional planning and management.

Provincial policy must be considered in context of enfolding provincial initiatives, programmes and directives aimed at promoting sustainable development. In the latter regard the Western Cape Government's 110% Green initiative, briefly described in the Executive Summary of this report, should inform decision making.

The PSDF states that it is a tool of governance that must comply with the requirements of the Municipal Systems Act, the National Spatial Development Framework (NSDP) and the Development Facilitation Act (DFA).

It is further stated that, for the PSDF to perform its function efficiently, it has to provide guidance on both the regional and local scale of planning. Interventions of both scales are guided by a theoretical departure point which is provided by regional economic and bioregional planning theory at the regional scale and by city planning and urban design theory at the local scale.

The PSDF states that, whilst there have been a number of criticisms of the bioregional approach, these criticisms have failed to detract from pertinent insights that the bioregional planning approach brings to regional planning and development and how to address the myriad of environmental, economical and social problems facing regions such as the Western Cape. It is furthermore stated that the relationship between cities, towns and their hinterlands is a fundamental problem of regional planning. Bioregional planning theory identifies a greater range of relationships which have far more profound implications for long term sustainability of these relationships, than regional economic planning theory. These relationships are rooted in the concept of Ecological Footprint.

It is further stated in the PSDF that, the bioregional planning approach appears to be far more effective and strategically embrace the wide range of environmental, social and economic issues faced by the province than does conventional regional economic planning. There is a need for a wide range of bio-physical, social and urban policies. The bioregional planning approach provides the necessary broad-based theoretical basis on which these could be based.

According to the PSDF, bioregional planning principles highlight the necessary and enormous challenges of the province by trying to move the development trajectory of the province onto a sustainable basis. These challenges could be deemed unrealistic or politically unacceptable, particularly in the face of pressure for short term development profits and as a consequence, ignored or inappropriately minimised under a regional economic planning approach. However, the unsustainable development trajectory must be challenged and Bioregional Planning Policy has been incorporated into the PSDF as a cornerstone which, inter alia aims to achieve the following:

a) Provide a standard format for the implementation of bioregional planning with the aim to facilitate sustainable development throughout the Western Cape.
b) Support the municipalities in the preparation of their IDPs and, in particular, their SDFs prepared in terms of the Municipal Systems Act or the Land Use Planning Ordinance (LUPO).
c) Facilitate the land-use classification of the entire land surface of the Western Cape Province in a standard format in accordance with defined Spatial Planning Categories, which are based on a broad spectrum of environmental parameters and a system of values and ethics.

d) Facilitate cross-boundary co-operation and co-ordination between municipalities in respect of issues that are of mutual interest for their respective areas of jurisdiction (refer to inter alia issues pertaining to land-use, biodiversity conservation, and resource utilisation).
e) Provide a framework that would inform any future municipal demarcation with the aim to reconcile future municipal boundaries with defined bioregional parameters.

In terms of its consistency principle, the PSDF incorporates local-scale spatial and design policies aimed at inter alia the promotion of the comparative economic advantages of the province and the protection of the heritage resources vested in cultural landscapes such as the Cape Winelands.

These policies include the application of five design principles to be applied in new and restoration projects, i.e. sense of place, sense of nature, sense of craft, sense of history, and sense of limits. The latter principles should serve as important informants for the preparation of a holistic and integrated heritage policy for both the urban and built environment.

The Bioregional Planning Manual provides a spatial and managerial framework for efficient bioregional management and planning on scales ranging from the international to the local. In a nutshell, the latter comprises the delineation of macro biogeographical regions such as the Karoo, Mountain Valleys and Coastal Plains, dropping down to the level of the catchment such as the Eerste River, Berg River and Breede River. One level down from the catchment/ ecological level is the human settlement scale. The delimitation of settlement domains is the product of the juxtaposition between settlement boundaries and natural/ ecological boundaries.

Stellenbosch Municipality has provided for neighbourhood planning and an inclusive planning and decision making process in its IDP (Chapter 3). Provision is made for a Ward-Based Planning Approach, Neighbourhood Revitalization and Effective Community Participation and the preparation of Area Development and Area Action Plans (Refer Figure 8 and 9 below).

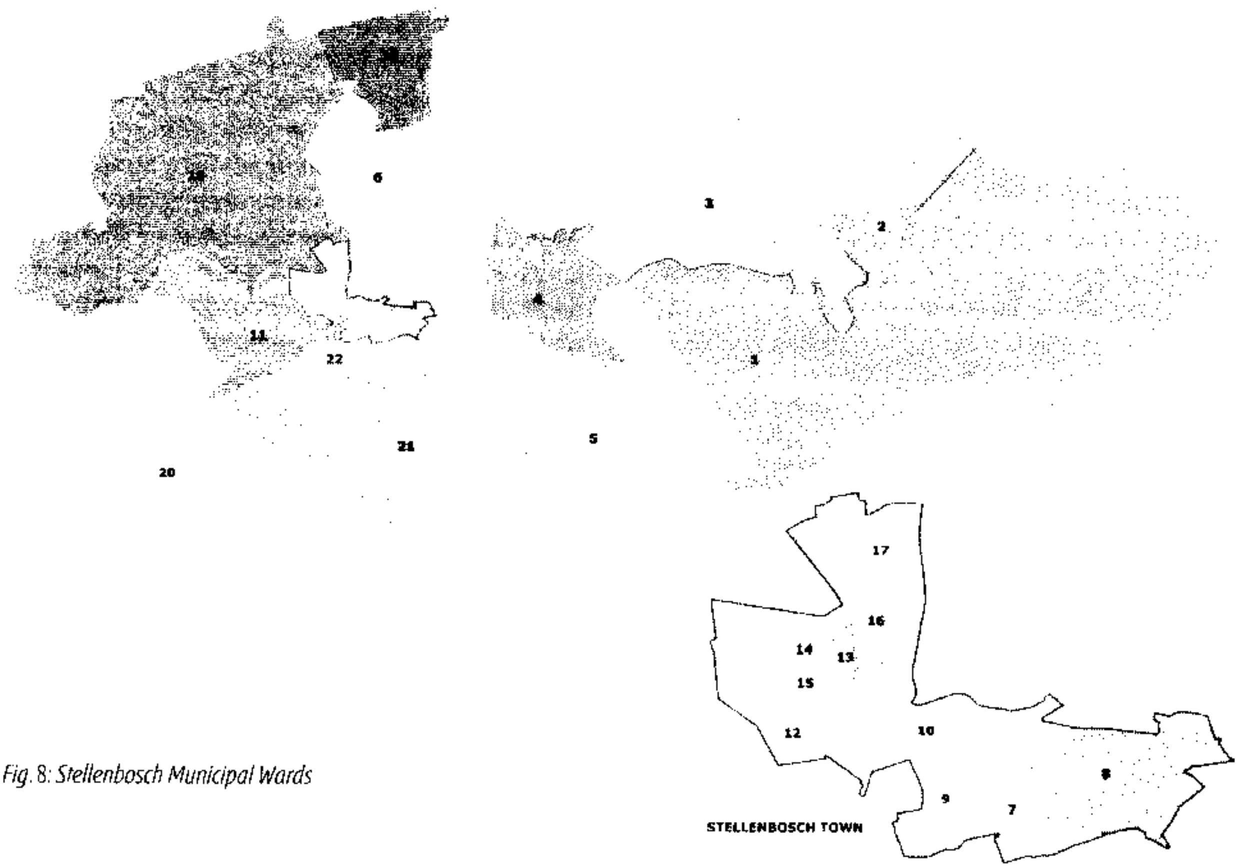
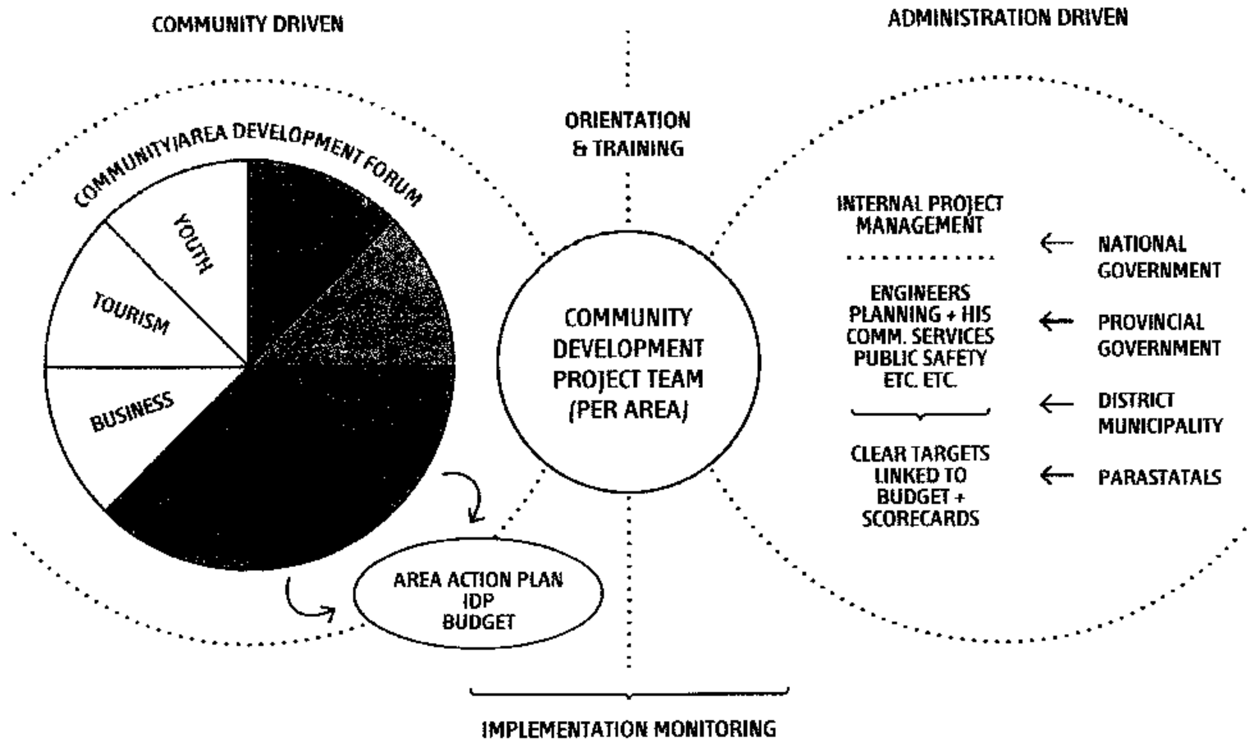


Fig. 8: Stellenbosch Municipal Wards



The positive correlation between efficient integrated development planning and management and the delimitation of appropriately-scaled areas of community interest is widely recognised in planning theory. This correlation has been formally recognized in provincial and municipal planning policy including Stellenbosch IDP.

It would therefore be of value to consider the bioregional planning principles described above as part of on-going improvement and refinement of the ward plans, neighbourhood revitalization program area plans, etc.

An example of the latter, as it pertains to Stellenbosch municipal area, would be the establishment of what could possibly be termed "settlement domains" such as Dwars River Valley, Jonkershoek, Upper-Blaauwklippen, etc. as is illustrated in the Figure 10 on the following page. These demarcated areas can serve as an overlay for ward area demarcation incorporating ecological and settlement patterns as is envisaged in bioregional planning whilst being consistent with Stellenbosch IDP principles.

For the provincial and local government to succeed in their endeavours to promote sustainable development it is of importance that the vital links between Area Plans and the larger bioregional planning scales referred to above are established, maintained, co-ordinated and managed over time. Ideally every project that may impact on sustainability should be considered in context of a hierarchy of spatial scales as provided for in the bioregional planning theory. Of critical importance is the participation of the business sector in development planning and management, and, in particular, in the implementation of sustainable development projects on the site, settlement domain and the neighbourhood area scales as is provided for in Stellenbosch IDP.

Of value in the above regard is the work Stellenbosch Municipality undertook in the past (Refer Figure 11). During 2006 the municipality commissioned the preparation of a set of dedicated municipal policy documents that comply with the provincial Bioregional Planning Manual specifically as it relates to the above objectives.

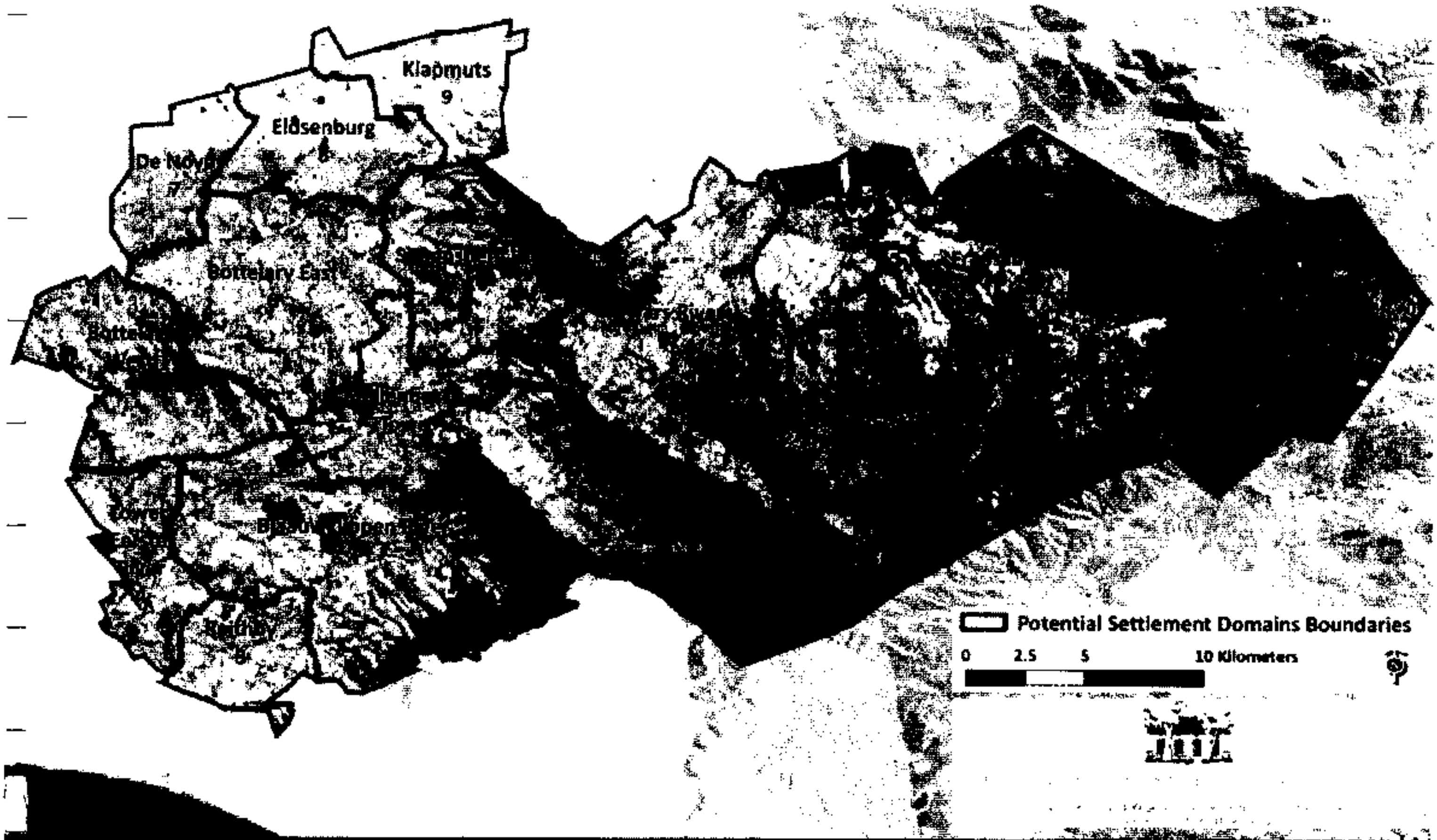


Fig. 10: Conceptual Neigbourhood Areas Demarcated In Terms of Bioregional Planning Criteria Stellenbosch Municipal Area.

The relevant documents are as follows:

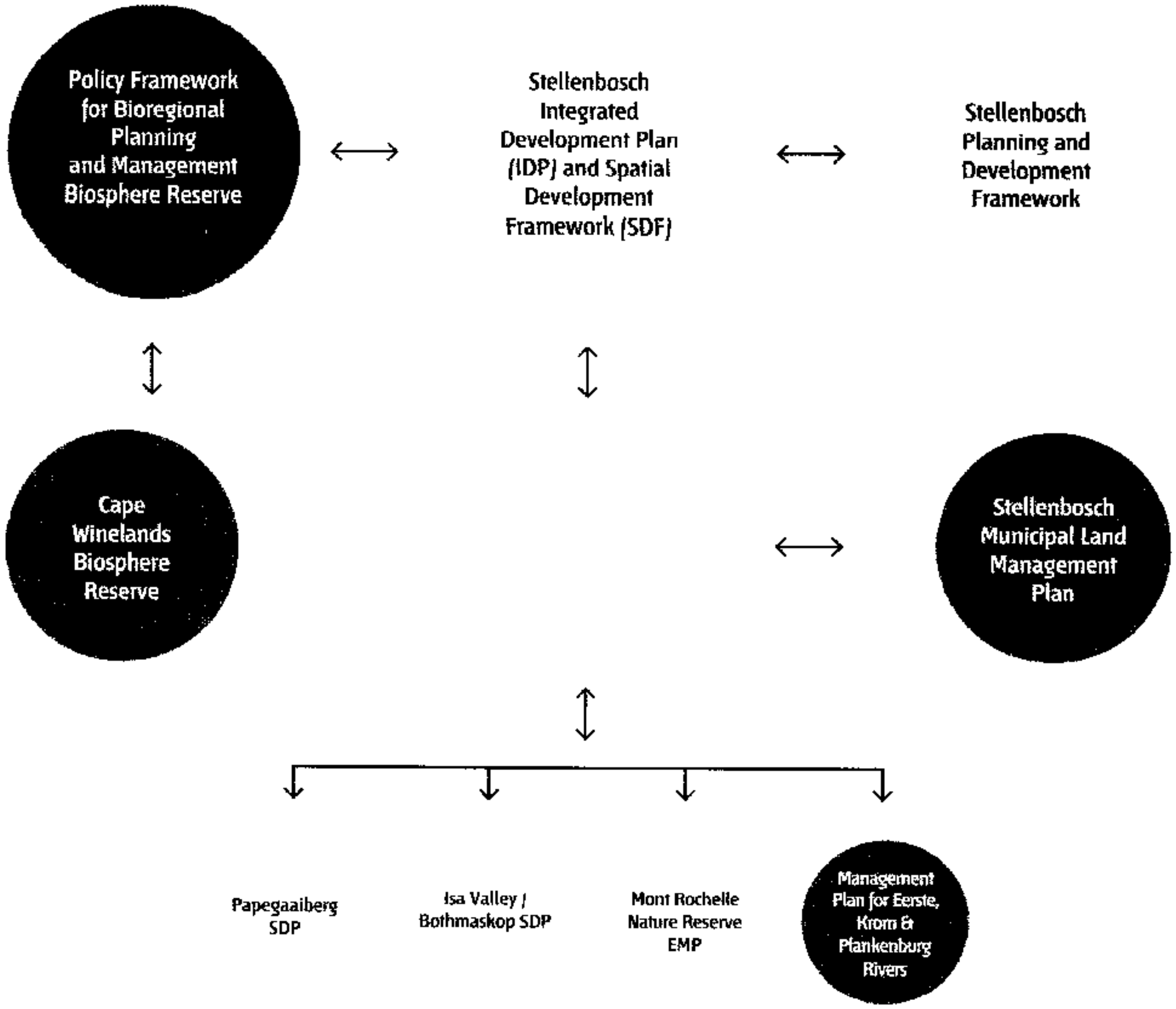
(i) Policy Framework for Bioregional Planning and Management and Biosphere Reserves (Nov 2006).
(ii) Stellenbosch Environmental Management Framework (June 2006).
(iii) Papegaaiberg Spatial Development Plan (Oct 2006).
(iv) Bothmaskop / Idas Valley Spatial Development Plan (Dec 2006).

In addition, the draft Stellenbosch Municipal Land Management Plan (September 2004)[9] and various documents pertaining to the Cape Winelands Biosphere Reserve have been prepared.

Figure 11 on the following page illustrates the relevant documents in a hierarchical relationship with other municipal planning and development frameworks and plans, in particular, the Stellenbosch IDP and SDF.
The package of bioregional planning frameworks and plans listed above was prepared to inform the Stellenbosch IDP and, in particular, the Stellenbosch SDF. The various documents collectively serve as an inventory of projects, or actions, to be undertaken under the IDP, and also provide a broad framework for measuring and managing the performance of the municipality in terms of a set of performance management criteria. While generally applicable as informants to municipal policy these documents require updating and review.

3.3 Implementing bioregional planning as an integrated dimension of policy

Bioregionalism is a comprehensive manner of defining and understanding the place where one lives sustainably and respectfully. Bioregionalism acknowledges that people do not only live in cities, towns, villages and countryside, but also in watersheds, ecosystems and eco-regions. The awareness of those connections to the planet is vital to one's health and the health of the planet (Loheed et al, 2001)[10].



Bioregionalism is not about solving problems for people, but rather solving them with people in a way that acknowledges the uniqueness and value of each person and place. It recognises that the process of making decisions and solving problems is just as important as the end product itself[11].

The agreement with UNESCO requires that bioregional planning be implemented at all levels of planning and project implementation and in context of all applicable levels within the Cape Winelands Biosphere Reserve. This inter alia requires the delimitation of spatial planning areas from the macro biogeographical level to the local neighbourhood level as described above.

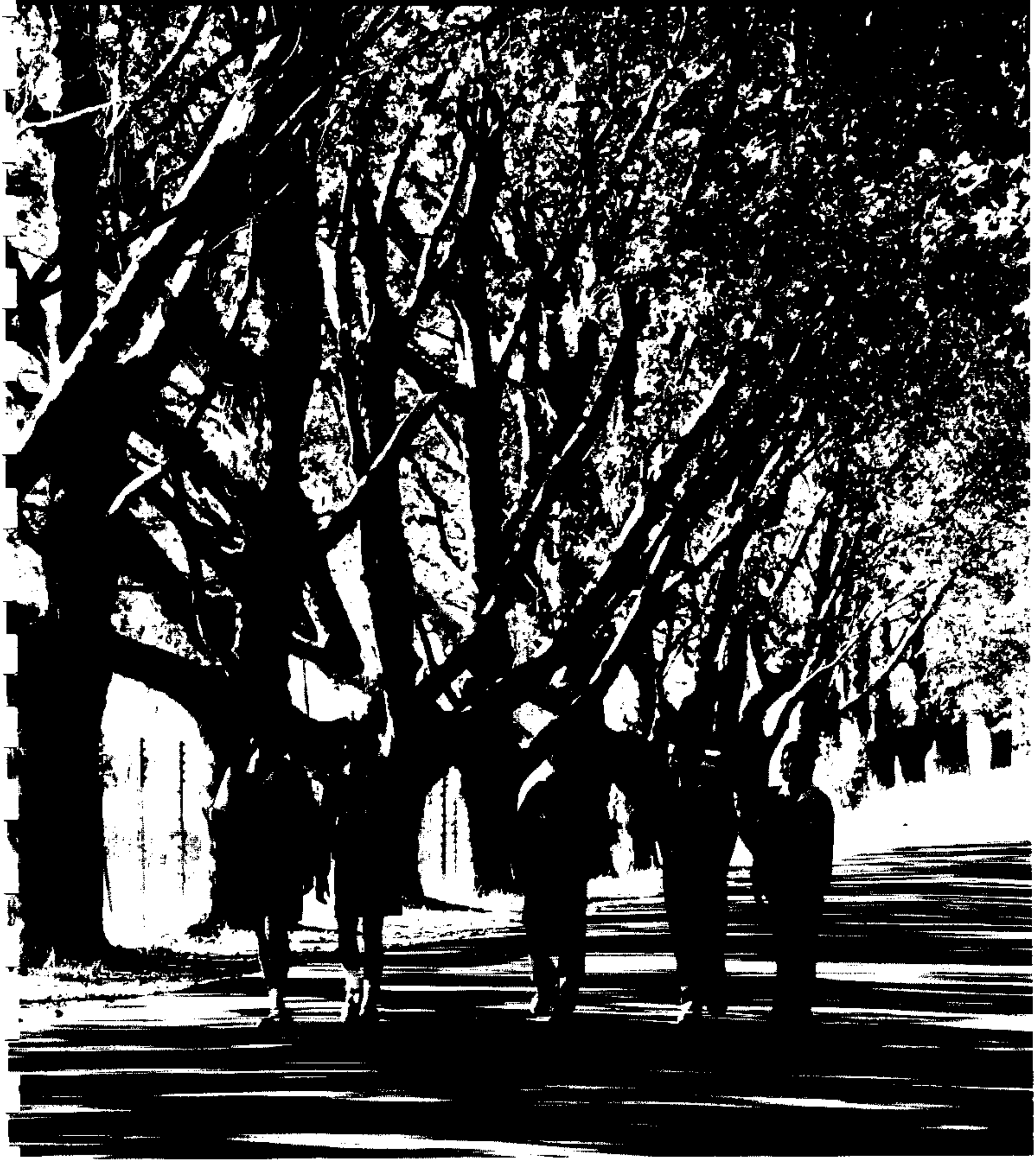
In the Bioregional Planning Manual it is stated that it is within bioregional areas (on all scales) that cooperative land-use planning and management can be undertaken (i.e. where....government, community, corporate and other private interests, share responsibility for co-ordinating land-use planning, for both public and private land and for defining and implementing development options that would ensure that human needs are met in a sustainable way (WRI, 1992)).

In order to give effect to this principle, the following challenges need to be addressed in municipal planning (Miller, 1996):

a) Create the capacity to manage complex & integrated programs.
b) Involve stakeholders in a meaningful manner.
c) Develop and link established institutions, or if needed, create new ones.

The above principles are encapsulated in the Stellenbosch IDP.

Bioregionalism is not about solving problems *for people*, but rather solving them *with people* in a way that acknowledges the uniqueness and value of each person and place.



3.3.1 Bioregional management guidelines

Stellenbosch Municipality has provided for the implementation of innovative and practical management strategies and guidelines in the Stellenbosch IDP (refer, in particular, to Chapter 3 of the latter). These comply with the provincial and municipal endorsement of the UNESCO/South African agreement and the relevant provincial and municipal planning policy (refer specifically to the PSDF and the Bioregional Planning Manual).

For ease of reference the provincial bioregional planning guidelines in the latter regard are summarised below.

Guideline No.1: Building Capacity

a) **Develop leadership for the bioregional management program.**
Ideally a well-respected local individual or organisation who has leadership capabilities and who knows the community and its resources should be involved in this task.

b) **View bioregional management as a social and governance issue.**
The manner in which authority and responsibility is distributed amongst spheres of government and between public and private interests, is a central issue in promoting co-operation and mobilising skills and capacities.

c) **Use authority to foster co-operation.**
It is idealistic to expect constituents to work together as a 'tight band of well-meaning stakeholders'. Experience has shown that a measure of authority to provide the backbone to efforts is both needed and appreciated. An authority must ensure that minimum goals, standards and criteria are met.

d) **Redistribute power over land and resources to develop authority and responsibility in the bioregion.**
The challenge here is to:
   (i) Establish incentives for local residents to take on responsibility for biodiversity protection and management.
   (ii) Foster a fair sharing of benefits from the use of resources.
   (iii) Place the authority to protect, control and use, closer to the ground (community level).

e) **Identify and assess the capacities of organisations and**

individuals in the bioregion and fill the gaps.
This action requires a detailed and systematic evaluation of skills and capacities in the bioregion, and the filling of gaps can often be achieved by establishing a new structure through which existing skills can be co-ordinated and where shortcomings can be supplemented by employing new skills.

f) **Use and build upon existing capacity wherever possible.**
The establishment of large regional structures should be avoided and priority should be given to reinforcing local technical capacity through networking on a larger scale.

g) **Build the capacity to deal with challenge.**
Bioregional planning takes place in the context of dynamic change and flux and it is, therefore, important to promote and foster capacity to anticipate and manage challenge.

Guideline No.2: Fostering Stakeholder Participation

a) **Leaders, planners and policy makers should get to know the stakeholders and their concerns, interests and perspectives.**
If too little is done to get to know and understand the region's people, bioregional planning and management will fail.

b) **Initially, focus on a few issues of interest to the widest possible set of stakeholders.**
Experience suggests that it is of decisive importance to begin simply by limiting the program to one, or a few, issues of common concern. Programs should rather grow gradually to embrace more comprehensive issues.

c) **Link conservation and restoration activities with socio-economic development goals in the bioregion.**
The challenge is to integrate development with conservation goals and measures.

d) **Provide access to decision-making.**
Give local residents and communities access to decision-making processes and the skills needed to participate fully in the development and implementation of democratically managed bioregional programs.

e) **To keep stakeholder participation fair, give all participants information of equal value.**
Constituents need to be well and equally informed and a scientifically sound information base must be established at an early stage.

f) **Give stakeholders incentives to get involved in and committed to bioregional programs.**
Whilst it is recognised that in some areas interest in conservation is great and that volunteerism may be assured, few stakeholders can do more than attend a number of public meetings or respond to questionnaires. To, for example, alter farming practices and other resource practices in the interest of conservation, will require compensation for time, expenses and alternative uses.

g) **To foster involvement and commitment, ensure that individuals and group stakeholders receive a fair share of the benefits.**
Where conservation-linked programs are linked to reward, ensure that it is both fair and forthcoming.

h) **In areas of multiple jurisdictions, develop co-ordination mechanisms that do not challenge existing sovereignty.**
The biosphere reserve approach, for example, leaves intact the authority of public agencies and private property rights.

i) **Honour all commitments that result from negotiations.**
It is especially important that authorities ensures that commitments are honoured and that such commitments do not fall prey to changing budgets, personnel departures which leave unfilled vacancies, etc.

j) **Promptly implement projects that respond to community needs.**
Where the implementation of a bioregional management program gives rise to specific projects, it is of decisive importance that such projects be implemented speedily

Guideline No.3: Establishing Co-Operative Arrangements Among Institutions

a) **Establish co-operative management options with and among stakeholders.**
A cardinal rule of ecosystem management is that people with interest in a bioregion are not simply to be placated with marginal give-away or menial jobs, but are understood to be partners.

b) **Adjust the design and delivery of technology to allow for the space and time necessary for**

communities and institutions to adapt.
Innovation and technology have to be introduced carefully and adjusted to local and social institutional circumstances.

c) **Do not hesitate to rely on short-term financial support from external sources for bioregional programs initially, as long as it is replaced in a timely manner by a sustainable flow of resources.**
Consideration should be given to the setting up of an environmental fund for the bioregion in which grants and contributions from international, national, provincial, local and private resources can be held in trust and capitalised.

d) **Stimulate and promote programs of high quality, inter-disciplinary research into determinants of the occurrence of ecosystems and natural resources and the uses made of them by rural and/or regional communities.**
Provide a supportive environment for creative and innovative research or applications development in sustainable conservation, resource use and management on bioregional bases. Attract postgraduate research to this field.

3.4. Municipal strategies for sustainable development

In terms of the bioregional planning documents referred to under Chapter 3.1 above read together with the Stellenbosch IDP, the strategies for sustainable development of the municipality recognise the following:

a) Eradication of poverty is an indispensable requirement for sustainable development.
b) Eradication of poverty requires environmentally sustainable solutions.

In the provincial bioregional planning policy it is recommended that the following strategies be considered by municipalities:

(i) Providing a mechanism for integrating environmental and poverty concerns into municipal decision-making.
(ii) Providing a strategic and participatory process of analysis, debate, capacity strengthening, planning and action towards sustainable development.
(iii) Integrating both poverty eradication and environmental sustainability perspectives with national and provincial economic policies and programs.
(iv) Serving as a catalyst to analyze economic, social and environmental development trends, taking stock of inter-related policies and plans, and identifying key problems – with the objective to achieve economic efficiency, social justice and environmental sustainability simultaneously.
(v) Integrating sustainable development strategies and strategy processes into the national, provincial and district development planning frameworks.
(vi) Mobilizing communities to promote continuous democratic dialogue and debate amongst broad sections of society.
(vii) Participation, representation, ownership and involvement of all relevant stake-holders promoting broad-based policy learning and capacity development.
(viii) Giving effect to government commitment and political will through negotiation and conflict management and balancing technical analysis with participatory planning process.
(ix) Promoting transparency and awareness of choices.
(x) Implementation of initiatives for consolidating local support for municipal programs.

3.5. Municipality's leadership role regarding sustainable development

Provincial bioregional planning policy highlights the following municipal leadership roles at it relates to the promotion of sustainable development:

Role No.1: Leading by example

In this regard, reference is made to the following:

a) Purchasing and procurement. A municipality is a large consumer of resources. The adoption of sustainable purchasing and procurement programs can demonstrate leadership and shape energy and resource consumption patterns locally and elsewhere.
b) Municipal properties, including buildings, parks and open space. Applying sustainable development principles to the planning and management of such properties can help a

municipality to operate in a sustainable manner and provide excellent examples in this regard.

c) Investment policies. Supporting or investing resources in sectors, firms or activities that promote sustainability is important to demonstrate leadership.

d) Renewable energy use as well as water and energy conservation. A municipality should aim to lead by example and save money by adopting sustainable practices in this regard.

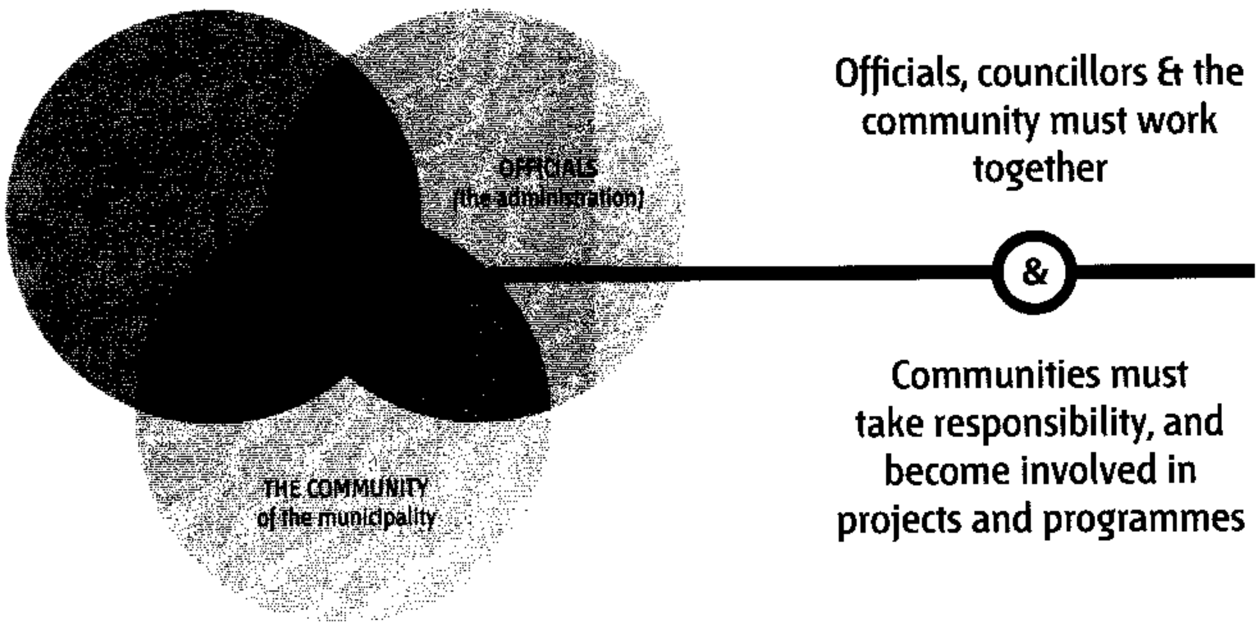
e) Workforce transit patterns and motor fleets (cars, trucks, buses, etc.). A municipality should aim to reduce energy consumption and shift towards renewable energy by managing the transit patterns of employees.

Role No.2: Promoting public-private-community based sustainable development programs and partnerships

In Stellenbosch IDP (Chapter 3) it is emphasized that local communities should play an active part in the planning and implementation of projects in their neighbourhoods.

Figure 12 below illustrates this IDP principle.

Figure 12: The three legal partners of a Municipality



3.6. The Special Management Area Approach

Provincial bioregional planning policy and the Bioregional Planning Manual provide for Special Management Areas (SMAs) to be established by both the public and private sector under specific circumstances.

It is a land unit which is formally recognised and managed as an area where sustainable developmental is promoted in practice and in accordance with international standards for environmental sustainability (Bioregional Planning Manual).

An SMA is defined as an area of excellence and good practice, where the ethos of sustainable development is served in practice. An SMA does not replace any other officially recognized planning unit such as that recognized in an IDP/SDF of a municipality, such as a Neighbourhood Area, Development Area, etc. In theory, an SMA can include a number of official Neighbourhood Areas and/or Development Areas.

The management and associated costs pertaining to an SMA should ideally be approached in the spirit of a public/private partnership. Funding could be provided by government, land-owner(s) other stakeholders, and institutions.

In addition, if an SMA is planned and managed in accordance with international standards it may attract international funding from, for example, UNDP (United Nations Development Program), GEF (Global Environmental Facility), etc.

An SMA is managed in accordance with an Environmental Management System (EMS) and program-specific Environmental Management Plans (EMPs). These plans are to conform to international standards for environmental management (e.g. ISO 14001) (refer to Section 10 below).

SMAs may be established over all types of land use zones, including urban, agricultural and natural zones. Various SMA's have been created in the Western Cape, the most notable of which is the Nuwejaars Wetland SMA near Bredasdorp which was initiated by private landowners. The Nuwejaars Wetland SMA is supported by DBSA, the Provincial Government of the Western Cape, Department of Agriculture, SANBI, SANParks and CapeNature.

The establishment of SMAs in the Cape Winelands Biosphere Reserve can serve as a mechanism to facilitate IDP objectives such as the promotion of public-private partnerships and community participation and can be the conduit for international funding. SMA principles could also be included in the preparation of Area Development Plans such as those envisaged in Stellenbosch IDP.

3.6.1.1 Coherent Long Term Management

A primary challenge associated with SMAs is the long-term management of both the human-made and the natural environment. It is generally a condition of approval that an Environmental Management System (EMS) be prepared to facilitate such management.

The EMS should be based upon sound economic and technical decisions and careful consideration of alternative strategies, and include a comprehensive statement on the vision, goals and objectives of the development. It should furthermore deal with the formulation of strategies to achieve the general goals and objectives stipulated in the development framework of the project in a manner that complies with ethical, social, and political norms.

The primary aims of the EMS should include the following:

a) Ensuring appropriate management of all aspects of both the developmental and the operational phases of the project.
b) Ensuring conformance with the stated environmental policy.
c) Enabling certification/accreditation of the estate in terms of ISO 14001.
d) Complying with stated zoning conditions.

In practice, the EMS should include directives pertaining to:

- What is to be achieved through the project.
- How the project and its various components are to be implemented and managed.
- Who will do the work.
- How the tasks are to be undertaken.

The EMS should be structured in accordance with a standard best practice format (e.g. SABS ISO 14004:1996(E)). In accordance with the ISO 14004 format, the EMS incorporates five distinct, but interrelated phases, namely:

(i) Determine management policy.
(ii) Planning of all projects and phases.
(iii) Implementation and operation.
(iv) Monitoring and corrective action.
(v) Management review.
(vi) Continual improvement.

The concept of continual improvement should be embodied in the EMS. Continual improvement is achieved by continually evaluating the relevance and performance of the EMS against the set environmental policies, objectives and targets with the purpose of identifying opportunities for improvement.

3.7 Preparation Of Spatial Development Plans And Strategies For Specific Areas

According to Stellenbosch IDP Area Development Plans are to be prepared for specific places (including cultural and biodiversity 'hot-spots'). Such documents would be enhanced if they were to be based on a Strategic Environmental Assessment (SEA) that incorporates in situ detail of the full spectrum of environmental aspects, including ecosystems, habitats, sensitivity, irreplaceability, visual aspects, etc. as provided for in the PSDF/Bioregional Planning level.

On a local municipal level, there are many areas that require special planning attention in order to direct resources, investment and action to such areas. In accordance with the planning principles of the municipal IDP, the private sector, communities or individuals, can help identify zones where development could serve as economic drivers to promote the objectives of the IDP, LED (Local Economic Development) and SDF and that site-specific Area Plans as is envisaged in the IDP. Area Plans are powerful instruments for promoting and achieving the desired outcomes that the municipality and its constituent communities have agreed upon in their IDPs and SDFs.

According to the bioregional and IDP planning policy no area should be planned and managed in isolation and consideration has to be given to issues beyond the boundaries of a specific planning area.

The following objective are important:

a) Improve co-operation between all spheres of government and other stakeholders.
b) Promote a conservation ethos in the minds of the stakeholders.
c) Promote on-going environmental restoration and conservation (including cultural and natural dimensions).
d) Implement management practices that benefit current and future generations, and honour obligations and undertakings at all levels of society.

According to the bioregional planning approach no area should be planned and managed in isolation and consideration has to be given to issues beyond the boundaries of the planning area.

e) Promote a shared responsibility to maintain the health, diversity and productivity of the area in a spirit of stewardship and caring.
f) Ensure that future growth and development proposals for the particular area are compatible with the vision, goals and objectives of the area.

3.7.1. Built Environment

All urban areas within the Stellenbosch municipal area are located within the biosphere reserve. They should therefore not be considered to be separate entities or components. The biosphere reserve can serve as a powerful instrument to promote, manage and protect the unique heritage of the built environment and enhance the unique sense of place of the settlements.

3.8. Partnership With University Of Stellenbosch

Stellenbosch Municipality and the University of Stellenbosch have a vision of Stellenbosch as a sustainable university town and a mission of reinventing Stellenbosch. A formal Memorandum of Understanding to the effect was entered into between the Executive Mayor of Stellenbosch and the Rector of Stellenbosch University during 2007.

The principles upon which the partnership is based is included in the Municipal IDP namely that;

(a) the parties have a responsibility, individually and jointly, to address the challenges facing Stellenbosch and to work towards a better future for all its inhabitants, temporary or permanent;
(b) the exercise of their joint responsibilities can best flow through collaborative efforts under the auspices of the Rector of the University and the Executive Mayor of the Town;
(c) addressing the problems and optimising the opportunities of Stellenbosch can best be done by adopting the core principle of sustainability in all spheres of activity, whether educational, social, economic, technological, infrastructural or ecological;
(d) they will pursue international interaction and initiatives to their mutual benefit.

In the IDP it is also stated that the formal partnership between Stellenbosch Municipality and Stellenbosch University serves as the point of departure for the following:

(i) to pursue this vision and mission collaboratively through continuing and formalising within their respective structures the regular Rector/Mayor Forum which has already been meeting successfully for some years;
(ii) to work in a non-partisan manner with local business and industry, non-governmental and community organisations towards sustainable local economic development/
(iii) to draw on the intellectual capital available at the University and the civic infrastructure of the Town in capacity- building and addressing the development needs of the Town;
(iv) to set up such joint projects as required and feasible;
(v) that these initiatives will form an integral part of the Integrated Development Plan of the Stellenbosch Municipality.

4. Project planning and implementation requirements

4.1. Project planning in compliance with the National Environmental Management Act (NEMA)

In order to ensure sustainability it is imperative that all land-use (specifically land development) be planned and implemented in a manner that complies with legislation, policy and international best-practice. Key requirements in this regard are the following:
Project planning is to be undertaken in accordance with the principles of the National Environmental Management Act (NEMA) 107 of 1998 and the Integrated Environmental Management (IEM) approach where land has to be rezoned or subdivided and NEMA is applicable. An IEM is defined as an integrated approach for environmental assessment, management, decision-making, the promotion of sustainable development, and the equitable use of resources (DEAT[4], 1998).

The following principles of IEM are particularly relevant:

a) **Informed decision-making.**
Project proposals and associated resolutions are to be informed by the baseline studies and assessments undertaken by specialist consultants and regular iterations among the project proponent, the relevant specialists and other stakeholders. Baseline studies should inform the compilation of a 'constraints and opportunities map' which, in turn, should serve as the premise for the planning and design of project proposals.
b) **An open, participatory approach in the planning of proposals.**
Project proposals should be subject to a coherent process of stakeholder consultation. Projects should be planned and implemented in collaboration and in co-operation with the local communities and other stakeholders.
c) **Analysis of alternative options.**
Alternative options are to be prepared in context of specialist studies, iterations between all concerned, and the EIA to be undertaken for a project proposal.
d) **An attempt to mitigate negative effects and enhancement of positive aspects of proposals.**
The planning and design of the various alternatives are to be informed by specialist reports on potential impacts and the mitigations proposed by specialist consultants.
e) **An attempt to ensure that the 'social costs' of development proposals (those borne by society, rather that the developers) be outweighed by the 'social benefits' (benefits to society as a result of the actions of the developers).**
A strategy should be implemented to ensure that the potential social benefits of the proposed development conclusively outweigh any detrimental impacts. Formal agreements should be concluded pertaining to the benefits that are to accrue to the beneficiaries of any development.
f) **Compliance with these principles during all stages of the planning implementation and decommissioning of proposals (i.e. from 'cradle to grave').**
Implementation of proposed projects should be regulated and facilitated by an Environmental Management System (EMS) and by a dedicated Environmental Management Plan (EMP) for each implementation program of the proposed project. Thorough monitoring, performance auditing, and continual improvement should be embodied in the EMS and EMPs. The local communities and other stakeholders must be involved in these activities in the long-term.

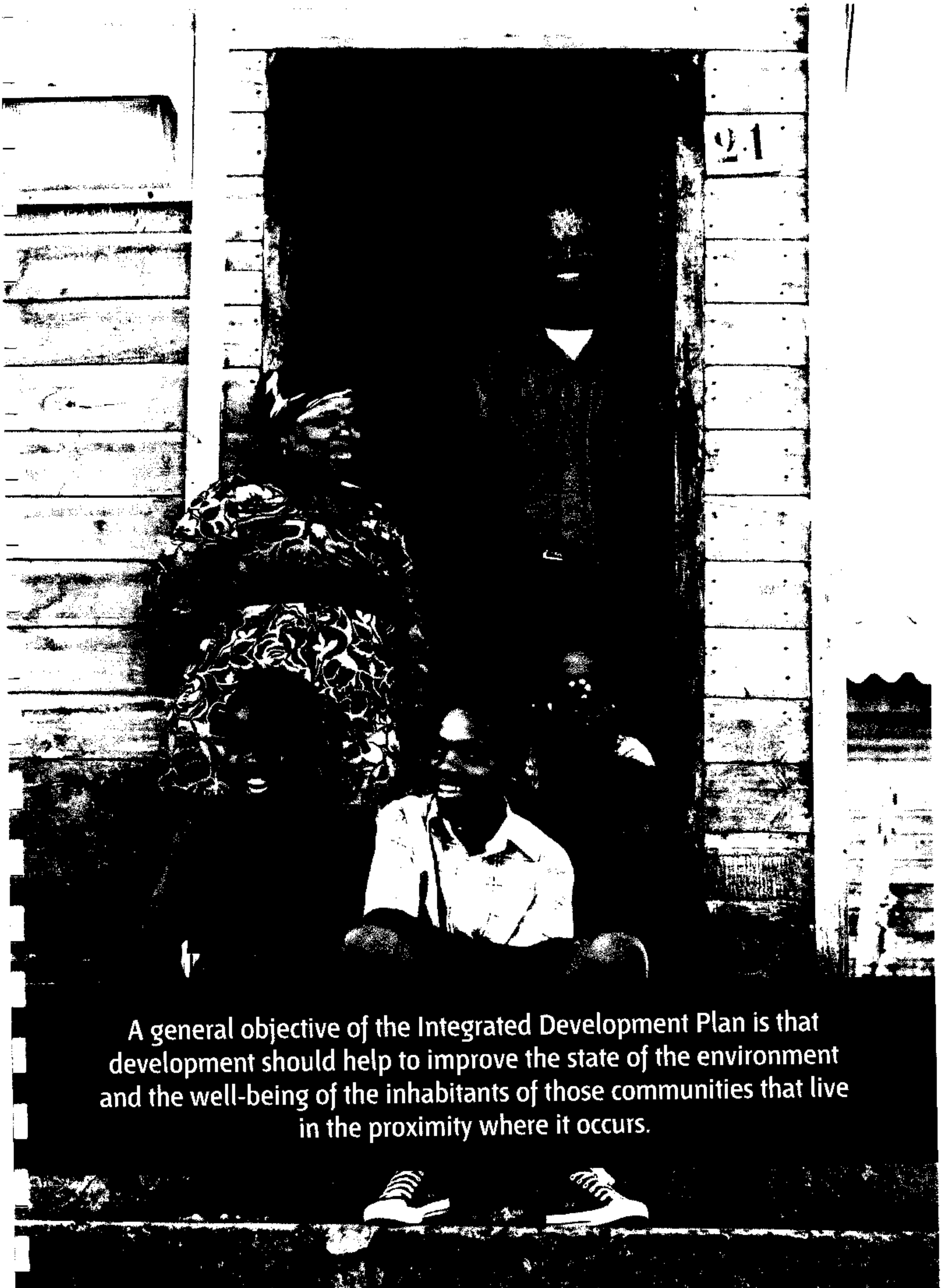
4.2. Comprehensive Project Planning Documents

Integrated Environmental Management provides the opportunity to facilitate and achieve integration of goals, objectives, principles and guidelines for sustainability at all levels of planning and implementation from the local to the international and through the programs and projects in terms of which any large-scale project proposal is to be given effect. A general objective of the IDP is that development should help to improve the state of the environment and the well-being of the inhabitants of those communities that live in the proximity where it occurs. In this regard, planning documents should illustrate how the project will give meaningful effect to the objectives of environmental restoration / rehabilitation and long-term conservation of both the cultural and the natural environment.

In particular, planning documents should conclusively illustrate the scope and sustainability of the contributions that the development would make in terms of the following:

a) Eradication of poverty and inequality and empowerment of the affected communities.
b) Restoration of degraded cultural landscapes and features and the construction of qualitative human-made features in accordance with place-specific design criteria and the principles of critical regionalism provided for in policy.
c) In situ and system-wide rehabilitation of degraded habitats that are highly irreplaceable and sensitive and long-term conservation of such habitats and systems.

The project planning documents should ideally record the developer's commitments pertaining to project implementation and environmental management, thus providing a control instrument and reference framework of undertakings given, against which their actual activities can, over time, be audited and measured. The project planning documents should furthermore



A general objective of the Integrated Development Plan is that development should help to improve the state of the environment and the well-being of the inhabitants of those communities that live in the proximity where it occurs.

The private sector has the responsibility to engage with the municipality and other organs of state to help/support government, in the spirit of partnership, to give practical effect to sustainable development.

serve the following purpose:

- (i) Serve as a background information document for I&AP consultation.
- (ii) Describe the planning and implementation model and methodology adopted for the proposed project.
- (iii) State the strategic and policy aspects of the proposed project and clarify key aspects that are to guide the planning and implementation of the programs associated with the project.
- (iv) Summarise the various programs associated with the project.
- (v) State the understanding and compliance of the proposed project with the relevant planning and development policies of the municipality.

5. Private Sector strategies for addressing the need and challenge (The SDI model)

The Stellenbosch IDP and its SDF are the leading strategic documents for sustainable development in the Greater Stellenbosch. Consistent with the IDP the private sector has the responsibility to engage with the municipality and other organs of state to help/support government, in the spirit of partnership, to give practical effect to sustainable development. This chapter addresses an approach/methodology to promote and facilitate sustainable development through private sector support and co-operative strategies.

5.1. The Sustainable Development Initiative Model

This office, as a private sector company has, over the past three decades, taken various initiatives to help give effect to the implementation of provincial and municipal policy aimed at promoting sustainable development. Of particular relevance during the past 15 years is the preparation of a standard sustainable development, planning and implementation methodology. This methodology is referred to by this office as a Sustainable Development Initiative (SDI).

An SDI is described as an over-arching socio-economic development and environmental rehabilitation strategy that is enabled and funded through the utilization of the resources (capital) vested in a defined area consistent with the international definition of sustainable development. The SDI model is about helping to promote a dynamic developmental state as contemplated in the South African Constitution. Accordingly, the SDI responds, in a practical and exemplary manner, to the most critical and fundamental challenges facing the country and the globe, namely poverty, inequality and environmental degradation.

As such, the aim of an SDI is to give practical effect to legislation, policy and protocols aimed at enhancing environmental integrity and human well-being through the efficient and just use of resources (capital). The SDI model recognises that global sustainability depends upon the successful implementation of development projects on the local scale linked to all other scales up to the international/global scale. The SDI model includes a framework for a climate-neutral strategy and action plans without which global sustainability is not possible.

The central objective of an SDI is to help give effect to the objects of the Constitution. On a local level this requires that support be given to the local municipality within which an SDI is undertaken.

In the above regard the following objectives and provisions of the Municipal Systems Act are considered as decisive:

- a) **Municipal planning must be developmentally-orientated.** Through development planning, municipalities must therefore fulfil the objectives of Section 152 and 153 of the Constitution. Development planning must furthermore, together with other organs of state, contribute to the progressive realisation of the fundamental rights to a safe and healthy environment, protection of property, housing, health care, food, water and social security, and education.
- b) **Municipal planning must take place within the framework of co-operative government,** implying that municipal planning cannot take place in isolation – it must be aligned with the plans and strategies of national, provincial and local government. The converse is also a Constitutional requirement.

5.1.1. Pillars of the SDI model

The SDI model stands on three pillars, namely:

Pillar 1: Finance

Sustainable Development has to be financed. The employment of monetary capital is the conventional method considered necessary for this purpose. However, to ensure the stability of the capital resources that are required for sustainable development, it is imperative that a broader view pertaining to capital and finance be adopted.

Financing sustainable development entails the employment of monetary capital together with three other forms of capital i.e. environmental capital, infrastructural capital and social capital. The four forms of capital must be strategically incorporated into a single form of capital that would be considered bankable by financial institutions. In the SDI model this is referred to as sustainability capital or sustainability finance.

A key strategic requirement for successful sustainable development is therefore to create sustainability capital in the project planning process that is bankable and ensuring that such capital would be employed in a sustainable manner.

It is imperative to establish an organisational structure that would include a sustainability fund to facilitate and administer the employment of capital to fund the economic drivers of sustainable development. Economic drivers for sustainable development are diverse and could include property development, solar or bio-fuel energy plants etc.

It is important to recognise that development can only be optimised through positive economic intervention within a framework of an integrated development plan and strategy. In order to optimise the potential of the economic drivers of sustainable development, the SDI model builds upon the principle that an SDI, for any given area, must be supported by projects to be implemented in terms of specific programs. Projects should ideally promote the comparative economic advantages of the region or the area within which the SDI is undertaken.

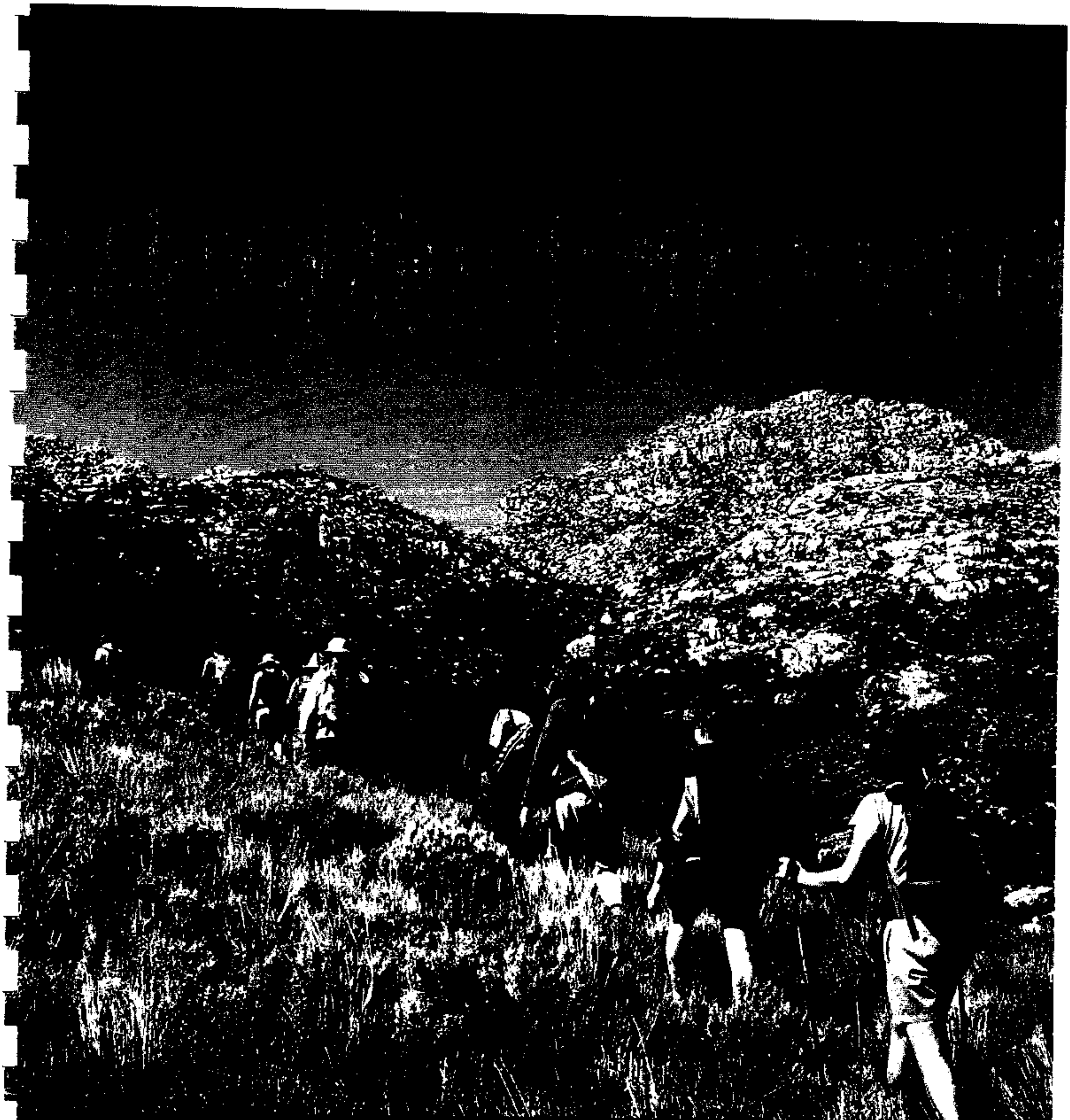
Pillar 2: Community Participation, Inclusivity and Human Well-Being

The SDI model builds on the principle of inclusivity. This implies that the planning, implementation and management of an area should be an ongoing inclusive process that gives meaningful consideration to the changing and dynamic interests, needs and values of the people that live in the area and that have an interest in ensuring a prosperous future for the area.

In this regard, it is important that the following should result from an SDI:

a) Continuing participation, representation and involvement of stakeholders in the SDI area.
b) Creating adequate and appropriate opportunities during the inception phase of the SDI planning, and thereafter, for community participation in decisions that may affect the area.
c) Consideration of, and agreement on, the values which would form the basis of the SDI and the associated projects.
d) Developing and utilising the skills and capacities of the people living in the area (especially previously disadvantaged people, and women) in the planning and implementation of the SDI and its projects.
e) Encouraging on-going involvement of local people in the programs identified for the SDI.
f) Recognising that historic injustices need to be addressed in a practical and sustainable manner as a matter of high priority. In particular, recognition needs to be given to the rights of local previously disadvantaged people to share in the benefits that development brings to the area in a spirit of partnership.

The SDI model is based upon, and gives effect to, the Community Public Private Partnerships Program



The planning, implementation and management of an area should be an ongoing inclusive process that gives meaningful consideration to the changing and dynamic interests, needs and values of the people that live in the area.

(CPPP)[14] of the Department of Trade and Industry, which targets private partners with the aim to position community initiatives/enterprises as ideal repositories for corporate social investment[15] as well as relevant local policy (such as Stellenbosch IDP). The program's core role in stimulating enterprises is to facilitate mutually beneficial, sustainable CPPPs that would eventually result in ownership by the community.

The importance of CPPPs is emphasised by the following statement of Price Waterhouse Coopers[16], namely: *'Government is under significant pressure to improve public services and roll out more infrastructure. This places an undue burden on government resources and public sector capital. Increasingly, the private sector is asked to provide capital and resources through CPPPs, which have taken on many forms, including concessions and joint ventures. CPPPs allow the public sector to achieve value for money by accessing private sector capital, resources and skills, thereby obtaining the benefits of innovation, risk transfer and improved quality and service levels.'*

The inclusivity approach provides for the participation and involvement of local communities in the planning, implementation and management of the SDI through an appropriate community-based organisational structure such as a treasury trust.

Pillar 3: Environmental Rehabilitation and Conservation

The SDI model supports the principle that biodiversity conservation is a prerequisite for sustainable development. It accepts that, for biodiversity conservation to succeed, the maintenance of environmental integrity (as defined by ecological, economic and social criteria) must be one of the primary determinants of land-use planning and development.

The SDI is accordingly founded on the principles of the NEMA:

(i) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

(ii) Development must be socially, environmentally and economically sustainable.

(iii) Sustainable development requires the consideration of all relevant factors including:

- (a) That the disturbance of ecosystems and loss of biological diversity; pollution and degradation of the environment; disturbance of landscapes and sites that constitute the nation's cultural heritage are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- (b) that waste is avoided, or where it cannot be altogether avoided, minimised and re-use or recycled where possible and otherwise disposed of in a responsible manner;
- (c) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- (d) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- (e) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
- (f) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

5.2. The SDI model

5.2.1. Core Interests and Objectives

As explained above the SDI encapsulates the principles of a strategic value-based approach to sustainable development (UN Habitat). This requires the identification of the core interests and objectives of a project and a need to demonstrate how it is to be achieved in practice.

While such core interests would vary from project to project it is an imperative that, having regard for the fact that sustainable development is an overarching goal of an SDI, the fundamental objectives of the SDI projects should relate there to.

5.2.2. The Structure of the SDI Model

The SDI is a strategy through which practical effect is given to a vision of sustainability for the area where the SDI is undertaken. An SDI is implemented in accordance with the following sequence of steps (refer to Figure 13 opposite):

1. The first requirement is to formulate a vision for the SDI project. Having regard for the central objective of an SDI, the latter has to be founded on ethical values with sustainable development as central objective. An organizational structure (e.g. Treasury Trust) should ideally be established to ensure inclusivity. The vision is then given effect through the integrated components listed below.

2. The preparation of a clear mission/strategy that should include the efficient and just use of resources (capital) vested in the SDI area. The rationale is that sustainable development has to be financed and monetary resources (money) alone cannot achieve this. The SDI strategically aligns monetary, environmental, infrastructural and social capital into a form of capital that is bankable and that can be used to finance sustainable development. The main purpose is to create economic drivers that would generate funds for the financing of both human well-being and the integrity of the natural environment. Innovative planning and design is a critical dimension for the optimilization of sustainable outcomes.

3. Implementation and funding of projects under defined programs planned and implemented in terms of clear guidelines which collectively address the key socio-economic and environmental needs and requirements of the SDI area and projects. The SDI programs are defined as strategic clusters of related activities that together achieve a specific goal.

4. The consideration of the desirability of the SDI project proposals in terms of all relevant scales, from the international to the local, and in terms of legislation, policy, and the spatial and design dimension. Qualitative place making through urban, architectural and landscape architectural design is considered an imperative for human well-being and therefore an inextricable component of sustainable development, it is therefore considered a critical dimension of the SDI Model as illustrated on the diagramme.

5. Assessing and measuring the performance of the SDI and its projects in terms of the criteria of efficiency and justice. This should be undertaken in context of statutory and policy requirements pertaining to need and desirability.

6. Implementation of the SDI through an adaptive management strategy in terms of an ISO 14001[8] Environmental Management System (EMS) that embodies continual improvement of all aspects of the SDI.

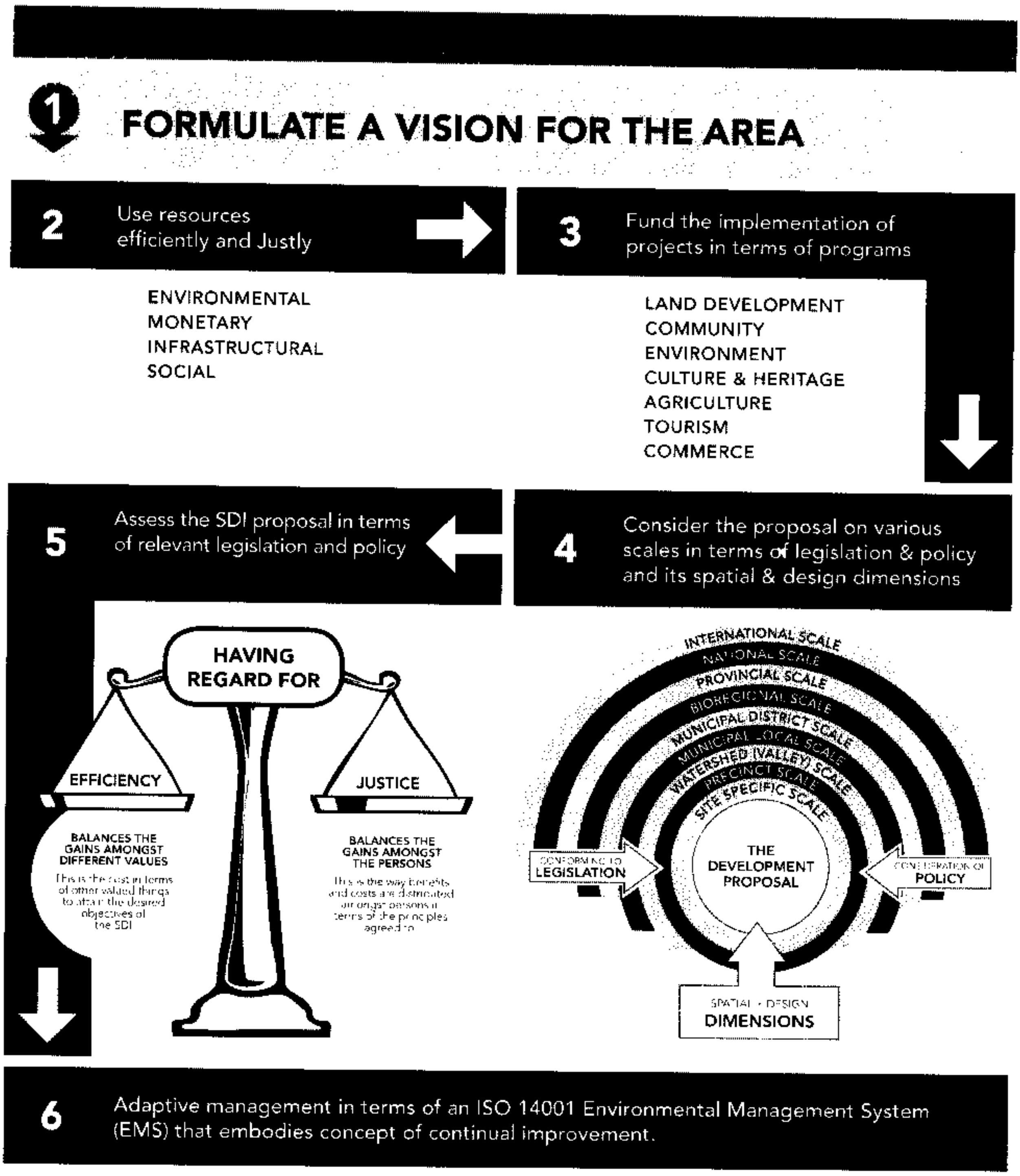
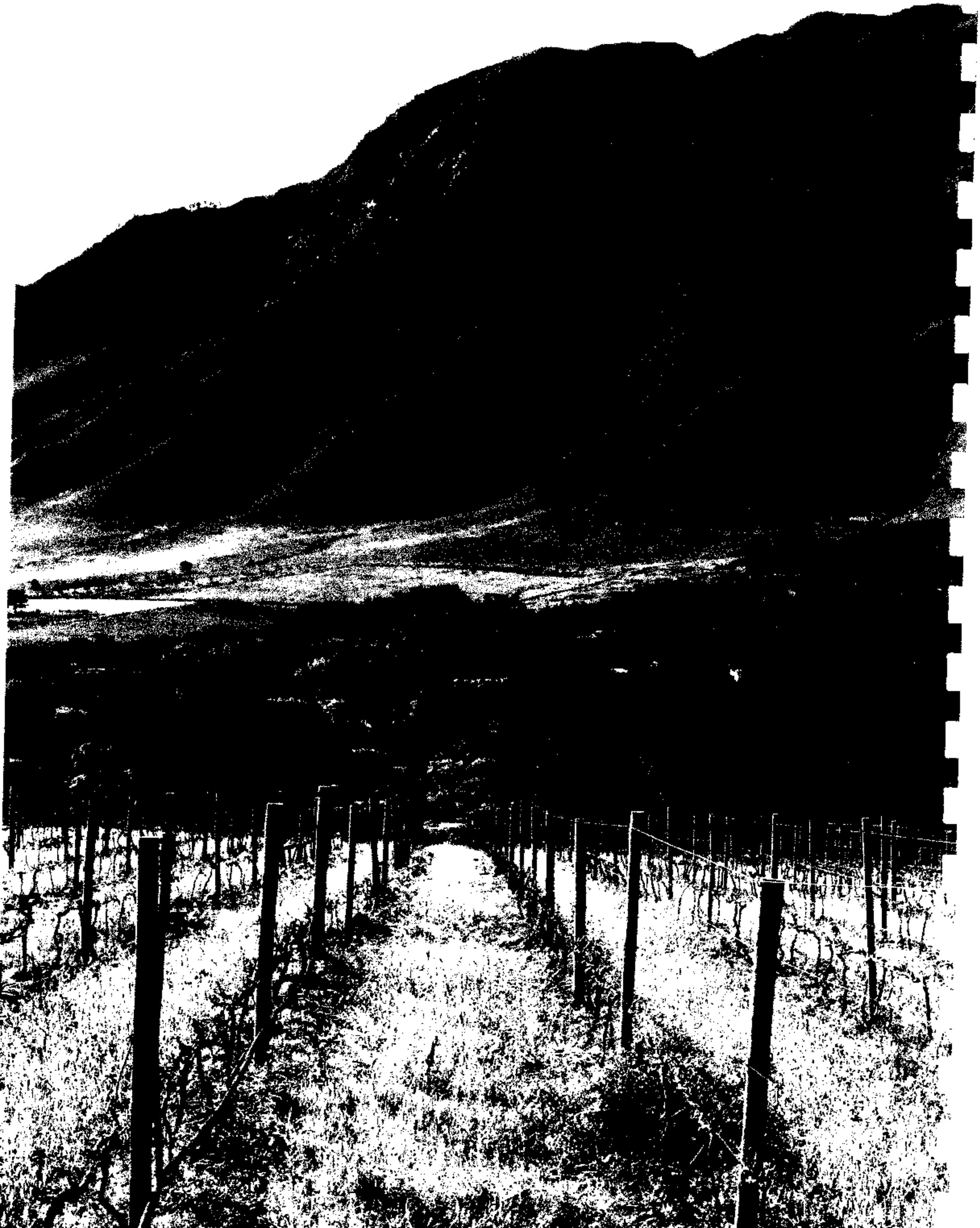


Figure 13: The Structure of the SDI Model



6. Sustainability and bankability

A key component of the SDI is innovative and sustainable funding which is to be provided through bankable projects.

Component 2 (figure 13) of the SDI model provides for the alignment and integration of the four forms of capital in a manner which could be bankable. This would require innovative and specialized financial instruments to be designed that can be described as sustainability finance.

Sustainability, in this context, is described by the ISDC as the stabilising point between the three dimensions of the triple bottom line, i.e. economic efficiency, environmental integrity and human well-being (social justice), each of the elements contributing to an on-going sustainable equilibrium. Typically the individual 'weight' of each of the three elements varies across a portfolio of sustainability projects. It is therefore likely that the sustainability investment spectrum, corresponding to a specific portfolio, will range from highly quantitative (and therefore more likely to be immediately bankable) to highly qualitative (and therefore more challenging to be bankable), as shown in Figure 14 below.

Bankability is defined by ISDC as the assessment of a project that provides the investor with a competitive rate of return over a short or extended period of time (e.g. 1 to 30 years), incorporating an acceptable risk profile to the investor, while also capable of providing short term liquidity when required.

Monetary capital constitutes an appropriate selection of amongst others, private equity, venture capital, corporate finance, project finance and possibly donor funding and philanthropy. The challenge in sustainability finance is to provide suitable investment structures that will deliver bankable sustainability project portfolios with full accounting of the individual contributions of natural, environmental, infrastructural and social capital to the portfolio.

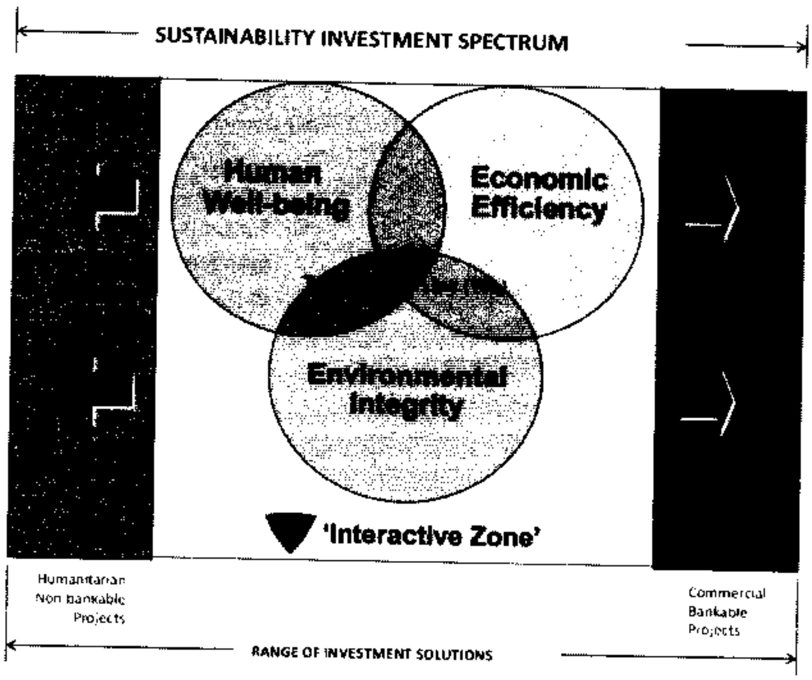


Figure 14 Achievement of sustainability and bankability (ISDC London).

6.1. A vision for sustainability finance

The vision established by the ISDC/Dennis Moss Partnership in 2002 is as follows: 'Globally utilise financial market driven mechanisms applied towards the development and delivery of sustainable solutions, focused on and providing:

- sustainable communities with the financial capability to achieve alleviation of poverty and develop towards sustainable lifestyle improvement;
- a variety of countermeasures against climate change (incorporating 'clean energy' and carbon reduction, retention and removal);
- biodiversity protection mechanisms in conjunction with biosphere reserves and the incorporation of bioregional planning; and
- development of innovative solutions, with incorporation of state of the art technology, in a range of focus areas underpinning the duality of sustainable development and climate change (e.g. water preservation, energy efficiency, health, agriculture, forests and eco-systems, waste, sustainable buildings/industry/transport.'

6.2. The sustainability investment platform (SIP)

ISDC developed the concept of the Sustainability Investment Platform (SIP), in order to provide a specialised environment enabling the effective application of sustainable finance and its various functions, in particular addressing the various forms of capital, listed above. The primary aim of the SIP is to address the broad investment community with an attractive and competitive sustainability project portfolio, with the on-going development of sustainability finance as its 'currency'. The overall objectives of the SIP relate to the following (refer to Figure 14):

a) Quantitative:
   (i) To achieve a highly competitive rate of return for the overall project portfolio.
   (ii) To provide appropriate sustainability orientated hedging instruments.
   (iii) To allow investors with competitive facilities e.g. early liquidity and exit opportunities.
b) Qualitative:
   (i) Each of the projects in the sustainability project portfolio has a clear set of objectives in support of the vision.
   (ii) A further consideration in each project is the opportunity to establish a benchmark/icon standard, also incorporating transferability and scalability to other future projects.

6.3. Components of the SIP

The SIP incorporates the following:

a) Financial Instruments - In order to provide the necessary risk protection to the potential investor, a variety of financial instruments are available. These are adjustable in order to address a broad range of qualitative issues while meeting the investment requirements of investors.
b) Sustainability Investment Models – providing a methodology and process to define and unlock value pertaining to qualitative sustainability issues, into structured projects, followed by the quantification of the defined and unlocked value in financial terms.
c) Sustainability Investment Fund – A Luxembourg-based and regulated fund, incorporating fund related financial/technical specialist support.
   (i) Fund custodianship: Investments are in care of a well established banking group.
   (ii) Fund administration: Providing investors with a monthly Net Asset Value analysis.
   (iii) Investment management: Expert management ensuring that invested funds are fully utilized.
   (iv) Fund management: Specialised project management dedicated to the various aspects of the fund structure.
   (v) Fund structuring: Specialised legal advice ensuring that investors have the necessary benefits e.g. tax structuring relative various geographic areas.
   (vi) Investment liaison: On-going communication with investors.
   (vii) Advisory Committee: A list of members worldwide with banking or technical expertise and a common focus on sustainability.

7. Climate-neutral strategy as an integral dimension of the SDI

Climate change is the defining issue of our era, with sufficient scientific evidence that climate change is upon us and that it is here to stay. However, there is also evidence that it is still in our power – as individuals, businesses, cities and governments – to influence the ultimate significance of the phenomenon.

We have the choice on how to act and we can all make a difference by supporting the transition to a climate-neutral world[16]. There is however a huge gulf between where we currently are and the climate-neutral future that we need to establish if we were to achieve sustainability.

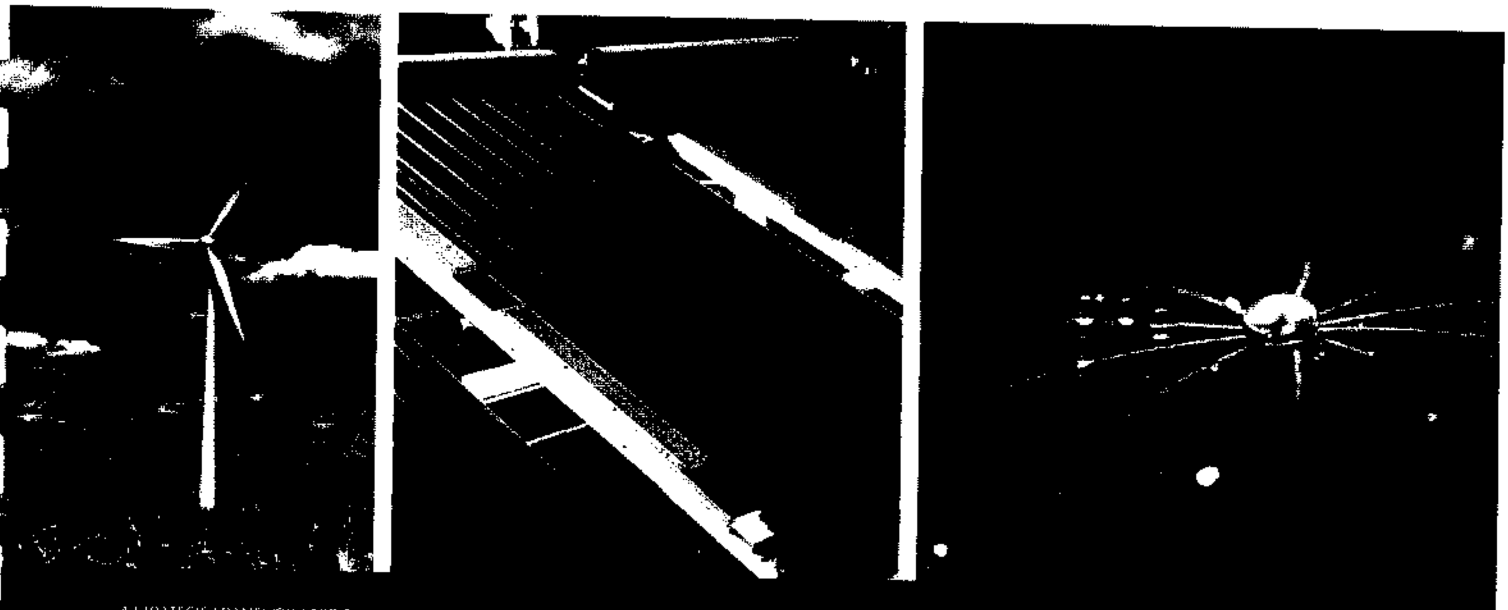
What is required is a reasonably simplistic and cost-effective approach to proceed from a vision to an implementable and sustainable climate-neutral strategy. The preparation of such a strategy relies on the internationally-recognised climate-neutral knowledge base and the integration thereof with the SDI model on the appropriate scales and levels of governance and in accordance with the six components of the SDI model as illustrated by Figure 13.

The SDI model, as illustrated by Figure 13, provide the required reference structure from where to implement a suitable climate-neutral strategy as an integral dimension of the SDI. Due to the complexity of expertise required, this office has engaged in on-going research into the subject in collaboration with the London-based ISDC Sustainability Consortium.

7.1. Developing a climate-neutral strategy

The development of a suitable strategy is a process, to be implemented over a realistic timeframe and in full synergy with the SDI model, resulting in the implementation of projects at grass roots level. Figure 15 (next page) illustrates the methodology for developing a climate-neutral strategy.

The methodology is based on the premise that climate-neutrality, sustainable development and biodiversity management are not independent issues – they are to be considered as the three legs of a tightly knitted system. ISDC, in colaboration with this office proposes that a climate-neutral strategy be developed in three phases as summarised in the following pages.



STRUCTURE: CLIMATE NEUTRAL STRATEGY

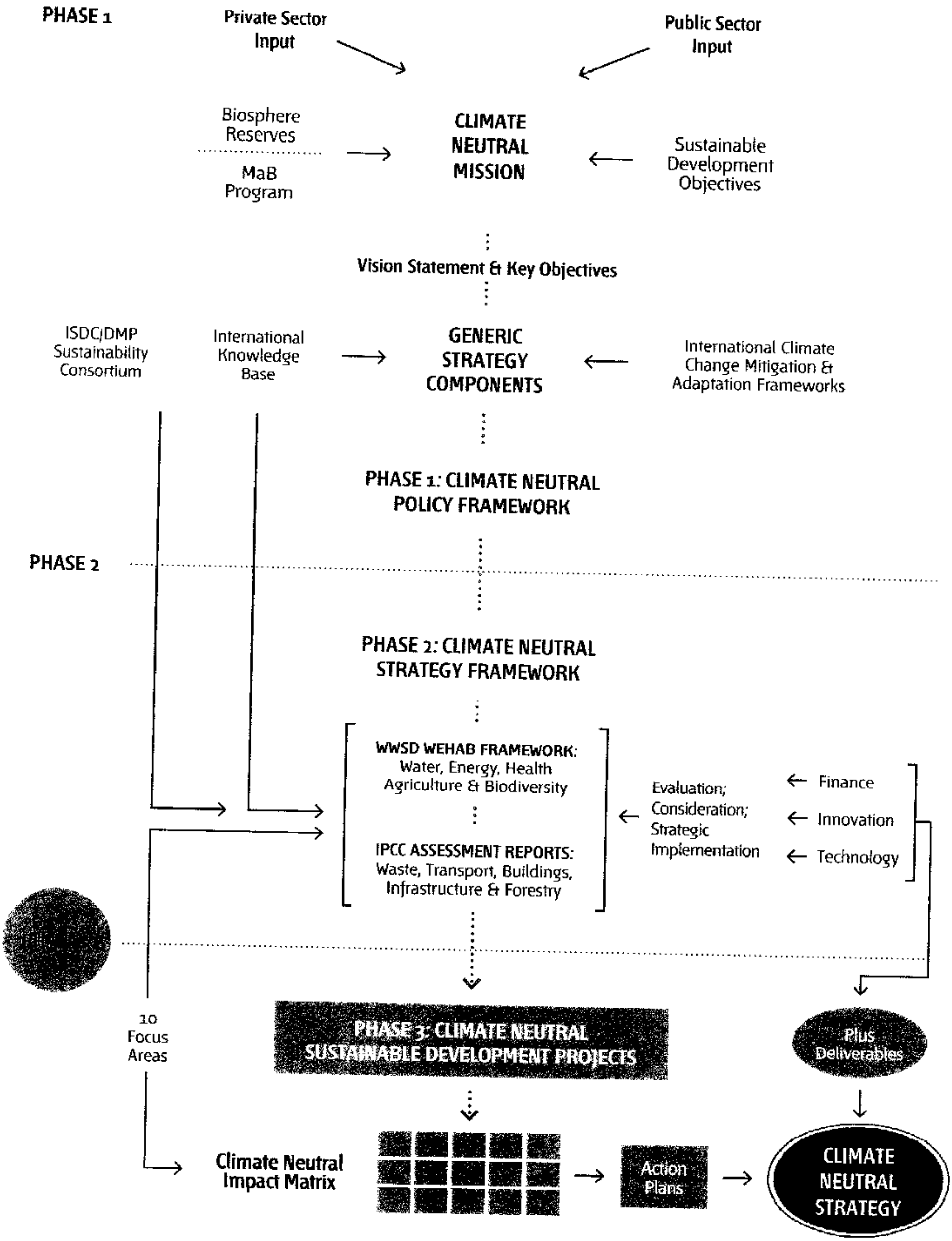


Figure 15. © ISDC / DMP - SUSTAINABILITY CONSORTIUM

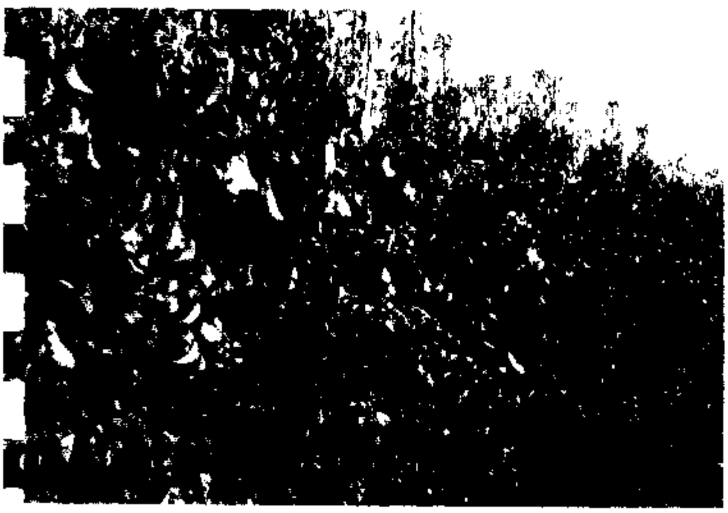
7.1.1. Phase 1: Climate-Neutral Policy Framework

At the outset, the vision and requirements of the subject area are considered as an integral part of the SDI model (Component 1 of the SDI). This is translated into a mission statement by combining it with key climate-neutral objectives.

The mission statement needs to take cognizance of existing legislation, policy and international standards, from the international to the local level (Component 4 of the SDI), in so far as they affect the climate-neutral strategy development process.

The mission statement incorporates consideration of:

a) Sustainability – with special reference to the objectives of sustainable development projects to be implemented.
b) Mitigation and adaptation – this presents a very important area of consideration presented by the Adaptation Policy Frameworks (APF) for Climate Change, developed by the United Nations Development Program (UNDP) on behalf of the Global Environment Facility (GEF).
c) International knowledge base – represented by a range of international organizations, from where the frameworks summarized in Phase 2 are derived. The international organizations and protocols considered in this regard include:



- Agenda 21
- World Symposium on Sustainable Development
- Millennium Development Goals
- African Development Bank Extensions
- Millennium Ecosystem Assessment
- Organisation for Economic Cooperation and Development
- Intergovernmental Panel on Climate Change

Considering these inputs contributes towards a generic climate-neutral policy framework, from which to proceed through Phases 2 and 3 towards delivery of a suitable climate-neutral strategy.

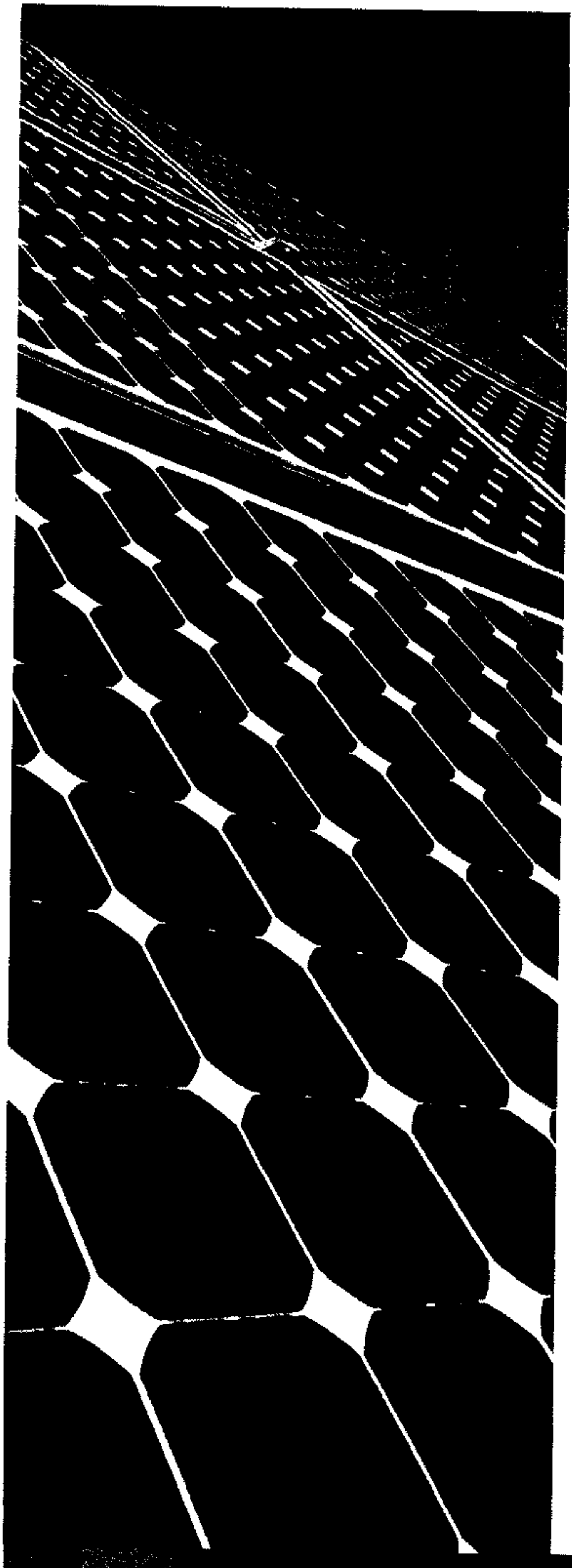
7.1.2. Phase 2: Climate-Neutral Strategy Framework

In this phase a climate-neutral strategy framework is formulated, the aim of which is to set an optimal strategy by integrating the objectives of the sustainable development project portfolio with the key climate-neutral strategy focus areas.

The climate-neutral action matrix is utilized to achieve the required integration. The latter is introduced under Phase 3.

In order to establish the strategy framework, the climate-neutral strategy focus areas (drivers) need to be identified first. A number of frameworks, derived from the international knowledge base, provide the extensively tested focus areas (drivers) required to develop the necessary guidelines for arriving at a suitable climate-neutral strategy.

The five key focus areas are water, energy, health, agriculture and biodiversity, which are also referred to as 'WEHAB'. The latter was the focal point of an announcement by the UN Secretary-General ahead of the World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002. A further five additional focus areas have since been suggested, namely waste, transport, buildings, infrastructure and forestry.



As a next step in this phase and for each focus area, a set of sustainable development guidelines, directed by the defined development programs, are established. Specific reference is for example made to the efficient use of energy in the construction and building industries as is provided for and contemplated in SANS 10400 – XA: 2011 and SANS 204: 2011. Simultaneously, an evaluation process is introduced, in which Finance, Innovation and Technology (FIT) considerations are evaluated and considered for introduction into the strategic development process. This is of specific importance with regard to the creation of suitable economic drivers, required for the successful integration of a project's sustainable development guidelines and the subsequent implementation as a climate-neutral strategy. Furthermore, economic drivers (agriculture, solar plants, bio fuels, property development etc.) are created in order to generate the required monetary capital from which to effectively finance the strategy.

7.1.3 Phase 3: Climate-Neutral Sustainable Development Projects

The completion of a Climate-Neutral Impact Matrix© represents the final stage of the development of a climate-neutral strategy, a process in which the selected focus areas, each with their accompanying guidelines, are integrated with respect to each of the proposed SDI programs (Component 3 of the SDI), effectively delivering a range of implementable action plans. In considering Component 2 of the SDI (capital to be employed) and in order to generate the required cash flow from which to effectively finance a fully implementable Climate-neutral Strategy, it is essential that the action plans are combined with suitable economic drivers. In order to achieve this objective, finance, innovation and technology considerations are evaluated and considered and are introduced appropriately into the strategy development process. Economic driver examples include property development, agricultural enterprises, tourism development, solar energy plants and waste water and recycling plants, delivering a service and also contributing financially to each of the SDI programs.

8. The concept of Climate Neutral Communities and Climate Neutral Settlements

Sustainable development has climate neutrality as its ultimate goal. For the latter to be achieved in practice dedicated policies and strategies and action plans are to be prepared and implemented that would be measurable. As described in this report it is proposed that the Sustainable Development Initiative (SDI) model, incorporating a climate neutral strategy, could help give effect to the above goal.

In practical terms the implementation of an SDI would require new settlements to be designed and development with climate neutrality as a overriding objective and for communities to develop a culture that embraces the principles of sustainability and hence climate neutrality.

The term Climate Neutral Settlements and Climate Neutral Communities are therefore introduced to differentiate the special characteristics of settlements and communities from that which is ordinarily understood by the term settlement and community To develop a culture within which sustainability (and hence climate neutrality) would be embedded, it is an imperative that practical effect be given to sustainable settlements and communities.

New settlements should therefore be designed to, in terms of specific criteria (such as that described in this report), qualify to be recognized as Climate Neutral Settlements. Through adopting sustainability behaviour practices, communities should ideally develop lifestyles that would be recognised for their contribution to sustainability/climate neutrality and that would be considered worthy of the term Sustainable Communities.

The manner in which the standards can be measured for both Climate Neutral Settlements and Climate Neutral Communities is described under Chapter 9 below.

For communities to succeed in promoting climate neutrality would require that the cultivation of a culture of sustainability would not be limited to the development of new, purpose made settlements, but should spread across all forms of existing settlements whether rural or urban. This will require retrofitting existing settlements and the planning/design and implementation of all types of projects that require resource-use to conform with the climate neutral strategy criteria as is described under Chapter 7 above. Communities everywhere would be encouraged, guided and assisted to adopt climate neutral lifestyles and practices in order to realize the Carbon Neutral Community ideal across the board.

The degree to which sustainable development is achieved has to be measured. Ultimately this has to be done on the biosphere (global) scale as success or failure has to be measured against climate change and climate neutral criteria indicators described above.

On the settlement scale the methodology of Kevin Lynch[17], which focuses on the quality of place (a holistic concept that Lynch refers to as goodness) can be measured in terms of performance dimensions. As emphasized in this report qualitative place-making is an integral dimension of both human well-being and environmental integrity and therefore part of the concept of sustainable development.

The biosphere and human settlements are inextricably linked and the degree to which sustainable development is achieved in practice, has to be measured on both of these scales. This is an imperative to enable climate neutrality and continual improvement. With Climate Neutral Strategy Framework at hand, it would be possible to measure the outcome of the Climate-Neutral Impact Matrix© described in Chapter 7 above.

Specific emphasis must be placed on measuring Green House Gas (GHG) emissions. GHG accounting and reporting practices are evolving and are new to many businesses.

The principles listed below are partly derived from generally-accepted financial accounting and reporting principles. They reflect the outcome of a collaborative process involving stakeholders from a wide range of technical, environmental, and accounting disciplines. GHG accounting and reporting is be based on the following principles (ISDC London):

- **Relevance:** Ensure the GHG inventory appropriately reflects the GHG emissions and serves the decision-making needs of users – both internal and external to the settlement (or project).

- **Completeness:** Account for and report on all GHG emission sources and activities within the chosen inventory boundary. Disclosure and justify and specific exclusions.

- **Consistency:** Use consistent methodologies to allow for meaningful comparisons of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series.

- **Transparency:** Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.

- **Accuracy:** Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

9.1. Measuring the quality and performance of settlements

The Stellenbosch municipal area is dominated by urban, peri-urban and agricultural settlements. The degree to which this settlement system performs well, from a sustainable development perspective, has to be determined in order to plan and manage it consistent with sustainable development policy and the aim to promote climate neutrality.

The question therefore arises of how the functionality and quality (goodness) of this complex settlement system should be measured. It has to, in the first instance, be recognized that the sustainability of a settlement system depends upon the sustainability of the biosphere. Therefore, the measurement of the quality of the settlement system as such cannot be fully measured in terms of the climate-neutral criteria alone (refer Phase 2 Climate Neutral Strategy Framework Figure 15 above). It has to be supplemented by measuring the functioning / performance and quality of other features of the settlement system that are not covered by the climate-neutral criteria (referred to above).

Planning policy for the Greater Stellenbosch provides for the guidelines of Kevin Lynch to be used for such measurement. Lynch argues that, to be a useful guide to policy (to measure the quality of a settlement) a set of performance dimensions should be developed against which the goodness of a settlement can be measured. Such performance dimensions should have the following characteristics (Lynch 1998:112).

a) They should refer primarily to the spatial form of a settlement, given certain very general statements about the nature of human beings and their cultures. To the extent that the value set on those characteristics varies with variations in culture, that dependence should be explicit. The dimension itself and its method of analysis should remain unchanged.
b) The characteristics should be as general as possible, while retaining their explicit connection to particular features of form.
c) It should be possible to connect these characteristics to the important goals and values of any culture, at least through a chain of reasonable assumptions.
d) The set should cover all the features of settlement form which are relevant, in some important way to those basic values.
e) These characteristics should be in the form of dimensions of performance, along which various groups in various situations will be free to choose optimum points or 'satisfying' thresholds. In other words, the dimensions will be usable where values differ or are evolving.
f) Locations along these dimensions should be identifiable and measurable, at least in the sense of 'more or less', using available data.
g) The characteristics should be at the same level of generality.
h) If possible, they should be independent of one another. That is, setting a level of attainment along one dimension should not imply a particular setting on some other dimension. Lynch argues that if one is unable to produce uncontaminated dimensions of this kind, one can settle for less, if the cross-connections are explicit. Testing for independence will require detailed analysis.
i) Ideally, measurements on these dimensions should be able to deal with qualities which change over time, forming an extended pattern which can be valued in the present. More likely, however, the measurements will deal with present conditions, but may include the drift of events toward the future.

Based on the above Lynch suggests the following five performance dimensions:

(i) Vitality
(ii) Sense
(iii) Fit
(iv) Access
(v) Control

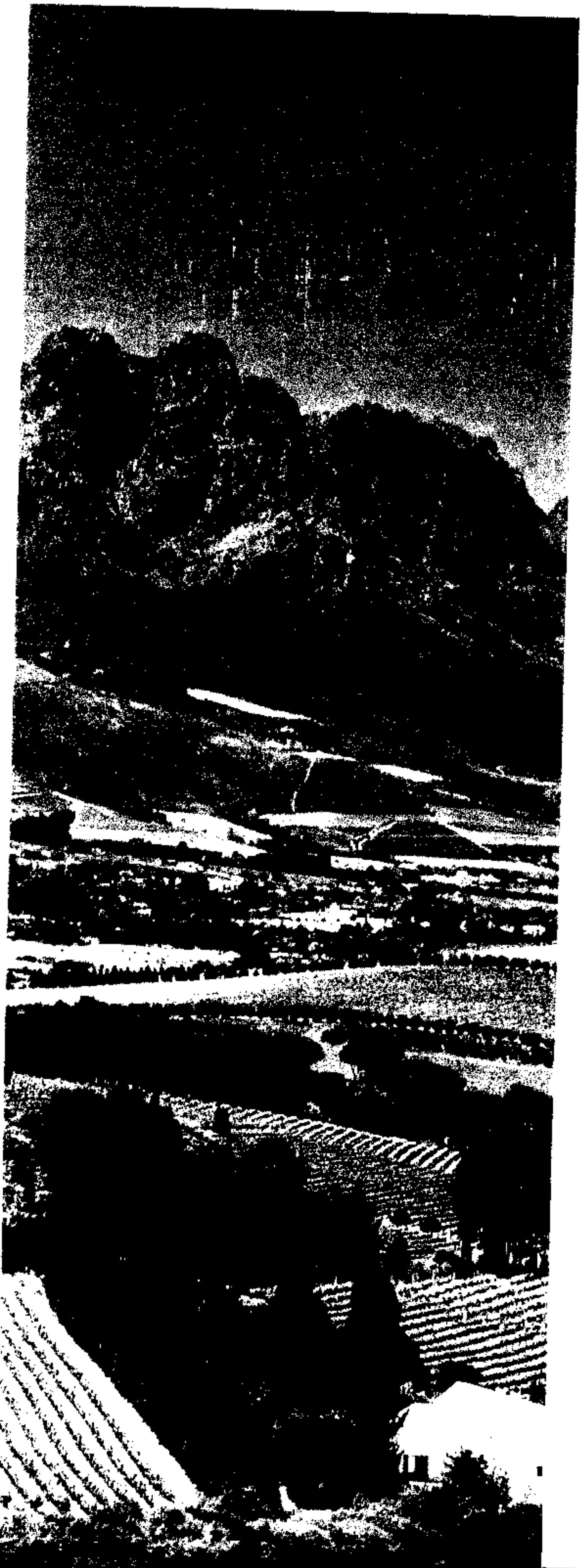
In the words of Lynch, two meta-criteria have to be appended to the above five performance dimensions i.e.

- **Efficiency:** The cost, in terms of other valued things for creating and maintaining the settlement for a given level of attainment of the environmental dimensions listed above.
- **Justice:** The way in which environmental benefits and costs are distributed amongst persons, according to some particular principles such as equity, need, intrinsic worth, ability to pay, effort expanded, potential contribution, or power.

Lynch explains that justice is the criterion which balances the gains amongst persons, while efficiency balances the gains amongst values.

He points out that these meta-criteria (justice and efficiency) are distinct from the five performance criteria. First, they are meaningless until costs and benefits have been defined by specifying the prior basic values. Second, the two meta-criteria are involved in each one of the basic dimensions and thus they are not independent of them. They are repetitive sub-dimensions of each of the five.

In each case, one asks what is the cost (in terms of anything else we choose to value) of achieving the degree of vitality, sense, fit access and control? And who is getting how much of it? Lynch, accordingly, proposes that these five dimensions and two meta-criteria are the inclusive measures of settlement quality.



He states that groups and persons will value different aspects of them and assign different priorities to them. But, having measured them, a particular group, in real situations, would be able to judge the relative goodness of their place, and would have the clues necessary to improve or maintain that goodness. Figure 16 opposite illustrates the above principles.

For the purpose of this report a brief summary of each of the five performance dimensions and the two meta-criteria efficiency and justice based on the proposals of Lynch, is provided below.

9.1.1. Vitality

Vitality depends on both the social structure and on the environmental structure. This holds true for the area as a whole and the settlements located in it. Lynch has identified three principal features for a healthy environment.

a) Sustenance: Adequate supply of food, energy, water, air and the disposal of wastes.
b) Safety: A good settlement is free of hazards and is physically secure.
c) Consonance: The spatial environment should be consonant with the basic biological structure of the human-being – it should support the basic requirement of ergonometry from the rural scale to the building scale. According to Lynch there are two other features that should be added to the above three, i.e. the vitality for:
   - other living things; and,
   - the present and future stability of the total ecological community.

It is to be noted that vitality includes all the considerations described under Chapter 7 pertaining to a Climate-Neutral Strategy and the measurement thereof.

According to Lynch vitality comes as close to a pure public good as any of those listed. However, 'like most public goods, vitality tends to be honoured in the breach, since the cost to anyone to increase it (or to refrain from decreasing it), may have a little connection with his or her benefits'.

9.1.2. Sense

Lynch describes sense as the joint between the form of the environment and the human processes of perception and cognition.

'Sense depends on spatial form and quality, but also on the culture, temperament, status, experience, and current purpose of the observer. Lynch describes sense as the degree to which a place can be clearly perceived and mentally differentiated and structured in time and space by its residents and the degree to which that mental structure connects with their values and concepts – 'the match between environment, one's sensory and mental capabilities, and one's cultural constructs' (Lynch 1998: 131).

Sense therefore depends on the spatial form and quality of a place for the observer. Therefore, the sense of a particular place will vary for different observers. However, there are significant and fundamental consistencies in the experience of the same place by different people, and a greater consensus can be reached on divergent views if a closer analysis of the concept of sense is undertaken, namely, to consider five specific aspects of 'sense'; i.e. identity, structure, congruency, transparency, legibility.

Lynch points out that places are modified to fit ways of behaving, and behaviours are changed to fit a place

9.1.3. Fit

Lynch explains that the term fit is loosely related to such common words as comfort, satisfaction, and efficiency and justice. He states that fit is easier to identify in its absence.

A common sense question would be 'Does this place work well?' To this should be added, does this type of use fit into its surroundings. Lynch offers a general criterion for fit (Lynch 1998: 185). 'The measure of general fit is the degree of congruence between daily behaviour, overt or intended, on the one hand, and the spatial setting on the other hand. It can be achieved by the modification of place, or behaviour, or both'.

9.1.4. Access

Lynch points out that complete and maximum access to all places in a settlement is not an expectation. However, an optimal level is desirable and one that can be increased. He suggests three sub-dimensions of access which are diversity, equity and control.

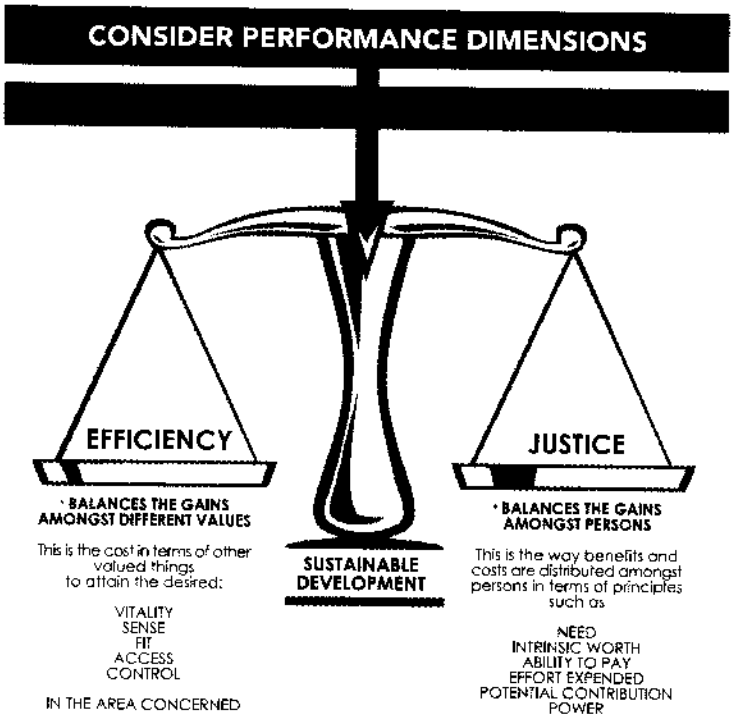


Figure 16: Considering and measuring performance in terms of defined meta-criteria.

9.1.5. Control

Lynch argues that, while it is accepted that space and behaviour associated with it must be regulated, it also has to be recognised that spatial controls have strong psychological consequences. He argues that applying minimum unobtrusive control which is necessary to keep heterogeneous uses at peace is a delicate art. He states that tolerance supports that art - learning ways of co-existing in space and time.

In summary Lynch (1998:220) argues that a good settlement is one in which place control is certain, responsible and congruent, both to its users (present, potential, and future) and also to the structure of the problems of the place. The relative importance of these dimensions and their level of adequacy will depend on the social and environmental context of the settlement.

Lynch argues that the ideal state, to express it in vague, general (and perhaps even contradictory) terms, is one of "responsible, capable, and certain local control, which is open to potential users, and which is interspersed with areas of low control and, tolerant of diversity and deviance"

The continuity of any human society depends on good control of its living space, but responsible control is also critical to the development of the individual and of the small group.

9.1.6. Efficiency and Justice

Efficiency balances the gains amongst different values in terms of the costs of other valued things to attain the desired vitality, sense, fit, access and control.

Justice balances the gains amongst persons in terms of principles such as need, intrinsic worth, ability to pay, effort expanded, potential contributions and power (Lynch 1998:225).

The question can be asked what justice has to do with the performance dimensions? Lynch (1998: 227) argues that because these dimensions are qualitative and complex, one cannot expect to generate any simple guide such as, for example, equalization of income. However, some critical aspects are identified that can serve as a general guide. The performance dimensions cited under Chapter 8.1 serve as a useful mechanism in this regard in particular as it relates to the following:

a) Vitality: While it is accepted that every person has the right to basic vital requirements it is also a fact that the costs to attain it is not even. The obligation to preserve the habitat for future generations is hard to achieve by people who cannot afford it and it would therefore be unjust to expect people to carry equal weight or to have to take equal financial responsibility to do it.
b) Sense: Issues of justice as it relates to sense seem less critical as it is seen to deal more with emotional and intellectual satisfaction than sheer survival. However to exclude people who are deprived of financial means, from an environment with high sensed qualities would be unjust.
c) Fit: Justice and fit presents a complicated picture. Lynch (1998: 229) suggests that, in this particular realm, the simplifying criterion of equalizing income and power rather than trying to equalize a great array of described facilities (of place) seems to be a more cogent rule. This view is however based on the understanding that baseline standards have to be set higher for disadvantaged people.
d) Access: Lynch states that equal access is second only to vitality as a pivotal issue of environmental justice. This should however be read together with the way places are controlled.
e) Control: Lynch (1998: 230) argues that a just distribution of one type of spatial control can be considered crucial, since the ability to maintain private territory is an important component of freedom. Justice may require that all people should be able to participate in the control of those activity settings in which they have a vital interest and to which they are willing to devote substantial effort.

10. Concluding Remarks

A rise in the temperature of the human body indicates that the biological system is not performing as nature had intended and that not all is well. Rising temperature is a sign that action is required – if it is left unattended and allowed to get out of control, death could be the final outcome (non action would therefore be regarded as highly reckless). The latter reality can serve as a metaphor for the globe – its temperature has been rising steadily for a considerable period – it is clear that the system is not performing as it should and action is therefore urgently required.

The factors that have caused, and which are continuing to cause, the rise in global temperature is well known. Legislation and public policies to address it on all scales, from the national to the local scale have been well considered and are in place. On a global scale there is hope that the international community can make progress to arrest the deterioration of the biosphere as recently testified by COP 17 and Rio+20.

As is stated in Stellenbosch municipal policy, comprehensive place-specific solutions will have to be found for chronic and interdependent problems such as crime, health care, education, pollution etc. It is on the local level, where the greatest challenge lies and where the greatest opportunities exist to effectively address these challenges. However, it is an imperative for success to carefully consider the nature of the challenge - one at which is a lack of the alignment of private sector development interests and resources use (capital) with community developmental interests and that of local government. In this report the Sustainable Development Initiative (SDI), methodology incorporating a strategy for climate neutrality, is proposed for consideration in promoting sustainable development and long term sustainability.

Care must also be taken that the implementation of policy is consistent with the community's understanding and expectations. 'Community understanding' is defined by the Sociologist, Prof. Dian Joubert, in 'Sosiologies Gesproke - Die Aard van Sosiologiese Interpretasies' as 'the agreement between persons based on common expectation and responsibilities which determines the way in which people interact with one another' (Joubert, 1973)18.

Joubert argues that, for any community to sustain itself, but also to grow and to develop in accordance with the interests and ideals of its members, there are four problem areas that need constant attention, namely:

• Maintaining existing norms - the maintenance of entrenched and appreciated normative patterns – an area that is often threatened in a period of social change.
• Achievement of objectives - achieving the collective ideals and objectives through participation and decision-making processes.
• Integration - care must be taken that the relationships between people remain satisfactory and positive.
• Adaptation - the adaptation to other communities and structures that are important for their own community - such as economic interdependence, administration and financial associations.

From a sociological perspective, policy must make provision for the accommodation of all four of the above areas. Communities exist in time and space and these two dimensions must also be taken into consideration when formulating goals and objectives when resource use and spatial development proposals are made and when strategies are formulated.

The area that is being planned is the space in which all inhabitants must satisfy their aspirations and interests, their ideals and values within context of the applicable policy and statutory frameworks. It follows logically that the highest level of participation of all residents in an area (the place) in question must be obtained in the sustainable development process.

Of fundamental importance for the maintenance of an ordered community life, is the way in which formal and informal control is exercised within community structures.

Joubert (1973) differentiates between four levels of control, namely:

• Values and norms that determine direction
• Regulations (acts) that regulate peoples behaviour

through sanctions and punishment if not adhered to
• Organisational and positional controls from specific roles and positions that have both authority and role expectations as characteristics
• Technical prescriptions such as municipal regulations that apply to specific areas or communities.

In order for the communities of the Greater Stellenbosch to grow and develop in accordance with their interests and ideals, the four problem areas referred to above, should be recognised and addressed. In particular, attention needs to be given to the achievement of collective ideals and care must be taken that relationships between people remain satisfactory and positive.

The challenge is to help create a developmental state in the Greater Stellenbosch area which is in fact, a complex settlement area in the Cape Winelands Biosphere Reserve.

The promotion of a state of development (which is a constitutional obligation), is a bedrock value that requires constant attention

In the latter regard one should reflect on the views of Lynch (1998:142) who argued that,

'If human life is a continued state of becoming, then its continuity is founded on growth and development. If development is a process of becoming more competent and more richly connected then an increasing sense of connection to one's environment in space and in time is one aspect of growth. So that settlement is good which enhances the continuity of a culture and survival of its people, increases a sense of connection in time and space, and permits or spurs individual growth: development, within continuity, via openness and connection'.

South Africa's new democracy coincided with a new century and a new millennium as well as a new challenge facing humankind – one of ensuring that the carrying capacity of the globe is not exceeded. Having regard for the outcomes of the COP17 in December 2011, the vision of 2010 - 2030 National Development Plan, Rio+20 and the relevant provincial, district on local policies that are in place such as Stellenbosch IDP, Stellenbosch is in an extraordinarily privileged position to contribute to the challenges of our time by giving practical effect to sustainable development on the local scale incontext of UNESCO's MaB Programme.

The planning and management of the greater Stellenbosch therefore has the potential to evolve into an exemplary model that can make a significant contribution to the improvement of an understanding of how to promote and give effect to sustainable development, sustainability and climate neutrality on the local scale in a place recognized by UNESCO as

an international "theatre for reconciling people with nature, that can bring knowledge of the past to the needs of the future and that can demonstrate how to overcome the problems of the sectoral nature or our institutions". *(Seville Strategy Paris 1996)*.

To make practical progress it would be of value to promote a vision easily understood for both its simplicity and profound meaning. The Greater Stellenbosch has the potential to become one of the most appreciated and respected places on earth for its contribution to sustainable development and climate neutrality. Having regard for the fact that the people of Stellenbosch have, in terms of an international agreement, been recognized as the curators and managers of a significant part of the Cape Winelands Biosphere Reserve, it is imperative for Stellenbosch to rise to the occasion.

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1 UNESCO, 2010: The Ethical Implications of Global Climate Change. COMSFT. SHS-2010/WS/1.France, Paris.

2 Brundtland, G. (ed) 1987: Our Common Future: The World Commission on Environment and Development: Oxford: Oxford University Press.

3 World Resources Institute (WRI), IUCN & UNEP: 1992: Global Biodiversity Strategy: Guidelines for Action to save, study and use Earth's biotic wealth sustainability and equitably. Washington

4 UNESCO Fact Sheet: 40 years of the UNESCO "Man and the Biosphere" Program

5 McIntosh, F. 2006: Cape Floral Region Protected Areas: World Heritage Sites of South Africa. South Publishers, Johannesburg.

6 PGWC, 2003: Manual for the application of bioregional planning in the Western Cape. Department of Environmental Affairs and Development Planning.

7 Stellenbosch Municipality has played a leading role in supporting the initiative of the Provincial Government of the Western Cape in the 1990's to establish a clustered system of biosphere reserves across the fynbos biome as illustrated by Figure 4 above. The listing of the Cape Winelands Biosphere Reserve in the World Network of Biosphere Reserves therefore has special significance for Stellenbosch in that it further contributed to placing the town and the surrounding Cape Winelands firmly on the international arena.

8 Global Report on Human Settlements, 2011: Cities and Climate Change: Policy Directions, United Nations Human Settlement Program.

9 The primary objectives of the Stellenbosch Municipal Land Management Plan were to:
   a) Provide a spatial plan, based on the municipal land audit, of the identified municipal land and other properties of the Stellenbosch Municipality.
   b) Categorise municipal property into broad Land Use Categories.
   c) Provide development strategies and policy regarding the management of the identified Land Use Categories that will address land reform, status of agricultural land and future lease agreements, promote environmental conservation, urban agriculture and maximize community advantages from municipal property.
   d) Provide generic guidelines regarding the general legislative status of lease agreements of municipal properties with specific reference to lease terms and termination procedures.
   e) Provide guidance to developers with regard to the planning and design of projects and the establishment of contractual agreements and appropriate partnerships with the municipality and the affected communities, the purpose of which will be to ensure that each development brings sustainable benefit for all parties as well as the receiving environment.

10 Loheed, B., Howard-McHugh, S., and Stein, N. 2011: City as Change: Collaborations of Sustainable Urban Life. Presented to the Massachusetts Historical Society Environmental History Seminar. Earthos Institute.

11 University of Idaho: Building Sustainable Communities Initiative. http://www.bioregionalplanning.uidaho.edu/SPUD/resources/BioregionalPhilosophy.pdf

12 Department of Environmental Affairs and Tourism (DEAT), 1998: A National Strategy for IEM in South Africa, Discussion Document. DEAT, Pretoria.

13 South African law defines a CPPP as a 'contract between a public sector institution/municipality and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project'.

14 www.cppp.org.za

15 http://www.pwc.com/za/en/public-private-partnership/index.jhtml

16 The term climate-neutrality is used to mean living in a way which produces no net greenhouse gas (GHG emissions. 'Climate-neutrality' is used instead of 'Carbon neutrality' for the reason that it is not just carbon dioxide, CO^2, that is driving climate change, given that the Kyoto Protocol limits the emissions of six main GHGs produced by human activities. The gases are carbon dioxide (CO^2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulphur hexafluoride (SF_6).

17 Lynch, K. 1998 Good City Form. Massachusetts: MIT Press

18 Joubert, D. 1973: Sosiologies Gesproke - Die Aard van Sosiologiese Interpretasies. Cape Town, UUB