2 BILLION STRONG

A REGENERATIVE SOLUTION TO BUILDING SUSTAINABLE AFRICAN CITIES

GOVEN | RICHARDS | RENDALL

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*A Regenerative Solution to
Building Sustainable African Cities*

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Sharing the Intellectual Property of
communiTgrow (Pty) Ltd
Cape Town, South Africa

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Foreword

Six years ago a Cape Town-born property developer, David Pearson, decided to act on his vision of creating a city that would consist of communities located in walkable, prosperous and safe neighbourhoods. His vision was that this community/city would lack nothing. It would be a self-sufficient community that would grow deep social and cultural roots and thus become a place where people could be free to be who they are and live a life of meaning and purpose. The people belonging to this community would be made up from different income levels and socio-cultural origins and in this newly created place, find a sense of common unity - community.

This dream is rooted in a particular context and driven by the constant entrepreneurial search for business opportunities. In this instance, the immediate context is Cape Town and South Africa and the growing backlog of housing. The overall South African housing backlog currently sits at 2.3 million housing units and for Cape Town the figure is approximately 450 000 units.

The post-Apartheid and democratic South African government continues to battle with a rapidly increasing housing backlog. What is becoming a commonly accepted reality is that the solution to the housing crisis is beyond the mere provision of just the physical building (i.e. the brick and mortar house). Even though hundreds of thousands of houses have been built in South Africa since the arrival of democracy and freedom in 1994, these "human settlements" were built in the tradition of the dormitory-styled Apartheid townships. They were devoid of the infrastructure requirements that enable the creation of a neighbourhood where sustainable urban living could become the norm. The emerging challenge therefore is to ensure that newly created neighbourhoods will serve as attractors for investment and trade, as well as places of recreation and pleasure, and the exercise of socio-cultural tradition. Moreover, for many migrants, the emerging "cities" or "human settlements" are not places of meaning; neither are they places one could really call "home".

The annual "summer" migration of African people from the city back to the "rural" or "traditional" village (i.e. homeland) is a useful window into the need for the creation of an African urban place of meaning and belonging. Core to this quest is private property ownership in a newly created urban space, defined here as community building based on the six pillar approach outlined in this book.

At the risk of over-generalising and stereotyping, one could interpret the annual migration to the rural areas more as a quest for meaning attached to land and ancestry than a quest to retain a rural-based life style. For many Africans, their presence in the urban environment is characterised by existence and not meaning. The "traditional" home is where meaning and belonging reside. This is well illustrated with the help of the Nguni family of languages which dominate the south-eastern hemisphere of South Africa, where there is a sharp distinction made between where you reside (i.e. your current physical address) and the location of your home of origin and meaning – which invariably refers to one's ancestral home. So in the African mind, one could argue that meaning of place is derived from wells of meaning that have little if anything to do with physical location, but more to do with the meaning attached to that physical location.

For many urban-born Africans, the traditional village/place of origin is in fact the impersonal urban city sprawl. This opens up a whole different discussion on the meaning of place relative to where one is born, socialized and initiated into life. What binds a group of people together in an urban setting is likely to be very different to that which binds people in a rural or village setting and it is at this point that urbanization, by default, facilitates the alienation of the urban dweller.

The reason for briefly rehearsing the difference between where you live versus where your traditional home is located is to illustrate that notwithstanding modern living, there remains a need to have a connection to the land – a connection to "place". This is particularly the case for an urbanizing African continent where the roots of meaning run deep into the soil of the "traditional" village.

Urban and city planners are becoming increasingly challenged by the permanent presence of people in and on the periphery of the older and established city – people for whom living in the city has become a permanent reality with no roots to a rural enclave and no desire to empty the city which has become their permanent home. The opportunity gap in the market is therefore a need for the deliberate creation of urban places and spaces of meaning. With the unique **communiTgrow** approach we hope to correct this urban-inspired alienation.

Much groundwork has been covered over the past six years and it is difficult to capture the full extent of what was required to evolve the company to where it is today.

What has happened in the process, however, is that a team of like-minded experts and professionals have ploughed their energies into making the **communiTgrow** vision a reality. For the purposes of this book, these busy professionals and experts have taken a moment to articulate what they are currently doing, and simultaneously create new workable frameworks and refine existing theory relative to the creation of a regenerative city. The **communiTgrow** solution is a replicable solution for other overcrowded and unsustainable living spaces on the periphery of traditional urban centres on the wider African continent, or even new secondary cities.

This book is an attempt to freely share the ideas and approaches utilised to create and deliver a safe walkable neighbourhood located in a new urban space (i.e. a new city) that has meaning and is economically sustainable for millennia. It is in these newly created spaces where people are to enjoy a renewed sense of value in their lives and be part of a community characterized by being a place to live, work and play. It is hoped that others may share a similar vision and be energized by a similar passion namely to create spaces and places of meaning for a rapidly urbanizing African continent.

Ruben Richards (PhD)   *October 2012*
Managing Director
communiTgrow (Pty) Ltd
Cape Town, South Africa

Preface

The Compelling Challenge

A book with the ambitious subject matter as covered herein is written both with trepidation and a huge dose of fortitude. Its message is one that we are committed to share and is based on a live experimental project called Wescape, currently underway on the urban edge of Cape Town, South Africa.

The compelling challenge posed by inevitable African urbanisation has enabled the birthing of a unique approach concerning how best to anticipate and build places and spaces in which an urbanising population will desire to live, work and play. One of the unique characteristics of an urbanising African society will be the reality of mixed income groups sharing the same physical space.

For many, it may come as a surprise, and it may be difficult for some to grasp that Africa is the fastest urbanising continent and consequently the fastest growing continent. It may also be hard to imagine and even more difficult to accept that Africa will, within the next two to three decades, probably have the largest middle class population in the world. Such a population will need a decent place to live, work and play.

The fact that such places do not yet exist presents a wonderful opportunity to property developers, town planners, investors, and entrepreneurs to participate in the supply of the goods and services, which will be on demand as Africa rapidly urbanises. This book is part of that excitement – written by Africans for Africa as we give content to our dream of building sustainable and regenerative African cities.

There have been many books and papers written on development and city-making in the last five years particularly, so why another one? Most of the development literature to date tends to outline the problems with city-making, the logjams, the political intricacies, or pose theoretical solutions. There appear to be none that comprehensively outlines a viable, practical and workable model for city-making in the Sub Saharan South.

Furthermore, notwithstanding the patterns and trends that have driven the past urbanisation, we note with concern the absence of new cities. Instead we observe an ever increasing load being placed on existing infrastructure and the proliferation of disaggregated, if not dysfunctional, informal settlement communities within the urban city environment.

Opportunity to create a regenerative city

communiTgrow is a specialist South African property and community development company whose core business it is to design, build and create human capacity to manage African cities. Our particular approach is based on regenerative thinking and a desire to create more self-sustaining communities. We advocate a practical approach to city-making with an integrative relationship between the major players in the city-making process including the state, private developers and business and the professionals and organised citizens. This approach, we believe, creates a common purpose and common ethical base on which these players can come together to address rapid urbanisation and to provide tangible choices for all people who choose to live in **communiTgrow**-styled African cities.

Our dream, as **communiTgrow**, is to contribute to making a system of African cities that build communities as co-creators and investors, generates jobs, regenerates the environment and make for a great place to live, work and play. But how does one create such a city? This is the central focus of this book.

In the context of the recurrent global economic cycles of recession, the rapid growth of cities on the African continent can offer opportunities for investment with a return. Designing cities of significant scale offers people in existing overcrowded and underserviced parts of the city as well as new migrants the chance to work their way out of poverty.

In the **communiTgrow** city all sectors of society are invited to be intentional investors in city-making. Residents are invited to rise to the challenge of creating and working with structures, processes and institutions committed to job creation, local economic development, social inclusion and embracing diversity, adaptability, inter-generational care and environmental custodianship. There is a focus on optimising quality of life parameters, managing consumption, recovering all resources in the urban cycle and reducing the cost of living.

Communal writing and theorising

This book reflects the collaborative efforts of private sector investors, interdisciplinary practitioners and housing developers who have been grappling with a developmental agenda within public sector and private sector projects in the context of city-making for the past 30 years. The common resolution of these different players is that if we continue within the current paradigm of development, working in isolation from-and often at odds with one another, we will never achieve sustainable communities. To achieve the goal of creating sustainable communities, we have harnessed the value of the perspectives and the skills that these different players bring, and in so doing, proactively worked to overcome the inbuilt restrictions of inherited systems and processes.

communiTgrow is a company consisting of experienced and committed individuals who have developed a workable economic and whole systems design framework with the tools, methodologies and processes to create more sustainable communities and to develop and implement a regenerative approach to city-making. In this manner, the **communiTgrow** team consider themselves to be designers, builders and human capacity builders for the modern African city.

While each chapter had a primary initiator and author, the final product, as reflected in this first edition, is the sum total of the inputs from the entire writing team. This will account for the various styles and forms of expression which will be noticeable throughout the book. The role of the editors was to find some common ground and facilitate the production of a more or less orderly account of the heartbeat of the design and writing team. Herding cats might have been an easier exercise since each member of the team is driven by a passion to make a positive difference in society with particular reference to the housing crisis.

The current and rapid rate of urbanisation in Africa is taking place under conditions of severe poverty and inequality. As a continent we have a small window of opportunity within which to intervene. In a UN Habitat Report concerning the State of African Cities[1], the Editor states that;

> By 2030 the majority of Africans will be urban residents, and the majority of them are predicted to live in slums and informal settlements unless radical corrective measures are taken.

Echoing a similar sentiment, the World Urban Forum in Vancouver in June 2006 had called for a major shift in global thinking anticipating that by 2008, for the first time in history, the majority of the world's population will live in cities, and in future years most of all new population growth will be in cities in the global South. The report goes on to point out that the rate and scale of this growth would be coupled with impending issues such as climate change, extreme weather events and resource depletion.

Together these factors pose serious problems not only in these new towns but also in older settlements that have long reached their infrastructure peak and lifespan. These large-scale problems pose huge urban disaster risks.

For our purposes, it is worth repeating what Professor Vanessa Watson of the University of Cape Town; reminds us about, that neither "the market" nor "local communities" would ultimately provide corrective mechanisms to urban problems. In fact, the UN-Habitat report identified urban planning as a central tool of governance, through which the major issues impacting urban development will have to be addressed. This no doubt represents a significant shift away from the conventional wisdom of trusting the invisible hand of the market, but rather explicitly focusing on urban planning as the mitigating factor for the successful emergence of viable cities. Professor Watson called on planning practitioners to develop a different approach to planning that is pro-poor and inclusive, and that places the creation of livelihoods at the centre of planning efforts. In this way there would be a means of mitigating poverty and urban disaster risks[2].

The communiTgrow solution and audience

We acknowledge existing cities as the arrival places for the last migration from which many people can choose to relocate to a communiTgrow city. communiTgrow offers new urban dwellers and intercity migrants the opportunity to step up their skills, incomes and lifestyles, As such, the realities, linkages and strategies to address untenable informal city areas and the need to work into existing city form and functions (e.g. densification), are seen as linked strategies that are part of creating greater choices for learning and economic networks. These are the choices that create new opportunities to redefine and position land, resources and economic value and regenerate families, and communities.

This book is aimed at those who are involved in the creation of settlements, decision makers, government officials, developers, land owners, environmentalists, and urban practitioners with particular reference to those who are based in, or have an interest in, Sub Saharan Africa. We are targeting people committed to working with intent, purpose and courage as we create the cities for our common future.

We are bold enough to combine innovation and embeddedness, comprehensiveness and pragmatism. We therefore invite the drivers of city-making to engage with our model as we create desirable places to live, work and play. communiTgrow cannot offer all of the answers to the challenges faced by an urbanising African society. However, in writing this book, we are inviting you to join us in doing, sharing and learning in order to create what we all desire – a place of meaning and belonging.

Vote of Thanks

A book of this scope and nature is only possible through the collaborative effort of a highly motivated team. I would therefore like to acknowledge and thank David Pearson for his vision and commitment to convene and co-ordinate both the process of building a new city as well as the creation of this book. I would also like to acknowledge the entire team of professionals and experts from the many different disciplines who became an integral part of this process. They have generously shared with us their practical and professional wisdom and experiences in visualising embedded and evolutionary solutions. I therefore

thank the partners and staff of the companies that comprise **communiTgrow**, namely PACT Developers, ARG Design, Bellandia, ARiYA, and Target Projects for co-developing strategies, models, and instruments, part of which this book tries to capture.

I would also like to express gratitude to the team who unselfishly shared their experience and insights which have sharpened the focus of our work and the way it is expressed in this book. In this regard I wish to say a special thank you to Andy Bush (Bellandia), Steffen Petter (ARiYA), Carol Sanford (Regenesis Group), Gunter Pauli and Nirmala Nair (Zeri), Pug Roux and Adam Essa (Ridgecom). I also acknowledge Istvan Gosztola, Jason Turner, Bill Reed, Ben Haggard and Timothy Murphy for their invaluable contributions to the regenerative systems approach and design. I also wish to thank the housekeeping team at ARG design for keeping us going with a great supply of food, drinks and care.

I also wish to express my deep gratitude to the writing team who have creatively interrogated, deepened and challenged the concepts and approaches inserted into this book. This team included: Paul Jones, Dr Camaren Peter, Tali Bruk, Nicola Human, Christian Gable, David Williams, Staci Kambourakis, Nadine Pauw, Dean van der Berg, Demitri Kambourakis, Yaseen Gamiet and Marc Volkwyn.

A sincere word of gratitude is directed towards the reviewers of this book namely: Jacqui Boulle, Thys Human, Dr Jonathan Bloom, Mervyn Bregman and Istvan Gosztola.

Finally, thank you to Carl Reynolds and Reygan Media for their kind assistance in getting our thoughts and dreams contained in this bounded form.

My hope is that this book will be a valuable contribution to those who want to make a tangible difference to the future of our beloved continent starting with defining common purposeful concepts and language followed by courageous commitment and action.

Ms Gita Goven   *October 2012*
Chairperson
communiTgrow (Pty) Ltd
Cape Town, South Africa

How to Read this Book

This book has four parts which together comprises the rationale, the conceptual foundation, implementation framework and a call to action regarding the **communiTgrow** approach to building African cities. The reader must note that none of the chapters of the book should be read in isolation of the other supporting chapters since the essence of the **communiTgrow** approach is that of integration or a whole-system integrated linked community.

The focus of Part One is the global context and regarding the urbanization challenges and how these impact on issues such as urban planning and design. The global challenges provide a context in which to understand the challenges facing Africa in general, and South Africa in particular, regarding the pace and consequences of rampant urbanization.

Chapter 1 provides a broad global and continental sweep of the challenges facing urban planners and city managers with respect to the quality and strength of current infrastructure and the need to rapidly create alternatives.[1] Chapter 2 applies the same analytical framework to the dynamics of urbanization as it impacts South Africa. In this regard Chapter 2 provides an explanation and background for how and why South Africa finds itself challenged by a rapidly increasing housing backlog of 2.3 million houses, and the need to create supporting service facility infrastructure in order to avoid the ongoing creation of Apartheid styled human settlements (i.e. dormitory towns) designed to provide a supply of cheap and unskilled labour to the established city. The challenge is to develop dignified communities instead.

Part Two captures a unique response to the challenge presented in Part one, namely a private sector business response to the African urbanization challenge. This response is in the form of a descriptive account of the business strategy and approach of a private specialist property development company who has the desire to provide more than just housing. This company, called **communiTgrow**, has a unique approach to enterprise clustering in city-making and city building skills. Thus, Chapter 3 makes explicit the strategic plan, the business case and the

approach to building an African city as understood by **communiTgrow** . In short, Chapter 3 introduces the reader to the unique intellectual property (IP) of the company, namely the six pillars required to build a regenerative city. The chapter also shows the interface between the value creating pillars and the practical application and rollout of its procurement philosophy and system. This interface serves as an illustration of how the **communiTgrow** model functions in practice.

Part Three is a detailed exposition of each of the six pillars that constitutes the IP of **communiTgrow**. The pillars are Economics (chp.4), Governance (chp.5), Housing (chp.6), Education (chp.7), Healthcare (chp.8) and the Regenerative city pillar (chp.9). The clustering of the pillars represents the value IP and is unique since it represents a holistic approach to regenerative city-making. Chapter 10 describes, in brief, the tool that is used to focus and schedule all operational implementation and outputs (i.e. deliverables of the project). This tool is called the PRO-FRAME (i.e. the procedural framework) and is the operational IP of the company. The procedural framework comprises 7 stages, each of which is explained in Chapter 10.

Part Four is the conclusion to the book wherein Chapter 11 provides a summary of the book and the **communiTgrow** approach and Chapter 12 is an exhortation to the reader and the challenge is a call to action. The reader is challenged to participate in creating urban spaces commonly called cities. Policy makers, developers, urban planners and city makers are challenged to not accept the status quo but to be bold and through a new approach to urban design help build a common future for Africa – where slums and informal settlements on the periphery of existing cities become the holding tanks they were established as and not permanent fixtures of the city landscape, as is currently the case.

A bibliography, glossary and index is provided, including a detailed profile of the companies that make up **communiTgrow**. A brief description of each of the contributors is also provided.

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Part One

Context, Challenges and the Need for a New City-Making Approach for Africa

Chapter 1

Global Change Trends and Urban Planning Challenges In African Cities

1.1 Purpose of Chapter

As indicated above, the overall purpose of this book is to present the ideas and proposals (i.e. the IP) of a Cape Town-based company called **communiTgrow** (Pty) Ltd. We have chosen to preface such a presentation by a chapter that examines the global change trends and urban planning challenges in African cities.

Therefore, the purpose of this opening chapter of the book is to locate the city building, citymaking and community development solution proposed by **communiTgrow** within the broader theoretical and analytical framework of global and regional debates and discussions taking place among theoreticians, academics, and urban practitioners relative to the challenge presented by rapid urbanization, particularly as it affects developing countries (i.e. Africa and Asia).

In doing so, this chapter will take a closer look at the broad-level global changes that are unfolding and consider their potential impacts on African cities in general. We will also frame what is required to respond to these impacts. This in turn, informs the urban planning approach that is proposed and articulated in this book. The **communiTgrow** approach, as it is titled in this book, is designed to be able to be generic enough to suit a range of different local contexts, yet it is specific enough in terms of its social, economic and financial models of growth and improvement. It also acts across sectors and scales in order to enable integrated, multi-level, polycentric, decentralised systems of urban governance within small to intermediate scale cities.

The primary context for discussion in this chapter will be the broader African context as opposed to the narrower focus of the following chapter (i.e. chapter 2 below) which will focus exclusively on the dynamics of urbanisation in South Africa.

1.2 Background

City development has recently received a great deal of attention in the popular and news media and has become a central theme for local and global institutions involved in city-making, urban design and development – in a word, urbanisation. This comes as no surprise though. Cities have long occupied the imaginations and speculations of a wide range of urban theorists, urban practitioners, writers, artists, intellectuals and academics alike, because of the central importance of cities in human development. Whether of small, intermediate, large or mega proportions, cities are where the majority of the future populations of the planet will live. Moreover, while cities in the developed world have peaked in terms of urbanisation levels and are exhibiting slower growth rates, it is the cities of the developing world, in Africa, Asia and Latin America, that will absorb the lion's share of planetary urban growth in the 21st Century.

This has major implications for what the future majority urbanised societies will become, especially in terms of socio-cultural, economic and environmental sustainability. The developmental trajectories that are adopted now, especially in the cities of developing and transitional economies, will determine their future social, economic and environmental sustainability at both city and national scales. It will influence behavioural change, which is critical to the sustainability agenda, as efficiency measures alone will not lead to sustainability. Behavioural change is necessary[1]. It will also determine their resilience to global pressures and shocks, their potential for innovation and adaptation, and ultimately their levels of competitiveness. Technological and infrastructural interventions alone, while important, may not be enough to guarantee that the existing and new cities that have been established in the developing world will grow into more equitable and liveable urban environments.

What is desperately needed are urban planning and business approaches that help developing world cities – especially in Africa – to stimulate a broader transition towards the establishment of sustainable human settlements. That is, human settlements that act as stable and secure places of employment, education, skills development, vocational training, service provision, recreation - and as a result of the opportunities that this opens up for sustained growth and development - serve as attractors for investment in the long-term. An integrated and coordinated approach towards the development of cities and human settlements is required in order to transition developing world cities and regions towards higher levels of mutual sustainability and productivity. Birthing strategies and approaches that can support the processes of transition has value for both developed and developing world regions alike.

1.3 Cities and Global Change Trends

Cities are the key "acupuncture" points for stimulating larger scale macro-economic transitions towards sustainability. Moreover, improving the global competitiveness and local resilience of developing world cities is a key priority for Africa, given its rapid rates of city growth. The approach that is proffered in this book – i.e. the **communiTgrow** approach - is particularly concerned with the future of African cities, and especially with the role that whole new green-fields small to intermediate city-scale developments can play in sub-Saharan Africa in general and Southern Africa in particular. Yet, these new "green-field" city-scale developments do not occur in a vacuum, and must accommodate the local and contextual features that characterise everyday life in African cities. They must respond to the existing socio-economic and environmental challenges that prevail in different localities across African cities. These are varied and numerous and warrant closer attention.

In social terms, the key challenges facing African urban development are negotiating the socio-cultural and political pluralism and diversity that accompanies urbanisation, and takes hold within the urban social fabric. That is, the challenge is to adopt urban developmental trajectories that will create or stimulate healthy, empowered urban societies that can contest and find resolution over differences in service of a broader sense of urban citizenry and belonging. Pursuing a "more of the same" approach towards development is likely to result in

the exacerbation of the fragmentation and inequality in African urban societies, which constitute political powder kegs. This is especially the case in African cities, which are characterised by high levels of slums and informal settlements, exceeding 62 percent on average[2]. Dissatisfaction with urban service delivery, access to land and housing, unemployment, poverty and drastic inequality, regularly combines to produce local scale protests in cities across Africa, and in sub-Saharan and Southern Africa in particular. Urban fragmentation, socio-economic marginalisation and exploitation of the poor persist as dominant themes in African cities and regions.

In economic and technological terms, it is likely that new modes of production, consumption and waste – based on new infrastructures and technologies - will emerge in these urban societies, which will increasingly have to cope with resource scarcities[3] and increased and concentrated demand for goods, services and livelihoods, that is; at larger scales than has ever before been experienced in modern history. Moreover, in most regions of the world, cities play a disproportionate role as engines of national economic growth. In South Africa, for example, cities such as Johannesburg contribute around 33 percent to the national GDP and absorbs 70 percent of the national workforce in the greater Gauteng region, which hosts both Johannesburg and Pretoria (now renamed as the City of Tshwane), and a nodal development corridor running between the two cities that threatens to render the boundaries between these two cities indistinct.

That is, cities are also increasingly more interconnected at local, regional and global scales, made possible by a variety of physical, virtual and institutional infrastructures that operate at multiple scales, from the global to the local. In cases in Africa, regional linkages aren't mediated by formal actors alone, but involve a wide range of informal actors such as women who are conducting cross-border trade in Central and West Africa, and informal markets that have significant regional and global linkages. The Zabaleen in Cairo, for example - the traditional Coptic Christian recyclers of Cairo City - have accessed international markets to recycle glass and plastic, and whose operations are sensitive to price fluctuations in the global markets. Moreover, formal and informal trade is increasingly being conducted along the trans-regional corridors that connect African cities, and especially on those corridors that link landlocked cities and countries to coastal cities.

However, the rates of growth of existing and new cities in the developing world have long surpassed the capacity of formal institutions of governance to adequately and appropriately respond to the multiple pressures that are placed upon municipalities, city governments and national governments. In Africa, formal systems of governance are on average wholly inadequately configured, structured and financed, and as a result, plays a key role in perpetuating more of the same socio-economic, political and environmental conditions. These conditions manifest in the form of high levels of slums and informality, unemployment, inequality, poverty and the exclusion of the majority poor from formal services and the support of formal institutions. Informal housing and land management systems exist alongside formal systems in African cities, often servicing the greater majority of the African urban citizenry, up to 80 percent[4].

Moreover, changes at the global scale have increasingly deeper effects on local-scale economies in both cities and rural areas alike in the developing world, exacerbating existing socio-economic strife and social discord. Four key evolving movements that are in operation at the global scale characterise the global transition that is underway:

First, the vast majority of countries and regions in the world are either already highly urbanised (as in the case of cities in the developed world, namely North America and Western Europe), or are experiencing rapid city growth rates (as is the case in the developing world, namely Africa, Asia and Latin America). That is, the *second wave of urbanisation* is unfolding at a global scale, and predominantly in the developing world.

Second, that we are likely entering a new global socio-metabolic and industrial transition that is characterised by resource constraint, ecological degradation, and greater uncertainty due to faster rates of technological, economic and social change, global environmental and climate change. Moreover, these often combine to induce abrupt, non-linear changes that are often difficult or even impossible for decision-makers and experts to predict[5].

Third, that the next industrial transition is being accompanied by a new *technological revolution* (i.e. green and resource efficient technologies and infrastructures) which is already capturing large global investment flows, and represents the vector through which economic recovery from the financial collapse of 2008 is envisaged.

Fourth, that the rapid projected growth of existing and new cities in Africa is widely appreciated as the largest *emerging* consumer market in the world. Africa is hence often referred to as "the last frontier" in the search for new consumers by nation states and multinational companies alike. This also offers developers, businesses and service providers the opportunity to participate in the establishment of external and internal value chains that are investment worthy and of value at a global scale.

The implications of these four broad global change trends are significant for decision-makers and actors who are dealing with urban change today, as their decisions will be thoroughly tested by these broad level changes, and the evidence for that was already showing before the financial collapse of 2008. Food prices are especially elastic to weather variability and extreme events, increases in the price of oil and the growing demand for crops for use as feedstock to produce bio-fuels. These broad-level global changes have extensive reach, and have significant impacts at the household scale in both developed and developing world economies alike, albeit to greater degrees.

Indeed, it is fair to say that ultimately the test of whether a city "works" is lived out at the household level. Whether the urban citizenry is inclusive, and the urban fabric provides opportunities for employment, growth and personal advancement, for political participation at both local and national scales, is equally accessible to all, and is "healthy" and liveable in this sense; it is ultimately *experienced* at the household scale. Hence it is also important to consider the vulnerabilities of - and opportunities for - urban households that exist as potentials, due in part to the broad global changes that are unfolding in the 21st Century.

Urban planning, as argued in this book, should be oriented around multiple scales of development activities (i.e. from the household to the city, national and global scales), and across sectors (i.e. social, economic, environmental, technological and institutional), and should focus on their integration, in order to achieve greater systemic sustainability in the medium and long-terms, while seeding new opportunities and catalysing innovation in the short term. The South African Cities Network (SACNET) recently published a review and analysis on "secondary cities in South Africa"[6]. In it, the question of metropolitan governance reform was acknowledged in the following statement;

Whilst South African discussions on secondary cities are hugely under-developed, there is growing interest in the subject of metropolitan government in the country. This interest has, arguably, been sparked by the recent declaration of two new metros in the country – Buffalo City and Mangaung. This declaration has led many South African cities, as well as national policy observers, to question what changes must occur in a town for it to be considered an "aspiring metro". Are "secondary cities" the same as being an "aspiring metro" – or do the two types of places offer different opportunities, and contribute different things to the national space economy? ... we are aware of the importance of the debate, and of the interest it has generated amongst South African municipalities.

The **communiTgrow** approach, which is the subject of this book, aims to stabilise land and housing markets for low to medium income dwellers that are moving to cities in Africa. It addresses the needs that arise from the natural growth and expansion of cities. The optimisation of city-making, through the **communiTgrow** approach, seeks to make cities attractive to all income and investment categories. Yet it is clear that urban planning instruments and methodologies will have to accommodate a vastly different global and local context from that which they have historically endured, and that the mere adoption of first world urban planning instruments by developing world cities will prove even more inadequate than they have historically been[7].

Ensuring the viability and productivity of households, businesses and service industries, and the effectiveness of governance and civil society, requires that planning instruments and methodologies that are used today, are acutely aware of the impacts that these broad-level changes may have at various scales. Watson[8] argues that urban planning, as a field, will have to undergo broad-level, fundamental changes itself. This is especially the case if it is to adequately respond to; (1) global change effects, and (2) to be able to adapt appropriately to local, contextual specificities, especially in developing world urban contexts.

In the next section, we take a closer look at the broad-level global changes that are unfolding. Thereafter, we consider their potential impacts on African cities in general, and then frame what is required to respond to these impacts. This in turn, informs the urban planning approach that is proposed and articulated in this book. The **communiTgrow** approach, as it is titled in this book, is designed to be able to be generic enough to suit a range of different local contexts, yet it is specific enough in terms of its social, economic and financial models of growth and

improvement. It also acts across sectors and scales in order to enable integrated, multi-level, polycentric, decentralised systems of urban governance within small to intermediate scale cities.

1.4 Global Change Trends

1.4.1 Second Wave of Urbanisation

In exploring "just transitions to sustainability", Swilling and Annecke[9] highlight the role of urbanisation in developing countries as follows;

> *"The first urbanisation wave took 200 years - 1750 to 1950 – and resulted in an increase in the number of urban dwellers in Europe and North America from 15 million to 423 million people[10]. ... The second urbanisation wave will take less than 100 years – 1950 to 2030 – and is taking place in developing countries where the urban population is projected to grow from 309 million to a staggering 3.9 billion[11]. ... As the global population increases from 6 to 9 billion with the bulk of this increase located in Africa and Asia, this means that it is the urban centres of Africa and Asia (some of which don't exist yet) that will be home to the additional 3 billion people expected on the planet by 2050."[12]*

In the first wave of urbanization 408 million people were urbanized over 100 years. It accompanied the industrial revolution (i.e. first industrial transition), where the archetype of the industrial "modern city" came into being. Its designers and makers "*gave cultural form to this radical transformation of everyday life and work"[13]*. At the same time, master plans, as dominant instruments of city planning came to dominate planning in both the developed world, and through colonialism, in developing world[14].

The second wave, which is likely to span 80 years, will urbanise roughly 3.6 billion people. As most of these people will reside in developing world cities, and mostly newly established cities, as stated by Swilling & Annecke[15], concerns over the capacity of these cities to absorb growth and increase competitiveness and living standards have become evident in a number of papers, books and policy documents that have emerged from all sectors of society (i.e. academic, governance, civil society, business).

The second wave of urbanisation is characterised by much higher rates and numbers. Moreover, this growth is concentrated in African and Asian cities (i.e. cities that are the least equipped to cope with this rapid expansion and concentration of demand within cities)[16]. Swilling and Annecke[17] highlight the fact that, "China alone will urbanise in 50 years more people than were urbanised in North America and Europe put together over 200 years". African cities, in turn, while having lower magnitudes of urban growth than Asia, have the highest rates of city growth on the planet[18].

As such, the second wave of urbanisation represents the greatest developmental challenge facing regions and countries across the world, and especially in the developing world. In Africa, this rapid urbanisation is projected to continue until 2050, when Africa will have an urban population of 1.2 billion, rising from the current 373 million[19]. Where Africa is concerned, most African cities are hopelessly ill-prepared to cope with the additional pressures that growth will place on them in the medium and long-term future. The challenge of providing infrastructures, services and engendering healthy, liveable cities is also most dire in Africa, where inequality, poverty and segregation patterns continue uninhibited through the colonial era into the independence era.

Secondary Cities: Yet, as pointed out by Swilling and Annecke[20], it is the growth of small to intermediate cities that is of most pertinent interest. Between 1990 and 2010 the number of new cities (i.e. that were previously under 100 000) was 694. Only 54 of these cities grew to a size of between 1 and 5 million, while 132 were intermediate cities ranging from half a million to 1 million people. The vast majority of cities (i.e. 510) grew to a size of less than half a million. By 2025, the majority of urban dwellers will live in cities that are less than 100 000 in population size. As a result, the question of secondary cities is a priority.

In South Africa, 8.02 percent live in cities between 100 000 and 500 000 and 9.82 percent live in cities between 500 000 and 1 million, while 34.01 percent live in the 6 metros that host between 1 million and 5 million people[21]. The five largest metros produce more than 50 percent of the economy[22]. Yet these metros are also becoming more interconnected with each other, and cities in Southern and Sub-Saharan Africa, along development corridors where new cities will likely be established.

The question of development of secondary cities along development corridors in South Africa and Southern Africa in particular, and Africa in general, is important to address, as they will increasingly act as connectors between the large

metropolitans and their "rural" or ru-urban hinterlands. Moreover, the functions of secondary towns are often specialised (e.g. mining, tourism, agriculture, energy, forestry) and upon which the large metros may in turn be dependent. With this in mind, the establishment of new cities and towns will likely also be accompanied by further specialisation of roles, whether in services or new production activities. Improving the development bases of secondary cities also offers up the opportunity to address concerns around skewed spatial development, where the disparity between income levels and consumption capacity are drastically unequal between the large metropolitans, or urban context, and secondary cities and their small towns and rural hinterlands, which broadly constitutes the ru-urban context.
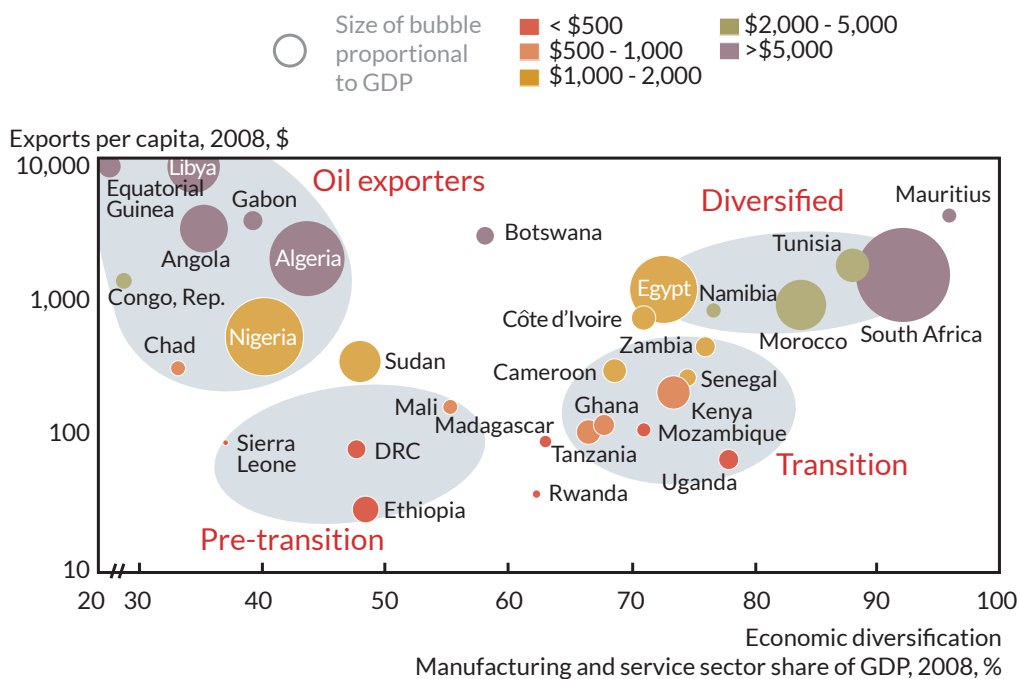
Note:
We include countries whose 2008 GDP was approximately $10 billion or greater, or whose real GDP growth rate exceeded 7% over 2000 - 08. We exclude 22 countries that accounted for 3% of African GDP in 2008.

Source: McKinsey Global Institute, 2010. Lions on the move: the progress and potential of African economies.

Figure 1.1 African Cities

1.4.2 Global Change and Cities

Global Political, Socio- Economic and Technological Change: The new global era in which we live is characterised by faster and more discontinuous rates of change – technological, economic, ecosystem, climate, political, social, and so forth – that impact at various scales and levels of influence. Urbanisation has played a key role in how these changes have unfolded as these changes overlap the most in urban socio-economic, political and technological systems and environmental systems (i.e. socio-technical systems).

The global polity and economy has undergone fundamental post cold war shifts that began with strong programmes for post-war socio-economic "upliftment" where the state held a key role in addressing the basic needs of society, but culminated in widespread programmes of privatisation, de-regulation, outsourced production and the new industrial division of labour, with the support and insistence of powerful global financial institutions such as the World Bank and the IMF.

This era has seen the state retreat from its prior role as the sole promoter of the public good through administering institutions that act in service of the public good, but not only due to the impact of global economic policies, but because of the sheer scale at which - especially urban – development challenges have presented themselves to city governments and national governments alike, who are equally unable to respond to the crises of rapid urbanisation that has been unfolding in developing world cities.

Material extraction for human production has approximately doubled since 1995[23], of which up to around 80 percent can be attributed to cities. Moreover, the global socio-metabolic and industrial transition that the planet is undergoing[24] also threatens new limits to growth as yet not experienced by modern civilisation, where resource scarcity, supply uncertainty and price fluctuations threaten to impact upon poor household budgets globally, but especially in developing world cities. The emergence of the global carbon economy is also significant, as it has the potential to dictate future growth potentials in developing world countries such as South Africa[25], which is carbon intensive and under-diversified. Similarly, African countries that are heavily reliant on the extraction of minerals and oil are

also economically under-diversified and may become more vulnerable as the 21st Century unfolds, and global actions to reduce emissions escalate and become more normative.

Global technological change is a critical factor when considering the future of cities. The next (sixth) industrial transition, will likely constitute a response to resource scarcity conditions, climate change effects, and the changing global socio-metabolism[26], inviting in the next technological revolution, which is constituted of emerging green and resource efficiency oriented technologies. Yet, as will be discussed later, technological responses alone will not be enough to respond to the challenges of urbanisation in Africa, however, and the direct transplanting of first world bounded, closed loop developments into developing world cities brings new challenges of its own, namely spatial and socio-economic segregation and fragmentation.

Where socio-economic and spatial changes are concerned, the second wave of urbanisation is characterised by a deepening and worrying "urban divide"[27]. As highlighted by the state of the world's cities report[28], the urban divide takes on multiple dimensions (i.e. spatial, economic, social, cultural, ethnic and religious dimensions). These stark inequalities are reflected in the collective urban psychology and fostering resentment, political and social violence and abuse. Where spatial segregation results in urban sprawl, inner city decay and the displacement of the poor to the urban peripheries, the urban divide then takes on a sustainability dimension (i.e. sprawled infrastructures and settlements convey higher costs of transport, goods, food, energy, water, sanitation and waste disposal to households and the private sector).

As the growth of and in the present cities in Africa will largely constitute the growth of informal and slum settlements, the growth of new cities in Africa may hold different possibilities. Ironically, developing world countries may be in a better position to prepare their urban centres and regions for the future, as a great many of them have not been established yet. That is, new developments in African cities may yet be constructed in ways that render them resilient to the projected future global change trends that threaten to reach down to the household scale in every economy in the world.

Global Climate Change and Cities: Where climate change is concerned, cities are vulnerable to sea-level rise, saline intrusion into aquifers, flooding, coastal erosion, storm surges and drought[29]. They may also experience extreme events such as fires, pest invasions, outbreaks of water-borne diseases such as cholera, algal blooms and eutrophication in rivers, estuaries and inland lakes, dams, and so forth. Moreover, climate change impacts upon such a wide variety of sectors, affecting everything from water supply, weather variability and heating and cooling costs in sectors such as agriculture, mining, industry and so forth. The household sector is most vulnerable, as household budgets, especially of the poor, are critically dependent on the costs of food production and transportation and the energy costs associated with those activities.

As pointed out by Stephen Friedman in a relatively recent book entitled "Hot, Flat and Crowded", "*energy poverty[30]*" is affecting households and large and small businesses, and the pressures upon the energy sector is expected to increase. Where energy supply is inconsistent and unreliable, productivity levels and potential for growth are correspondingly affected. In the developing world, energy poverty is a key factor that must be accommodated when considering new developments of cities in particular and human settlements in general. For example, the International Energy Agency stated in 2009 that the price of oil would only rise into the future[31]. While small price fluctuations may occur, they will occur within a generally increasing price trend. This impacts upon the global pricing of staple food supplies, rendering households in developing world cities vulnerable to oil prices and transportation costs. The price of electrical energy is also increasing, affecting food prices (i.e. storage, refrigeration), and business and property owners have all had to cope with escalating utility costs.

Where soil quality is affected by ecological degradation, erosion, bad agricultural practices, or by climate change induced variations in local climate that induce desertification and spatio-temporal changes in vegetation patterns, shortages of arable land will continue to threaten poor household budgets around the world.

Water supply uncertainties and shortages in various critical food producing regions in the world, also threaten to impact the prices of food. In Africa, water is a key strategic consideration for national security in the North African, East African and Southern African regions in particular. The current drought in East Africa has

affected between 10 and 12 million people, according to recent estimates made by the United Nations. In South Africa, which is a water scarce country where the majority of water supply is devoted to agricultural activities (i.e. above 70 percent), the question of water is critical to national economic growth. According to regional scale climate modelling predictions for Southern Africa, the West is expected to experience decreased rainfall, while the Eastern Escarpment is expected to experience increased rainfall[32]. Higher ambient temperatures however, may negate rainfall gains, so increased rainfall projections may not translate directly into overall water gains, and it is likely that spatial variations at local levels may differ. Harvesting water and improving the recharge capacity through improving soil and biodiversity conditions, may become a necessity in many water-scarce regions in Africa.

Ensuring potable water supply for cities themselves, and for the cultivation of the food that is necessary to feed their inhabitants, constitutes one of the most severe resource constraints in the region. As cities spring up along development corridors across Africa, their water needs may prove increasingly difficult to meet, especially if they are further away from natural water resources. Moreover, building new dams may not constitute a viable solution, as conflicts over national and trans-boundary international water supply deficiencies may emerge, as is already the case over Ethiopian dam construction along the Nile. The question of ensuring water supply for agro-ecological production is addressed at the national scale, while the question of how to ensure potable water supplies and water sanitation services is addressed at the city-scale.

Where the establishment of wholly new cities in the region is concerned, it is important to think through the design of water systems in radically new ways. It is no longer economically sustainable to establish large scale developments using conventional technologies and design approaches, as increasing costs of water and energy will render their operating costs exorbitant. Pumping water and waste to and from large centralised water management systems is likely to be increasingly economically unfeasible in the future. Indeed, if the city managers of developed, "world class" cities were given the choice today, they would likely *not* put flush toilet systems in place. Decentralised water management systems will likely be required; which ensure re-use and recycling of water and the increased efficiency of water use through improved system efficiency and strategies for behavioural change.

1.4.3 Technology Revolution: Green Technologies and Carbon Economy

In 2008, Worldwatch projected that the worldwide market for environmental goods and services would double by 2020[33]. The growth in the green technologies sector has been astounding. Leading up to the 2008 financial crisis, renewable energies showed double digit growth[34], exceeding 30 percent growth for all years between 2004 and 2010, with the exception of 2008 and 2009 when the financial crisis took hold[35]. By comparison, in 2007, investment in coal-based power (at US$110Bn) was lower than investment in renewable energies (at US$151Bn), with the expectation that renewable would receive about US$450Bn by 2012[36]. Should annual investment remain at current levels, it will reach about US$410Bn by 2012; that is, it has remained largely unaffected by the financial crisis of 2008[37].

African and Asian cities are where the bulk of growth is occurring; also, an opportunity space. The response from the developing world has been to encourage high-tech centric and technocratic responses, which can be framed under the theme of "urban ecological security"[38]. The great hope that lies behind the push for urban ecological security, which is fuelled by high tech green technologies, is to usher in the next technology revolution (i.e. green technologies). The next technology revolution will likely constitute a response to the resource limitations imposed by the next industrial transition (i.e. transition towards resource scarcity combined with increasing demand for production, decoupling and doing more with less). The high levels of investment into green and renewable energy technologies is widely viewed as an appropriate and necessary measure, that will pull the global economic system out of recession and into a new period of growth, fuelled by infrastructure expenditure and increased consumer market potentials.

The quest for sustainability on a continental scale is ultimately contingent on the actions that cities take. Infrastructure choices that are made now will lock African cities into patterns of consumption for approximately the next 40 years[39], and perhaps more. Thus the need for new models of development for developing world urban challenges is evident.

The role of African cities as adopters of new, green and high tech city-scale infrastructures is being anticipated by a range of financial and technology speculators. The question of how to engage with this agenda, from an African

perspective remains the subject of intense thought, discussion and debate. What seems clear is that techno-centric schemes alone will not achieve the kind of equitable liveability that is desired in African cities, and will not stimulate transitions that overcome prevailing and historical inequalities. What is required, are integrated approaches that can guide inter-institutional and inter-sector coordination, in order to ensure that the social and economic fabric of communities is concurrently built, and that sustainability and liveability are ensured through urban development.

1.5 Urbanisation in Africa: Key Challenges

In Africa, urban growth is largely characterised and weighted by the growth of slums. Slums and informality are pervasive and characteristic of the majority condition of African cities[40]. Slums and informal housing and land acquisition and management are central and key challenges that face African cities currently and will continue to do so in the future. Yet this is not all that challenges African cities. North Africa, for example, has made the most progress in Africa towards millennium development goals of reducing slums through large public housing projects (with private sector partnership), almost halving their slum populations[41]. Yet socio-political upheaval has still unfolded across the region with the advent of the Arab Spring. This underscores the importance of socio-political stability in Africa and African cities, that is; that urban citizens are able to actively participate in political action, and can bring about changes to formal institutions of governance that benefits them.

Poor local governance undermines municipal financial viability and has a knock-on effect on formalisation of housing and land markets. Fragmented, weak municipalities and formal institutions characterises Sub-Saharan African cities. This is especially true in Sub-Saharan Africa, where the absence of reliable institutions prevails, despite a burning need for them to be effectively deployed. Corruption, unsuitable levels of bureaucratisation that render formal systems ineffective, and nepotism all combine to render formal institutions of governance largely inaccessible and ineffective in addressing the socio-economic conditions of the average Sub-Saharan African urban dweller. Moreover, the lack of municipal finance and effective mechanisms for municipalities to collect revenue is pervasive, and is in large part due to the failure of institutions to engage with

urban development processes effectively. That is; the lack of formalisation of housing and land markets means that municipalities have no avenues for revenue collection.

Significant demographic, socio-cultural and political changes have also been unfolding in African cities. The large numbers of unemployed African youth is a major concern for city governments and urban planners. The "youth bulge" is characterised by; the prevalence of unemployment amongst working-age youth, illiteracy and lack of access to opportunities for employment, education, skills development, vocational training, apprenticeship and so forth. Changes in the role of women in society are also emerging. While it has to be acknowledged that most African women who live in slums and informal settlements play key roles in ensuring that these settlements are serviced (sanitation, water, food, etc.), they are often relegated to diminutive roles within the household and in the community.

African countries and African cities in particular, have high levels of income and consumption inequality, as indicated by their staggering Gini coefficients. Where Gini coefficients are not large, it usually indicates that the greater majority of the population are poor and not that these societies are more equitable and liveable, providing a basic standard of living that compares with their counterparts in the cities of the developed world. Gini coefficients in South Africa and South African cities such as Johannesburg and Cape Town are the highest in the world[42].

Where city spatial form is concerned, high levels of income and consumption inequality are strongly reflected in African urban societies and the spatial urban form that generally accompanies them – which is fragmented (economically, ethnically, religiously, culturally) and sprawled towards their peripheries. Fragmented spatial urban development: segregation, securitisation, bounded enclaves, off-grid infrastructures, characterise the spatial form of African cities.

Where city sizes and inter-dependences are concerned, both the growth rates of cities and inter-regional corridors are important considerations. The growth rates of African cities are the highest in the world, while national levels of urbanisation still haven't tipped the 50 percent mark in Africa (although South and Southern Africa has breached the 50 percent national level of urbanisation mark). In Africa, the growth is occurring mainly in small to intermediate sized cities, while some large urban agglomerations such as Lagos and Kinshasa will soon constitute the largest cities in Africa, with Lagos overtaking Cairo in growth by 2015 (with

14.1 and 11.6 million people, respectively) . There are many landlocked cities and countries in Africa, and this presents significant challenges to growth in these countries and cities. As a result, the growth of regional linkages between cities has also increased, and a range of development corridors now connect African cities, albeit in different states of repair as far as road infrastructure is concerned.

Cities may consume up to 80 percent of global energy supply, producing up to 75 percent of carbon emissions, and roughly 75 percent of global economic output[43.] Where global economic change is concerned, according to a range of observers[44], the next global industrial transition is faced with the prospect of ensuring growth amidst growing global resource constraint challenges. Food, arable soil, oil, electrical energy and other resources that are critical for production – such as rare earth minerals – all interact to produce double and triple-squeeze effects on household and business expenditure. Fluctuations in the price of oil was already spiking food prices before the financial collapse of 2008 when food prices rose by 60 percent in the first half of 2008, and people living below the poverty line increased by between 130 and 155 million, rendering a billion people living in near starvation conditions around the globe within a period of six months[45]. It is likely that speculation in global financial markets also affects food markets significantly. Moreover, Africa faces the additional challenge of skills shortages in areas that are critical for ensuring growth and development. However, the African continent is significantly resource rich in terms of minerals and raw materials, renewable and fossil energy sources, arable land, biodiversity, pristine and unique ecological habitats and labour pools.

Climate change also exacerbates the pressures that African cities are subject to. African cities are majority coastal, and are especially vulnerable to sea-level rise, storm surges, coastal erosion, flooding, drought, saline intrusion (e.g. Beira has up to 80km of saline intrusion), aquifer salinity intrusion (e.g. Cape Town), energy demands for cooling and refrigeration and energy demands for heating. Climate change impacts on global supply uncertainties, especially where food is concerned, and demand changes, where energy is concerned, threaten household food budgets of urban dwellers in African cities. For example, should the frequency of extreme, disaster-scale events - such as the current drought in the US Midwest which has severely affected global corn supply, and the failure of the Siberian wheat crop in Russia – increase significantly due to climate variability, which has been projected by the IPCC, then global food supply uncertainties will play a large role in exacerbating household budget uncertainty, especially in African cities.

Household vulnerability to food, water and energy (including transport) budgets is well understood. Climate change and global economic changes threaten to render these linkages unstable in respect of how they culminate at the household level. The lack of capacity of formal institutions to respond to the urban development challenges faced in African cities has resulted in a wide range of alternative players and groups operating on largely their own terms within the urban fabric, whether private sector or informal.

Private sector led development in African cities has exacerbated urban sprawl and encouraged a proliferation of gated and enclave developments within African cities that exist as islands of privilege "amidst a sea of poverty"[46]. They do little to foster growth outside of their boundaries and do little to restore continuity to the urban form and fabric of operations. At the same time, slums and informality proliferate between the enclave developments that have "first world" or "world class" pretensions. The declaration of autonomous informal zones that exist independently - and often in defiance of - formal city and national authorities in inner city slums and in large informal settlements on the peripheries of cities, also fragments the urban spatial and socio-cultural continuity and declares municipalities utterly ineffective in determining urban development.

As a consequence there are strong arguments for decentralisation of governance in African cities, as well as for the deployment of decentralised technologies and infrastructures in African cities. Yet there is an additional question of high relevance in the African context, namely; *the question of how to approach "new builds" in (and of) African cities*, especially small to intermediate cities (i.e. under 500 000 and between 500 000 and a million people, respectively).

The wide-scale lack of current infrastructures and service provisions, as well as the proliferation of new small to intermediate scale cities in Africa increases the relevance of *new builds*. It is this question that the development that is proposed in this book is concerned with and is devoted to fleshing out, in the hope of stimulating a new discursive niche that can grow to benefit both urban theorists and practitioners. That is, those who are engaged as players within urban development projects across the continent, and especially those who are concerned with new small to intermediate scale cities and their development trajectories.

1.6 Framing What is Required to Respond to the Challenges of Urbanisation

The question of urban development in Africa is closely linked to the future socio-political and economic stability of African countries, as African political constituencies will soon reside in cities and be in the majority when compared to the non-urban constituency or electoral base. That is, African political change will likely be driven by its urban dwellers. This is a significant departure from the mostly rural voting populations that have hitherto dominated African politics.

As most urban dwellers in Africa live in slums (i.e. 62 percent), rethinking urbanism from the perspective of the slum is important[47]. Urban governance regimes that do not recognise this need are likely to reproduce more of the same socio-economic inequalities and fragmented urban socio-spatial forms that have historically persisted through colonial and independence dispensations in African countries[48]. The role of informal markets in African cities has not been fully harnessed in terms of its potential to generate cash flow amongst poorer urban residents, and instead city governments have largely treated informal markets as aberrations of formal sector activities and undesirable in reproducing the "image" of pristine, sterilised "first world" urban environments in order to attract foreign investment. Slums and informality will likely continue as central phenomena in the evolution of African cities. Finding ways to integrate between formal and informal sector activities and regulatory processes is of paramount importance in African cities.

Yet the need for integration spans more broadly than simply between formal and informal sectors. Integration between different sectors (governance, business and civil society), government agencies and departments, service provisions are all required to ensure higher levels of sustainability and liveability in African cities. The Minister for Human Settlements in South Africa, Tokyo Sexwale, acknowledges housing delivery alone will not solve the pressing socio-economic challenges of creating liveability, economic viability and resilient households. As the Minister articulates it, development is required that yields "places where people can fall in love". Citing the high levels of integration that was achieved between institutions that was achieved during the world cup, where large scale construction projects were successfully delivered upon, the Minister highlights the potential to establish integration around a more pressing need for the benefit

of South African society, that is; the need for "sustainable human settlements" as the integrating vision for government, institutions of governance and sectors (i.e. governance, business, civil society).

The need for solutions that operate at scale is paramount. The real question is how to go about it. In this respect, integrating visions and "iconic projects" such as the soccer world cup in South Africa, or a thematic emphasis on "sustainable human settlements" as proposed by the Minister can play a significant role in bringing integration between sectors and government departments and agencies. In this respect, the role of "strategic intermediaries"[49], in bringing integration in urban development, can prove useful. That is, strategic intermediaries that act on agendas that help bring greater coordination can take many forms, for example; private sector bodies, public-private partnerships, higher education institutions, urban observatories, government task teams and committees, civil society groups.

Pieterse emphasizes that *"new forms of local community economies"* are necessary in order to "recast" urban sustainability in the South[50] suggesting that *"bio-regional economic diversification"* is necessary to ensure that local community economies remain resilient to changes that result from global linkages. Yet how can these ideas be deployed and implemented in the construction and governance of new, green-fields small to intermediate scale city developments?

Moreover, what role can public-private partnerships play, and how should they be conceptualised and formulated? Within the construction of the partnerships itself, both sectors acknowledge the importance of the other (i.e. the social and business sectors), and must therefore meet requirements that extend beyond their immediate realms, into the realms within which partnerships are constructed. The public sector has already adopted both the logic and rhetoric of the private sector, while the reverse is rarely true. In this light, the question of what the social role of business within the community constitutes remains an unaddressed piece of the puzzle that constitutes public-private partnerships. In response to this question, the **communiTgrow** approach attempts to integrate between efforts to grow both business and communities as integrated, networked systems. It establishes a new way in which the social role of business can be advanced, to its own benefit and to society at large, but especially at local, community levels.

1.7 The Need For A New, Inclusive And Context-Based Approach

What emerges from the above discussion and a brief survey of the contours of the global debates is that there is room for the implementation of workable solutions. In this regard we take note how Watson[51] links planning systems in developing world cities to planning systems and processes that have been transplanted from cities in the developed world, into Africa and other cities in the global South. Watson shows how this has persisted through colonial and independence dispensations, and critiques the role that "master plans", such as spatial development frameworks (or SDFs) have played in exacerbating existing inequalities in the cities of the developing world, when deployed as a planning instrument in these cities. Should these be replicated in the planning and construction of totally new city builds, they run the risk of engendering more of the same inequalities that have persisted in the developing world in general, and in African cities in particular. Watson therefore emphasises the need for new, inclusive, context-based approaches towards planning in developing world cities.

The Wescape project which has been underway in Cape Town for the past six years in terms of planning and developing conceptual clarity is evidence of the "new" approach referred to by Watson. Another "new" approach is the Charter City approach as proposed by Fuller & Romer[52]. The **communiTgrow** approach and the charter city approach are similar. Both models presuppose the need to establish a unique economic underbelly. In the case of the charter city model, Fuller & Romer propose a special reform zone (akin to an exclusive economic zone) while **communiTgrow** proposes an institutional framework which enables the community to own a significant portion of the profits generated by commercial activity in the city (i.e. in that specified zone). It is this special zone within which the appropriate connectivity and functionality of urban development, governance, technology and management can be formulated, tested and improved over time.

1.8 Conclusion

The inevitability of African urbanization is apparent. Debate over the demographic evidence for a regional urbanization focus on the definitions under which urbanisation is measured[53], in no way negates the fact that Africa's cities are the fastest growing in the world. The reality of Africans flocking to cities in rapidly growing numbers renders arguments over "push" versus "pull" truly academic. The fact is that Africa's urban populations are exploding and will continue to do so for the foreseeable future. Thus, a final key opportunity presents itself in the growing realization by governments in the region, that rapid urbanization is here to stay.

Responsive African leaders have already realized that the demands of growing urban populations must be met and new approaches to development, including expansion of public-private partnerships, are both inevitable and desirable. Among many of the region's new leaders there is a fresh willingness to learn about new approaches to urban poverty alleviation that have succeeded within Africa and in other regions[54]. Yet, the key question that plagues public private partnerships, is how they are constituted and to what purpose they are oriented. It is in response to this tension that **communiTgrow** has innovated an offering for city-building that re-thinks and re-deploys the role of business in the community and as a partner in development that can work with the priorities of government and civil society, while ensuring economic growth and financial sustainability.

communiTgrow is passionate about addressing the natural growth of cities in Africa with regenerative strategies. **communiTgrow** is particularly concerned with the construction of new, green-fields cities in Africa, and offers a new and unique proposition for public-private partnerships for housing and employing low-income dwellers in Africa. Investment in well-serviced, coordinated and sustainable infrastructure and economies of scale, are fundamental preconditions for social and economic growth. Resource-efficient technologies and practices need to be coupled with governance structures and actions that support the transitions to living with, and creating regenerative urban ecologies and socio-economic systems.

To ensure that these transitions get the necessary behavioural and resource support, **communiTgrow** re-conceptualises the role of business in the community, and proposes a model where businesses contribute a fraction of their profits to a system of oversight that cross-funds the delivery and provision of services and the like. In this model, business contributes to the development of the places so that the social and environmental capabilities can flourish. This strategy for supporting natural city growth allows the possibility of linked and decentralised infrastructure that supports the transitions to sustainable and regenerative urban development.

These services span the whole range of the needs and opportunities that are required to ensure healthy and liveable communities, ranging from basic needs to education, skills development, vocational training and so forth. The **communiTgrow** approach takes a system-wide view on the development of sustainable cities; requiring the integration and coordination of new, green-fields urban development through a new model, consisting of six pillars; economics, housing, education, healthcare, governance, and regenerative systems. The model is supported by processes for regenerative urban design and planning, tender procurement and implementation. It is currently being applied to the Wescape development, which is located on the Atlantic coast of the Western Cape in South Africa, along a development corridor that extends upwards into West Africa. In effect, the **communiTgrow** approach establishes a zone in which reforms in inclusive and regenerative metropolitan governance regimes can be incubated, tested and refined over time to suit local contexts.

In the next chapter the South African context is discussed, as it is the first location in which the **communiTgrow** approach is being deployed. The South African context mirrors the African context in many ways, yet is significantly more developed in terms of infrastructures, institutions of governance, and economic growth than most of Africa, and as such, provides an implementation context that is suitably supportive and challenging at the same time. That is, it is an ideal "test-bed" in which the **communiTgrow** approach can be implemented and refined over time to suit other locations and contexts in Africa.

Chapter 2

The Dynamics of Urbanisation in South Africa

2.1 Purpose of Chapter

The purpose of this chapter is to contextualize the **communiTgrow** solution within the specific urbanisation challenges facing a developing South Africa. In doing so, this chapter will make explicit some of the history and circumstances that have created the inadequacy of existing urban infrastructure which has consequently become unable to cope with rapid urbanization. In doing so, this chapter will unpack the dynamics and legacy at play resulting from the city and urban planning philosophy and cultural assumptions embedded in the spatial layout of South Africa.

The narrower and detailed focus of this chapter, then, is the South African context relative to its urbanization challenges at a national, provincial and local level.

2.2 Contextual Implementation

South Africa is the immediate context of implementation for the **communiTgrow** approach which is a direct response to the challenge of rapid urbanization and the inadequacy of existing urban infrastructure to cater for the full spectrum of needs of the modern urban city dweller. Wescape, which is located north of Cape Town is the flagship project for the **communiTgrow** model and will serve as a reference point for this chapter and indeed the book as a whole.

This book is being published at a time when high numbers of service delivery protests are being experienced in South Africa and the call for housing and services in cities has never been greater. The **communiTgrow** proposed solution

is therefore rather timeous and it is designed to make a positive and practical contribution, and help tackle South Africa's seemingly intractable housing crisis and the broader analytical urban-design challenges. The innovative **communiTgrow** proposal currently being rolled out through the Wescape project is therefore presented here for consideration and application to a wide audience namely the African continent with the benefit of the ongoing implementation and refinement of the model in South Africa.

An emerging consensus is that urban growth in South Africa is uncoordinated, unplanned, and is occurring at a greater pace than after the arrival of democracy. Apartheid restricted the movement of black people, confining them to rural areas and homelands. The major shift that occurred in the post-Apartheid dispensation concerns the large numbers of new black and brown arrivals into cities and urban areas that are ill-prepared for their arrival or for their growth. Peri-urban sprawl, consisting of mainly informal settlements and low-income housing characterises the spatial profiles of South African cities and introduces pressures that existing infrastructures are often unable to cope with. In the case of the Wescape project and the wider Cape Town metropole, the surrounding areas such as Dunoon, Khayelitsha, Mitchells Plain and Atlantis constitute the areas where infrastructures are stretched. **communiTgrow**'s hope is that Wescape will play a key role in providing a solution to the pressures that are currently being experienced in the region as a whole.

2.3 Urbanisation and the Growth of Informal Settlements in South Africa

Reports indicate that by 2010 approximately 62 percent of the total population of South Africa was urbanised[1]. This rate of urbanisation is occurring at ± 1.2 percent per year[2]. Although this rate is not as high as many African countries, it still represents a significant challenge to municipalities. Based on 2011 figures, an estimated 10 percent of South Africa's population live in urban informal settlements. That is more than 1.2 million households and an informal settlement population of over 4.4 million. If you include those living in overcrowded backyard shacks, 23 percent of the households in South Africa's nine largest cities are estimated to be without adequate shelter. In reality, the actual numbers are probably significantly higher than these figures suggest[3].

2.4 Placing South African Cities in Global Hierarchy

Global hierarchies of cities look at either population or function as a determinant of ranking. The UN's list of the 100 most populous cities (or mega-cities) in the world in 2010 included, Johannesburg, which ranked 89th on this hierarchy and Cape Town at 98th. In other words, two South African cities rank amongst the world's 100 largest megacities. These cities namely, Johannesburg and Cape Town, can be classified as primate cities in the larger hierarchy. There are eight city regions, known as metropolitan areas in South Africa, two of which have been added recently. The Western Cape Province has one such region called the Cape Town metropolitan area. These major cities, which concentrate 31 percent of the total population together, contribute as much as 55 percent of national GDP[4].

2.5 Secondary Cities and the Western Cape

The international spotlight has recently turned on secondary cities because that is where the most rapid urban growth rates and levels are unfolding. Secondary cities play a distinct role in national life. They often act as catalysts for development in their surrounding regions. They also alleviate demographic pressure from a country's metropolitan areas and offer an alternative to the densely populated urban environment.[5]

Cape Town is South Africa's second-richest city, in terms of gross domestic product (GDP) per capita, after Johannesburg. As the economic hub of the Western Cape Province, Cape Town produces 10.58 percent of South Africa's GDP and accounts for 71.10 percent of the Western Cape's economic activity.[6] Based on these 2009 figures, Cape Town is the second main economic centre in South Africa. In 2003, the Department of Environmental Affairs and Development Planning (DEADP) published a green paper entitled: *A Settlement Framework for Western Cape Province.*[7] In this paper, the authors state that the largest part of the Western Cape Province contains stagnating and declining urban settlements, other than Cape Town, the metropole. These coincide with the arid interior and the northern parts of the West Coast. Economies in these regions are sectorally narrow and stagnant, populations are scattered, services are rudimentary and settlements are small and widely- spaced. According to the report, some 60 percent of the area of the Province is fit for little more than extensive stock

farming. There is limited potential for economic growth and employment provision in some regions. Any new settlements that are built in these areas will likely exacerbate the levels of poverty and deprivation.
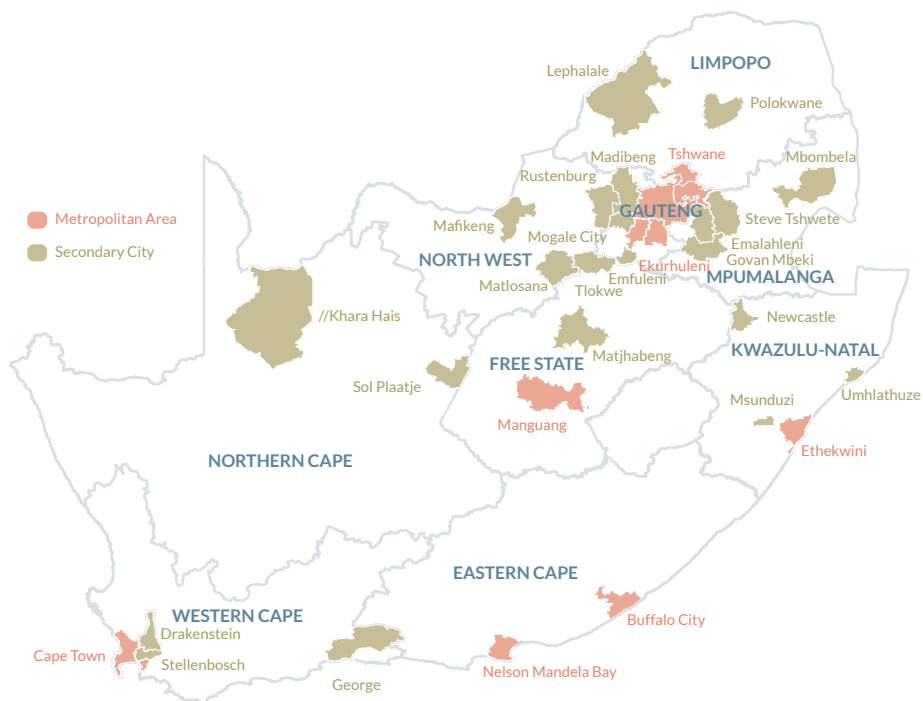
Figure 2.1 South African Secondary Cities

A study conducted by the University of Stellenbosch entitled *Growth potential of towns in the Western Cape* with results published in 2004[8] undertook to survey to determine which towns had the highest potential for growth and highest need. Sixteen towns were identified from the survey. These are located spatially closest to the metropole and along the West coast and South coast. The N7 West Coast Growth Corridor that is intended to link Cape Town up the west coast with Saldanha and Vredenburg and eventually with Angola and Namibia was

considered the logical place for the location of a secondary city. **communiTgrow** has risen to this specific challenge and are developing a model that can be used to expand the potential of these secondary cities.
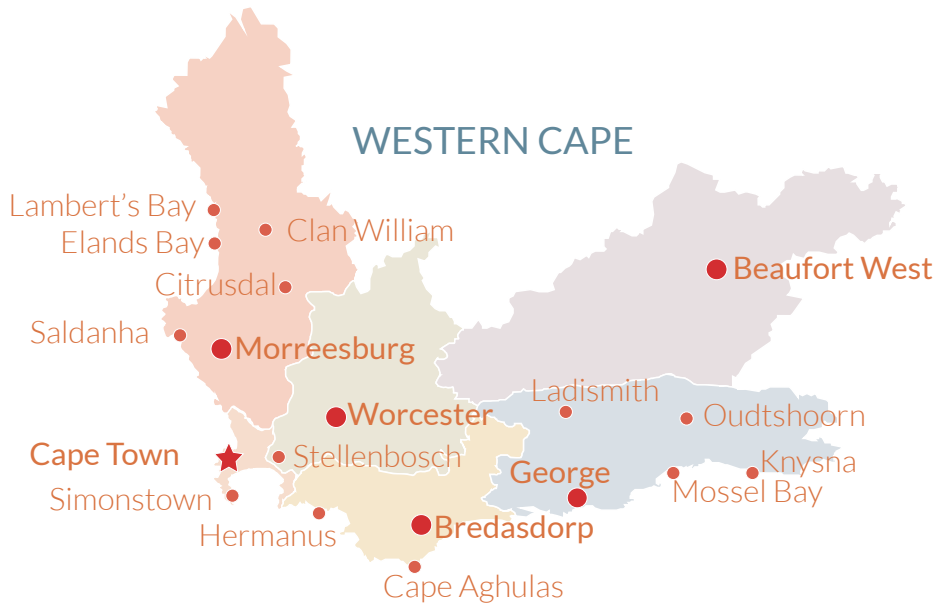
Figure 2.2 Towns in the Western Cape

The interior of the Cape province is not well endowed with high-potential towns. Low development potential is mainly concentrated in the Karoo (including Little Karoo), the West Coast interior and former mission stations. The worst quality of life levels is recorded in the Great Karoo and Little Karoo, as well as in towns near the metropole with extensive spontaneous and agglomerative informal housing developments, e.g. Franschhoek, Grabouw, Villiersdorp and Worcester. This would not be the ideal location for a secondary city, that is located along a development corridor in a position that connects growing peri-urban areas to the Cape Town metropolitan area.

Only the larger metropolitan areas appear to be able to cope with the rapid growth and urbanization challenges they are undergoing. Although there may be economic potential for the growth of these towns, the governance structures and strategic planning are not coping with the increased pressure on services. An example of this inability to cope is the town of Rustenburg, a town in the North West province of South Africa. The example of Rustenburg is used as this region has one of the richest sources of platinum and some of the largest mines in the world and a growing economy. Yet the town is characterised by ad hoc development and urban sprawl. There is no spatial plan for the town and very little control over new development. If this town with its burgeoning economy cannot cope with urbanisation challenges, then it seems to suggest that less wealthy towns will have an even greater difficulty to address these challenges.

2.6 The Spatial Geography of South African Cities

South African cities are characterised by high levels of spatial fragmentation and polarisation between income groups as a result of the legacy of Apartheid planning. Communities of different races were separated into discrete areas under Apartheid and were divided by large buffer strips that have become "no-man's-land" magnets for informal settlements. These were often unsuitable for development and vulnerable to flooding and other environmental hazards.

The consequence of these buffer strips is the dislocation of labour from areas of employment and infrastructure. It also resulted in the location of informal settlements on the peripheries of towns and a pervasive low density suburban sprawl. In the post-Apartheid dispensation, urban sprawl, gating and enclave developments such as strip-malls and townhouse developments dominate the urban landscape. This sprawl increases and reinforces a reliance on fossil fuels, because low population densities don't support public transportation systems. In order for a public transportation system to be economically viable, settlements of at least 20 - 25 du/ha are required.[9] Therefore, there are more private vehicles on the roads and as a consequence higher levels of pollution and greenhouse gas emissions. The result has been increasing commuter distances and high costs especially for the poor.
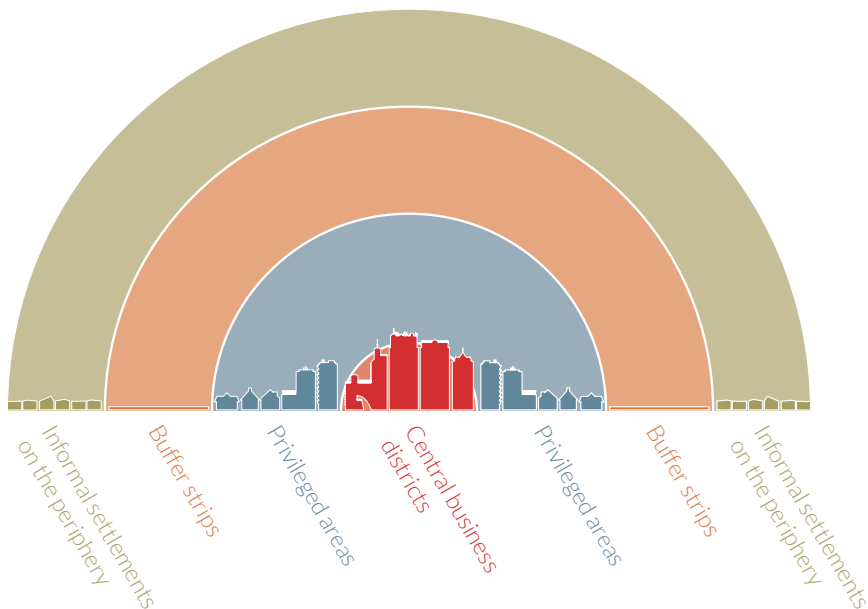
Figure 2.3 Typical Model of South African City

According to the *State of the Cities Report* produced by the SA Cities Network,[10] the very poor households in South Africa's major cities spend up to 58 percent of their income on housing and transport and poor households spend 23 percent of their income on transport alone. This dislocation has also resulted in the exclusion of mainly the poorer city residents from the amenities and economic opportunities offered by the city due to the location or absence of these facilities in the suburbs.

There are numerous costs as a result, including capital and operating costs for public services[11] which are mainly centralised and therefore become increasingly expensive the further away the location from the centre of the city. Other externalities include costs to the environment as a result of longer commuter distances and therefore the increased use of fossil fuels as well as pressure on agricultural land. High pollution levels results from a lack of sanitation, waste management and adequate energy sources in the informal settlements. It is both difficult and costly to supply bulk services to the peripheral areas of the city. Other costs include negative impacts on the economy, and social and political upheaval, which are manifesting now in service delivery protests throughout South Africa,

but in particular in the Western Cape. The social costs include a high crime rate (South Africa has one of the highest crime rates in the world) and subsequent social and spatial fragmentation due to gated communities and urban enclave developments. Spatially they are exacerbating fragmentation, low-density sprawl and segregation.

The technocratic planning system which, in part, adopted imported European models such as zoning and land use management has created swathes of mono-functional land uses reliant on private vehicles for transportation. The land use management tools (such as rezoning and subdivision) are expensive and have resulted in lengthy planning processes, which are not appropriate for poor communities.

Since South Africa became a democracy in 1994, many forward thinking and developmental policies have been introduced at a strategic level, yet the current development paradigm has not amended the spatial fragmentation of cities.

At **communiTgrow** , we are proposing a fundamental shift in the way that cities are composed from a socio-economic and land use perspective. Income will no longer be the primary determinant of location within the new city. Nor will ownership of private vehicles be a prerequisite for access to infrastructure and services. **communiTgrow** seeks to design compact cities that provide walk-able neighbourhoods and an efficient and reliable public transportation system that is designed to minimise the use of private vehicles. It will endeavour to increase social inclusiveness and reduce social segregation through the design of quality mixed-use areas. This is achieved through providing choice in house types and locations, access to economic opportunities within walking distance and access to community facilities and leisure spaces.

2.7 The History of Housing in South Africa

There is a great deal of public debate and disappointment around the subject of housing in South Africa. Housing is more than just shelter as it determines an individual's access to other services and facilities like schools, clinics, job opportunities and shops. As such the location of housing "defines the geography of opportunity"[12].

There is a backlog of over two million houses in South Africa, which is rising annually. The governing regime set itself a target of delivering 300 000 social houses per year, yet delivery of these units has consistently fallen short of target (e.g. 161 854 housing units and 64 362 serviced sites were delivered in 2009/10.[13])

In Cape Town, there is a backlog of some 450 000 houses, which increases every year. The local authority has been delivering at a pace of some 6000 to 8000 houses per year .

Keeping pace with the growing demand for housing is near impossible given the current mechanisms of delivery, as has already been acknowledged by the Ministry of Human Settlements. Moreover, the 2008 global financial crisis has exacerbated the pressures upon government and households alike, and reduced GDP growth and foreign direct investment has negatively affected the capacity of both state and private institutions to deliver effectively on housing demands. A radical rethink is required that places integrated service delivery, community and sustainability at the heart of low-cost settlement development programmes.

Figure 2.4 Housing Backlog 1996–2011

Total housing backlog - 2.1 million

1996	2001	2011
1.5 million	1.8 million	2.1 million

(comprised of informal settlements + backyard shacks + overcrowding)

Source: Western Cape Department of Housing, 1994 and Department of Human Settlements, 2011.

Although the South African government has been delivering houses for the poor through its subsidized housing scheme, the housing backlog has not declined as indicated by the table.[14]

The major challenges for housing supply for the poor are access to well-located land and bulk infrastructure, and housing delivery chain inefficiencies.

According to the Urban Landmark;

"Urban land that would give poor people the means to create wealth is in high demand and thus sought after by the more powerful sectors of the economy. Given the "logic" of the market, poorer communities, and state players such as municipalities that act on their behalf, are often unable to bid competitively on valuable land."[15]

According to the South African Financial and Fiscal Commission[16], although up to 70 000 hectares of state-owned land has been identified for housing purposes, none have been made available for housing. This is due to various factors including inappropriateness of location, environmental and legal constraints, issues with tenure (i.e. communal land) and a lack of communication and participation between government departments.

However, even when land has been made available for settlement, it can take many years before the houses are made available for occupation. Bureaucratic and practical obstacles such as township establishment and approvals, negotiation with surrounding interested and affected parties, installation of services, house construction, and transfer and handover all contribute to delays in delivery. The number of people living in informal settlements and backyard shacks reflects the current dysfunctions in the housing sector. Neither the state nor the market has been able to address the housing need in an adequate manner.[17]   A 2007 Community Survey showed that the majority of people participating in the economy cannot afford housing for themselves without state support. In 2007, 85.6 per cent of South African households earned R3 200 or less per month. Even those households who can afford to buy a house are finding it difficult to access home loans.[18]

The traditional lenders were and still are unwilling to make loans to low-income earners for housing. Only middle and upper income households have access to traditional finance, while the poor are generally excluded, due to the cost of funding and the risk of lending in the lower market segments. Micro-finance

institutions have not been very prevalent and instead, loan sharks have occupied the vacuum. At a macroeconomic level the South African economy is characterised by low levels of savings and high levels of debt financed consumption. This is especially the case where poor and low-income households are concerned, as their survival is contingent on daily or monthly incomes that are insufficient to provide opportunities for saving.

Moreover, exclusion from formal systems (e.g. not having an ID document means you cannot open a bank account) further contribute to the challenge of ensuring long term savings. The World Economic Forum's 2011-12 Global Competitiveness Report ranked South Africa 72nd in the world for its gross national savings rate which is equivalent to 20 percent of gross domestic product (GDP)[19]. As a result of restrictive Apartheid planning law and disenfranchisement of the black majority, many people have never bought or rented a house, or know anyone who has. There are therefore many inexperienced housing consumers. Such consumers often make mistakes or fall prey to unscrupulous operators who steal their money[20].

The South Africa experience of major shortfalls in housing provision is not unique in the developing world due to high population growth rates and rural urban migration. Yet the problem is exacerbated by the social and political history of the country's previous Apartheid regime.

A number of approaches to housing delivery have been implemented in South Africa since its democracy in 1994. The current government inherited an urban housing backlog of approximately 1.3 million units at its inception in 1994. As mentioned previously, this housing need was in part due to the discriminatory administrations and laws (such as the Black (Native) Laws Amendment Act, No 46 of 1937 and the Black Communities Development Act, No 4 of 1984) coupled with a period of rapid urbanisation from people previously prevented from living in the cities.

The Housing Department created policies that institutionalized the right to free housing and created an expectation from its citizens that these would be delivered by the state. These policies were based on the section in the Bill of Rights of the Constitution of South Africa, 1996 that states that;

- *"Everyone has the right to have access to adequate housing.*

- *The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right.*

- *No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances. No legislation may permit arbitrary evictions."[21].*

However, in the early 1990's the housing sector was fragmented, with inconsistent funding and direction and ill-defined accountability. There were numerous departments that dealt with housing at National, Provincial and Municipal level. These bodies were administering some twenty different subsidy systems. In addition South Africa's Apartheid legacy had left the government with many inappropriate laws and procedures that needed to be repealed or amended. This legacy also resulted in a depressed housing sector, which lacked capacity both in terms of human resources and cheap, accessible materials to speedily provide housing.[22]

The 1980's and early 1990's were also a time of service payment boycotts initiated by the civic movement and communities, aimed at undermining the Apartheid government. It was the one area of black resistance that the Apartheid government was unable to break.[23] As a result of this many households were reluctant to and unable to re-commence paying bonds, rents and services after the 1994 elections.

After 1994, the ANC government had initiated the Reconstruction and Development Programme (RDP) – a programme and policy aimed at addressing the immense socioeconomic problems brought about by Apartheid. However, its major focus was on providing services to the poorest households. Under this programme free housing was provided to South African residents in the lowest income brackets through a series of subsidies. The state initiated or supported the construction and delivery of approximately 1.9 million housing units. However, an additional 2 to 3 million housing units were required to stem the growing backlog.

The government then introduced its Breaking New Ground Strategy, which was recognition of the fact that housing alone would not resolve many of the issues associated with poverty and spatial fragmentation. Integrated service provision and new infrastructures that yield viable, prosperous and healthy communities are required. This strategy incorporated a number of fundamental principles for the creation of vibrant, dynamic communities. However, the instruments to implement the strategy did not change markedly from their predecessors.

The **communiTgrow** model has taken all the above variables and analysis into account and offers a different instrument to implement growth. What is proposed is therefore not merely a housing strategy but a comprehensive strategy for the making of cities.

2.8 Consequences of Previous Policy and Municipal Failure

2.8.1 Service Delivery Protests

It seems that South Africa has come full circle from the 1980s service boycotts to the service delivery protests of the last six years. Service delivery in the post 1994 South Africa has been characterised by violent protests, tyre burning and petitions. Many of the service delivery turnaround responses and strategies are yet to produce results. This response of violent protest amongst poor communities has become the norm amid a seemingly incapable and weak local government.[24]

At the moment in South Africa, the public's perception of local government is of a corrupt, insensitive and unresponsive bureaucracy. There is general consensus that these protests go beyond the issues of waters, sanitation and housing delivery and are also about the failure of local governments to engage ordinary people in meaningful political processes.[25] This situation is a powder keg waiting to blow and government has acknowledged that new and innovative models of dealing with development need to be found. That is what we are offering through **communiTgrow**.

2.8.2 Income Inequality

South Africa is classified as a middle income country with a strong industrial sector and a well-developed infrastructure.[26] However, statistics in this regard are extremely misleading. In fact, South Africa has one of the highest ratios of income inequality in the world. Since 1995 its HDI has fallen consistently. It decreased from 0.67 (ranked 125 out of 177 countries) in 2008 to 0.60 in 2010 (ranked 110 out of 169 countries)[27]. In 2000, the South Africa Gini coefficient stood at 0.68 which gives the country one of the most unequal income distributions in the

world. By 2008, this score increased further to 0.70[28]. The poorest 20 percent of the population earns about 2.3 percent of national income, while the richest 20 percent earns about 70 percent of the income. Poverty is widespread and deeply entrenched and is a barrier to growth and development of the country. It is estimated that close to a third of the South African population receive some form of grant or pension from the state.[29]

The HSRC estimated poverty rates for each municipality in 2004 and found that the majority of municipalities with the lowest poverty rates were found in the Western Cape. These included Stellenbosch (23 percent) and Saldanha Bay (25 percent). The major city with the lowest poverty rate was Cape Town (30 percent).[30]

communiTgrow sees employment as a fundamental component of the success of its business model. To achieve poverty alleviation within the city, our pilot city called Wescape, will offer people the chance for employment. Residents will have access to a general **communiTgrow** programme of orientation, coaching and mentorship that will be made available to all inhabitants. This will include programmes such as skill upgrades, specializations and community programmes. All participants will be involved with community outreach, programmatic electives and immersion programmes within business and the wider community. This will create opportunities for social rejuvenation and regeneration through building communities and enabling their evolution through increased opportunities for learning and prosperity.

2.8.3 High Rates of Unemployment

South Africa is a country with high rates of unemployment. This is particularly prevalent amongst the youth and young adults as South Africa has a majority young population. Those that have found employment often have a large number of dependants and therefore find that saving is difficult. The costs of food and transport, as a proportion of income, are also extremely high and banking costs are prohibitive. Therefore poverty is pervasive. Most of the unemployment occurs in those under 35 and the percentage rises dramatically for those who have not completed school to Grade 12. Even with a tertiary qualification, employment is not guaranteed for the youth in the current economic climate. The problem is that

the actual magnitude of job creation is simply too small. In addition, the rate of job creation has slowed as a result of the global economic crisis.[31] Therefore the need for new entrepreneurs is critical.

One of the social barriers for young black entrepreneurs is the number of dependants that they have. The eldest child that manages to get an education or a means of employment is expected to support younger siblings, parents and / or grandparents. This is often the working capital required to run a fledgling small business. Other barriers include an over regulated formal business environment, limited access to finance from lenders that are not willing to take on risk and concentrated markets with limited niche opportunities.

communiTgrow takes the view that supporting young entrepreneurs is fundamental to the success of the City Model. A more detailed discussion of the **communiTgrow** proposal for harnessing the production capacity of the working age youth in South Africa is proffered in the "economics pillar" chapter of this book.

2.8.4 Inadequately Educated Workforce

An inadequately educated workforce is a potential threat to economic growth and in that respect, education and skills development remains a challenge for long term sustainability. South Africa has a university enrollment rate of only 15 percent, which places the country 97th overall, in the world .[32]

To a large degree, South Africa inherited a highly fragmented and unequal education system from the Apartheid era. The education of the non-white majority was neglected for decades. Yet despite increased spending on education, a large percentage of school-aged children still do not attend school beyond the primary level. Currently 87 percent of school-aged children attend at the secondary level and only 20 percent at the tertiary level.[33] The Human Sciences Research Council (HSRC) in South Africa reported that 12 million children live in poverty. Four million of these children are starving and 40 percent have growth problems. Statistics reveal that 81 percent experience income and material deprivation and many live in informal settlements. More than 50 percent live in households where nobody is employed. The schools are deprived of resources, facilities and qualified teachers and this is having a huge impact on the quality of education and skills

available. Unskilled and uneducated South Africans have little chance of finding a job in the formal economy. In addition, the Human Sciences Research Council found that one of the challenges to employment of the youth is a lack of skills that "underpin employability"[34]. These include foundation skills such as mathematics, English, communication and work readiness.

There is a growing body of evidence to suggest that intervention in the first three years of life of a child fundamentally influence their values and social behaviour as adults. Therefore Early Childhood Development (ECD) is recognised as a fundamental step in improving education readiness for children. Yet the South African government underfunds ECD. [35]

communiTgrow recognises access to education as a fundamental tenet of sustainable development and regenerative design. Our approach is expanded upon below in Chapter 7 – The Education Pillar.

2.9 Resource constraints

2.9.1 Over Reliance on Fossil Fuels

There is a high dependence of the South African economy on the minerals energy complex[36] (MEC) which is closely tied to the manufacturing sector and hence drives the bulk of economic growth. The key issue is that the economy is highly dependent on cheap energy (from coal) and is under-diversified, with low levels of savings, high levels of debt financed consumption and low levels of innovation and investment.[37] The economy is under-diversified, with low levels of savings, high levels of debt financed consumption and low levels of innovation and investment.

The South African economy is highly dependent on cheap energy from coal, historically for mining and agriculture, and more recently for manufacturing and tourism. It exhibits an extremely high dependence on imported fuels (approximately 60 percent of transport fuels comes from overseas imports of crude oil). The rest of South Africa's fuel for transport comes from coal, which is mined and refined locally and from gas. Apart from industrial effects, oil price increases also affect the prices of electricity, water and property taxes. Adjustments to inflation rates are also influenced by the cost of fuel.

South Africa is one of the largest emitters of greenhouse gases (GHG) in the world. Coal provides 75 percent of the fossil fuel demand and accounts for 91 percent of electricity generation.[38] The bulk of GHG emissions in South Africa come from the energy sector. It contributed 78 percent of South Africa's total greenhouse gas emissions in 1994, and more than 90 percent of carbon dioxide emissions.[39] The bulk of South Africa's electrical energy is used by industry.

As global pressures and current policy regarding climate change demand a shift towards an economy that produces less greenhouse gas emissions, South Africa needs to rethink the structure of its energy sector. It needs to look towards alternative technologies for its supply of energy and to industries and lifestyles that generate less demand. A move towards a greener economy decoupled from resource use is already appearing in strategic documents produced by the state. However, the construction of two new mega coal-fired power stations (Medupi and Kusile) by the national utility Eskom calls into question this commitment. It was reported in the Mail and Guardian newspaper (April 2010) that the ANC stood to earn R1 billion if the World Bank granted Eskom a $3.75 billion loan to finance its contract awarded to Hitachi Power for work on the Medupi power station. [40]

The claim on the Eskom website is that South Africa's coal reserves are estimated at 53 billion tonnes, and with present production rate there should be almost 200 years of coal supply left.[41] However, Hartnady in his article in 2010 questions this assumption. He claims that;

> *"South Africa's coal reserves have been significantly reduced since 2003 and a re-assessment based on the complete statistical history of production from southern Africa has indicated that the present remaining reserve for the entire subcontinent comprises only about 15 billion tonnes or gigatonnes"*[42]

Thus "peak coal" is a far more immediate possibility that threatens the current economic basis of the economy.

The **communiTgrow** model provides a practical method for moving towards a different type of economic base as expanded on in chapter 9 below which focuses on regenerative design.

In Cape Town, the economy is largely shaped by three sectors; (1) finance, insurance, real estate and business services, (2) manufacturing and wholesale and retail trade, (3) catering and accommodation. In 2008 these sectors contribution

to the city's real GGP, employment and gross capital formation was 66.61 percent, 58.56 percent and 57.32 percent, respectively. Although Cape Town is less reliant on mining than the rest of South Africa, these sectors are still heavily reliant on energy and transport. Transforming the economy of Cape Town to a greener economy is therefore seen as a way to increase the resilience of the City to external influences such as oil price increases and a collapse of the mining industry.

The Wescape pilot project located north of Cape Town will provide a pilot system to create a greener economy. For a further discussion in this regard please refer to Chapter4 below dealing with the economic pillar of the **communiTgrow** model.

2.9.2 Food Production Decline and Price Increases

Worldwide food shortages and rising food prices have been attributed to global warming and climate change, and has resulted in crop failure and production decreases. According to Food Price Watch, domestic prices of staples remain at levels higher than those of a year ago (that is, December 2010–December 2011) and seem to be climbing. Maize prices are up in South Africa by 84 percent, attributable in part to reduced local production, increasing demand, and rising global oil prices. South Africa could face a maize shortage soon and might have to import the grain. Every food group has risen in price since last year. Bread and cereals are up by a disquieting 26.6 percent and bean products by more than 20 percent, followed by fats and oils and animal protein – both by a little under 14 percent. Increases in food prices are particularly difficult for the poor as food makes up a large percentage of their expenditure[43]. The arable land (percent of land area) in South Africa was only 11.82 in 2009, according to a World Bank report, published in 2010.[44] This is therefore a precious commodity if South Africa is to be food secure in the near future.

The importance of urban agriculture therefore gains prominence in a discussion regarding food security. However, unless food production is carried out at scale and using commercial principles, it will never be able to compete with commercial farming. Consequently, this is an undertaking that must be adopted at a city wide scale. At **communiTgrow**, urban agriculture underpins our approach to sustainable development. Our model reinforces the need to promote urban agriculture within the city boundaries.

2.9.3 Water Scarcity in South Africa

The government has identified water as a critical resource. Experts warn that increasing demand for water is set to place severe strain on the country's ability to supply this finite resource. South African Treasury's 2012 Budget Review, states that South Africa will start running out of water 13 years from now without better management.

A recent document claims that "On current projections, South Africa's water demand will outstrip available supply between 2025 and 2030,"[45] and that water quality is further deteriorating due to pollution.

South Africa has an economy that was built up on mining. The mines have also had negative consequences environmentally. They have produced large quantities of acid that has leached into rivers and aquifers. Many long-abandoned mines are rapidly releasing their toxic contents into the water system, and the state has been slow to respond to these threats so that now the drinking water in many areas in under threat.

Improperly treated sewage is also a growing problem in South Africa. The current technology used by most local authorities in South Africa is an end of pipe solution. Sewage is collected in a centralised system and treated, before running into rivers and the ocean. Most municipal *sewerage systems in South Africa* are 30 to 50 years old.[46] The ageing infrastructure of most sewerage treatment systems in South Africa renders them as inefficient. A large proportion of the sewage emanating from South African urban areas is not treated properly prior to discharge, because the sewer systems are incomplete, or sewage treatment plants are overloaded. This is particularly true in densely populated areas and in those areas where summer storm runoff enters sewerage systems.[47] In addition most sewerage systems in South Africa make use of a waterborne sewerage system. Given the current water crisis, this is not a viable solution. A further problem relates to the location of informal settlements, especially along the urban peripheries and alongside water courses and over aquifers, as these are usually marginal, unplanned areas, where little or no provision has been made for waste and sanitation services. With inadequate sewerage systems in place, and little provision for the removal of waste, large quantities of waste are washed into rivers and wreak havoc on habitats, or are leached into aquifers where they make their way to overburdened water purification plants.

Underlying all of these crises is the widening loss of essential skills in the engineering sector. Over the last decade and a half the municipal sector has lost six-sevenths of its engineers and technicians, rendering most outlying municipalities unable to deliver even the most basic services.[48]

South Africa is considered to be a "dry"/water-scarce country. Therefore a new approach is needed towards water use, reuse and conservation. One South African conservation organisation has warned that South Africa's fresh water could be so badly polluted in five years' time that it would be unfit for drinking.

At **communiTgrow** we offer a way of city-making that not only respects, but also regenerates the ecosystems in which it is located. The systems we propose are designed to operate in a manner that supports local ecosystems and reduces levels of consumption of natural resources. Consequently, **communiTgrow** supports the deployment of decentralised infrastructure, technology and governance solutions.

2.10 Urban Infrastructure, Renewal and Sustainability

The process of city building is currently uncoordinated and ineffective and does not create sufficiently sustainable settlements and communities. The different spheres of the government (National, Provincial and Local) are tasked with providing different aspects that make up the city and these efforts are not coordinated. For instance, the Provincial government provides schooling and clinics as well as funding for housing. The municipality provides infrastructure, such as sanitation and refuse removal. National, Provincial and Local authorities all are tasked with providing and maintaining different levels of road infrastructure. Coordination is also lacking between departments within the same sphere of government, who tend to work within silos. It is quite common for a new settlement to be planned and constructed, which consists entirely of houses, where no employment opportunities, schools, clinics or municipal offices have been provided.

In the Western Cape most infrastructure systems are operating at maximum or close to maximum capacity. The reality is that local authorities have not been investing in infrastructure maintenance and repair for the past three decades.

This has reduced the lifespan of most infrastructure. If we are to change to a sustainable economy then changing the way we think about infrastructure systems is vital. Existing infrastructure systems for transportation and water are very energy intensive. So intervening at this level, in the way that infrastructure is designed, operates and the technologies used is essential to reducing our carbon footprint and creating more sustainable solutions.[49]

At **communiTgrow**, we approach our infrastructure design from an ecosystem perspective. **communiTgrow** will also formulate and test models for deploying smart infrastructure and logistics in the developing world context. The principles used are that matter cycles continually through the web of life that the energy driving these ecological cycles flows from the sun and that diversity assures resilience.

2.11 Healthcare and Burden of Disease

The public health sector is over-stretched and under-resourced in many places in South Africa. While the state contributes about 40 percent of all expenditure on health, the public health sector is under pressure to deliver services to about 80 percent of the population.[50] Institutions in the public sector have suffered poor management, underfunding and deteriorating infrastructure. The situation is compounded by public health challenges, including the burden of diseases such as HIV and tuberculosis (TB), and a shortage of key medical personnel.[51] An estimated 5.6 million people were living with HIV/AIDS in South Africa in 2009, the highest number of people in any country.[52] A lack of adequate sanitation and water is one of the largest factors in creating unhealthy conditions for poor people. A lack of sanitation and adequate drinking water can lead to health problems, such as increased exposure to pathogens which can lead to diarrhoea (one of the largest factors in infant mortality).

The doctor-to-population ratio in South Africa is estimated to be 0.77 per 1 000. Due to the fact that the vast majority of GPs – 73 percent – work in the private sector, there is just one practicing doctor for every 4 219 people.

There is a dearth of national guidelines, norms, standards and targets and a lack of national stewardship affecting the health system's planning and performance. Insufficient resources to implement a range of national policies exacerbate this situation.

The **communiTgrow** approach to healthcare focuses on the factors that support human health and well being, rather than on the factors that cause disease. For more detail on the **communiTgrow** approach to health see Chapter 8 below – The Health Pillar.

2.12 A New Approach - Fresh Challenges

Sustainability is at the forefront of the **communiTgrow** approach. Most approaches to sustainability have tended to concentrate on the biophysical or economic and have disregarded the social aspects. In the **communiTgrow** approach, the emphasis on the social is paramount, as this is where the key requirement for long-term sustainability resides in South Africa and indeed in much of Africa and the developing world in general.

In our approach, socio-economic stability is key to ensuring long-term sustainability. In responding to many of the current issues impacting city-making, we believe that we have formulated an approach that is both practical and that deals with a significant measure of the urban development challenges that South Africa and Africa is facing through deploying an approach that is focused on long-term sustainability.

In the next chapter, the unique **communiTgrow** approach is introduced and the market niche to which it is responding is detailed. It responds to a growing market niche where the demand for liveable urban environments is already high and continues to grow, while at the same time potential buyers remain unable to enter the housing market, from which they are effectively priced out.

Part Two

Responding to the Business Opportunity with a Regenerative Approach

Chapter 3

communiTgrow (Pty) Ltd: Structure and Corporate Strategy

3.1 Purpose of Chapter

The purpose of this chapter is to make clear our corporate identity as well as outline our business approach and proposed solution to the chronic shortage of housing within the context of developing sustainable African cities. In this chapter we will make a strong case for why we need to exist, who we are, and in broad brush strokes explain how we go about doing business and raising the required capital to fund our core business as well as fund the larger project, in this case the Wescape Project.

The Wescape development which is located on the urban edge of Cape Town is the first major project of the company and therefore serves as a live university and a reference point for much of the discussion in this book. For purposes of illustrating the scale of the project and at the same time creating a context for discussing the business strategy of **communiTgrow**, it may be useful to know the broad contours of the Wescape project as illustrated in Figure 3.1. In short, the Wescape project will be developed over a 20 year period and comprise approximately 200 000 housing units and all the supporting infrastructure required of a city including transport infrastructure (roads and rail), educational institutions (day care centres, schools, colleges, university), and the full spectrum of municipal services. The differentiating factor for a **communiTgrow**-styled city such as Wescape is its regenerative approach which is explained in more detail in Chapter 9 below.

Educational Facilities
Early Childhood Development
Creches
Pre-Primary Schools
Primary Schools
Highschools
Colleges
University
Further Training
& Education

Public Open Spaces
Town Squares
Urban Parks
Neighbourhood Parks
Fields

393,750m² Retail

Regenerative ecology

200,000 Homes

1,260,000m² Light industrial

800,000 Population

551,250m² Commercial

Public Service Facilities
Home Affairs
Municipal Offices
Local Libraries
Community Centres
Religious Centres
Post Offices
Fire Stations
Police Stations
City Halls

Health Care Facilities
Community Health Centres
Primary Clinics
Tertiary Hospital

Sports Complexes
Athletics Tracks
Sports Fields
Swimming Pools
Local Stadiums

Figure 3.1 Wescape Overview

3.2 Our Unique Intellectual Property and Financial Modelling

communiTgrow(Pty) Ltd is a specialist South African property and community development company whose core business is to design, build and empower all role players to co-manage new African cities. Through our participating shareholders, comprising of five specialist South African private companies, we provide and implement a uniquely customised turnkey solution that facilitates the creation of a community where the need for affordable housing and socio-economic sustainability are simultaneously met.

Through our unique IP and financial modelling, we offer a comprehensive approach to holistic development, socio-economic and environmental concerns. Our integrated whole-system turnkey solution to affordable housing and community development is done to scale and is best applied where the core need is between 25 000 and 200 000+ housing units and part of a long term project which, in the case of provisioning 200 000+ units, would typically span a 15-20 year development period.

communiTgrow aims to partner with governments and agencies that are facing up to the enormous task of providing housing, especially for the low-end of the bonded market, accompanied by sustainable community development for millions of residents and citizens who otherwise are destined to become a burden and a resource strain on existing city and urban infrastructure.

3.3 Shifting Paradigms: Moving a Step Beyond the Traditional Approach

As indicated in the previous chapters, there is a need in developing economies for integrated and effective urban design and development. Traditional property developers are consequently challenged to build more than just the physical house. **communiTgrow** has risen to this challenge and has designed a unique approach to property development which has community development and sustainability as the key development outcome.

It is for this reason that **communiTgrow** has formally established itself, to give effect to the building of sustainable communities. The **communiTgrow** approach to housing development is new to South Africa and Africa. Never before has a property development company taken responsibility for creating the full value chain - from the building of the house to ensuring that the community itself is economically sustainable and that the neighbourhood is a fully integrated sustainable whole. **communiTgrow**, is thus a pioneer in taking the property development industry to a new level of accountability through innovation and measurable community upliftment.

One of the innovative and distinguishing features of **communiTgrow** is its commitment to overcoming the development challenge in Africa. The company is set to help build regenerative holistic communities and neighbourhoods rooted in education, dignified employment, healthcare and housing. It is the desire of **communiTgrow** to create communities which are able to generate multiple income streams using a regenerative whole-systems approach to urban and economic design. The **communiTgrow** approach is designed to create an economically viable and sustainable community to scale – a place where permanent jobs are offered through the creation of sustainable industries linked to the wisdom and understanding of what a truly regenerative ecology is. The ensuing chapters in this book will discuss and illustrate this intent in more detail. For the purposes of this chapter we simply want to indicate that our explicit intention, as a company, is to move beyond providing houses. Our intention is to create the circumstances and environment where a quality life can be lived by a community of almost one million residents for generations to come. We are therefore not merely creating a location for decent housing for a transient labour force. The residents of this new community, indeed a new city, will be able to earn "affordable living" and "make a life" in that very place. The cities we design and build will be able to generate jobs and offer wealth creation opportunities so that they become self-sustaining cities.

A **communiTgrow** city is based on the philosophy that mixed income levels can co-habit in the same space and their respective economic and entrepreneurial needs will complement each other in a healthy manner. Therefore, the immediate beneficiaries (indeed residents) of a **communiTgrow** styled city will be twofold:

(1) The housing portfolio (see Chapter 6 - Housing Pillar) will appeal to the aspirant middle class who are unable to access affordable housing or jobs in the "traditional" city and urban areas and (2) The other market segment, and indeed beneficiary, will be the GAP market. This GAP market is defined as a sector where the household income is insufficient to enable them to participate in the private property market, yet too high to qualify for state assistance.

3.4 The Market Need

3.4.1 A Rapidly Urbanizing Africa

The continental business focus of **communiTgrow** is Africa. We recognise that African governments face the enormous challenge of providing sufficient affordable housing units and services for a rapidly urbanizing African continent. In particular, most African countries, and cities in particular, have considerable urban housing backlogs. Cape Town, one of the larger cities in Africa, for example, has a backlog of 450 000 housing units .[1] The demand has thus outstripped the supply, placing enormous strain on the current rate of provisioning by the city which is unable to keep up with demand.[2]

It is estimated that the African continent will need 800 cities (accommodating between 800 000 and one million people per city linked to approximately 250 000 housing units) to be built over the next four decades, if she is to cope with the current rate of urbanization and migration to the African city.[3] The abiding question linked to a race against time is: Will the "new" cities be built in time to accommodate the demand? Furthermore, will these new cities be built before the infrastructure of existing cities become so overloaded by the demand that they collapse due to the sheer weight and strain placed on the existing infrastructure grid by the incoming migrants and growing existing residential base?

It would appear that we could either anticipate the growth and engage in a proactive approach by building new cities or adopt a "head in the sand" ostrich approach and hope that the problem of overcrowding in and around the periphery of our existing cities will simply go away. As this book has already highlighted, research shows that African urbanization is inevitable and will be ongoing at a rapid pace for at least the next four decades. The question is: How will we respond

to this rapid and inevitable urbanisation? From a business perspective the question is: How will we position ourselves as astute business people to benefit from this wave of unprecedented opportunities on our continent while at the same time assisting to create sustainable community?

We at **communiTgrow** see African urbanization as an opportunity and not as a threat. We see an opportunity to assist countries in the up-scaling of the continent's capability to cope with the unprecedented rate of city growth that has enveloped many regions and locales on the continent. It is worth repeating that the urban migration happening on our continent is the greatest migration of people in the history of humankind – in this instance a migration from the African hinterlands to the African urban metropoles which are already ill-equipped to cope with its current people load and the internal growth of African cities.

communiTgrow sees itself as a potential partner to existing administrations and governments who want to proactively provide long term and sustainable solutions to the housing crisis faced by that country with particular reference to the affordable housing market, with a particular focus and an emphasis on the GAP market.

3.4.2 South Africa's Housing Backlog and Three Core Market Demands

A number of core needs within the South African market have already been identified. These are discussed in detail elsewhere (see above, for example, Chapter 2). However, there are three of core market demands that merit specific mention and will help in creating a context for the relevance of the **communiTgrow** IP and approach. These are (1) the challenge of creating effective housing solutions for the GAP market, (2) the need for housing in well-located areas proximal to employment and (3) the need for a holistic and integrated approach to development. Let us take a brief look at each of these identified market demands and inevitable drivers.

The GAP market challenge: The GAP market has traditionally been overlooked whilst the greatest need for housing is located there, thus constituting the largest potential market. Historically, projects delivered don't service the lower end of the GAP market, primarily due to a lack of financial sector support. Also, the lack

of well structured financial models that manage the inherent risks and delivery for such projects have been overlooked by those with the "know-how' to do them. It is for this reason that we have applied our minds to the creation of a sustainable financial model to facilitate the funding of home owners who otherwise would not be able to enter the private property and home owner market.

Provision of housing opportunities in well-located areas proximal to employment: In South Africa, by way of example, Cape Town's housing backlog of approximately 450 000 housing units, with an annual delivery by combined public and private sector initiatives amount to an average of 14 000 housing opportunities . What exacerbates this insufficient supply of stock is the increasing urbanisation and in-migration trends into the city which is expected to increase the number of housing units to 780 000 in Cape Town by the year 2030. As such, the need for effective service delivery is prevalent.

A holistic approach: Despite the best efforts of both the public and private sector, housing developments in South Africa have usually been located in areas with very poor infrastructure and services facilities. In addition, the layout of these projects lacked the feel of a true community. Also, units of varying quality have been provided causing a number of additional challenges to be overcome by beneficiaries. And finally, we must note the impact of a lack of integrated planning at the design stages. The combined result is that communities often struggle with access to economic opportunities, which is detrimental to the overall growth of communities. "At scale projects", as promoted by **communiTgrow**, offer delivery of holistic settlements and an opportunity to unlock sustainable developments in most major cities in Africa, whilst positioning people and economies of a new growth path.

There is therefore a need for a holistic approach to community development and settlements planning in conjunction with improved spatial and urban design frameworks and approaches, ensuring integrated service delivery over the life-cycle of settlements.

Figure 3.2   Housing Typology Analysis

Unit value (ZAR) axis:
- 0
- 115,000
- 246,000
- 492,000
- +

Diagonal labels (top):
- Government intervention 9,000 housing units per annum
- Private sector contribution 9,000 housing units per annum
- FLISP market program but ineffective delivery
- Increasing government support throughout rental housing program
- Finance-linked in accordance with loan and investment terms

Market size (vertical axis)

Bands (left to right):
- Subsidy
- Lower GAP/social housing
- Upper GAP
- Open market

Household income (ZAR) axis:
- 0
- 3,500
- 7,500
- 15,000
- +

(Subsidy)
- Projects located on outskirts of economic job opportunities
- National delivery backlog
- Full subsidy provided by Government

GAP
- Low supply of stock VS high residential demand
- Limited access to mortgage finance
- High exposure to debt affects majority of market
- Sliding scale subsidy provided by Government
- Exposed to all open market fees and costs

SOCIAL HOUSING
- Grant provided by Government
- Located within proximity to job and economic opportunities
- Rental units always in sectional title schemes
- High demand due to challenge in access to mortgage finance market

(Upper GAP)
- Low supply of stock VS high residential demand
- Limited access to mortgage finance
- High exposure to debt affects majority of market
- High demand due to challenge in access to mortgage finance market
- Exposed to all open market fees and costs
- Located within proximity to job and economic opportuni ties
- No subsidy provided

(Open market)
- No Government intervention
- High supply and demand dependent on economic climate
- Majority of property trends and statistics drawn from this market
- Accessible to limited percentage of country's population
- Well-located within proximity to economic jobs, and private and public amenities

3.4.3 Target Market and Affordability Criteria

Ongoing research shows that there is a desperate need for effective housing solutions especially in the GAP market sector. "GAP housing" is a term that describes the shortfall or "gap" in the market between upper-middle class residential units developed by private property developers for profit R250 000 / USD $31 250) and the state supplied approximately (R100 000 / USD $12 500 or less) residential units.

Market analysis also reveals that the GAP market suffers a lack of affordability options. While the City of Cape Town, for example, has identified the Cape Town GAP market size to be 165 000, the broader Cape Town housing backlog, as mentioned, is already around 400 000 housing units, and growing every year.

The housing backlog is, of course, not unique to South Africa and in this regard, market research shows that the African continent is a prime frontier for development despite its multitude of structural and developmental challenges. **communiTgrow**'s turnkey solution[4] will be an enormous advantage to governments, the private sector and communities across Africa, as they collectively address the urgent need for the creation of sustainable African communities and cities. This is especially the case where the emergence of new cities along local and trans-regional development corridors is concerned, where towns may develop different functional specialisations or different combinations of functions from one another.

With reference to Cape Town, the market which provides the most opportunity, in our view, is the GAP market as well as the subsidised and the lower end of the bonded market. **communiTgrow**'s approach of providing an integrated and holistic solution to challenges in this market should be well-received as it represents a sustainable solution to the proliferation of informal settlements due to affordability at this low end of the market. A graphical representation of the GAP market analysis relative to Cape Town is provided as Figure 3.2, indicating the various income and affordability thresholds. What is evident is that within the GAP market there are sub-categories defined by income levels linked to affordability (subsidy, social housing, upper GAP, open market). This information becomes extremely useful for marketing purposes as it assists to identify target markets and groups best suited to benefit from the various housing options in the broader property portfolio of the new city.

3.5 Vision and Mission

3.5.1 Business Vision

The ongoing assessment of market opportunities has birthed the vision of **communiTgrow** namely to build communities of understanding throughout Africa, at scale, in which the capacity for education, health, potential and the expression of people-based communities can contribute to regional economic stability and the ongoing regeneration of healthy eco-systems.

We recognise that each place / location / country has unique value that is derived from understanding its intrinsic and comprehensive essence. By the same token we believe that when this intrinsic value of place is defined and subsequently underpins development, then people, place and systems can work to develop the full potential of the people in a place that can continuously adapt to the rapid changes facing our societies and environments. Neighbourhoods such as these position people and communities to have healthy lives, livelihoods and lifestyles.

Ideally, the **communiTgrow** model and its IP should be applied to new development projects but can also be used as a supplement to an existing development. Thus, through a number of strategic interventions flowing from each of the six core pillars of its development philosophy, **communiTgrow** is able to provide a location-specific value-creating service to a development project and its clients.

3.5.2 Mission Statement

The mission of **communiTgrow** is to co-develop contextually appropriate regenerative communities of sustainable neighbourhoods underpinned by whole-system thinking and sound financial modelling, in regions where people's basic needs are not currently being met.

3.6 Business Strategy

3.6.1 Key Strategic Interventions

The **communiTgrow** approach to development is vastly different to any other development agency or developer. Understanding this difference in value creation for each project or client is key. This approach is constituted by a few key strategic interventions:

- Superior education facilities, teacher training programmes and syllabi (partially subsidised)

- Comprehensive healthcare (partially subsidised);

- Integrated governance system;

- Increased size and quality housing units at reduced costs;

- Integrated business catalysts and sustainability programmes;

- Optimising urban infrastructure and natural systems design for spatial, environmental and resource efficiency.

Armed with this innovative approach **communiTgrow** has the opportunity to add credibility and sustenance to its approach by seeking to establish the concept through a series of well-planned and carefully selected pilot projects. These projects will be integrally linked to the development approach chosen, and will serve to eventually strengthen each pillar's objectives and proposed strategies, thereby assuring credibility for each pillar, whilst also ensuring comprehensive credibility for the development approach as a whole. By following this strategy, **communiTgrow** will also have access to projects that speak to one part of its project approach, thereby increasing cash-flow.

3.6.2 Building Strong Alliances with Key Forward-Thinking Partners

communiTgrow has an opportunity to position itself in alliance with powerful corporate entities within various sectors, thus empowering itself to make use of their influence to access support and interest (from the financial sector, but as well

as building a support base amongst the larger business, commercial and public communities). Such alliances will answer the need for community development through **communiTgrow**'s development concept and also showcase in different economic sectors, allowing for a greater understanding of the value-add of the company over the medium to long term.

Some of the existing key forward thinking partners include whole systems partners (Zeri Organisation and the Regenesis Group), various project partners (Aurecon, Old Mutual) and individuals such as Professor Gunter Pauli and Professor Jonathan Bloom.

3.7 Corporate Structure and Capability

3.7.1 communiTgrow is a Joint Venture Company

The guiding principle and foundation on which **communiTgrow** is built is that the management of the whole system is as important as the management of individual parts of the system. Understanding and managing systems integration and adaptation is therefore critical to the **communiTgrow** approach. **communiTgrow** is thus a deliberate joining of the specific competencies of five different companies, each playing a unique yet complimentary role in a joint venture. The unique knowledge, skills and competency configuration of **communiTgrow** enables it to function as a specialist consultant company, with a range of experienced service providers at its disposal, from each of the five partnering companies enabling the provision of a whole systems turnkey solution.

These companies are:

Pact Developers (Pty) Ltd
new business, project finance and overall strategy

PACT is a company that is committed to uplifting communities through deploying whole-system development philosophy and thereby creating sustainable opportunities for the greater good of individuals, families and communities of people.

Furthermore, PACT is committed to the establishment of sustainable entry-level communities where industry and employment are permanently created

as a new residential development is being constructed. Founded in 2005, PACT Developers focuses its energy and efforts towards social upliftment and addressing social needs through whole-system development of communities and is committed to bringing about change for the greater good of all.

Visit: www.pact.co.za

Bellandia Investments (Pty) Ltd
large scale residential and commercial property developers

An award winning Bellandia *provides over 45 years of large scale residential and commercial property development and delivery experience and has become a well-respected brand in South Africa, especially in the Western Cape;*

Bellandia has been in existence for almost half a century and during this time has undergone three major phases of growth and development. In an effort to strategically position itself to take advantage of the changes in the housing market, Bellandia moved towards the development of larger-scale residential projects within this field. Bellandia now forms part of the PACT Group of companies and serves as the executive project manager for all the projects which PACT Developers source and initiate. The Bellandia experience and reputation is a valuable addition to the **communiTgrow** stable having won the Silver Award in the category "Best Residential Development in South Africa" in the prestigious international Homes Overseas Awards in 2005 for its Sandown Crescent development.

Visit: www.bellandia.co.za

ARG Design (Pty) Ltd
architecture, town planning, sustainability and urban designer

ARG is an award winning company that provides expertise in holistic green urban architectural and innovative sustainable settlement design solutions.

ARG is committed to creating innovative sustainable solutions for settlements and buildings. ARG has designed and delivered many major projects and are recognised as leaders in the field of Integrated design and sustainability. ARG's practice combines the professions of Urban Design, City and Regional Planning, Architecture, Landscape Architecture and Environmental Management. ARG

aims to push the boundaries of sustainable design and constantly develops its knowledge and ability to deliver outstanding service. The Sustainable Solutions Initiative of ARG provides practical research to ensure cutting edge thinking and problem solving for every project.

Visit: www.argdesign.co.za

ARiYA Project Managers (Pty) Ltd
programming and project managers

ARiYA is an award winning company that offers the ability to timeously deliver mega-projects through strategically planned project management and procurement.

ARiYA was established in January 2005. With the exceptional track record in successful project delivery, ARiYA quickly attracted prestigious projects, building an outstanding rapport within the industry. ARiYA's proudest moments to date came in 2010, when the iconic and award-winning Cape Town Stadium was successfully delivered and handed over for the 2010 FIFA Soccer World Cup. ARiYA continues to grow their exceptional capabilities in achieving the goal of helping to build Africa. ARiYA has now extended its core service provisions to include Town and Regional Planning. ARiYA is comprised of a multi-disciplinary team of experienced professionals based at its office in Cape Town.

Visit: www.ARiYAprojects.com

Target Project Managers (Pty) Ltd
project and construction management

Target is an award winning company that guarantees strategic partnerships that deliver a simple, effective, successful and streamlined solution to projects.

Target Projects was founded in 1997 and has distinguished itself as one of South Africa's leading project management companies in construction, economic development, logistics, transportation and business planning, collecting several awards along the way. Some of their mega projects include the construction of the Cape Town International Convention Centre, which is rated in the top 20 in the world; the redevelopment of the international and domestic terminals at the Cape Town International Airport; and the design and construction of a national

cultural archive in Timbuktu, Mali. This world heritage site was the first successful NEPAD cultural project. Target Projects is also embarking on several projects in Central East Africa.

Target Projects is more than a development, project and construction management company. Rather, their holistic approach to a project ensures that they become strategic partners, taking pride in their personal involvement from start to successful completion of the project.

Visit: www.targetprojects.co.za

3.7.2 communiTgrow (Pty) Ltd - Board of Directors

The **communiTgrow** board of directors is comprised of directors from the participating shareholder companies. Currently the board includes:

Executive Directors:

- Ms Gita Goven – Chairperson (Director at ARG)
- Dr Ruben Richards – Managing Director (Director at PACT)
- Jalal Allie – Financial Director (Financial Director at Bellandia)
- David Pearson – New Business Development (Director at PACT)

Non-Executive Directors:

- Terence Smith (Director at Target Projects)
- Sigi Naidoo (Director at ARiYA Projects)
- Alastair Rendall (Director at ARG Design)
- Andy Bush (Director at Bellandia)
- Paul Jones (Director at Tax Radar)
- Drew Danford (Chairman at Bellandia)

3.7.3 Practical Commercial Agreements

communiTgrow's IP and turnkey solution is available to clients via various commercial arrangements. Clients can be engaged on a retainer plus fixed price contract or a combination of retainer and profit share basis, depending on the size and duration of the project.

In sum, **communiTgrow** can serve as both the developer on the one hand and on the other hand as a consultant to other developers. Its comprehensive service basket of holistic community development products, with linkages across the full development spectrum, ensures that **communiTgrow** is able to provide practical and relevant solutions to challenges faced by its clients.

3.8 Six Pillars - The communiTgrow Product and Our Value Proposition

The **communiTgrow** product offering (i.e. IP) is a multi-pronged approach to housing development thereby ensuring successful mega city development characterised by improved spatial and urban design and integrated service delivery across all aspects of the life of the community – indeed integrated community development.

We deliver our product through six pillars of integrated whole systems community development – our unique methodology and approach to city-making and community development. These pillars are:

Pillar 1 - Economy - Stimulation of local **economic** activities, provision of vast array of economic opportunities and fixed employment;

> **communiTgrow** has committed to the delivery of integrated economic development initiatives which place emphasis on both local entrepreneurial development (stimulating neighbourhood economic growth) whilst also focusing on establishing mega economy drivers such as key industries necessary for large-scale job creation, which also requires deep levels of

specialisation. These initiatives will be managed by an economic authority, ensuring sustained growth, regardless of scale across all relevant sectors.

Pillar 2 – Housing – Provision of a wide range of **housing** options (i.e. portfolio) within safe and secure environments, underpinned by integrated infrastructure allowing for walkable communities;

This pillar focuses on providing affordable and quality housing units across a number of socio-economic levels through the delivery of integrated and mixed-use developments. **communiTgrow's** first mega-project, Wescape, promises to provide approximately 10 000 housing units per annum whilst providing a total of 200 000 units over 15-20 years. In addition, an urban design and spatial planning framework will ensure that these units are delivered with the necessary supporting infrastructure and associated economic benefits/opportunities.

Pillar 3 - Healthcare – The building of comprehensive **healthcare** facilities and methodologies, thus allowing for traditional and conventional healthcare practices to occur simultaneously;

Healthcare, like education, is the cornerstone of good community development and it too faces an ever-increasing need for affordable and accessible service delivery for families. **communiTgrow's** approach to healthcare is all-encompassing, ensuring the integration of traditional and pharmacological healthcare in order to provide the widest and most affordable range of services and products in the projects which it delivers. Further focus will also be placed on a nurses' training elective as part of every strategy written.

Pillar 4 – Education – A cradle-to-grave **education** approach, focusing on all-encompassing education nodes for all ages inclusive of first-world education syllabi, advanced facility design and strong leadership;

Education is an integral part of and a prerequisite for social upliftment. The South African education system has been fraught with a number of challenges, including a lack of effective planning of infrastructure around schools and a weak training environment for teachers. Another concern is the on-going inability of school leavers, especially matriculants (i.e. Grade 12), as

well as university graduates, to access job opportunities. **communiTgrow's** commitment to provide strategic interventions in education which are of real value to all age and income groups sets it apart from other development agencies in Africa. The focus is on the provision of teacher training colleges, comprehensive education syllabi, and a wide range of vocational options as well as creating foundational linkages with the business sector to ensure relevant skills transfer.

Pillar 5 - Regenerative ecology - Waste is seen as a resource and not a problem. Our approach to urban design is inclusive and supportive of environmental sustainability, drawing on the latest **regenerative environmental** design in terms of waste management, energy creation and usage, infrastructure services (electricity and water), food and water security.

communiTgrow, through a number of strategic partnerships, will implement initiatives that will regenerate biodiversity, reduce waste, ensure self-sufficiency of water and energy, food security and encourage employment in an overall self-sustaining community with multiple streams of cash flows. These initiatives will include diverse energy sources, such as solar and wind, as well as an array of recycling systems that will encourage waste to be viewed as a resource and not an ever increasing problem. The overall natural systems will be improved, become more productive, supportive of life and healthier than before.

Pillar 6 - Governance - Integrated approach to community development with a focus on organic growth, built on the foundation of integrated **governance** structures and management systems as well as public participation and interaction.

In order to ensure the delivery of sustainable and holistic communities, **communiTgrow** has committed to providing walkable communities , a concept which allows for easy access of all necessary services to the end-user. An integrated urban design and spatial planning approach will ensure that all facilities, sectors and activity nodes are located where the most value can be obtained from them. In addition, governance organisations and initiatives will be implemented to ensure that all aspects of each project is maintained and managed effectively. The enforceability of agreed upon rules and regulations will be a prominent features of the governance pillar.

3.9 The Financial Model

Arguably, the most important aspect of **communiTgrow**'s IP is its financial model. It has taken more than five years to develop and fine tune the model. It is a model that is premised on an integrated holistic philosophy of community development. There are two core questions to be answered by the financial model. The first being - How does one raise the money in the first instance (i.e. seed money) to even begin a project of this magnitude? How is one able to convince investors to invest money in the project? Here we are alluding to the raising of capital and for ease of reference will link these questions to what we call the Project Development Financial Model. This is a first tier question.

The corollary to project development finance, indeed a second tier question, is - How will this project (i.e. Wescape, for example) create sustainable jobs and facilitate wealth creation? How do we turn one rand/dollar into one hundred rand/dollars? In short, how do we create an economy that can sustain the kind of jobs and growth we envisage for this new city? This is a matter to which a comprehensive answer is provided in Chapter 4 which outlines the Economic Pillar. However, the growth of economic value presupposes that we, in the first instance, have raised capital for the project here described as Project Development Finance (i.e. seed money).

For the purposes in this chapter, we want to answer the primary question which involves the need for "seed" money in the first instance namely, "Where is the project development money located and how does one go about raising that kind of capital?" This is a question that deserves as clear an answer as possible.

Notwithstanding the detail provided below in Chapter 4 - The Economic Pillar - we will be well advised to repeat, here, the three core principles that will govern the overall financial operations of **communiTgrow** projects.

The first principle being fees will be drawn from all active business entities within projects for the opportunity to do business. **communiTgrow** provides an excellent opportunity to the business sector due to the integrated communal support system which it establishes and manages, as well as the sheer amount of people in one place, coupled with the fact that the business can enter a virgin market without competition.

The second principle being **communiTgrow** will take a percentage of all grants and investment funding obtained for administration and management.

The third principle is that of upfront fees payable from development joint ventures in which **communiTgrow** provides the expertise on the one hand and landowners provide the land on the other hand. Thus **communiTgrow** and landowners jointly raise finance for the development

3.10 How to Procure Project Development Finance

Capital raising and Investor confidence: The objective of this section is to explain how the **communiTgrow**'s financial model (i.e. capital raising model) works, and how project development finance required for a **communiTgrow** project is procured, structured and deployed.

As with any ambitious undertaking, whether it is sending a man to the moon or uplifting the disadvantaged on the African continent, it requires vast amounts of funding as well as a method and governance structure to control its expenditure and monitor the delivery on the stated objectives and goals for which the funding was procured. So the primary question is - How can the financial capital resources required for the project, be procured? The answer is actually quite simple: Get out there and *find it!* Unfortunately, capital will not be handed to you simply because you are engaged in an upliftment housing development. Rather, you will receive support because you have a financial model that is well researched, analyzed and both creatively and carefully formulated.

When attempting to find anything, the immediate task at hand firstly requires a well-informed qualified dedicated team and secondly, the search area must be narrowed down to finite subject areas. In this case, there are only *three* areas to source project development finance. These are *firstly*, in the host country of the project, which includes all spheres of government which participate in the National Budget controlled by Treasury. The *second* potential source of funding is the numerous international grants and subsidies coordinated by the various international and regional agencies such as the World Bank, the International Monetary Fund (IMF), the African Development Bank (AfDB), SADB, European Central Development Bank (ECB), German Agency for International Cooperation

(GIZ), the United Nations (UN), and so forth. A *third* source is the international business community, which includes any interested and affected party such as merchant banks, finance houses or international conglomerates with a vested interest in procuring contracts to supply goods or services.

Taking the above into account, there are four key components to procuring project development finance; (1) having a committed team leadership, (2) a qualified, motivated and dedicated team, (3) the creation of a development proposal detailing project approvals, detailed implementation plan, operational management and a profitable business case, and (4) a qualified financial management team with the ability to implement and manage financial procedures on behalf of investors. Without these four components in place, you are unlikely to attract any investment funding.

From an investor point of view there are at least six considerations that inform a decision to either support or withdraw support for your project. The key investor considerations are; (1) What is the nature of the investment? (2) Who are the promoters and managers of the project? (3) What are the risks associated with the investment? (4) What is the term of the investment? (5) What return is being offered given the risks? And finally, (6) What is the exit strategy for the investor?

Satisfactory answers to these questions should unleash the quantums of funding that are required for the project to be implemented at full scale, which could mean over twenty years. However, the marketing and sales force will need to make a strong case in spite of the already existing market demand for housing. The further and critical point to remember in the capital raising phase is the need to show that sustainable job creation will become a vital component of the city-making process and thus a sustainable project.

Insistence on sustainable job and wealth creation come only second to governance. The project must be able to convince investors and funders that there is a reliable, enforceable and transparent governance framework and mechanism that will ensure that the raised capital is utilized as per budget. This may sound like a pedantic point but it is quite fundamental to the project and the levels of comfort required by an investor or funder. Therefore, governance, and its enforceability, must become sacred to the entire project.
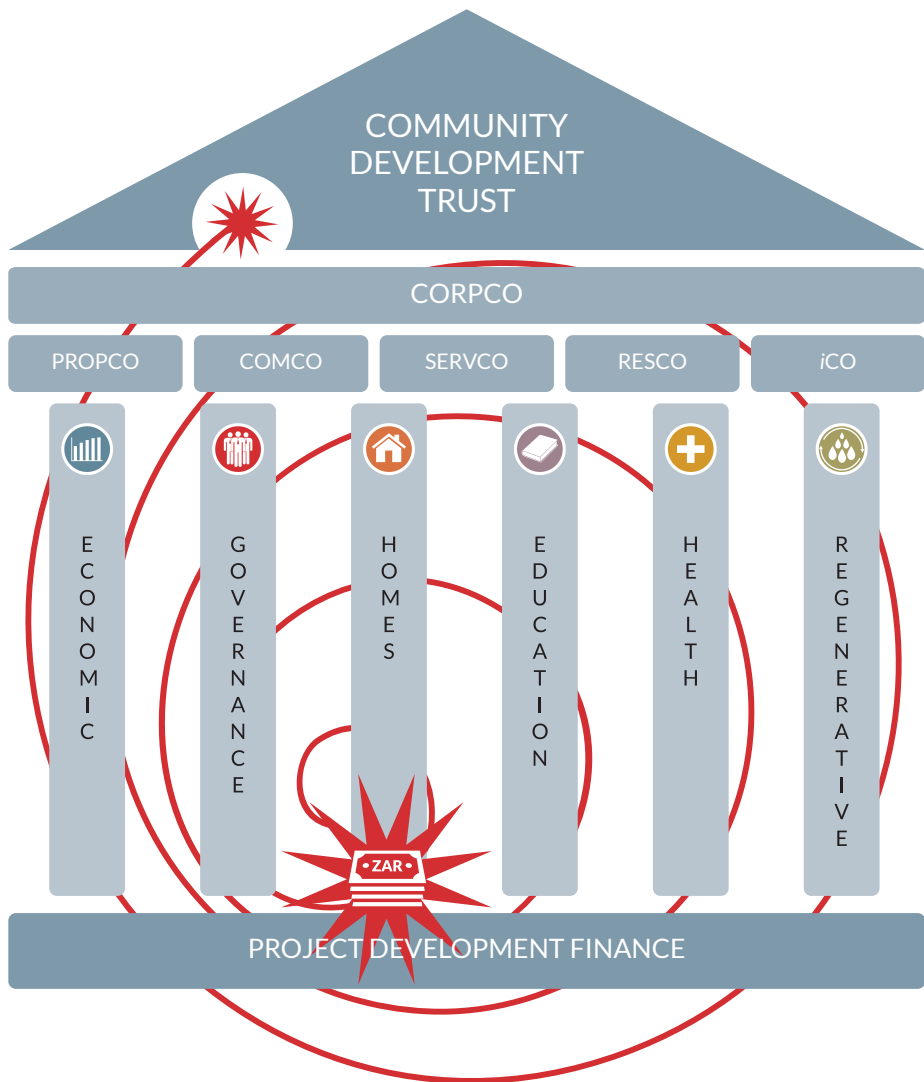
Figure 3.3 Project Development Financial Model

3.11 Creating wealth through an Institutional Structure

3.11.1 The Formal and Legal Structures

The **communiTgrow** IP and model, as discussed throughout this book, consists of six pillars. The pillars, one could say, represent the core value system of the city-making project, although it is much more than mere representation. For purposes of explanation let's assume that the pillars are representative of core values that will guide implementation. In order for the pillars to give effect to their value, an institutional structure needs to be created for the city. At this point in the discussion we emphasise that there is a difference between the corporate business structure of **communiTgrow** (Pty) Ltd as a specialist consulting company and that of the institutional framework of the new city. It is the institutional framework of the city that we are now discussing. It is this institutional framework in its entirety that rests on a foundation called the project development financial model as illustrated by Figure 3.3.

Perhaps a useful way to conceptualise the institutional framework is to ask the following question: How will the new city be managed? How will it generate income? Where will the different assets of infrastructure be housed? Who will manage it? Who will own it? Who will monitor the profitability of the city and the enterprise as a whole? What mechanisms will be in place to ensure that the residents and community as a whole remains fully represented and in control of the city?"

The short answer to these kinds of questions is that the city, its assets and at least 25 percent of all profits made in the city, will be owned by the residents of the city. As illustrated by Figure 3.4 below, such ownership will reside in an entity called the Community Development Trust (or similar entity) which will be the highest decision making entity within the new city/community.[5] This Trust will create and be supported by an operating company (i.e. for profit) called CORPCO which will manage every operational aspect of life in the city. CORPCO (i.e the profit making Corporation) will carry out its task through five dedicated subsidiary companies, each with a specific focus. The five subsidiary companies will be:

PROPCO - This is the initial "un-serviced land" entity, which installs the services and sells off the residential serviced erven to RESCO and donates the serviced erven earmarked for the community facilities to SERVCO. It continues to hold the serviced commercial erven, which it develops into retail centres and areas, office nodes, business hubs and industrial parks. Profits will flow through CORPCO to the TRUST, where it will be shared by the Community.

COMCO - This entity will structure all joint ventures with incumbent Enterprises and negotiates supply contracts of goods and services for the new city in exchange for a shareholding in the Enterprise, which profit share flows up through CORPCO to the TRUST, to be shared by the Community. COMCO leases operating premises from PROPCO.

RESCO - Acquires all Residential serviced erven and develops all top-structures, which it sells for gain to incumbent workers / residents. Profits flow up through CORPCO to the TRUST, to be shared by the Community.

SERVCO - Accepts transfer onto its balance sheet of all serviced Facility erven, which it then leverages to establish the full service facilities required to assure the Community that all social and community needs will be met. SERVCO will interface with COMCO and CORPCO to assist with structuring the joint ventures with service providers of health and education or the like.

*i***CO** - Will handle all communication, media and promotion of the new city and operate from premises developed by PROPCO, which budget will be cost to CORPCO but will endeavor to be its own profit centre through offering its services to the greater community at a market related fee.

Therefore, all contractors, suppliers, and any other entity that wants to do business in and with the new city, will need to enter into a contract and agreement with one of the five operating subsidiary companies. All services and goods will be procured in terms of the **communiTgrow** procurement framework which is discussed in more detail at the end of this chapter. Therefore, the commercial ticket into the city will be via a structured and well governed procurement system. It is envisaged that there will be hundreds, if not thousands, of companies active in the creation and building of the new city. And every single one of these companies will need to enter into formal contractual arrangements with one of the five subsidiary companies via the procurement system. All of these commercial arrangements and activities will be overseen by the executive board of CORPCO made up of at least two directors from each CORPCO subsidiary company.
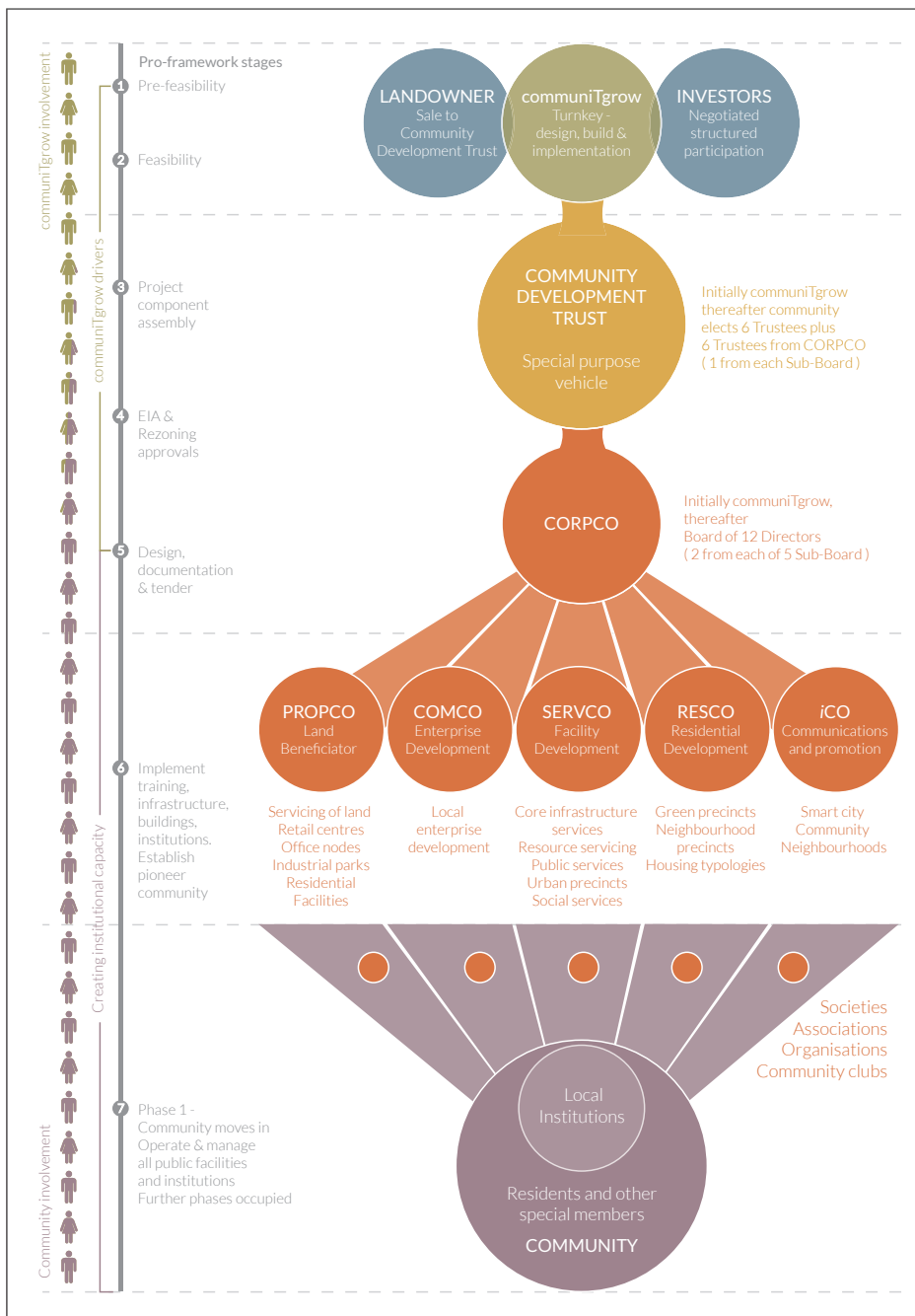
Figure 3.4 Institutional Business Model Organogram

The profit-making logic of the financial model is that a substantial portion (viz. up to 25 percent) of all profits generated by active business in the city will be retained by the subsidiary company and ultimately retained by CORPCO. The mechanisms for guiding the flow of profits in the city may be through profit share arrangements or direct shareholding in the operating company active in the city and/or providing services to the city. In this regard there will probably be a series of SPV's (Special Purpose Vehicles) created to give effect to this important principle of ensuring that a proportion of the profits generated by the city remain in the city for the sole discretionary use by the residents.

The dividend policy at a CORPCO level is that at least 50 percent of profit in CORPCO will be paid to shareholders and 50 percent will be moved into the Community Development Trust for purposes of creating subsidies. The Community Development Trust will have the sole discretion as to how the subsidies will be distributed – be it as education bursaries, or short term interest free loans to small businesses in the city, or as a subsidy to each resident towards offsetting the cost of utilities or the cost of other municipal services. The idea is that the Community (i.e. the residents) will own and be entitled to a significant portion of the profits of the city and will have the power to decide what to do with it.

As indicated in figure 3.3 earlier, the financial model is designed so that money flows through the entire development with the expressed purpose of having a multiplier effect and with profits filtering upwards to the Community Development Trust to be used at their discretion. The Community Development Trust will be populated with members from the community who in turn will be elected to their positions on the Trust via the web and network of community clubs that will ultimately control every aspect of life and work in the new city.

3.11.2 Limiting Risk and Maximizing Return

Accounting for investor money: **communiTgrow**'s institutional structure represents a diverse and intensive amount of business activity. To ensure that these entities are established with as much risk limitation as possible and that returns are protected the team sought to consider a number of aspects in their planning:

- The debt to equity ratio of each entity must be in alignment with their core competencies resilience to market conditions. For example, SERVCO must carry less debt due to risk of loan default whereas COMCO can carry more debt to create an incentivized environment for self-sufficiency.

- The level of guarantees offered by CORPCO will impact the structure of financing packages for the other entities and must be utilized.

- CORPCO's commitment to operations for any of the entities can ease the financing burden but could limit autonomy. Therefore, the correct balance must be in place before their creation.

Market conditions affect any proposal. The team will engage in market sounding exercises during the creation of the subsidiaries to ensure an adequate understanding of investor and lender climate.

Security structure and lender protection: Project finance lenders rely primarily on project cash flows. To ensure security for lenders a number of protection mechanisms will be put in place.

For all project assets interests will be secured to ensure lenders can take any necessary remedial actions. Financial controls over all cash inflows and outflows along with contractual documentation will ensure senior debt always has priority and specify when senior lenders can prevent equity distributions. Finally debt service reserve accounts and maintenance reserve accounts will act as additional cash flow controls.

3.12 Procurement and the Financial Model

The critical characteristics of any financial model of this scale, and indeed the **communiTgrow** model, is its bankability, the flexibility of its financing structure (with reference to the dynamic relationship between senior debt, equity, junior debt, mezzanine debt etc), credit enhancement (with its focus on taking some of the risk away from senior lenders), security structure and lender protection, payment mechanisms and enforceable corporate governance.

All these components which make up and inform the **communiTgrow** financing model are well known. However, the key to success and investor confidence is, as mentioned, the governance framework with particular reference, in this

instance, to the procurement framework. An enabling procurement environment within a strong governance structure can play an instrumental role in cultivating and nurturing robust economic activity. This will be achieved within a bespoke procurement framework that links supply to incrementally increasing and evolving demand over time in a prescriptive way to leverage the full extent of the economic value chain in order to maximize local economic and community development. The enabling procurement framework is illustrated in Figure 3.5. below
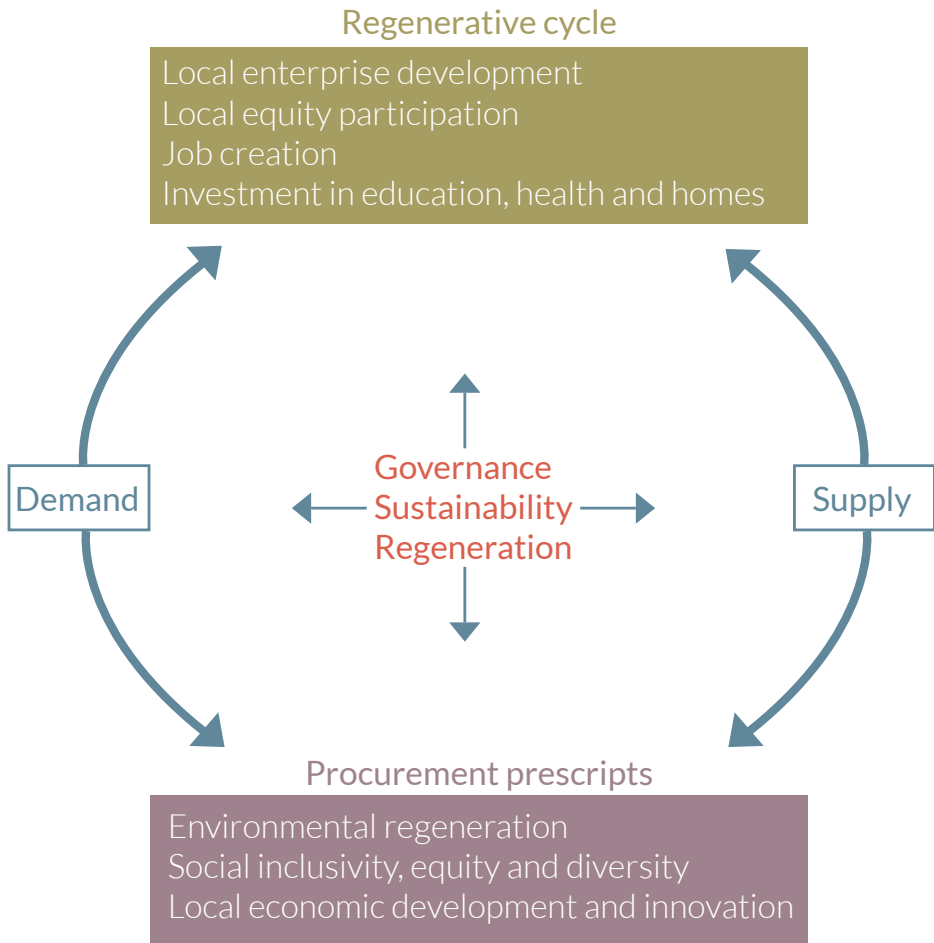
Figure 3.5   Enabling a Procurement Environment

The focus is about creating economic opportunities that builds social inclusion and diversity in a manner that regenerates economies and ecologies within various nested scales of development. This means creating opportunities for work seekers, for entrepreneurs, for training and for young people. The procurement process is structured so it supports the strategic objectives of the development. For example, tenders will place requirements for local population and community inclusion. Moreover, incentives will be put in place for suppliers to source local components that will catalyze entrepreneurship within the community. This vision can only to be achieved within governance and implementation framework based on value added principles of sustained growth in the development of local community resources and human capital hence the emphasis on the creation of support structures for training and skills development.

Within the South African context, access to education, job and economic opportunities is a national imperative. Currently programmes such as Broad Based Black Economic Empowerment (BBBEE), expanded public works programme, community based public works programme sets the framework for addressing unemployment and access by previously disadvantaged population groups into the mainstream of the economy. Through its procurement protocols, **communiTgrow** will address these imperatives by incorporating the aforementioned national priorities into our procurements systems directly or indirectly. Our empowerment approach intends to have a broader measurable impact with a local focus as the building of greenfield cities and provides an opportunity to deal with structural imbalances in society and the economy whether it be in South Africa or anywhere else in developing Africa. In the context of South Africa the critical challenge is overcoming the legacies of Apartheid and in the context of Africa, the ravages of colonialism and the negative impact of Western aid policies.

communiTgrow procurement framework is flexible, and can respond to changing policy environments as mechanisms for review and changing targets are built into our implementation systems. In this regard **communiTgrow** strategies will align with National frameworks and imperatives such as the recently Cabinet approved National Development Plan 2030 and the Broad Based Black Economic Empowerment legislation. **communiTgrow** procurement implementation framework should be viewed within the broad scope of empowering processes including, amongst others: job creation, urban renewal, poverty alleviation, ownership, specific measures to empower black women and persons with disabilities.

communiTgrow strategies are aimed at increasing access to productive assets whilst simultaneously ensuring the productivity of those assets. The procurement process therefore seeks to promote new opportunities for and increase the levels of participation of people in the ownership, management and control of economic activities in the creation of a city. **communiTgrow** strategies aggressively support individual entrepreneurs as well as social and collective capital, while supporting the acute development and growth of local content.

The direct involvement and spin-off effects will be contextualized, within the national and local economic frameworks and quantified in terms of bespoke systems based "impact analysis". This analysis will measure the real impact on targeted categories through the building of the new city as well as quantifying different socio-economic and BEE developments as spin-offs from it whilst allowing early warning systems with the strategies to change thus enable maximization of impact.

The **communiTgrow** approach is particularly sensitive to the need for the procurement process to respond to this integration, as it is through smart procurement strategies that sustainability is ultimately ensured;

- The economic aspect is about maximising business value and working with our suppliers to reduce costs on a whole-life basis, as well as making it easier for businesses trading within the **communiTgrow** city to stimulate the local economy.

- The social aspect is about ensuring access, equality and diversity are embedded into the procurement process, taking the opportunity to secure relevant wider community benefits, and making sure that our suppliers comply with employment law as well as address social transitioning, skills, training and health and safety.

- The environmental aspect is about ensuring that all our commissioning and procurement activities are conducted in an environmentally responsible manner, for example, by only buying goods, works and services that are necessary, reducing the use of virgin non-renewable natural resources, recovering water energy.

The **communiTgrow** procurement process is well positioned to respond to the interstitial, overlapping spaces between sectors. These are the opportunity spaces where the broad dual goals (i.e. on the development of both a supportive business environment *and* actualising equitable social development) of the procurement strategy can be realised. The deployment of the principles in the regenerative pillar (i.e. smart design, technology, etc.) services the sustainability agenda, while the opportunities for skills development (i.e. in apprenticeships etc.) supports the social agenda. Indirectly, they both service the ultimate goal of creating communities and societies of empowered consumers who can participate in their economies, livelihoods and cultures of the city.

3.12.1 Procurement Policy Framework

The foundation for a regenerative city and the building blocks of the empowerment of the local community is institutionalized within the business model and systematized through implementation of a economic, procurement and governance framework underpinned by the six development pillars, with particular reference to the economic and governance pillars. (See chapters 4 and 5 respectively.)

Regenerative strategies for cities are integrated through each of the pillars through prescription (impacts, specifications, targets) and built into the process (timelines, monitoring) that is broadly illustrated in Figure 3.6.

The business model optimizes and places economic activity and value creation into 6 legal structures (i.e. CORPCO, PROPCO, RESCO, COMCO, SERVCO, *i*CO), each with locked in value starting initially with unimproved land and value unlocked through added value processes from planning, design and building, to people living and consuming goods and services to business enterprises providing goods and services in an ever increasing cycle of growth over time. During each step of the way something has to be enabled either through demand or supply. Each transaction is a value add and part of a value chain and procurement regulates the transactions. The **communiTgrow** model ensures that as much of the value is accrued in a regenerative process of building and sustaining a local community and resources.

	Data	Content analysis	Design	Procurement	Operations (Governance)
Regenerative					
Economy	How? Why?	How? Why?	How? Why?	How? Why?	How? Why?
Education	Desktop research	Demographics, Diagnostic and Transitioning matrix	City regional magnets	Impact assessment targets	Local institution
Health	Touchstone papers		Hierarchy of places and spaces		Meta settlment scale
Homes	Workshops Investors		Programs Operations	Monitoring and evaluation	
Governance	How? Why?	How? Why?	How? Why?	How? Why?	How? Why?

Figure 3.6 **communiTgrow** *Regenerative Living Systems Design and Delivery*

Value capture needs to be securely embedded in the Governance policy frameworks Constitutions (MOI) of **communiTgrow** suite of Companies (i.e. CORPCO, PROPCO, COMCO, RESCO, SERVCO, *i*CO) and implementation protocols (Procurement Policy Framework).

How is this achieved? Firstly, it is critical to understand the **communiTgrow** value chain and its various layers. In this respect, please refer to Figure 3.7 - Procurement Cycle.

Each concentric circle in Figure 3.7 represents an expanding value further divided into various asset bases. For example, PROPCO will start with unimproved land, adding value through acquisition of development rights to construct commercial buildings (fixed assets) to buildings being occupied (rented) by business enterprises selling goods or services to consumers created through building of homes and providing public and utility infrastructure. Each of these slices and layers of concentric circles represents value that is created through procurement in a cycle represented from different processes along a timeline. Thus procurement becomes the vehicle to capture this value add to be directly accessible to a growing community that can sustain itself through employment, enterprise development, equity in assets, control of public and community facilities and control of resources to sustain itself and invest in environmentally regenerative programmes.
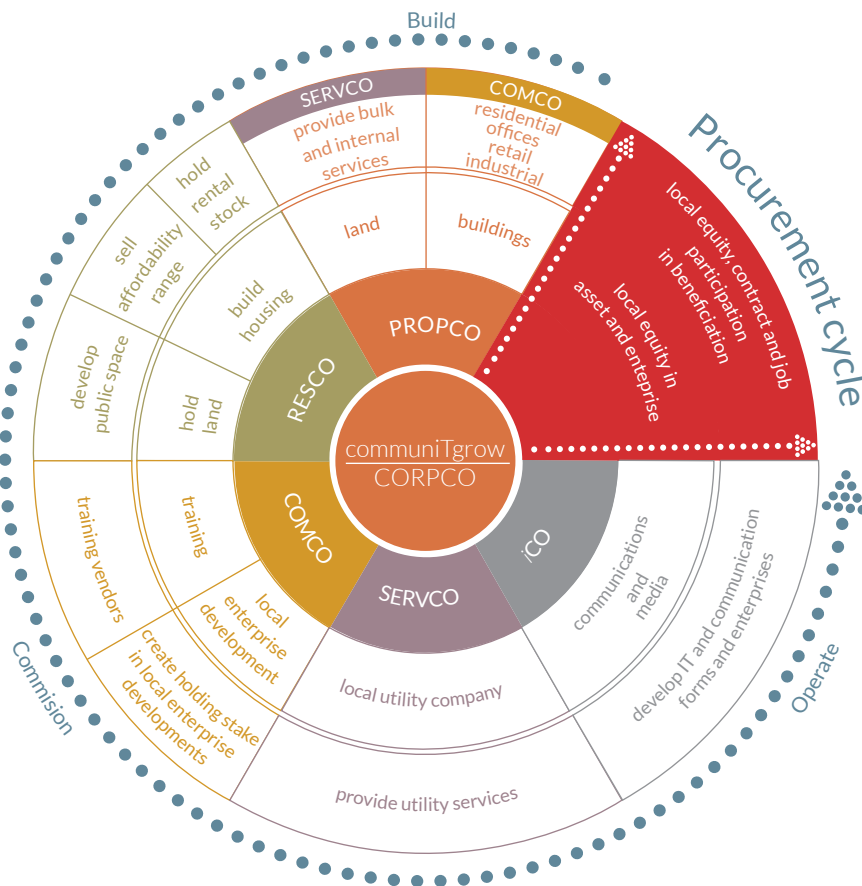
Figure 3.7   Procurement Cycle

A procurement policy thus identifies and sets out the principles that defines the framework that will govern the implementation of procurement processes and against which one can measure performance. Figure 3.8 further illustrates the scope of procurement. The **communiTgrow** procurement policy is based on the following objectives which will be translated into criteria and scorecard targets when commissioning or procuring goods, services or business opportunities. The scorecard and target group composition will vary depending on the procurement category and will be adjusted over time to achieve increasing impacts.

- Procurement strategies are people-centred, while remaining focused on the goal of stimulating regenerative economies and ecologies that enhance liveability and sustainability.

- Empowerment and procurement strategies are to be viewed within the broad scope of economic activities including, job creation, skills and management development, education and meaningful ownership.

- Access of target groups or individuals to training to build capacity to engage in procurement opportunities.

- Access to finance for small and medium business enterprises.

- Procurement processes to have a measurable impact on the target groups.

- BBBEE is an imperative and will be implemented in a coordinated and integrated manner in line with national imperatives and the needs of the growing communities on a sustainable basis.

- Increase access to productive assets for the target groups and appropriate support to ensure sustainable management and use of resources.

In actively addressing South African development imperatives the **communiTgrow** procurement policy framework has integrated the broader strategy of the national development plan into a workable and sustainable programme that is designed to be implemented as part of a city growth plan by:

- Promoting and managing direct investments in areas of priority creation, with **communiTgrow** acting as threefold intermediary convening agency to establish the local project corporation for services in **communiTgrow** cities.

- Creating institutional support structures including provision of services such as management training, small business support and linking in CBO, NGO and government support programmes and incentives thus increasing the level of joint working across private and public sector and civil society organisations.

- Investing in skills development and growing small and medium enterprises in order to have the capacity to take part in procurement opportunities.

CORPCO	communiTgrow			CORPCO	
Sub entity	Convene	Prepare	Implement	Operate	Maintenance
PROPCO	Retail, Office, Industrial	Secure RFP, EOI, investment agreements	Precincts	Precincts	Precincts, Public spaces
COMCO	Build and lease or sell	Secure contracts for leases	Business in the community, Programs	Business in the community, Governance	Commercial buildings
SERVCO	Infrastructure to serve residential portfolio classes, Magnets, Program facilities	Design, Build, Operate, Contracts, Programs operators	Secure community precincts	Infrastructure, Facilities, Precincts, Program management	Public open spaces, Place systems
RESCO	Target market	Design, Build, Operate	Residential portfolio classes	Residential management	Residential stock
iCO	Facilitation, Communication, Reporting, Marketing, Training	Communication for agreements, Reporting, Co-ordinates training	Consumer education, Governance training	Communication, Community business targets	M&E and feedback loops

The leftmost vertical label: **communiTgrow action** — CORPCO (strategy,pillars,magnets,procurement,governance)

	Convene	Prepare	Implement	Operate	Maintenance
Total procurement value	Startup capital	Project convening preparation fund	Whole-systems design, Process documentation	Infrastructure, Starter village, Phase 1, Peak spend 1	Peak spend 2, Targeted spend as reviewed	Annual budgets as per planning cycles
Delivery periods can overlap	Capacity building	6 - 12 months	2- 3 years	2- 3 years x phases	2- 3 years, Commissioning 3 -4 year annual cycles	Annual recurrent with feedback loops

Notes:
All delivery will be through procurement,
Maintenance cycle to allow for disaster risk management

25,000 - 100,000 units:
3 - 5 year program for first full phase,
2 - 3 year rollout per other 6 phases (overlapping)
5, 10, 20 year projects

Figure 3.8 Procurement Framework

- Unify business structures that provide a measurable commitment to implement **communiTgrow** vision by playing a leadership role in building international and local Strategic Partnership and through suppliers who subscribe to **communiTgrow** values and goals.

- Engage proactively with suppliers to make sure maximum value contribution is secured to address the **communiTgrow** business in the community goals.

- Promote compliance with the full spectrum of labour relations policies and legislation and encourage participating companies to go beyond the minimum requirements of the law.

- Promote compliance with principles of corporate governance and encourage participating companies to go beyond the minimum requirements of the law.

- Promote the development of new forms of ownership and support for small businesses including community and worker-owned businesses.

- Always include women and women-owned businesses in projects.

- Empower communities through procurement and community centred programmes that are initially focused on infrastructure provision and job creation, and prescribes working closely with the socio-cultural, economic and ecological factors that characterise different local contexts.

- Developing a wider range of innovative procurement solutions, including user-choice, shared services and joint venture companies;

The **communiTgrow** team policy framework will be implemented through specifically designed protocols to achieve these objectives. Targets will be set in compliance with local and national imperatives informed by the bespoke procurement impact assessment model, which as an output defines and prescribes minimum targets for each value proposition and procurement stage in the development cycle as illustrated in Figure 3.9 (Recycle Wealth in Community). The procurement impact assessment model (PIA) is further described below. As a minimum, the following categories will be the focus:

- Ownership of productive land should be in the hands of the target groups, including individuals and collective enterprises.

- Local Community (BBBEE) equity participation in each sector of the economy of the city should be increased including individuals and collective enterprises.

- Continued efforts to increase broad base community equity.

- Target percent of SME's should be BBBEE companies.

- A significant percent of private sector procurement should be directed towards target groups, including local BBBEE companies, SMME's and collective enterprises.

- Executive management in private sector companies.

- Long-term contracts and concessions should incorporate black and community owned companies and collective enterprises up front.

- Community reinvestment that should ensure an increase in advances to local entrepreneurs, SMME's.
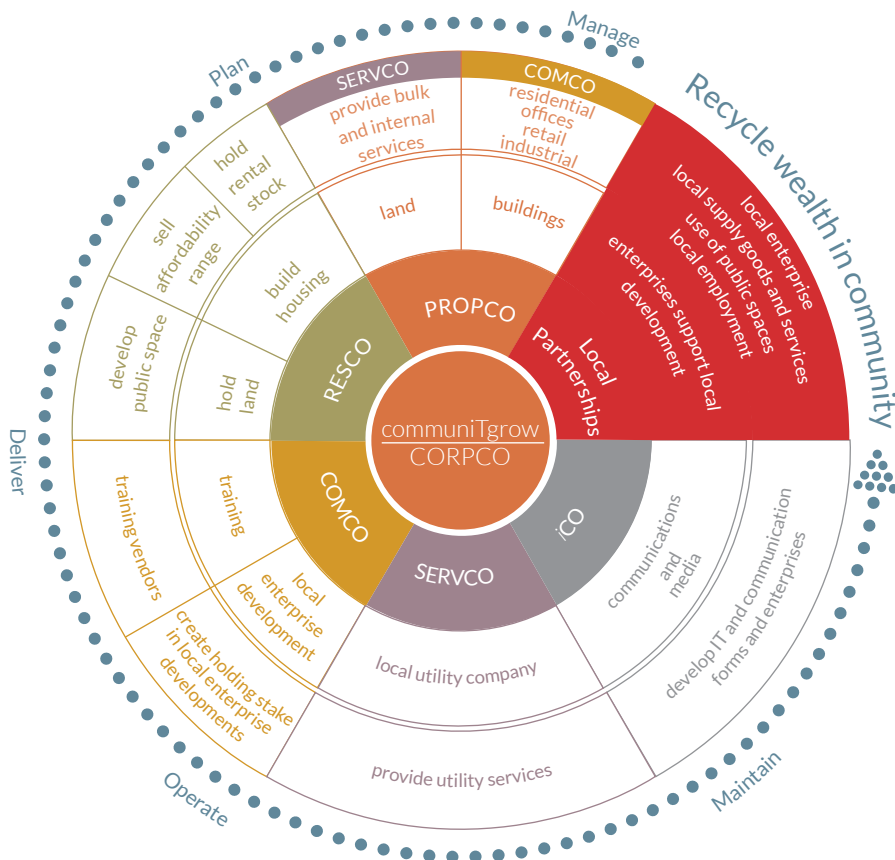
Figure 3.9 Recycling Wealth in a Community

The following principals will inform the development of the key performance indicators to be regulated by the procurement impact assessment model in different contexts, that:

- Procurement is people, community, broad-based, empowerment and regenerative resource focused.

- Accelerates the de-racialisation of communities

- Fast tracks the re-entry of historically marginalised people and groups into the mainstream of the economy through local economic development which will form the platform for broader economic access.

- Enabling procurement as an integrated and inclusive process.

- Enabling procurement that is associated with good governance.

- Enabling procurement as a key function within the growth strategy of **communiTgrow** and city-making.

As such **communiTgrow** strategy stresses a community empowerment process that is associated with growth, development and enterprise development.

3.12.2 Procurement Management Systems Approach

A Procurement Management System (PMS) is run off a database that includes change control functions. An appointed procurement manager will be responsible for maintaining the PMS and will report directly to **communiTgrow** on progress of compliance with procurement targets and KPI's. Each principal of a contract will be obliged to report progress at regular intervals to the procurement manager on a prescribed format.

At the tender adjudication stage, prescribed forms are submitted to the procurement manager for capture on a computer based (i.e. PMS) monitoring system. Successful tenderers will be required to register on the system and their performance in terms of tendered participation goals will be monitored. Non-compliance will be managed as part of a change management system forming part of the PMS.

The PMS will apply to all aspects of economic activity including equity participation, contract participation and training.

Strategy TPAS	Support TPSP	Management system TPMS
Identify target groups:	**Setup empowerment desk:**	**Procurement manager:**
Youth Disabled Woman owned business BBBEE Local resources (SMME's, material suppliers, plant hire)	Tender information Tender advice Monitoring	Reports to communiTgrow Controls all processes
Identify target area:	**Maintain database:**	**Monitor:**

Wescape
Cape Metropolitan
Western Cape
National
	Youth
	Disabled
	Woman owned business
	SMME's
	BEE companies
	Local companies
		PM procurement manager
		Consultants
		Main / Multiple Contractor
		  -Selected subcontract
		  -Nominated subcontract
		  -Suppliers

Establish database:	**Establish database linkages with:**	**Reports:**
Link with existing Supplement where necessary	Training Capacity Finance	From contractor From consultants From project manager To Procurement manager To client
Set procurement strategy:	**Financial support:**	**TMPS computer system:**
Multiple procurement (breakdown procurement) Direct contracts Specialist contracts Job creation	Establish linkages with support NGO's.	Register tenderers Monitor key performance indicators Flagging non-compliance
Set targets:		**MPS change management:**
Define minimum and maximum participation goals Use resrource specifications Tender documents (special conditions)		Default Penalties Remedial measures
Tender:		
Adjudicate on basis of PPIP and score card		
Award		
Report		
Monitor		

Figure 3.10 Process of Procurement

The Schedule, illustrated in Figure 3.10, demonstrates how this process will work during the construction phase. Similar systems will apply to other categories defined by different phases and different implementing entities (e.g. PROPCO, SERVCO).

3.12.3 Procurement Impact Assessment

Procurement Impact Assessment (PIA) Model: The PIA is a quantitative and qualitative tool to evaluate the relative impact of particular procurement strategies applied to a project. The PIA is to be used as a tool to inform the development of;

- Setting and evaluation of appropriate procurement and empowerment implementation strategies,
- Setting and evaluation of appropriate empowerment targets,
- Development and evaluation of appropriate procurement protocols,
- Implementation of monitoring protocols, and evaluating results achieved.

The use of the model is illustrated in detail in the flowchart in Figure 3.10 which indicates how the various procurement processes unfold in a project. This model can be used in each of the procurement projects. An example of the application of this model on a capital construction project is illustrated in Figure 3.11. Each project can be aggregated throughout the project cycle and assessing against the full value chain to get an overall picture can be measured.

Monitoring, Support and Change Management: Monitoring KPI's and having the ability to either add support or effect change in time to ensure the outcomes and objectives as set down is critical. The implementation of the PMS and the establishment of a procurement desk will be a fundamental part of ensuring compliance and achievement of targets. A procurement desk will be established to:

- Manage the data base (entry is web based through website).
- Advise prospective tenderers.
- Monitor KPI's (bespoke software).
- Flag non compliance.
- Advise on remedies to non performance.
- Report.

EPIA Process

Planning
- Identify opportunities and constraints
- Identify local resources (audit)
- Establish skills profile/capacity
- Identify local business and assess their capacity
- Establish feasibility of realising opportunities

Set empowerment objectives
- Establish regenerative target group
- Establish regenerative deliverables
- Set empowerment targets

Develop implementation strategy
- Plan, design and procure strategy
- Select appropriate delivery options
- Quantify regenerative deliverables
- Complete PIA

Check EPIA
- Test PIA against objectives
- If less than target repeat previous step until PIA is maximized

Develop project brief
- Prepare HRD plan
- Prepare project plan
- Structure training plan
- Prepare procurement plan
- Prepare cost plan
- Prepare targeted procurement management plan
- Prepare monitoring and evaluation plan
- Prepare reporting formats for verification and auditing

Figure 3.11 PIA Process

EMPIA steps	Project	Stage action	Project ID	Conceptual reports	Preliminary design	Detail design	Contract documents	Tender process	Construction
1 EMPIA procedures and protocols									
2 EMPIA report									
3 Optional EMPIA re-assessment									
4 EMPIA analysis and targets									
5 EMPIA specifications									
6 EMPIA tender compliance report									
7 Tender approval to include EMPIA project goals vs programme goals									
8 EMPIA monthly commulative reports									
9 Project completion and close out reports									
10 Empowerment impact evaluation									

Figure 3.12 Empowerment Impact Assessment

3.12.4 Procurement Implementation Strategy

Procurement Implementation Strategy will be informed by the PIA model. An example of a typical construction contract procurement strategy is;

Pre-implementation

- Identify opportunities and constraints.
- Identify local resources (capacity audit re-human and natural resources).
- Establish skills profile/capacity.
- Identify local business and assess their capacity.
- Establish feasibility of realising opportunities.

Selection/confirmation of contract strategy

- Optimise employment / SMME / ABE / community opportunities.
- Economic evaluation.
- Select appropriate delivery options.

Preparation of implementation plan

- Structured training plan - structure and composition of training and development support.

Investigate development support network requirements

- Bridging finance - sureties.
- Mentorship / counseling.
- Roles and responsibilities of development support.
- Participants, trainees, local business, community, etc.

Breakdown Procurement

- Breakdown into smaller contract components.
- Apply policy on over full contractual chain.

3.13 Wescape – A Living University: Cradle to Grave Learning

3.13.1 Africa's Largest Sustainable Community Development Project

communiTgrow is currently busy with 3 projects, two in Cape Town – Annandale and Wescape - and one in Johannesburg. The Cape Town projects are located outside the city environs of The City of Cape Town and along the city's north-west industrial corridor which stretches from Cape Town to Namibia through to Angola. The Wescape project in Cape Town is by far the largest **communiTgrow** project and will serve as the living university to build human capacity to replicate the model. The Wescape project will be open to any professional and/ or government agency wishing to learn and apply the lessons being pioneered through the Wescape project.

By sheer size, Wescape promises to be the largest development of its kind in Africa and will set a new standard for the creation of sustainable, regenerative communities in both South Africa and Africa as a whole.

3.13.2 Partnering with Government

A significant development in South Africa is that the national government has taken the decision to finance an infrastructure development programme as a key catalyst to jump start the local economy. A critical component of this programme is the housing sector where government has called upon private sector companies to partner with government to help reduce the growing housing backlog. **communiTgrow** has taken up the challenge and has deliberately positioned itself as a key strategic partner to government in the delivery of not only houses but indeed the creation of a financially sustainable community.

Given the competency profile of **communiTgrow** as a company, we believe that **communiTgrow** is uniquely placed to move the South African housing landscape from the dominant feature of being dormitory towns to that of becoming integrated communities that are financially autonomous and sustainable.

It is this belief that has motivated us to try and convince all stakeholders including the developer, the government administrator and legislator and the private investor, that it is possible to fundamentally change the future fortunes of the African continent. We suggest that the **communiTgrow** model and design regarding community and property development would provide a reliable basis for dreaming a different urban reality for our continent.

3.13.3 Job Creation Potential

A project of the size envisaged for Wescape in Cape Town is designed as a 20 year project with a projected project value of ZAR157 billion [USD $ 19.6 billion]. The bold 20 year development of the 3 100 hectares of land will provide 200 000+ homes to house an estimated 800 000 to 1 000 000 (one million) inhabitants. The supporting infrastructure to be built is likely to include: 4 hospitals; 20 clinics; 25 sports grounds; 200 crèches; 200 schools; 4 police stations; 15 community centres; 1 criminal justice precinct; 1 university; 1 FET college; a light engineering industrial hub. Wescape will see the introduction of a greener regenerative extension of the City of Cape Town. Wescape will provide an affordable home in a safe, convenient, walkable neighbourhood.

The preliminary job creation forecast for Wescape indicates the 300 480 jobs will be created in the following areas; construction – 30 869 jobs; housing – 49 603 jobs; commercial – 75 696 jobs; public and civic services – 11 724 jobs; local enterprise – 63 118 jobs; financial services – 610 jobs; community services – 68 860 jobs. In short, notwithstanding analytical challenges, each household of the community, in theory, will/can have at least one member of the household enjoying the status of an "employed" person.

3.14 Conclusion

The foregoing discussion has demonstrated that **communiTgrow** has an opportunity to initiate a new paradigm by implementing holistic community development while being on the leading edge of holistic green development. With public infrastructure spending, global focus and investor interest all directed towards this industry, **communiTgrow** can be successful in harnessing the momentum created to achieve the first true holistic development at scale in South Africa. The future presents an opportunity to finalise all necessary areas of expertise to ensure the achievement of the **communiTgrow** objectives for holistic community development. **communiTgrow** does not pretend to have all the answers but it is a giant leap forward towards coping with the challenges of rapid urbanisation in Sub-Saharan Africa.

As we will demonstrate in the ensuing detailed discussion on each of the six pillars, our aim is to connect more dots than is normally the case when talking urban design and community building.

We are confident that our integrated approach to building African cities will facilitate the creation of communities of understanding. We believe that through our six pillar approach we can assist Africa to pro-actively prepare for the greatest challenge ever to be faced in Africa, namely, high-speed urbanisation.

Part Three

The Six Pillars of the communiTgrow Approach

Figure 4 **communiTgrow** *Pillars Overview*

Overview of Six Integrated Pillars

In this section, each of the six pillars will receive individual attention. A key feature of a **communiTgrow** approach is the deliberate and conscious breaking down of the silo approach to city-making and community development. While the pillars are distinct in character, they need to be read and understood as part of an integrative whole systems approach.

Pillar 1 - Economy - Stimulation of local **economic** activities, provision of vast array of economic opportunities and fixed employment;

Pillar 2 – Housing – Provision of a wide range of **housing** options (i.e. portfolio) within safe and secure environments, underpinned by integrated infrastructure allowing for walkable communities;

Pillar 3 - Healthcare – The building of comprehensive healthcare facilities and methodologies, thus allowing for traditional and conventional healthcare practices to occur simultaneously;

Pillar 4 – Education – A cradle-to-grave education approach, focusing on all-encompassing education nodes for all ages inclusive of first-world education syllabi, advanced facility design and strong leadership;

Pillar 5 - Regenerative ecology - Waste is seen as a resource and not a problem. Our approach to urban design is inclusive and supportive of environmental sustainability, drawing on the latest regenerative environmental design in terms of waste management, energy creation and usage, infrastructure services (electricity and water), food and water security.

Pillar 6 - Governance - Integrated approach to community development with a focus on organic growth, built on the foundation of integrated governance structures and management systems as well as public participation and interaction.

Chapter 4

The Economic Pillar

4.1 Purpose of Chapter

The purpose of this chapter is to explain how permanent sustainable jobs are created within the economy of a **communiTgrow** city. We will discuss the types of jobs, the timing of the jobs (i.e. when and how they come on-stream during the life of the project) and the kind of economic engine required in creating and sustaining employment in this evolving new city. These issues are pertinent to and comprise the content of the economic pillar, being one of six foundational pillars, which make up the IP of the **communiTgrow** approach to community building and city-making.

The economic pillar is best understood as developing a detailed business plan for a **communiTgrow** city. Consequently, each city developed by **communiTgrow** will have its own unique business plan. Initially, the economic pillar of **communiTgrow** is less about establishing a robust economy than it is about a 20 plus year business plan for the new development initiative. The goal is to ensure that sustainable micro-industries are created on the back of supplying the established demand for homes. The attendant opportunity is the subsequent clustering around the construction industry and the magnets / attractors which create a multiplier effect that in turn establishes a full array of sustainable economic activities over the life of the building project converting these into permanent jobs for the citizens of the fledgling city. The sole objective of the economic pillar in the evolving new city is to establish a meso-economy built on the impetus of the construction of housing, the micro-economic business clustering within the a macro-economic regional context.

The demand for homes in South Africa is gaining increasing attention. The Minister of Human Settlements, Tokyo Sexwale, has drawn specific attention to this in his Human Settlements Housing Budget Speech of 2012 indicating that total housing backlog in South Africa is approximately 2.3 million homes and

450 000 within the City of Cape Town. This is a significant demand which has not yet been fully utilized in South Africa or Cape Town as the potential engine to turn around the fortunes of an economy struggling to create jobs. This is no different to the demand which will characterize urbanization in Africa over the next four decades, where the demand will be to establish at least 800 cities similar in size to what is being planned at Wescape in Cape Town by **communiTgrow**.

Financial services
610

Green cluster
5,260

Commercial cluster
75,696

Public and Civic services
11,724

Community services
68,860

Construction cluster
30,869

Local manufacturing and enterprise
57,858

Domestic services cluster
49,603
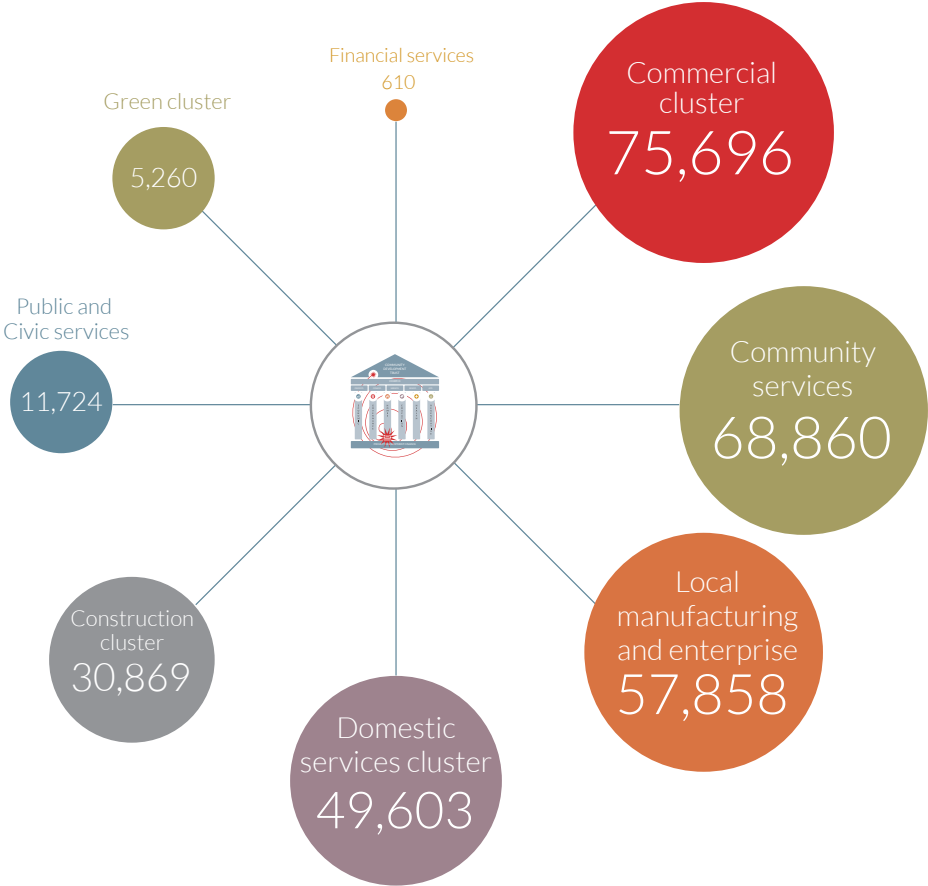
Figure 4.1   Pillars and Jobs

By way of example, this chapter will use the job creation potential (see Figure 4.1) linked to the Wescape project to explain the dynamics of the **communiTgrow** economic pillar approach to establishing a sustainable micro then meso-economy. The number of employment opportunities to be created is estimated to be 300 480 new jobs which translate into each household having an income generating potential from employment within Wescape, a secondary city within the greater Cape Town catchment region.

A final word by way of introduction is that the economic pillar is considered to be the cornerstone of the **communiTgrow** model and as such the business plan must investigate every aspect of the business model. This is done to ensure that the design of the city is aligned with the business of establishing the new city; initially the built environment followed by the commercial and social environments with governance as the capstone of the business structure . How will this happen? Who will make it happen? What mechanisms need to be in place to facilitate job creation and economic growth? What is the theory underpinning the economy of the new city? These are the aspects which will be investigated in detail in the **communiTgrow** business plan for each new city. The investigation demands multidimensional interdisciplinary insight and a long range perspective into business modelling and implementation programming. In order to fully appreciate the **communiTgrow** modelling we have provided as many illustrative diagrams to show the interconnectedness of the various aspects of the model.

4.2 Multidimensional Interdisciplinary Economics

4.2.1 Economics as the First Among Equals

It is a truism that without a viable economy to sustain a new city, it is likely that such a settlement serves as just another dormitory town as opposed to becoming a vibrant economically self-sufficient city. In this regard there are two points worth mentioning.

Firstly, whilst the economic pillar is one of six pillars that make up the IP of the **communiTgrow** model, it is not unreasonable to classify it as the first pillar among equals, since without economic sustainability, any settlement's future is severely

compromised. Therefore, any development, such as Wescape which plans to house 800 000 plus residents, must address questions regarding its proposed economic sustainability and self-sufficiency.

Secondly, it is the economic pillar that ultimately is the driving force that is responsible for the facilitation and stimulation of local economic activities and the provision of a vast array of economic opportunities and permanent employment. It is the economic pillar which is the programme that facilitates the integrated economic development initiatives which places emphasis on both local entrepreneurial development (i.e. stimulating neighbourhood economic growth), whilst also focusing on establishing the mega-economy drivers such as key industries necessary for large-scale job creation. While the discussions relative to the economic pillar are value-centred, it is worth mentioning that the ongoing day-to-day management of all economic initiatives will be guided by the detailed business plan designed specifically for that particular development initiative, a meso-economic business plan designed within a regional context.

What the economic pillar of a **communiTgrow** model seeks to do in each business case, is to proactively avoid the consequences of dependency of the demand related to a single economic activity, in this case the activity of constructing houses. Ultimately, how the various business initiatives dovetail together within the broader institutional structure and **communiTgrow** IP will be investigated.

4.2.2 The Law of Supply and Demand

We accept that economies cannot be created but that markets themselves give rise to an economy within a micro, meso and macro-economic regional context.

> ## Creating a network of associated industry
>
> Once the pillar approach is applied to the expected demand, immediate opportunities for specific industries become apparent, but more importantly, the need for every related additional and secondary industry is quantifiable. These are the magnets of a fledgling economy, industry clustering and its attractors.

The laws of supply and demand assume that if there is a commodity in great demand and if that demand is being supplied, then a market has been established; suffices to say that an economic activity has been created. The key business opportunity therefore is to position oneself so that one can supply and respond to the demand for that product or service and subsequent value chain. In this regard, a useful point of reference for our ensuing discussion is the fate of some mining towns after the Great American Gold Rush of 1849. During this expansionist period, many mining towns or even smaller cities were established in the Western United States of America. However, when the extraction frenzy died down after the gold ore deposits had been mined, many of these mining communities completely vanished. Why did these "collapses" unfold?

The short answer is that there was not a business plan to independently develop industries whilst the gold mining activities were booming and thus no activation or emergence of an economy or planned efforts to build a sustainable community outside its dependence on a single business / economic activity. In other words, there was no attempt to innovate beyond the reliance on a single commodity. The under-diversification of these micro-economies rendered them unable to adapt to changing circumstances and to develop new markets and opportunities for growth.

The economic pillar understood in this context, demands that a detailed well researched business plan for how new cities can establish themselves, initially through supplying the demand for Affordable Housing but then establishing diverse multiple industries in a regional context and in so doing, avoid the pitfalls that bedevilled the American gold mining towns and cities, namely avoid dependence on a single economic driver.

We would do well to observe that these American gold mining towns and cities had every diversified activity of a thriving community, from governance to education and entertainment whilst the boom was unfolding. Money was changing hands, business was being transacted furiously but it all died out soon after the mineral deposit had been extracted, or the demand for that commodity subsided. A sustainable economy had not been established beyond the capacity to reap returns other than that of the ore deposits. Immediately, people moved to where they could survive within a hopeful community context. It is this concept of

a hopeful community that we humans search for, where economic activity offers permanent employment and opportunity, hence urbanisation and is the basis of the thinking which underpins the economic pillar of the **communiTgrow** model.

The defining principle of establishing a viable micro and meso-economy in a **communiTgrow** city is that whilst the demand for housing / homes is being supplied, at a programmed rate, other core industries / magnets / attractors / clusters are being established and given the necessary time to take root and develop. These potential industries must be well researched and planned, to take full advantage of the 'money spend' during the construction phase and providing homes for people desperate to become enfranchised, within a macro-economic regional view. Thus, a **communiTgrow** city will over time provide regional economic stability, which will permeate the entire fabric of regional society and be a catalyst for "nation building" or even "continent building". This will be so because for the first time the continent will be developing according to a significantly new business model, one which locates business in a developmental role that is more suited to the challenges that urban Africa faces. The hope is that the continent will be working from the same business plan.

4.2.3 The African "Gold Rush of 2050"

We hold the view that Africa's new gold rush is its demand for housing, linked to inevitable urbanization. The scramble to penetrate Africa's emerging market is a secondary opportunity since the latter supplies further impetus to the timing of an 800 city building continental initiative. We Africans must demand that this second wave of extractionist strategy by the developed countries ensures that a legacy of upliftment is the result and not that which has historically been capitalism's legacy on the continent. Therefore, it is this African housing rush that affords the opportunity to build of our continent after centuries of extractionist business strategies, which have ensured that the various classes of infrastructure installed were adequate only to extract Africa's resources with little or no thought of "putting back". It is the putting back that is at the core of **communiTgrow**'s regenerative thinking and approach to city-making.

The African "Gold Rush of 2050" is underscored by the now commonly cited numbers describing housing backlogs and the future needs of Africa. These numbers indicate that by 2050 Africa will require 800 new cities each with an average of 250 000 housing units to house an average one million residents in each of these new/secondary cities.[1] Amazingly, the demand for affordable housing in these 800 new African cities translates into approximately 200 million housing units required over the next four decades. This demand alone provides Africa with an economic engine never before imagined.

This glaring demand for affordable housing, fuels a market, which with a well strategised programmed and detailed business plan for each city, can create complimentary cluster industries that will establish a demand and supply mechanism for other goods and services, whilst creating permanent employment. This multiplier effect, which we at **communiTgrow** refer to as whole-systems integrated linked community development, offers an opportunity to harness the potential and benefits of the new "gold rush" (i.e. Africa's housing demand) over the next four decades notwithstanding the current backlog.

4.2.4 From Extractionist to Regenerative Design

Using the provision of housing as its base activity for developing communities, **communiTgrow** has created a programmed approach to generating sustainable permanent jobs within an evolving community through the sum of the parts of the various pillars that make up its IP.

Historically, Africa's experience of economic business development models have been that these are extractionist in orientation, which means that they have exported natural resources and/or goods and services with the intent of leaving as much of the proceeds offshore. These resources are then utilised in the production of goods which in turn get sold back to Africa for profit, again to be sent offshore. Little consideration has ever been given to the ecology of the land or the residents on the land, save as an afterthought by social activists. Growing political pressure in post-Apartheid South Africa and other African countries is aimed at compelling companies to "put back" or "beneficiate" the community as a way of "reparation" for these extractionist strategies and exploitative labour practices of the past.

As stated in the introductory chapters of this book, the demand in Africa for livelihoods and consumer products continues to grow. Africa, according to the pundits, is destined to have a 2 billion plus population by 2050 and probably the largest middle class population in the world, which translates to new consumers of goods and services. However, this requires industrial scale infrastructure, with a predisposition to benefit already industrialised countries. How can Africa sustainably benefit from this economic wave fueled once again from outside of Africa?

A new paradigm for creating economic activity

How do we get away from extractionist models and get to ones where the community benefits? How do we capture all the potential that Africa's growth presents through its demand for these "secondary" cities? The answer is, by generating a fundamentally new market space where supply and demand are stimulated riding on the coat-tails of housing delivery.

To date, these factors have not translated into easy solutions or opportunities for regions. However, **communiTgrow** modelling as applied to the Wescape initiative which serves as our test bed, offers insight into a possible regenerative solution for Africa. The current population of the West Coast area of the Western Cape, which comprises the areas of Blaauwberg, Melkbos, Atlantis and Witsands is approximately 330 000 people, with an unemployment rate of 25% (by narrow definition) and around 40% (by broad definition). The proposed Wescape initiative of 200 000 new homes based on a **communiTgrow** model, would ensures that job-creation and regional beneficiation or 'putting back' is built into the economic model from the outset, and not as an afterthought. Such an approach would drastically shrink regional unemployment in a sustainable manner.

communiTgrow's business strategy is to stake out new market spaces, establishing value propositions on the back of providing affordable housing, creating new demand for products and services for which there is no direct competition. Through its emphasis and philosophy of regenerative systems design, **communiTgrow** is determined to supply the obvious demand for houses but will do so in a way that creates viable and sustainable micro and meso-economies characterized by a diversified market place.

4.3 Creating a Diversified Marketplace

4.3.1 Functional Social Industry

The key to establishing a market and thus an economy is to provide a robust and diversified marketplace. Establishing such a marketplace requires value innovation plus a different competitive mind-set and a systematic approach to investigating opportunities or put differently, adopting a linked whole-systems approach. The six pillars of the **communiTgrow** model provide the context and a values framework to generate industry in unoccupied territory in a linked whole-systems manner.

A sound economic engine and financial system which understands the multiplier effect, thus creates further opportunities for growth within the system. The pillars provide a solution to collate market activity and view it from a fresh perspective for the macro region. More importantly, the pillars provide a way of understanding the functional orientation of the entire social sphere and translate it into industrial attractors or magnets. These provide the opportunity to identifying strategic associations of which goods and services are complementary given a defined target market and consumer base. As an example, to build 200 000 homes over 20 years requires approximately 2 million doors and windows in the entire development, for all classes of residential and commercial top-structures. This value chain suddenly has depth and upon detailed investigation ensures that the full spectrum of the attractor cluster is exposed and hence the multiplier is established. This then is replicated throughout the various portfolios which are investigated during the design phase and is translated into drivers of a unique business plan for that initiative.

4.3.2 Developable Land

Continuing with the South African example, Wescape, we note that the project has the intent to relocate many of the inhabitants of the Cape Town shacks to the planned **communiTgrow** city in the western growth corridor and increase its population by 350%, from 330 000 to over 1.1 million. Assuming current population growth trends, this corridor will be home to 25% of Cape Town's

population, an increase up from 10% to 25%. Therein lies the opportunity, to respond to an established demand, which can be transformed into real economic fuel activating a sustainable opportunity because the **communiTgrow** pillars embed the market in the community allowing for organic diversification and resilience.

Since the demand for housing has been firmly established, the next step in developing the new marketplace through the **communiTgrow** pillars approach requires one other key component, namely developable land. Such developable land must offer access to the two fundamental basic human needs, namely water and food security. Thus, the **communiTgrow** approach is to pair developable land with the pillar methodology at a scale significant enough to create opportunities for a market and social industry to arise, which is only possible because the scale of city-building projects allowing for strategic engineered initiatives that result in multiple revenue streams for the project. Utilizing both high-level design and precisely timed programming of service facility delivery, all aspirations of a new sustainable city can be achieved.

4.3.3 From Latent Potential to Value Creation

communiTgrow offers a solution to simultaneously capitalize on Africa's rapid economic ascent and addresses the challenges unique to Africa and South Africa via the Wescape project. The method through which these two goals (i.e. economic ascent and unique challenges) are achieved is through unlocking the potential of developable land by employing a procurement and governance structure that cultivates and nurtures robust economic activity. Another complex framework created by **communiTgrow.**

communiTgrow's model thus offers the structured transition from latent potential to value creation through three key elements. *Firstly* through understanding the spatial dynamics of cities and the opportunity they afford for leveraging co-dependent industry through demand-side economic development; *Secondly*, by realizing the necessity of offering more than merely a housing development to the market but rather a business of settlement delivery; *thirdly*, by capitalizing on the natural environment's regenerative capacity to support innovation, growth, and opportunity.

4.3.4 Cities as Engines: A Whole Systems Perspective

Building new **communiTgrow** cities on the back of housing delivery is the economic engine for both individual countries and Africa itself. It is this economic engine that explains the dynamics of creating permanent jobs and economic stability. If we assume that housing delivery is the engine then the development finance would be the petrol that fuels the engine but that the lubricant oil that continues to grease the moving parts is most definitely the intricate programme modelling of construction of the build environment with the detailed business plan being the road map which offers ongoing direction.

At the core of the **communiTgrow** economic business plan is detailed programming of how the entire development project is carefully constructed to ensure that each industry magnet feeds off the next and the various clustering bundles become the attractors of long term economic environment as the jobs are unlocked with each new activity. This multiplier effect which eventually offers stability of the economic environment is largely invisible, similar to investigating dark matter and how it holds the cosmos in place. The multiplier will initially stimulate the regional economy since all resources are sourced externally. However, eventually local manufacturing enterprises will be established to service the demand for the construction of the built environment and subsequent service industries. These local enterprises range from the corner coffee shop to the tertiary hospital: the full gamut of economic activity.

communiTgrow understands that economies are influenced by people's needs. It understands the supply and demand curves which exist in elegant theory that offer new dimensions of complexity when they intersect with human behavior. Economist Michael Storper explains that community is an essential component to economy. Moreover, he argues communities are indispensable to superior economic performance and that communities provide the coordination framework within which market structures can proliferate and grow.[2]

Storper's analysis eloquently explains the methodology which is taken into account as we developed the **communiTgrow** programmed phasing model, the engine of the permanent job creation, as reflected in Figure 4.2. The homes pillar of the **communiTgrow** model has a single fundamental requirement, time, which is broken down into phases. Time is the key to organic spiralled growth. Phasing the development over time allows **communiTgrow** to weave together all the ingredients crucial to developing a community or common unity. This process requires time, not dissimilar to baking a cake. This recipe is the **communiTgrow** IP which has been in the oven, so to speak, for many years. (See Figure 4.2 Growth of Communities Model)

Social business partnerships
Skills
Community
Environment

Economy activity
Construction
Manufacturing
Light industrial
Financial services

Regenerative economy
Eco industrial
Internal economy
Business process
Green sector jobs

Magnet / attractors 1
Educational college
Health college
Intergenerational centres
Urban management academy
Open spaces management

Magnet / attractors 2
Homes
Portfolio classes
Community precincts
Social facilities
Public places and spaces

Magnet / attractors 3
Hospital
University
Regenerative services

Timeline

Stage 1 - Economy establishment
(Design, build and manage)

Stage 2 - Social development
(civic sector, social society)

2037
2034
2031
2028
2025
2022
2019

7 6 5 4 3 2 1

30,000 60,000 90,000 120,000 150,000 180,000 210,000

Phases

Homes

(as catalyst for stable economy)
Stage 3 - Industry development
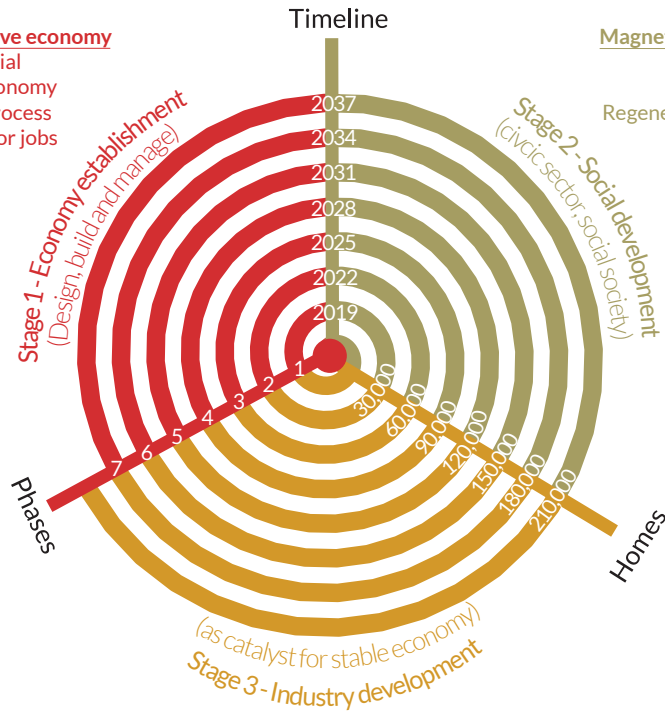
Technology systems
Design
Strategic
Experts
Regenerative

Innovations
High tech
Skills
Knowledge
Experts

Labour based
Construction
Light industrial
Manufacturing

Retail and services
Financial
Business
Community

Figure 4.2   Growth of Communities Model

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4.3.5 Intelligent Allocation

communiTgrow recognises that space can play a crucial role in utilizing community to find advantageous economic synergies within the system and generate multipliers for growth. The key is to generate a system through which demand is generated. A recent Asian Development Bank publication (ADB) argues that;

> *"Growth essentially comes from within a region's or sub-region's intelligent allocation of human, physical, and intellectual capital. Simple supply-side economic investment (infrastructure, etc.) offers little benefit when pursued in isolation of other activities".[3]*

communiTgrow finds opportunity for demand-driven growth through focusing on whole-system linked integration or 'clustering' of industries as magnets and the subsequent complimentary attractors. This allows specific locations to generate economic activity in three ways:

- increasing value capture in supply chains for local manufacturing and service sector businesses;
- expanding domestic consumption;
- supporting tacit and explicit knowledge sharing activities essential to innovation.

The ability to plan backward and forward linkages to established regional centres in the production and operation of the settlement enables innovative technology to be implemented at a viable scale and operational techniques to be introduced that break the mould of some of the disadvantages of the current municipal management model. The sustained and programmed delivery of new living environments over 20 years ensures significant reduction of the housing backlog and unlocking opportunities to improve the disenfranchised poor quality living environments elsewhere in the city. Through the decanting of a densely populated informal local area, it allows for the regeneration of that community as it becomes more spacious and constructive planning can be implemented.

communiTgrow offers an opportunity to attract significant investment into these initiatives which funding is currently not being invested at scale, due to lack of delivery credibility and planned programmed implementation. This is true for both South African and other African regions notwithstanding that such activities offer macro-economic stimuli.

4.4 Institutional Framework

The **communiTgrow** institutional framework and organisational structure is outlined, followed by the five key benefits of this framework and structure.

4.4.1 The Structural Components

The **communiTgrow** IP and model, as indicated in this book, consists of six pillars. The pillars, one could say, represent the core value system of the city-making project, although it is much more than mere representation of a value system but rather a value add system. Assuming that the pillars are representative of core values that guide implementation, in order for the pillars to give effect to their value, an institutional structure needs to be created for the city.[4] The institutional framework in its entirety rests on a funding foundation called the "Project Development Financial Model", as indicated in Figure 4.3. The institutional framework oversees the business plan implementation which commences with the initial infrastructure spend that begins the construction of the built environment and eventually resonates throughout the community as the development is constructed in phases over time.

To develop the institutional framework, we pose the following questions:

- How will the new city be managed? How will it generate income?
- Where will the different assets of infrastructure be housed?
- Who will manage it? Who will own it?
- Who will monitor the profitability of the city and the enterprise as a whole?
- What mechanisms will be in place to ensure that the residents and community as a whole remain fully represented and in control of the city?

The short answer to these questions is that the city, and the residents of the city will participate in the profitability of the economic zone through the community's appointment as beneficiary of the Community Development Trust, which participates in most major economic activities in the new city. Such ownership will reside in an entity called the Community Development Trust which will appoint trustees to represent the community's interests. The Trust will wholly own the holding company CORPCO, an operating company (i.e. for profit) - which will oversee the operational aspect of enterprise activity in the city. CORPCO

will carry out its task through five dedicated wholly owned subsidiary companies, each with a specialized interests and focuses. Efficiently managing CORPCO requires definitive answers to the following concerns;
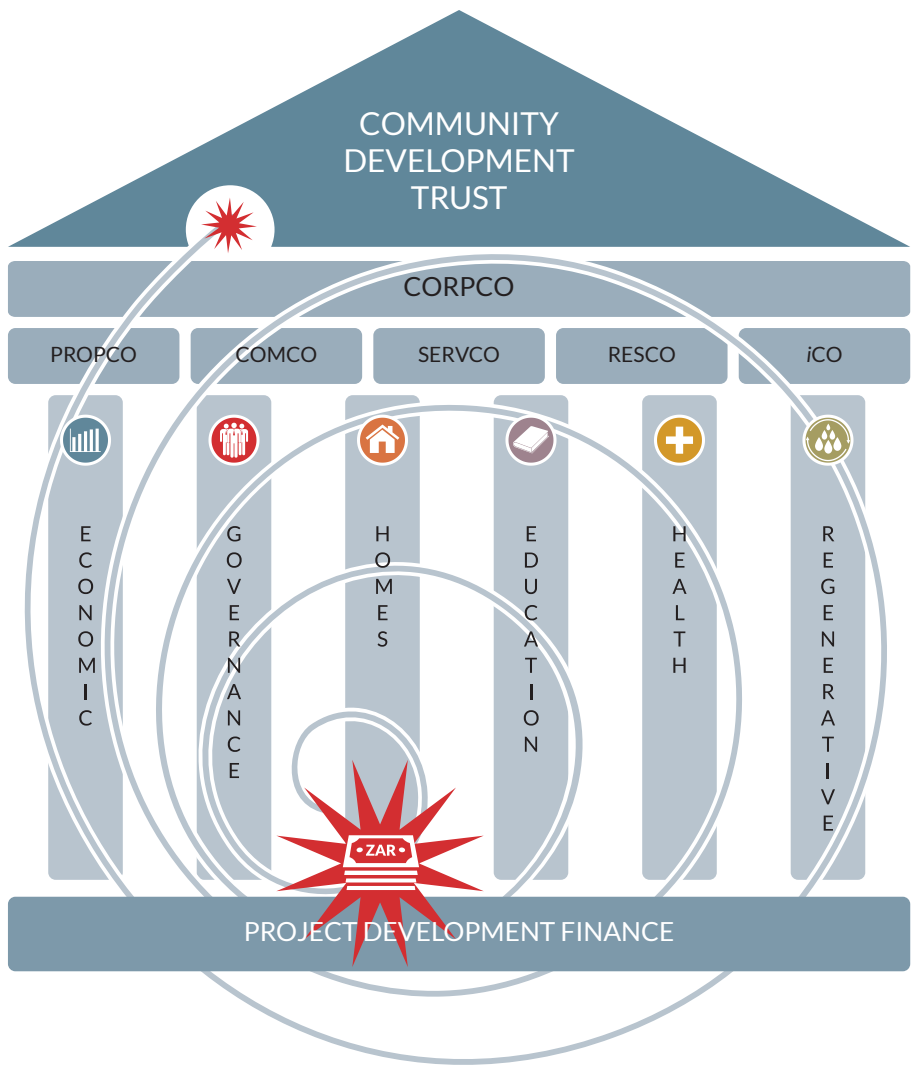

Figure 4.3   Project Development Financial Model

- What is the most appropriate governance for effective decision making?
- Do we need a central or decentralized organisational structure?
- What is executed by CORPCO, what is outsourced?
- How can we reach alignment between process and our strategy with regards to customers and costs?
- Which systems are required to support the processes?
- Which information flow is required for communication through entire chain (from customer to supplier)?

The creation of five subsidiaries are the result of responding concretely to the above concerns. How will these subsidiary companies operate?

PROPCO will be the land owning company responsible to install all external bulk and internal services, then to sell off the residential serviced erven to RESCO and donates the serviced erven earmarked for the community facilities to SERVCO. PROPCO continues to hold the serviced commercial erven, which it develops into Retail centres, Office nodes and Industrial parks. Profits generated by PROPCO will flow through CORPCO to the TRUST, to be shared by the Community (see Figure 4.4).

Thus, PROPCO will act as the retail, office and industrial land development arm of the community. The entity will work closely with a master plan to develop land in a manner consistent with creating an effective economy. PROPCO in essence harmonizes the mandates of a typical city's property development department. PROPCO's sole purpose will be to service land and then on-sell to RESCO or COMCO. For SERVCO, PROPCO will donate the land for public and utility facilities together with all private and public open spaces.

COMCO structures all joint ventures with incumbent enterprises and negotiates supply contracts of goods and services for the new city in exchange for shareholding or profit share in the enterprise, which profit share flows up through CORPCO to the TRUST, to be shared by the Community. COMCO leases operating premises from PROPCO (see Figure 4.4).

COMCO's primary roles will be to attract employers to the new city. These activities will include, but are not limited to, creation of promotional literature, attending trade shows, and working with PROPCO and SERVCO to create unique incentives through infrastructure and participating in promotional efforts and building infrastructure for new employers. COMCO will also focus on retention

and expansion of the established business community within the project through its development. Such activities shall include: assisting with procurement of job training funds, sponsoring business seminars, and identifying opportunities for clusters and collaboration for SMMEs.

It is critically important for the community to leverage its inherent market. To do that COMCO must continually focus on improving the community's ability to capture revenue. COMCO will focus on finding opportunities to maximize local production, local purchasing, retaining retirement income, etc. thus improving the ability to capture multiple revenue streams. COMCO will also be a critical support tool for CORPCO in encouraging new businesses. COMCO will be the administrators, the fund managers of investment capital and revolving loan funds. The entity also has the responsibility of initiating strategic projects such as the creation of enterprise incubators. Finally, COMCO will coordinate all community initiatives for receiving funds and aid from the broader government and support the training of private SMMEs to do the same.

RESCO will acquire all Residential serviced erven and develops all Residential top-structures, which it sells for gain to incumbent workers / residents. Profits flow up through CORPCO to the TRUST, to be shared by the Community. RESCO thus acts as the primary arm for the development and marketing of Residential parcels. Moreover, it will structure the body corporates and develop the rules and regulations for neighborhoods of various typologies.

SERVCO accepts transfer onto its balance sheet of all serviced Facility erven, which it then leverages to establish the full Service Facilities required to assure the Community that all social and community needs are met. SERVCO will interface with COMCO and CORPCO to assist with structuring the joint ventures with service providers of health and education or the like. SERVCO will become the primary service-delivery agency within the development. SERVCO will be tasked with providing all basic services or identifying the right partnerships to offer waste, water, energy, etc. to the community. This provides a unique and critical opportunity for SERVCO to foster innovation in infrastructure and service delivery structures and projects. In addition, SERVCO will be responsible for the coordination of any public entity's involvement with the development and ensure a fluid relationship with local, regional, and national government. Finally, SERVCO will ensure that the development's open space network is maintained and utilized for its highest and best use.
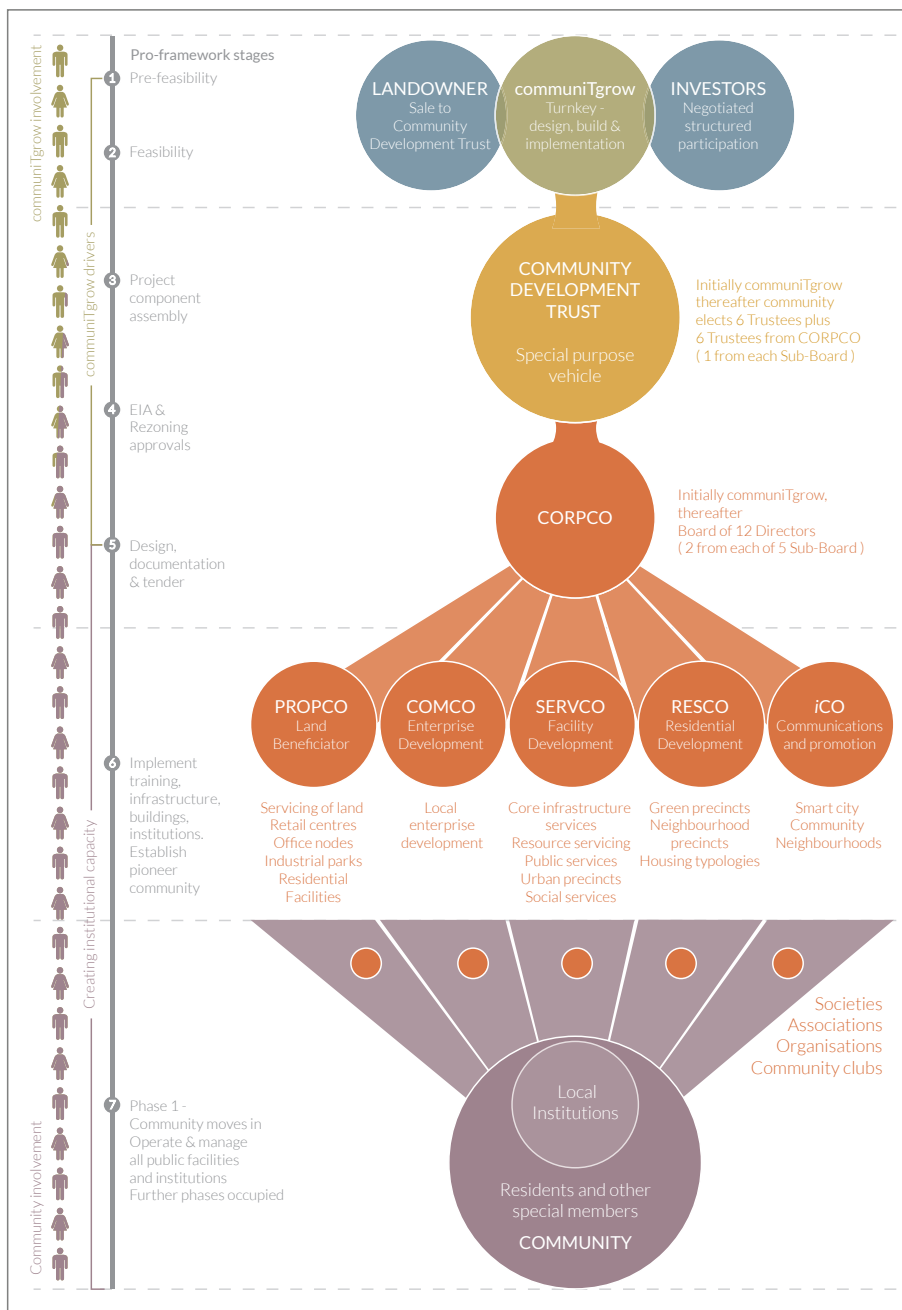
Figure 4.4   Institutional Business Model Organogram

*i*CO will handle all communication, media and promotion of the new city and operate from premises developed by PROPCO, which budget will be a cost to CORPCO but will endeavor to be its own profit centre through offering its services to the greater community at a market related fee. *i*CO will be responsible for all promotion, marketing and communications organisation that will become the focal point for community interaction and education. *i*CO will be tasked with generating the following: Investor Reports, Information and Marketing Brochures, Tender Documents, Websites and Blogs, Focus Groups and Events co-ordination, Target Market Promotion / Education, Progress Reports, Public Information, Questionnaires and Surveys, Settlement or Community Outputs, Pillars Education and Performance, Magnets Impact. Community Agencies outputs, Labour Communication, Independent Monitoring and Evaluating, Leisure and Recreation Communication.

4.4.2 Corporate Governance in a New Paradigm

Community Development Trust, by virtue of CORPCO's commercial activities has ensured that a level of wealth creation / ownership to the local community and to support this community oriented model for each **communiTgrow** city will ensure all institutions focus on accountability and good governance.

Aside from community investment activities, CORPCO will become the vehicle for ensuring that business and service delivery entities within the community promote the highest standards in corporate governance. A culture of excellence in reporting and business conduct will be instituted from the outset. The structure of such governance will be imported from the World Business Council on Sustainable Development. The following two tables (Figures 4.5 and 4.6) are representative of the procedures, support structures, and protections that will guide CORPCO and its subsidiaries in day-to-day operations.

4.4.3 Five Major Benefits of the Commercial Design

Five major benefits of the commercial design are outlined in detail below. These benefits accrue for both community and businesses within the city, ensuring their mutual development and long term sustainability.

Who is accountable	Supply chain management	Human resources	Product development / sales	Finance	Public / corporate affairs
Accountable for what	Risk management Product responsibility	Employment recruitment and retention	Competition Product responsibility	Fiduciary responsibilities Reputation	Reputation
To whom	Management Suppliers Standard setting bodies NGO's Competitors	Management Employees Wider business Community institutions Reugulators	Corporate affairs International agencies Regulators Competitors Customers Media NGO's	Stakeholders Finance directors Management The market Competitors Investors Shareholders Assessment bodies Regulators	Management Employees NGO's Advisory panels Competitors Wider business Community institutions Regulators
Through what mechanisms	Greater role in strategy Audit Training Standards / monitoring / compliance Establishing working relationships	Peer learning training and development Creating culture amongst employees Leadership	R&D Stakeholder intelligence (customer feedback, benchmarking)	Analysis Investor surveys Annual general meetings Disclosure	Management Employees NGO's Advisory panels Competitors Wider business Community institutions Regulators
Cross-functional connection	Sales Marketing Corporate affairs Product development	Corporate affairs Marketing	PR Marketing Corporate affairs	Public / corporate affairs Marketing	All functions and units
With what outcomes	Deliver accountable supply chain through strategic embedding	Use social accountability as a marketing tool	Create more sustainable products and services	Meet broader fiduciary responsibilities	Raise company profile

Figure 4.5   Accountability Matrix

	Bribery	Environmental impacts	Diversity and discrimination
Who is primarily accountable	Finance Legal	Facility / operations or EHS department	Human resources
Accountable for what	Actions or staff Policies and company policies	Emissions and waste Resource use Transport Product impacts	Recruitment and retention policies Practices and performance
To whom Company	Audit committee Compliance staff Employees	Board Employees	Board Employees
Laws and regulations	Governments	Regulators Government agencies	Regulators Government agencies
Markets	Customers Suppliers Investors	Customers Suppliers Investors	Customers Suppliers Investors
Society	Local population Politicianss NGO's	Local population Politicianss NGO's	Local population Politicianss NGO's
Through what mechanisms	Company code of conduct Whistle blowing Laws Partnerships	Internal metrics, structures and processes Reporting to regulators / agencies Public reporting and engagement	Diversity policy, metrics, structures and processes Reporting to regulators Public reporting and engagement
Potential positive outcomes	Reduced risk of fines and blacklisting Gain new business due to clean reputation Lower cost of capital Better staff recruitment and retention Learn how to do business better	Cost reduction Better risk management Improved reputation Licence to operate Process / product innovation	More competitive in war for talent Increased employee motivation Improved reputation Benefit from cultural learning
Who might generate additional value	Marketing Human resources	Finance / strategy R&D	Operational line management

Source: WBCSD, 2005. Beyond Reporting: Creating business value and accountability.

Figure 4.6 Operations Governance Matrix

Benefit 1 - Creating Wealth for the Community: The holding company, CORPCO will become the executive management arm that will conduct the strategic planning for a number of different subsidiary organisations. This holding company structure ensures vertical integration and cross-subsidization where needed. It creates the structure to enable economic development. CORPCO will have the ability to identify opportunities across the entire "value chain" of the community and provide both vertical and horizontal integrated environment to generate synergy, cost-effectiveness, and investment multipliers.

communiTgrow will initially build capacity and eventually hand over responsibility of CORPCO to the community as the development matures and understanding of the workings of the Business Model is understood by the community. The community would elect members of the community to sit as the beneficiary representatives on the Community Development Trust. The Trust is also the custodian of the values, principles and the vision of the project.

The **communiTgrow** project management role is to design, build and initially manage CORPCO and its sub-entities. The profit-making logic and dividend policy of the financial model that underpins the **communiTgrow**-styled city is innovative. A substantial portion of all profits generated by active businesses in the city, to be negotiated with each incumbent business activity in the new city will be earned by the subsidiary company, which will ultimately be paid to CORPCO. The mechanisms for guiding the flow of profits in the city will be through profit share arrangements or direct shareholding in the operating company active in the city and/or providing services to the city. In this regard there will be a series of SPV's (Special Purpose Vehicles) created to give effect to this important principle of ensuring that a proportion of the profits generated by the city remain in the city for the sole discretionary use by the residents.

The Community Development Trust will be advised by the community as to how dividends / subsidies, not cash, will be disbursed to the community, be it as health or educational subsidies, or short term interest free loans to small businesses in the city, or as a subsidy to each resident towards offsetting the cost of utilities or the cost of other municipal services and so forth. The idea is that the Community (i.e. the residents) will own and be entitled to a significant portion of the profits of the city's business activities and will have the power to decide its profit sharing but will not be paid out as a cash dividend.

The financial model is designed to ensure that money flows through the entire development with the expressed purpose of having a multiplier effect, with profits filtering upwards to the Community Development Trust to be used at their discretion. The Community Development Trust will be populated with members from the community who in turn will be elected to their positions on the TRUST via the network of community clubs and associations active in the new city community.

Benefit 2 - Creating Public Value: **communiTgrow** will create value through strategic structure of smart resource allocation. Governments face huge challenges in providing services and advancing political agendas. First, the traditional "old" city must deal with the legacy of infrastructure, limiting where resources must be dedicated and also creating a need to service outdated facilities and business models. Furthermore, governments must combat redundancies within departments and programmes and rigidity of governmental structure that prevent effectiveness in pro-actively addressing community issues. Yet none of these challenges have hindered the general populace in demanding more and more from their respective governments. Costs continue to increase while there is sometimes limited political will to make the drastic changes necessary.

Given the aforementioned lack of will and other factors, the question that arises is: Can governments alone meet the challenges of housing backlogs and the demands of service delivery? We believe that the potential role that the private sector can play has not been fully harnessed in the forms that public-private partnerships have taken in the past.

Benefit 3 – Community Centred Corporate Governance: Governance is one of the pillars of the **communiTgrow** model and is discussed in detail in the next chapter, however, a brief comment about governance is necessary in this chapter.

In short, CORPCO and the Community Development Trust model prevents the whole sale extraction of profit from the community. Instead, it redirects and re-invests the profits made in that community thereby creating a continuous pool of money and resources available to improve the quality of life of that community. This economic logic in action is the need requiring a governance framework to ensure that what is invested is secure.

Therefore, all contractors, suppliers and any other entities that want to do business in and with the newly created and evolving city, will need to enter into a contract and agreement with one of the five operating subsidiary companies. This is the commercial ticket into the city. It is envisaged that there will be hundreds, if not thousands, of companies active in the creation and building of the city. Each one of these companies will need to enter into formal contractual arrangements with one of the five subsidiary companies via the procurement system, as discussed in the procurement section of Chapter 3 above. All of these commercial arrangements and activities will be overseen by the executive board of CORPCO.

Sound governance of fiscal management and forecasting is critical for long term sustainability. History shows that any lack of good governance results in a smoke and mirrors show, which dupes the ignorant and always results in the inevitable graveyard of derelict living spaces as is beginning to characterize the uncoordinated and piecemeal growth and sprawl of African cities.

Benefit 4 – Community Representation and Ownership: The Community Development Trust Board of Trustees will be made up of 12 Trustees, 6 elected by the community plus 6 members from the CORPCO Board of Directors, being the Managing Director of CORPCO and 1 Director of each of the sub-entities i.e. PROPCO, COMCO, SERVCO, RESCO and *i*CO who serve on the CORPCO Board. The CORPCO Board will be made up of 12 Directors, comprised of 2 Directors from each of the sub-entities, which each have 4 Directors. In addition, CORPCO will have a Managing Director and a Financial Director. The institutional framework and structure is designed such that the local population becomes a shareholder and an active voice in strategic decision making activities. Together with CORPCO, the Community Development Trust will focus on a variety of strategic initiatives through its subsidiaries to generate the hard and soft infrastructure the community will need in order to sustain itself.

The detailed flow expressed in the diagram (see Figure 4.7) is an attempt to graphically portray the **communiTgrow** business process flow. The overall aim of the diagram is to show how all roads lead to the Community Development Trust – the fulcrum around which the entire development revolves. Sustainable community development is ultimately at the heart and core of what **communiTgrow** achieves through its IP and methodology.
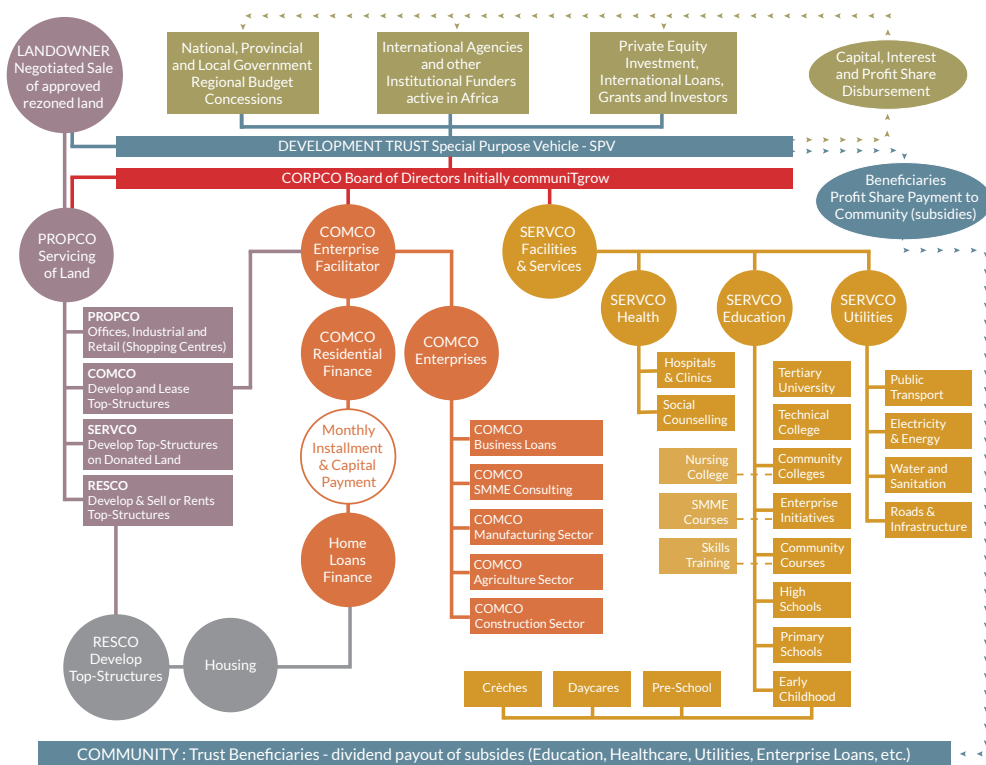
Figure 4.7 **communiTgrow** *Business Process Flow*

Benefit 5 – Maximising Return and Limiting Risk: **communiTgrow**'s institutional structure represents a diverse and intensive amount of business activity as depicted by the business process flow chart in Figure 4.7. To ensure that the institutional entities are established with as much risk limitation as possible and that returns are protected, considerations regarding debt to equity ratios, the level of guarantees offered by CORPCO and how CORPCO can ease the financing burden. Regarding the issue of debt to equity ratio, each entity's debt to equity ratio must be in alignment with their core competencies in a manner that enhances resilience to market conditions. For example, SERVCO must carry less debt due to risk of loan default whereas COMCO can carry more debt to create an incentivized environment for self-sufficiency. Regarding guarantees we take note that the level of guarantees offered by CORPCO will impact the structure of financing packages for the other entities and must be utilized. Finally, CORPCO's commitment to operations for any of the entities can ease financing burden but must be regulated as it could limit autonomy. Therefore, the correct balance must be carefully structured with the necessary procedural checks and balances programmed upfront.

The institutional framework and financing model of **communiTgrow** notes that market conditions affect any proposal. CORPCO will engage in market sounding exercises during the creation of the subsidiaries to ensure an adequate understanding of investor and lender climate which will clarify procedure but is ongoing.

4.5 Catalyzing Economic Growth

The structure for catalyzing an economic growth plan for a new approach such as building regenerative communities involves several elements that must be pursued simultaneously and effectively. **communiTgrow** translates each of these elements into specific actions and activities to forward the strategy.

4.5.1 City Scale Developments

The urban design of Wescape, for example, is rooted in recognizing the role of the market and based on an understanding of the local area economy and of local, regional, national and global markets. All interventions will therefore be driven by market demands and will be planned to be sustainable in the market in the medium- to long-term. The scale and scope of the development creates the necessary economic activity. By localizing as much of the economic activity within the borders as possible there is an opportunity to internalize much of the economic benefits for the community. This will include creating opportunities for downstream and upstream activities, including manufacturing and servicing opportunities.

The scale of the development and its institutional composition allows for it to address current market failures. Thus addressing the challenges of unemployment and the mismatch between the skills of people and the demands of the market becomes possible. The project will actively find solutions to mitigate the impacts of market failures when the new **communiTgrow** city is being designed. All interventions are planned with the aim to improve the effectiveness of the market.

4.5.2 Credible Partnerships and Support

In line with the project's commitment to use resources effectively and efficiently, **communiTgrow** will continue to work in partnership with others and has identified a range of organisations and institutions with available resources and skills and will leverage and supplement these to achieve its goals.

4.5.3 Procurement Process

communiTgrow's focus is about creating opportunities. Economically this means creating opportunities for work seekers, for entrepreneurs, for training and for young people. The economic plan will achieve this by structuring the procurement process so it supports the strategic objectives of the development. For example, tenders will place requirements for local population and community inclusion. Moreover, incentives will be put in place for suppliers to source local components which will catalyze entrepreneurship within the community.

4.5.4 Credible Institutional Arrangements

The new city will seek to reduce the red tape for investors, making it an attractive investment destination. This will include establishing a new business development unit, responsible for signing MOUs with key government partners to improve information and access to existing incentive schemes and facilitation of linkages between investors where synergies might exist. The new city will encourage responsible business activity in its interaction with investors.

4.6 Economic Modelling Tools

4.6.1 Financial Model for Delivery of Housing and the Commercial Market

The financial and economic model is ongoing and dynamic. However, the core principle, as discussed below, remains the same, namely that the well-being of the community comes first. The **communiTgrow** model establishes the profitability of an initiative and underpins the financial viability of a city-making / city-building project which can be applied to schemes as small as 50 000 residential units or as is the case with Wescape, as large as 200 000 residential units.

The key to any project based on sustainability principles is that the ongoing management must take place within a fiscal governance framework that is rooted in sound financial practice where extrapolated budgets / cashflow projections are based on accurate assumptions.

4.6.2 Phasing Timeline: Construction, Job Creation and Economic Sector Diversification

"Growing" an economy requires more than project development finance or investment. It requires time which must be intricately programmed into phases which detail when each portfolio class of a city is built and becomes part of the social fabric of the new city. The rate of populating the new city dictates the demand and need for services as well as consumer goods. **communiTgrow** has

set a strategic target that 85% of the entire workforce must come from the local population. To achieve such a goal, **communiTgrow** must have mapped and anticipate when certain needs will become apparent and at what thresholds the new city must provide service facilities. This modelling has been compiled for Wescape. (See Figure 4.8)
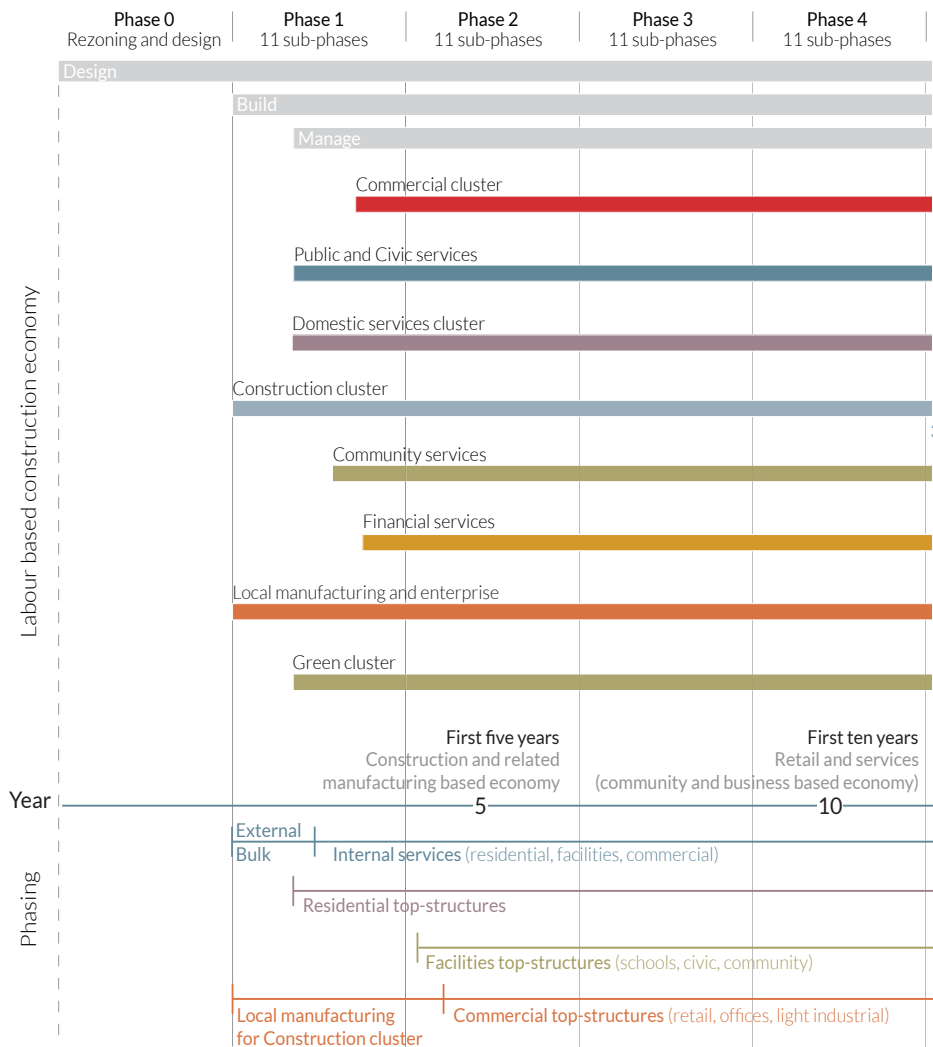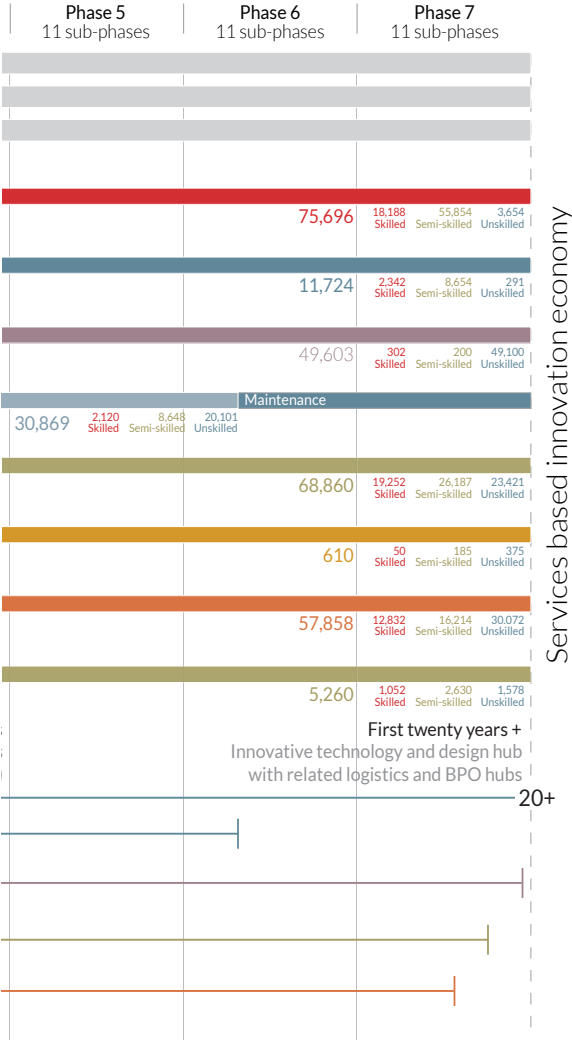

Figure 4.8 Job Sectors and Economy Transition at Wescape

The development of a normative model to create a projection and forecast for demand. Such a framework establishes targets for all of CORPCO's subsidiaries. It also generates a roadmap to ensure that the development of the community remains on target in creating a robust and sustainable environment for job creation and a quality living environment. It ensures that land development is programmed to the tempo of population migration and growth. Such a model must be dynamic; it must be flexible to account for global market trends and the pressures of commodity supply and demand.

There are 2 components to this tool. The first is an analysis of the local potential and dynamics of the housing market. This allows for the team to build a set of assumptions upon which to generate a model. We can comfortably assume that *the a*ffordable housing market will generate jobs in the management, entrepreneurial and professional services category. The second is to generate population expectation per phase of development and utilize economic and statistical formulas to derive the number of jobs required per

Phase 5	Phase 6	Phase 7
11 sub-phases	11 sub-phases	11 sub-phases

75,696 — 18,188 Skilled | 55,854 Semi-skilled | 3,654 Unskilled

11,724 — 2,342 Skilled | 8,654 Semi-skilled | 291 Unskilled

49,603 — 302 Skilled | 200 Semi-skilled | 49,100 Unskilled

Maintenance

30,869 — 2,120 Skilled | 8,648 Semi-skilled | 20,101 Unskilled

68,860 — 19,252 Skilled | 26,187 Semi-skilled | 23,421 Unskilled

610 — 50 Skilled | 185 Semi-skilled | 375 Unskilled

57,858 — 12,832 Skilled | 16,214 Semi-skilled | 30,072 Unskilled

5,260 — 1,052 Skilled | 2,630 Semi-skilled | 1,578 Unskilled

Services based innovation economy

First twenty years +
Innovative technology and design hub
with related logistics and BPO hubs

20+

151

sector for any given population. Such a figure creates a normative framework and dynamic targets to help ensure high-level tracking of sustainable growth for the community.

4.6.3 Property Development Feasibility Analysis

Intrinsic to engaging in land and top-structure development of city-making is the ability to secure project development finance. **communiTgrow** utilizes a financial modelling tool, developed over the past five years, which thoroughly investigates the combinations and permutations of the proposed development to ensure that a financial return at a rate sufficient to secure adequate financing from commercial lending agencies and institutions.

The **communiTgrow** financial model produces a 230 page report broken into 3 detailed areas:

- Preliminary project viability detailing land use budget and residential cross-subsidisation
- Top-Structure viability for phased construction programming of residential, commercial and service facilities
- Economic data inclusive of job creation programming and business plan cashflow

The important key indicator in accessing the viability of a project is the cost of external bulk infrastructure versus the return on the various asset classes of property and the cost of construction in the region. **communiTgrow** works closely with Aurecon Engineers to ascertain all preliminary data and costings.

4.6.4 Lock Step Growth Population: Jobs Required Projection

Keeping track of job creation is an absolute essential element of the development of a new city based on **communiTgrow** principles. The uptake of housing and growth in the commercial and industrial sector requires that jobs are provided in lock step with the growth of population in the new city. To help plan for this need **communiTgrow** has undertaken the development of a dynamic projection tool. The tool offers population expectation per phase of development and utilizes economic and statistical formulas to derive the number of jobs required per sector for any given population. Such a figure creates a normative framework and dynamic targets to help ensure high-level tracking of sustainable growth for the community. The outcome and product of such an analysis is illustrated in the diagram (see Figure 4.9).

4.6.5 Cost Effective Infrastructure

communiTgrow recognises that urban design itself can unlock economic opportunity. The very nature of a community's design can provide tools to leverage existing resources into areas of innovation and utility. Economy of "large scale whole-system integrated linked development" offers a number of distinct advantages but requires the implementation of cost effective infrastructure and technology for services and buildings. The point that needs emphasizing is that decentralized and semi-decentralised infrastructures are capable of supporting much more growth and employment than those that are centralized.

Skilled jobs	53,052
Semi-skilled jobs	117,228
Unskilled jobs	129,763
Total	300,043
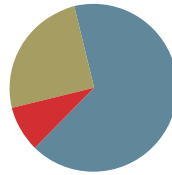
Domestic
services cluster
49,603   303
      200
      49,100

Financial services
610   50
    185
    375

Local manufacturing
and enterprise
57,858   11,745
      14,870
      31,243

Green cluster
5,260   1,052
     2,630
     1,578
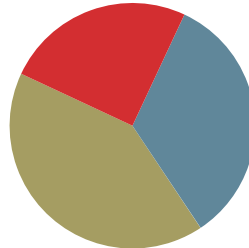
Community services
68,860   19,252
      26,187
      23,421

Public and Civic
services
11,287   2,342
     8,654
      291
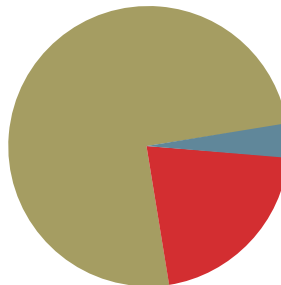
Commercial cluster
75,696   16,188
      55,854
      3,654

Construction cluster
30,869   2,120
     8,648
     20,101

Figure 4.9   Wescape Job Summary

4.7 Building an Economy that Regenerates

The key elements of the regenerative strategy for the economics pillar.

4.7.1 Utilising Construction and Settlement Dynamics

The new city's development finance platform provides the seed capital to begin to unlock strategic initiatives and institutional arrangements within the **communiTgrow** pillars that funnel to create downstream benefits for other pillars. In this way, an entire network of industry and opportunity is unlocked. These **communiTgrow** pillars generate not only large-scale industry and anchor commercial tenants but support services for SMME's, and a wealth of job opportunities within the social services sector.

The Wescape project provides a tangible example of how the pillars work throughout project development. The economic pillar is, of course, active long before the first settlers arrive on site to build the city, since funding must be raised and managed long before the first residents arrive on site. Nevertheless, since the first residents of the community will be the construction workers and since they will be the first people on site; it is fair to say that the act of building community begins through the housing pillar. The settler community will by definition be a construction-oriented, labor based community thus allowing the economy to initially be dominated by construction activities. But, over time the needs will migrate toward a differently skilled economy. This transition which involves the growth and diversification of activity creates employment opportunities en-route to maturity.

The construction and house building roll out programme is scheduled to run over a period of 20 years with a target of building 1000 houses per month, which scale and pace of job creation is linked to the building programme over the construction period. However, the critical lesson from history (i.e. the American Gold Rush discussed above) is that long before the construction impetus begins to taper off, a number of other industries should already be proactively nurtured, in a programmed manner.

4.7.2 The Power of Industry Magnets, Clustering and Attractors

In addition to construction and settlement economic activity, a **communiTgrow** city will utilize specific industry magnets to create the critical momentum to spur the development forward.

Innovative technology and BPO hubs cluster

Retail and facility services (community and business) cluster

Construction and related manufacturing cluster
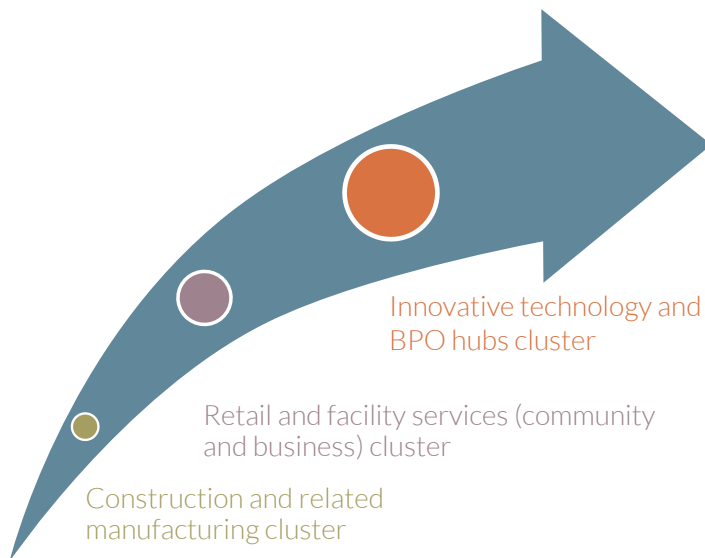
Figure 4.10 Economic Road Map

The diagram (see Figure 4.10) illustrates the direction and momentum that are created as the development moves through its various phases and the programmed increase in the provision of houses, population and the need for a more diversified job creation base. The stages are somewhat predictable yet have to be carefully programmed and supported if it is to be sustainable. The logical development will be from a construction and manufacturing based economy towards retail and services and ultimately towards innovative technology and design with related BPO hubs.

It is evident therefore that through specialised industries based on the identified magnets for that specific regional initiative, the subsequent clusters and ultimate attractors can be further defined. For the Wescape projects, the identified magnets are;

- A green settlement – with related construction, manufacturing and services;
- An innovative hub with iconic expo and entrepreneurship support;
- A learning settlement– with related training services and publishing;
- An e-economy with fast broadband throughout and related BPO and ICT hubs;
- A 24/7 settlement and economy - with public transport and safety.

Figure 4.11   Attractors and Magnets

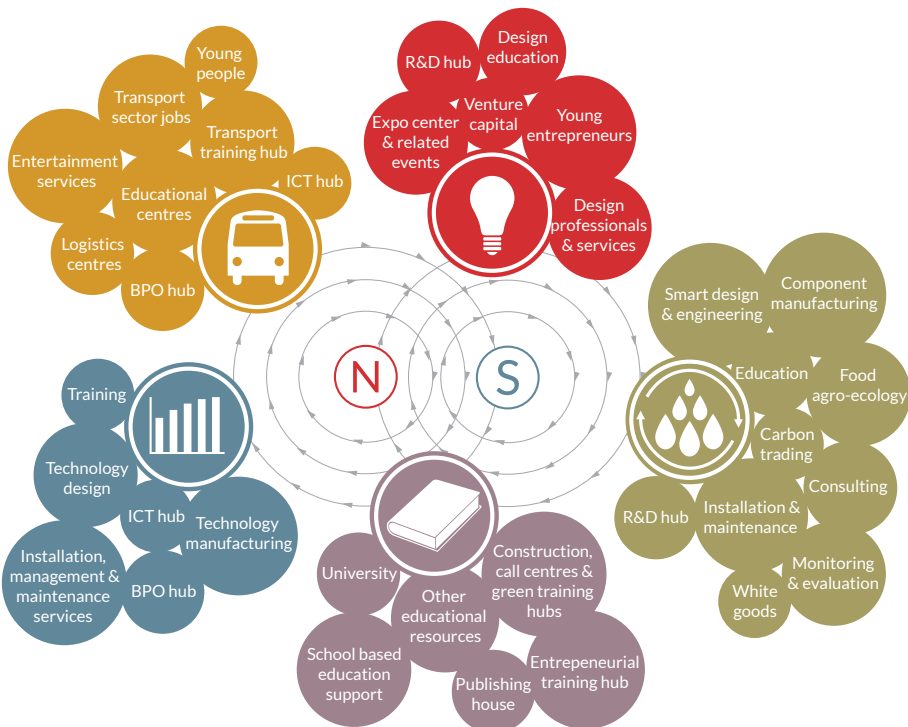The identified industry magnets (see Figure 4.11) provides a solution for the inevitable transition away from construction sector jobs and establishes economic activities that can have multiplier effects for employment throughout the surrounding region, as will be the case with Wescape and the surrounding regions such as Atlantis in Cape Town.

The economic pillar therefore helps to proactively anticipate and focus specific economic development in the community in such a way as to create the critical momentum to spur the project forward.

Let us use a practical example to illustrate the entrepreneurial and job creation potential using the magnets as a conceptual tool. We have argued above that the design of the industrial underbelly of the new city (in this case Wescape) will develop and evolve as the community grows. Initially, the economy will be dominated by construction and related manufacturing activities noting that the projected rate of delivery is 1000 homes per month. So, by way of example, let's use the green settlement magnet with its related construction, local manufacturing and facility services clusters to illustrate the above principles.

Wescape's "green settlement" magnet, a community to be developed over 20 years, delivering approximately 200 000 residential units, immediately magnetises the construction cluster. Simultaneously, its north pole - local manufacturing - and its south pole - facility services - are activated. These three clusters align and activate their sub-clusters which intersect with each other and establish stability. Our economy has begun to take root, beyond the activity of building houses.

At the very fringes of the green settlement magnetic field is where the attractors come into existance. The attractors can be in steady stable space, cyclical space or chaotic space, which simply means that they are the glue that solidify economic structure.

The aforementioned example illustrates in practical terms exactly what is meant by a whole-system linked community development philosophy namely the integration of several disciplines of property development and strategic economic thinking interwoven into the urban design fabric.

Furthermore, this approach creates a full spectrum of permanent employment opportunities within the community, whilst leveraging off of cheaper land and the construction of housing.

4.7.3 Maximizing Utility Through Money Multipliers

The entire philosophy of **communiTgrow**'s economic and financial strategy is to model the strategic focus of property development. An expanded scope allows an entity to maximize the potential return on investment by utilizing funds towards community facilities and infrastructure with the greatest multiplier potential. Through the percentage-share-partnership model, the private businesses and civic facilities within the community effectively become brand extensions of the new city and allow value to be re-invested into and in turn drive revenue growth throughout.

4.7.4 "Eco-system": Entrepreneurship and Skills Development

Sustaining a sustainable economy requires that the economy begins to move into an organic phase of development, one that can regenerate itself and adapt to local and global market conditions. Such a phase requires entrepreneurship to create a flexible, productive, innovative, and sustainable localized economy.

To do this it is important to create an "eco-system" of entrepreneurship. Research has repeatedly proven that certain geographical locations have become leaders in entrepreneurship, far outpacing different locations despite similarity of policy and incentive structure. Thus it becomes readily apparent that the Porter "cluster" approach is particularly important. In addition, Dr. Daniel Isenberg of the Babson Centre for Entrepreneurship argues that while education and institutions are important they are not as much of a causal element as many would argue. He explains that leadership is a more critical element[5]. Thus, we see the unique benefit that the community's institutional structure could provide in creating this entrepreneurial eco-system.

Most community enterprise development programmes fail because they do not bridge the gap between start-ups and potential suppliers. The diversity of subsidiaries within CORPCO can mitigate this risk and help provide appropriate matchmaking opportunities.

Skills development and vocational training are also an important strategic effort to encourage entrepreneurship and local talent development. Consistent with many objectives of a **communiTgrow** city will provide opportunities for individuals to undertake training and skills training this will be supported in a number of ways from component of tender requirements, programmes by COMCO, community programmes, and contributions by local business.
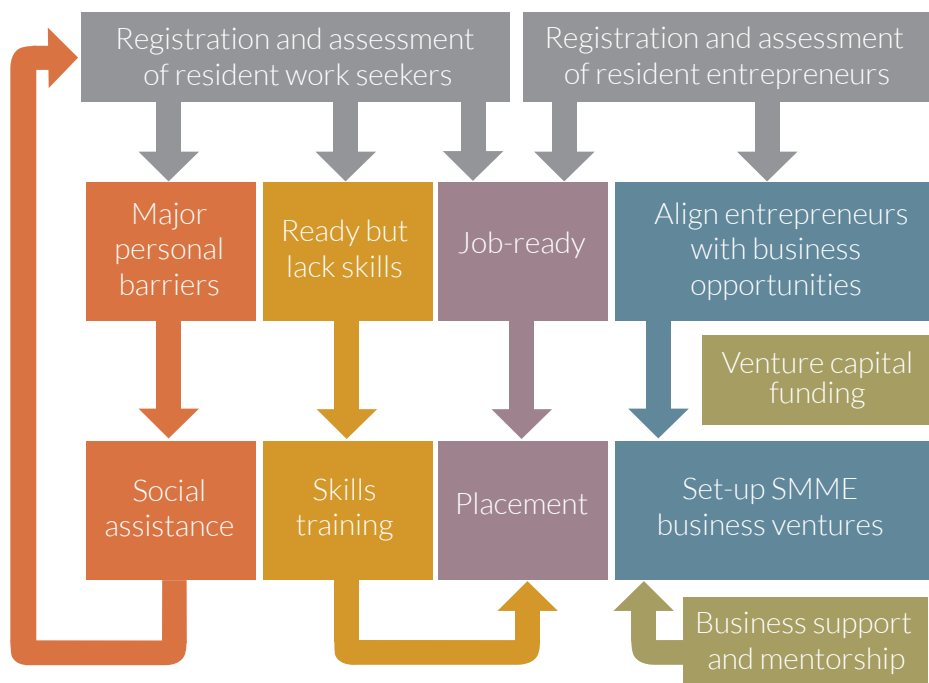

Figure 4.12   Skills Development and Workforce Development Tool

4.8 Conclusion

In this chapter we have explained that the implementation of the economic pillar is driven by the objective of creating sustainable employment through unique business plans for each regional initiative. This will be achieved on the back of

the construction of mega-housing delivery projects, which in turn stimulate the economic drivers required to support the identified industry magnets and subsequent cluster attractors to ensure sustainable growth of the fledgling city.

We have identified the need to use initial infrastructure deployments as critical job creators since infrastructure developments have long term consequences for future resource-security and competitiveness (i.e. sustainability). Moreover, if one deploys these infrastructures with semi-decentralisation strategies one can create more jobs throughout the value chain at exactly the right levels, and as they are required within the economy for small and medium enterprises alongside the multi-nationals. To do this we must ensure that the business plan of the new city reflects the appropriate synergy to take full advantage of the infrastructure deployments. The building of such a market place is proactive and programmed, developing the need for an institutional structure, business process flow and governance system to facilitate the harnessing of the potential of the market opportunity. In this way there is a better chance for the emergence and vibrancy of a micro-economy developing into a meso-economy which in turn has far reaching effects into the macro-economy.

Pragmatism, and not optimism, characterizes **communiTgrow's** economic pillar. As we indicated, this pillar is better understood as a business plan that establishes sustainable communities which have access to an economy that regenerate opportunities for growth and employment. We have deliberately avoided high level theory and rather attempted to show, with this chapter, that the key to urban sustainability in Africa is to adopt a **communiTgrow** programmed action which involves the deliberate creation of a diversified economy (i.e. market place) using the African "housing rush" and construction demand (indeed "boom") as the catalyst for growth. The imperative is that this growth and diversification must avoid the temptation of establishing an economy which is dependent on the single economic activity, in this instance, construction. Our business plan has shifted us from hoping to knowing that it is possible to create permanent sustainable jobs within the economy of a **communiTgrow** city.

Chapter 5

The Governance Pillar

5.1 Purpose of Chapter

The purpose of this chapter is to explain how governance, as understood by **communiTgrow**, will work in practice, using the Wescape project as a live and evolving case study.

This chapter draws heavily on **communiTgrow** business planning and financial modelling documents, feedback from numerous brain storming sessions and stakeholder meetings, as well as reviews and engagement with key analytical literature including feasibility studies, government policy and position papers, current legislation and international best practice models relative to the challenges presented by African urbanization and city-making in the 21st century.

The hope is that this book, and indeed this chapter, will inspire and serve as a resource for decision makers and influences, officials, developers and professionals who are faced with similar challenges in their environment and/or country.

5.2 Critical and Framing Questions

5.2.1 Beyond Administrative and Procedural Compliance

Governance is one of the six pillars that provide the foundational support of the **communiTgrow** IP. In this regard, some critical and framing questions need to include;

People / Participants
Human resources required to ensure that
the operational objectives are achieved

Operational interventions and implications
Practical and operational interventions which ensure
that the programmatic objectives are achieved

Program interventions and implications
The programmatic interventions folded into
the policy environment

Built environment interventions and implications
Interventions in the built environment to ensure
that a specific magnet is supported

Strategic interventions / magnets
Interventions in pillar that create value
beyond the status quo

Figure 5.1   Pillar Planning and Co-ordinated Implementation Tool

How do we live together as a people, nation-state, village community or indeed as a citizen of the global village? What are the rules, values, principles and norms by which we agree to regulate our socio-cultural and physical environment in order to live a good life on earth and preserve our planet for future survival?

In the narrower context and scope of this book, the more poignant question is; how do we ultimately stimulate and then regulate a particular community that, over the next 20 year period will evolve from a piece of land that has access to water but with zero residents and infrastructure, to an inhabited space that will

comprise almost one million residents located in 200 000 housing units, supported by an infrastructure that will boast 200 schools, 20 primary healthcare clinics, 15 Inter-Generational Centres, 200 crèches/day care centres, 8 secondary clinics, 25 sports fields, 8 tertiary facilities, 4 police stations and 4 hospitals? Indeed a brand new city that is about to be created on the outskirts of the City of Cape Town; a new/secondary city called Wescape!

What ensures that the spatial environment and community of Wescape – and any such like development - becomes and remains economically viable, environmentally sustainable and culturally vibrant within a framework of regenerative ecology? The short and admittedly simplistic answer is that it will depend heavily on the supporting integrative governance framework.

It is tempting to theorise and intellectualise about governance, but the blunt reality is that the set of rules and regulations created for this community must not only be premised on sustainability but must enjoy the "buy-in" and "acceptance" of all stakeholders involved in the living, working and playing spaces of this particular community. Without the total support from the emerging community Wescape cannot become a desirable place to live, work and play. In short, the governance framework must be clear, direct, measurable and enforceable, if it is to have any value in an emerging new city.

What then are the different components that make up this new city being built just outside Cape Town? Who will ensure that all parties understand and comply with the agreed upon rules of engagement relative to its governance framework? What will hold together the triadic relationship involving residents, businesses, municipal/governmental systems that will impact this development? Who will ensure that cultural as well as the biological systems remain in harmony in order to maximally optimize human and ecological potential thereby creating a sustainable and rewarding life?

As will be evident from the discussion below, the choice of a governance framework and its integrative capacity must, of necessity, go beyond that which currently tends to dominate discussion on governance namely administrative and procedural compliance.

5.2.2 Bio-Cultural Suicide or Sustainable Living

Cities are places where demand is concentrated, and hence the pressure that cities exert on the ecological life-support systems that belie their survival is similarly exacerbated. The sustainability of urban systems is defined in multidimensional terms, that is; the mutual sustainability of social, economic and ecological as integrated systems. Yet, civilisations and their cities have often run awry of the limits that natural systems exert upon their survival.

The well known Jared Diamond, a professor of geography and physiology in the US, reminds us that the survival of a society goes way beyond the legal and statutory compliance to notions of governance. In his 2005 book entitled "*Collapse: How Societies Choose to Fail or Succeed*", Diamond describes and discusses "societal collapses" involving an environmental component.[1] Of course, other factors contributing to the collapse of a society include climate change, hostile neighbours, trading partners and the question of societal response. However, the significant contribution of Diamond's analysis is best summarised by Malcolm Gladwell who remarks that:

> *"Diamond's distinction between social and biological survival is a critical one, because too often we blur the two, or assume that biological survival is contingent on the strength of our civilizational values. The fact is, though, that we can be law-abiding and peace-loving and tolerant and inventive and committed to freedom and true to our own values and still behave in ways that are biologically suicidal."[2]*

We do well to heed Jared's primary insight; namely that cultures collapse because they are unable to align their belief system, values, technologies without taking account of what the ecosystems they depended upon could sustain. Jared's argument, backed up with a catalogue of case studies, show how societies that have collapsed actually failed to question their assumptions, thus taking for granted practices which in turn reflects the hubris that doomed them – indeed biological and cultural suicide.

Where cities are concerned, infrastructure choices that are made today lock cities into usage-footprints (and emission footprints) and behavioural patterns for up to 40 years[3]. Infrastructure choices drive behavioural patterns. This is especially the case with large public transport systems for example. Yet

all infrastructures systems, from transport to energy, telecommunications, educational, learning, healthcare, waste management, housing systems play a critical role in establishing the ecological footprint of a city and the behavioural patterns of the urban citizenry.

The governance of infrastructure, which typically occurs through a variety of different government departments, requires integration if sustainability objectives are to be achieved. Achieving this integration is one of the functions of governance, and fragmented and piecemeal infrastructure development and environmental governance systems are unlikely to result in city-scale system sustainability.

Ensuring compliance lies at the heart of governance, and in this respect, the key task of ensuring that resilience is guaranteed, is achieved through the adaptive capacity of the city system, or it's "ability to self-organise" or adapt to a combination of pressures. Governance sets the "rules of the game" for environmental compliance, and in this sense, must play a key role in determining and coordinating what type of self-organisation emerges in response to threats to the life-supporting ecosystems upon which the cities rely upon for survival.

The **communiTgrow** approach towards the governance of human-nature interactions is to employ strategic frameworks for systems integration at the whole city scale, and to enforce pragmatic compliance regimes for environmental violations for different sectors. A focus at both levels is required, as vertical integration is ultimately required to ensure that top-down strategic initiatives are effective at local scales. **communiTgrow** envisions achieving varying degrees of sustainability in different projects, but the central aim is to ensure that **communiTgrow** cities are set upon developmental trajectories that offer increasing possibilities for them to decouple growth from environmental impacts and resource exploitation.

5.2.3 The communiTgrow Option – Building Communities of Understanding

The governance choices proposed by **communiTgrow**, and as outlined in this chapter, and as applied to the Wescape development, is a bold attempt to consciously avoid the pitfalls identified by Jared Diamond and others. The

communiTgrow option is best expressed in its vision and mission statement. The vision of **communiTgrow** is to build communities of understanding in which the capacity for health, prosperity, potential and the expression of people-based communities can contribute to regional economic stability and the ongoing regeneration of healthy eco-systems. The mission of **communiTgrow** is to co-develop contextually appropriate regenerative communities of sustainable neighbourhoods underpinned by whole-systems thinking. Such neighbourhoods position people and communities to have healthy lives, livelihoods and lifestyles.

In short, **communiTgrow** has an integrative and communal approach to governance. The approach is premised on holistic theory and gives practical expression to the importance of the whole and the interdependence of its parts by bringing together community, ecology, economy, programmes, operations and governance. As the Nobel prize-winning economist, Elinor Ostrom has shown, communities have the capacity to adaptively co-manage their resources for mutual benefit and longer term sustainability, and can avoid the "tragedy of the commons" where individuals acting exclusively upon their own self-interest push the system to collapse[4]. Yet local solutions that aim to achieve this must cater for the specific contexts in which they are located, and must establish governance systems for these contexts that draw upon specific socio-cultural, political and economic circumstances. The **communiTgrow** approach seeks to achieve integration and a fair, transparent, socially-based governance framework, alongside the instrumental use of punitive governance systems, in order to help ensure that the core functions upon which urban society thrives are subject to cooperative systems of governance.

5.3 A Working Definition of Governance

5.3.1 The Governance Debate in Perspective

So what is governance, really? The evolving body of literature on the topic of governance is vast, potentially confusing, sometimes paralyzing and certainly fraught with geo-political and economic agendas. Furthermore, our sense is that this body of literature is dominated by theoretical and academic concepts with little practical application. The challenge of this chapter is to define and discuss governance in as practical a way as possible. In doing, so let's locate ourselves in the broader discussion.

5.3.2 Governance as the Central Nervous System

The intricacies and nuances of governance with its more theoretical and macro socio-political aspects are dealt with in chapter 1 and 2. For purposes of this chapter we hold the view that governance is to society what the central nervous system is to the human body. Not unlike the central nervous system, governance ultimately affects the functioning and capability of every aspect of the human body and its ability to realize its full potential.

It therefore goes without saying that the slightest injury to governance will have a dramatic, if not paralysing effect, on the rest of the body and will most certainly have the effect of diminished and curtailed performance capability. The centrality and importance attached to governance might explain why there is such a recent mushrooming of governance-discourse noting that just about every professional discipline now has the word "governance" hyphenated to it – be it economic, environmental, or defence governance. More recently, and with particular reference to international agencies such as the World Bank, the IMF, the United Nations Development Programme, there has been an insistence on the visible and measurable implementation of governance as part of the funding requirements for projects.

A final definitional comment about governance is that governance is often associated with what it is trying to correct, namely corruption and maladministration. It is rarely associated with more positive and visionary elements as expressed by **communiTgrow**. Nevertheless, we make the valuable observation that transparency and accountability are two sides of the governance coin. What **communiTgrow** wants to do is go beyond compliance and accountability. We want to inspire and energise.

5.3.3 From General to Discipline-Specific Discourse

As indicated above, recent literature and discussion has migrated governance from a general and generic discussion to a discipline-specific professional discursive practice. So initially, the primary distinction was between good governance and bad governance. More recently, this generic focus has given way to a plethora of discipline-specific and specialist discussions including security

governance[5], environmental governance[6], financial governance, governance in the health sector, governance in the defense sector[7] and so forth. Practically every discipline seems to have a department or unit paying attention to governance. Why?

5.3.4 What is Governance After All?

Notwithstanding many different definitions of governance[8], we have chosen here to define governance as that set of rules, values and traditions by which a group of people agree to be held accountable. In short, governance is the code by which we agree to live together (i.e the code to which we will comply). In addition, we agree to the sanctions associated with and imposed by that code in the event that we do not comply with the code.

> In colloquial and everyday language governance is the do's and don'ts of all aspects of communal living including the punishment (or remedies) that will be activated when you do not comply with the agreed upon code.

This, in our view, is the essence of any definition of governance, notwithstanding discipline-specific language and nuances associated with the word.

5.3.5 Governance Must Be Practical and Measurable

Governance is therefore much more than just administrative systems, policies and statutory compliance. For governance to have meaning, particularly in the context of a developing nation, it must be implementable and measureable. Its code must be enforceable if it is to have any real effect. In other words, governance cannot remain a policy or theory to which we give intellectual accent only. As per our image of governance as the central nervous system, we hold the view that administrative systems and societal development in general will stand or fall by its ability to practically implement governance and to measure its impact.

In the context of building a new society, such as promised by Wescape, governance is fundamentally about measuring levels of human security and feelings of safety and economic sustainability. For example, if citizens do not

feel safe in their neighbourhoods, the security governance framework will have failed and must be reviewed. Furthermore, if the Wescape development does not create the projected number of jobs or attain the attendant self sustainability goals linked to regenerative ecology, then the governance pillar will have failed and consequently Wescape will fail – and possibly stand accused of the kind of bio-cultural suicide as mentioned above.

In the context of a Wescape-type development, physical safety and economic viability (i.e. jobs for residents/citizens) are real, tangible and measurable indicators especially since the vision for Wescape is to create a residential living space characterized by safe walkable communities, that are economically sustainable and viable. If the residents do not feel safe to walk the streets both during the day and at night, it can be argued that the Wescape project will have failed to achieve one of its primary objectives and will stand accused of a failure in proper governance.

Similarly, if investors are jittery about the economic and fiscal regime that governs their investment in Wescape, they are unlikely to make significant investments in the project.

5.4 Governance and the Challenge of Urbanisation

5.4.1 Inevitable Urbanization and the communiTgrow Response

As discussed in Chapter 1 and 2 of this book, Africa is destined for rapid urbanization. The current African urban migration trends suggest that approximately 800 African cities will emerge over the next four decades.[9] The question we need to ask is: What will these cities look like? Will they be safe places to live in? Will they be economically viable spaces? Or will they be sprawling infrastructure-less dormitory towns on the periphery of existing cities. Will these emerging cities be lifeless spaces that merely accommodate migrants in search of better employment, with no aspiration of laying down socio-cultural roots in the places where they find work?

If the forecasted African urbanization growth is real, then these 800 "new" cities will emerge whether we like it or not. The challenge facing governments and its town planners and spatial management experts is the question relating to how best to anticipate and proactively prepare for the eventuality of rapid urbanization in Africa. There is no doubt that herein lay the entrepreneurial opportunity for spatial development along the lines as proposed by **communiTgrow**.

It is in this context that **communiTgrow** appears as a pioneering spatial (i.e. urban design) and community development expert, with Wescape as its flagship project. This project is likely to serve as a benchmark for other projects of similar intent and scale for the rest of the African continent.

5.4.2 The Great Internal and External Interface

The emerging pattern of city growth in Africa linked to the pressure exerted by urbanization, is that of the growth of "informal settlements" (in contrast to "slums", which can occur in both formal and informal housing arrangements) on the periphery of an existing city, with poor living conditions and access to services. Therefore, the prevailing challenge is to assess the extent to which existing urban and city infrastructure can absorb the inevitable migration or whether the remodelling of older cities must give way to the establishment of brand new developments, to not only accommodate the number of migrating people, but also reflect a technological alignment with modern challenges embedded in the green economy and issues around the adoption of renewable energy.

In short, the migration and rapid urbanization of the African continent will need to take account of limited and expensive resources, the multi-cultural and international character of those in search of their pot of gold in the city and the interface between new and old.

Unfortunately, city-making across the African continent seems not to have kept pace with the demand. The need for the creation of new spaces (i.e. new cities) is self evident. In many instances, the new developments will need to be plugged into the existing infrastructure of a nearby or adjacent municipality, and accommodate the emerging social community that is heterogeneous and

international in orientation. The other reality is that higher income earners face the same spatial challenge, namely; insufficient affordable housing units and scarce opportunities to create a permanent and meaningful life in the urban space.

In addition, African cities will face the evolving of a brand new "community" which will need its own unique set of rules and regulations by which it will allow itself/themselves to be ruled / governed. In many instances these rules and regulations would be nested within existing governance frameworks.

However, as the foregoing analysis has shown, most of the existing municipal and public sector governance systems (particularly as it relates to Cape Town and the Wescape project) were designed for a completely different set of circumstances and with a different set of socio-cultural assumptions. Bluntly stated and applicable to South Africa's Apartheid legacy, cities were places designed for "white" people on the premise that black people did not belong in the city. Apartheid discourse went so far as to describe urbanizing African communities as "black spots" – which presumably needed to be removed – hence the Apartheid governments legally sanctioned forced removals policy – a policy that removed black people from the urban and city area.

A further problematic and core premise of the Apartheid economic belief system was that black people were defined narrowly as mere commodities namely cheap and casual labour to suit the needs of white capital. The dehumanization of the African person thus made him/her more easily expendable and regarded as an alien in the urban space. Blacks were allowed into the city and tolerated in the urban environment on the premise of non-permanence in the urban setting. The psychological scarring associated with this policy runs deep and has a profound impact on the governance assumptions one ought to make when creating a new urban living space in South Africa - a space not defined by race and class.

These attitudes run deep in the psyche of South Africa. It is therefore critically important to note that the governance systems from that period were premised on a very different set of assumptions when compared to today, including cultural, economic and environmental assumptions. Furthermore, notwithstanding the removal of racist legislation, the current and existing governance frameworks of many South African cities are antithetical to the demands of a 21st century economy that is increasingly dominated by prescriptions linked to a green

and sustainable economy. Thus, many public entities (i.e. governments and municipalities) are in the process of playing catch-up in terms of both space and technology management.

The question or challenge is: will they be able to catch up in time given the speed at which government bureaucracies work on the one hand and the speed at which technology changes? Does the slowness with which government(s) operates present an opportunity for a company such as **communiTgrow** to proactively "fast-track" development along the lines proposed by its regenerative city building model? Unfortunately, bureaucratic inertia is a common theme across Africa where urban governance of land and housing markets are concerned, which is mostly informal, which is why municipalities have low revenues.

It therefore remains an open question as to whether or not existing systems will "catch up in time" with the pace of African urbanization. There is no doubt a case to be made for the incorporation of a new governance framework, not unlike that proposed for Wescape, as complimentary to and not antithetical to existing city management systems.

So a significant point to be made here is that the Wescape type system, insofar as it needs to plug into *external* municipal systems, must have a synergistic interface. New developments cannot and should not be seen as unconnected islands. The external connection to existing infrastructure may have challenges but the connection must be made to work.

However, looking inward, in terms of how the residents, businesses and the service providers on the inside of the Wescape community interact with each other – this will require a deliberate and concerted effort to not only create governance frameworks designed to achieve the goals of a Wescape development, but more importantly must enjoy the buy-in from the internal stakeholders defined as residents, business owners and service/utility providers.

While not completely desirable, a simultaneously operating dual system of governance is probably inevitable – a system that will regulate the behaviours, services and interaction between the *internal* stakeholders (i.e. the broader Wescape community made up of resident and business owners) on the one hand, and a system that regulates relationships with the *external* stakeholders namely

the adjacent municipal/government interface that provides bulk services, the processing of political processes (e.g. elections), policing, healthcare, education and so forth. The pressing question is: "So how do we do all that?"

5.5 A New Model of Community Building

5.5.1 Three Levels of Governance

Governance in the **communiTgrow** model functions at three levels within the context of an institutional framework ultimately governed/controlled by a **communiTgrow** Trust. To this we will return shortly. However, for our purposes here, let's identify the three levels of governance. The first is behavioural governance**.** This represents the rules and recourse by which everyday life is conducted in everyday institutional settings. These include formal and non-formal rules that are articulated, agreed and evolved to serve the purpose for which they are intended. The second level of governance is Institutional and intra-institutional**.** Here the common purpose, roles and responsibilities of institutions are defined. The third level of governance is at the level of settlement/ living systems. This area of governance correlates to the different systems, levels and scales at which governance is used and allows for more systemic common purpose definitions of the governing process.

5.5.2 Contours of a New Regenerative System

The primary aim of this book and the services offered by **communiTgrow**, is to motivate for a brand new approach to city-making and community building – an approach that will proactively prepare African cities for the inevitable arrival of millions of Africans as they move from the rural periphery to the urban centre – in fact 800 million such persons over the next four decades.

The practical implementation of proposals made by **communiTgrow** piloted via the Wescape development just outside Cape Town, South Africa, is premised on a vision of creating and building a contextually appropriate regenerative community comprising of sustainable neighbourhoods underpinned by whole-system

thinking, and where people and communities have healthy lives, livelihoods and lifestyles. In order to achieve these objectives a proactively managed set of governance rules, principles and traditions must of necessity apply.

5.5.3 Unique Features

The Wescape development proposed by **communiTgrow** will by definition share many governance frameworks with the adjacent municipality/local and national government. But while there are many common and overlapping generic governance features, the approach proposed by **communiTgrow** in respect of creating regenerative communities, will have a few unique and non-negotiable features. These features have a direct bearing of creating the rules, values and traditions by which this newly created community will agree to live by. Let us highlight five such unique features.

From dead land to living ecosystems: The first issue has to do with land and land ownership. While the **communiTgrow** model can take place on any developable land, a unique feature of the Wescape development is that it will be taking place on privately owned land. The purpose is to transform dead land into a living eco-system. So, notwithstanding the anticipated, and in some instances necessary, interface between the Wescape development and existing municipal authorities and services, the Wescape development takes place on privately owned land and will be developed as a result of the entrepreneurial flair of a private developer.

Of course, private land ownership is not a pre-requisite. However, security of land tenure is a fundamental tenet underpinning a development such as envisaged at Wescape. This does not mean that a similar development cannot take place on crown or state owned land. However, as already stated, investors will require a great degree of comfort regard the security of land tenure, if a project of this magnitude is to enjoy private sector investment support. This is not unlike the special economic zones which Fuller and Romer describe in their thesis on charter cities[10]. The point being made here is that the developer of the land must enjoy as little interference as possible from established bureaucracies and governance frameworks. Put differently, the land must not be encumbered by unnecessary red-tape and bureaucracy.

In the specific context of the Wescape Development, and as a primary/ foundational premise, the said land will be managed and governed by a registered Trust as per South African company law.

From 0 percent stakeholder to 25 percent shareholder: Secondly, up to 25 percent of profits from business-related activity in Wescape will be owned by the community (i.e. residents). In other words, the residents move from being a traditional stakeholder to a 25 percent shareholder of the "city" in which they live. Furthermore, and through various levels of representation, the entire community will decide on how to spend the 25 percent profit.

One could describe this 25 percent profit-sharing as a "levy" or sorts, although it is much more than a levy. It is also not to be viewed as a burden. Profit is a reward for doing business smartly and should thus be celebrated. The spirit and philosophy undergirding this principle of 25 percent equity / profit-sharing is economic sustainability. Wescape wants to avoid abandonment by business and/ or the usual extraction of all profits from a community with little, if any, investment back into the community from which the profits were made in the first instance. The legacy of poverty stricken towns on the periphery of mineral rich mines is what Wescape will deliberately avoid through this aspect of its governance framework.

The absolute key to success is that the residents must move beyond the risk of entitlement and must therefore exercise control of all services which affect their lives. This kind of involvement presupposes a high level of ownership-thinking on the part of the resident – ownership not only of their piece of property but also ownership of the process and infrastructure that ensures the appreciation of value of the initial property. This ownership is given practical and measurable expression in the 25 percent of profits being retained within the community. Furthermore, the "profit" will be utilized in two ways. Part of the "profit" will be retained and converted into a subsidy scheme to finance projects identified by the community. The other part of the profit will be used to pay non-cash dividends.

It bears repeating that residents will therefore not only be viewed as stakeholders but indeed shareholders in the estate, since a portion of the profits of all business conducted in Wescape will be channeled back into the community for purposes of upkeep.

From rate payers to investors: Thirdly, the foregoing 25 percent profit share and shareholder element creates the opportunity for this community to be self financing and self sustainable in terms of financing small, micro and medium business enterprises that will be required by that community over the 20 year period of the development. In other words, the opportunity created by Wescape goes beyond a "nice place to live" but also a unique opportunity to create a business, create jobs, and thus make a positive contribution to economic growth and wellbeing.

Thus, part of this "profit-share" will be used to finance those residents who wish to set up businesses inside Wescape. Smart financial and entrepreneurial thinking will conclude that the availability of this kind of capital can be geared or leveraged which in turn will benefit the Wescape community as a whole. If nothing else, this kind of financial innovation provides the seed capital for the creation of businesses inside Wescape and will be an immediate antidote to the legacy associated with under developed mining towns as previously alluded to.

A criterion within the governance framework will likely be that the business owner must be a property owner (preferably a resident) in Wescape. In this way one creates a "vested interest" and "buy-in" from the property owner as opposed to perpetuating the well known disinvested resident and/or absentee landlord paradigm. Being the owner of a business and being part of the same community has the potential to change the relational dynamics of that community in a positive manner.

From a divided past to a common future: The fourth feature of a **communiTgrow** modelled city is that socio-economic profile (for example; of Wescape) will be one of mixed income levels with a spatial layout of 50/50 housing in high / low affordability categories. The housing units have been priced to accommodate the aspirant upper middle class as well as people who fall below the threshold of qualifying for state subsidy or bank loans.

In other words, Wescape will give practical expression to building bridges and ladders of opportunity particularly for those who would ordinarily not be able to own property, let alone live in a community where there will be equal access to resources and services regardless of one's income level, which would otherwise not be readily accessible to the majority of the population.

Notwithstanding the proliferation of gated communities in the traditional upper and middle class areas of most cities, the reality is that 80 percent of South African's cannot afford to live or own property in such spaces. In fact, as is mentioned elsewhere in this book, 80 percent of South African's are to be located in that sector which we call the GAP market (chapter 3) and below. The housing challenge in South Africa cannot ignore the fact that the majority of people cannot afford to live in an exclusive gated community. If indeed South Africa is to survive into the future, then the gap between the rich and the poor must be narrowed. The current gap is not sustainable and will lead to radical instability if not revolution. One way to mitigate this rich-poor divide is to find a way that they can co-habit in the same space without compromising standards and a quality of life. A multi-class developmental model is required that is practical, feasible and sustainable. The Wescape model offers such a solution.

The **communiTgrow** approach as expressed by the Wescape development is that a well governed mixed income level community is the solution. There will be a chance for those who have money to leverage their capital, and there will be a chance for those who are normally excluded from owning property and a better chance at making money to, in fact, enjoy such a chance.

From uneven to equal access to services: A fifth feature of the governance framework of a **communiTgrow** model is equal access to services and utilities. Access to services (i.e. the goods and rights of the city) will not be determined by the economic status of the resident but by the values embedded in the governance framework of the community and the various constitutions and agreements that will regulate relationships of all parties involved in developing Wescape. In this way Wescape stands a chance of creating a completely new internal social fabric for that community – one that is built on service excellence and not on economic status or buying power. This is no doubt a huge and bold shift away from the traditional entrenchment of entitlement to excellence based on one personal economic power and status. In this instance, the Wescape governance framework and community building values become the driver of excellence and not the philanthropy and after-thought goodwill and charity.

The Wescape community will enjoy a high level of cross subsidization through its self-financing principle. The advantage of this approach is that a new society is built without taking away from one and giving it to another but instead, creating

an environment in which all participants can thrive. The idea of drumming down "those who have" to the lowest common denominator namely "those who do not have", is not an option. Community growth at Wescape is designed on the premise of aspiration and not resentment. Those that have resources will not be punished and those without resources will have a once in a lifetime chance to improve their lives beyond their current expectations. This after all is what community growth is all about.

The uniqueness to be highlighted here is that membership of the Wescape community entitles all residents to exactly the same utilities and services (e.g. education, medical care, etc.) – regardless of income level. The differential income levels will only be seen at the level of personal home comforts where the higher income resident would be able to occupy a row-A house as opposed to a row B house. At the level of personal preferences, it will mean that the occupant of a row-A house may choose marble floor tiles whereas the low income member of Wescape probably won't have a very wide range of options in terms of floor tiles etc.

The critical point is that one's economic earning power does not buy preferential education or healthcare within the community because all residents will enjoy equal access to such services. The thing that determines the quality of services in Wescape is thus not the earning power of the resident and the normally consequential preferential treatment. What determines equal access is the success of the full governance package – the integrated holism as discussed above.

Put differently, personal economic / earning power does not determine the quality of services which will be provided indiscriminately throughout the estate. Personal earnings/economic power will only influence your ability to buy high-end finishes to your row A as opposed to the row B houses.

Thus all residents, regardless of social status or income power, will enjoy the same quality schooling and services (health, education etc). The Wescape intention is to make world class services and facilities available to all residents – a radical quality of service delivery and excellence. The only basis on which to access the said services is by virtue of one's residency status in Wescape.

5.6 Intelligence-Driven Governance

5.6.1 Behavioural and Cultural Change

A recent report produced by CHEC provides a helpful framework to contain the enthusiasm and innovation as proposed by **communiTgrow**. The CHEC report identifies some critical mega-shifts that are of greatest relevance to the future and fortunes of the Western Cape. These are a *geo-economic shift* where it is noted that China and India will eventually lead the global economy; *socio-digital transition* noting the power of the hand held device and the technological revolution currently underway; and a shift in attitudes towards the *natural limits to growth* where the underlying model of extraction and consumption of non-renewable resources, especially energy, is unsustainable.

In its discussion on the implications of these shifts for the Western Cape in particular, the CHEC report notes that;

> *"Practically, this translates into discussions on making city-economies self-sufficient systems that can meet its own resource and food needs due to localised and decentralised production, circulation and consumption systems. This requires a fundamental shift in how we live, organise our settlements, and cultural beliefs in what constitutes liveability and prosperity."*

The report goes on to remind enthusiasts (which here will include **communiTgrow**) that;

> *"Even though most of these trends and their implications are not really contested in any fundamental sense, our biggest challenge is how to persuade people and key institutions to lift their heads above the immediate pressures facing households, politicians and businesses."*[11]

In short, the road to success will require massive behavioural and attitudinal adjustments on all sides – including residents and authorities, because, as the CHEC report states, one of the most important tasks of the Future Cape visioning process is to educate each other about how we can act in a mutually complementary fashion to achieve high order societal goals.

The way to facilitate and mediate such change is through a well managed governance framework as proposed by **communiTgrow**, parts of which we have attempted to explain earlier in this chapter and throughout the book.

5.6.2 Relieving Immediate Pressures that Threaten the Development

There is nothing like immediate pressures and challenges to bring one back to reality. And so while **communiTgrow** dreams of building its model city, the immediate pressures, particularly pertaining to the Western Cape, must not be ignored since these provide the context in which the **communiTgrow** type development is a proposed solution. While many of these pressures have been canvassed in chapter 2 above, some merit being mentioned again. Some of the immediate challenges facing the Western Cape, in particular, include structural unemployment, endemic social violence, dysfunctional settlements marked by poverty traps, and ailing infrastructure and the cost of upgrading or creating new infrastructure.

The authors of the CHEC report describe the challenge facing the Western Cape as follows;

"There are three fundamental transitions that we need to embrace and ensure if we are to achieve the vision. Firstly, we must embrace the imperatives of the eco-production knowledge revolution as the basis for long-term inclusive and resilient growth. Secondly, we need to fundamentally reposition our economic and political orientation away from our traditional markets—Europe and the US—and prioritise Asia, Africa and strategic partners in Latin America. This export focus will provide the long-term basis for continued growth due to the demographic and urbanization dynamics playing itself out over the course of the next forty years. Thirdly, we need to ramp up the right kinds of investments to (re)build the infrastructures, neighbourhoods, social fabric and trust of our province. This investment in the human and social capital stock is a precondition for economic and ecological success over the long-term."[12]

The CHEC report rightly makes the point that;

> *"At the core of reordering human settlements and neighbourhoods across the province is an intelligence-driven governance system that connects reforms in energy, public transport, network infrastructures and the making and retrofitting of the built environment. Such a system is also essential to move away from reactive governance to anticipatory governance."[13]*

The **communiTgrow** proposal is an attempt to "step up to the plate" and partner with authorities to make the kinds of transitions that are required for the Western Cape to transition towards higher levels of sustainability, and greater adaptive capacity, while making it a place to live, play and work at the same time.

5.7 Conclusion

communiTgrow offers the opportunity to constitute project based business and governance for infrastructure and service delivery deployment, but more importantly; for city and municipal governance as well. It integrates across sectors (land and housing management, business, services, etc.) and across different scales (ranging from the neighbourhood, to walk-able community, urban village to urban quarter scales). It offers a new way of ordering of civic, commercial and other facilities through a business structure that builds in the social, economic and environmental transitioning requirements to define citymaking for our common futures. Various frameworks, tools and actions have been defined based on current instruments to define the role, purpose and structure of governance across scales, sectors and stages of citymaking.

We at **communiTgrow** recognise that we have an opportunity to initiate a new paradigm and implement a holistic community development approach while being on the leading edge of holistic green development. With public infrastructure spending, global focus and investor interest all directed towards this industry, **communiTgrow** can be successful in harnessing the momentum created to achieve the first true holistic development at scale in South Africa. In order to achieve this goal, focus is needed to establish the **communiTgrow** brand and build credibility as an organisation able to achieve its objectives. The future presents an opportunity to finalise all necessary areas of expertise, to ensure the achievement of **communiTgrow** objectives for holistic community development.

Chapter 6

The Housing Pillar

6.1 Purpose of Chapter

The purpose of this chapter is to explain the **communiTgrow** approach to housing, as one of the foundational pillars which constitute the IP of the company.

The true test of a city is experienced in the lived realities of individuals, families and communities. The home is at the heart of the interactions and interdependencies that mediate the reproduction of social values, beliefs and norms, and behaviours that shape society. These are critical for ensuring sustainability and in short, summarises the **communiTgrow** approach to housing[1].

The **communiTgrow** approach to housing draws on the African and South African contexts in general, in order to formulate a conceptual framework for housing that is informed by the broader context. This is interpreted and refined for Wescape, so that housing plays a regenerative role in society. The approach seeks to locate the issue of housing demand and supply in a contextually informed framework that recognises the current realities of the urban setting. It seeks to move away from the often prescriptive and formulaic responses that dominate many affordable housing programmes within developing urban economies, and are driven by outmoded approaches and models. Unfortunately these dominant approaches and programmes generally fail to comprehend the value of the home or household in the regeneration of social norms and behaviours within cities.

As indicated in earlier chapters, and illustrated in Figure 6.1, the affordable housing sector faces a variety of challenges, including inadequate funding mechanisms, given socio-economic levels of the homeowners in this segment. These challenges suggest that a new approach is required if private home ownership is to increase in a significant way. The **communiTgrow** approach to housing represents one such "new" way through its emphasis on the development of homes as the centre of community development. The **communiTgrow** approach to housing not only places private home ownership at the centre of community development but sees home ownership as the fulcrum around which the community revolves. Herein lies the uniqueness of the **communiTgrow** approach.
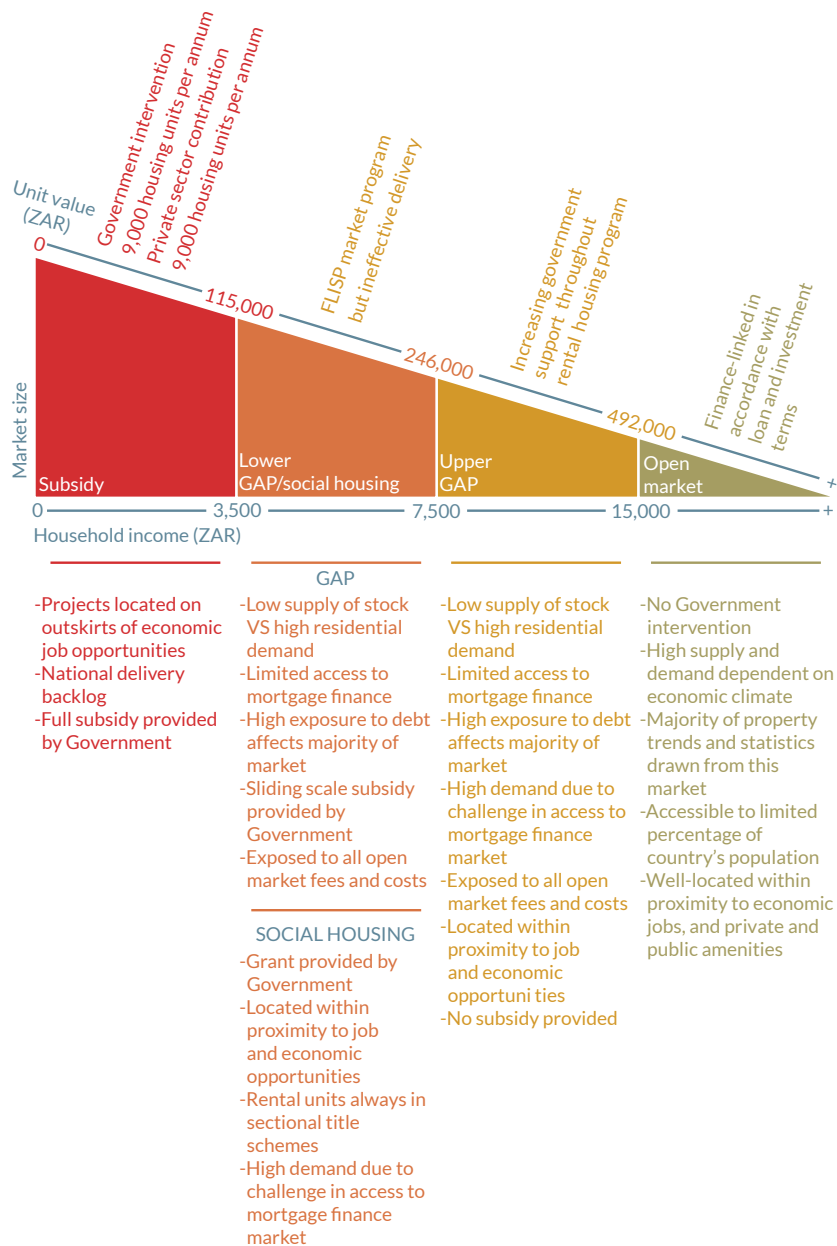
Unit value (ZAR)

Market size

0

115,000

246,000

492,000

Government intervention
9,000 housing units per annum
Private sector contribution
9,000 housing units per annum

FLISP market program
but ineffective delivery

Increasing government
support throughout
rental housing program

Finance-linked in
accordance with
loan and investment
terms

Subsidy

Lower
GAP/social housing

Upper
GAP

Open
market

0 — 3,500 — 7,500 — 15,000 — +
Household income (ZAR)

Subsidy
-Projects located on outskirts of economic job opportunities
-National delivery backlog
-Full subsidy provided by Government

GAP
-Low supply of stock VS high residential demand
-Limited access to mortgage finance
-High exposure to debt affects majority of market
-Sliding scale subsidy provided by Government
-Exposed to all open market fees and costs

SOCIAL HOUSING
-Grant provided by Government
-Located within proximity to job and economic opportunities
-Rental units always in sectional title schemes
-High demand due to challenge in access to mortgage finance market

-Low supply of stock VS high residential demand
-Limited access to mortgage finance
-High exposure to debt affects majority of market
-High demand due to challenge in access to mortgage finance market
-Exposed to all open market fees and costs
-Located within proximity to job and economic opportuni ties
-No subsidy provided

-No Government intervention
-High supply and demand dependent on economic climate
-Majority of property trends and statistics drawn from this market
-Accessible to limited percentage of country's population
-Well-located within proximity to economic jobs, and private and public amenities

Figure 6.1 Housing Typology Analysis

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6.2 Housing Context

6.2.1 The Need for Housing in Africa

It is estimated that by 2050, a rapid increase in urbanization and population growth will result in more than 1.23 billion African city dwellers. This means that more people will be living in cities than the combined populations for urban and rural classifications of the Western Hemisphere[2]. What is the scale of new urbanisation in relation to the existing? This will result in an urgent need for 800 new cities on the African continent. Most of these new cities will be small to intermediate sized cities and towns. This requires a substantial realignment of the way urban, service and housing development is implemented. What **communiTgrow** proposes is a regenerative approach that allows for the constant growth and adaptation of the systems and environments that are necessary to support city development and its inherent sustainability.

In South Africa, post 1994 rapid urbanisation has resulted in 51 percent of people currently living in urban settlements. People have moved to urban cities in search of economic opportunities, education and health facilities. The lack of preparedness by municipalities for this pace of urbanisation has resulted in this movement finding shelter in informal settlements, backyard shacks and severe overcrowding. The search for a better life in most cases has relegated people into untenable physical and social conditions and locked them into multiple poverties in persistently marginalised locations. It is expected that the next growth will be to secondary cities and service towns as is already being shown through the South African example of the reclassification of Mangaung and Nelson Mandela Bay as Metropolitan areas. The major cities, secondary cities and service towns which are part of functional city regions are therefore in need of particular solutions to transform the currently unsustainable patterns.

The obvious focus of housing is to fulfill the basic need for shelter, but its true value lies in its ability to act as foundation for the connection of the family unit to the wider social network, whilst also fulfilling a financial role as an asset with value that can be leveraged. The household, above all, serves a critical function as a home in which relationships are nurtured, learning is engendered and habits and behaviours are birthed and transferred, often between generations.

African households do not fit the typical nuclear family model that has served as the basis of Western housing development programmes. Many African households are female-headed, often by mothers and grandmothers. Single parent or grandparent households have become the norm, and are in part due to the prevalence of HIV/AIDS in African countries for which adequate treatment cannot be obtained. This has also resulted in a wave of child-headed households. Extended family networks, which traditionally played a strong role in ensuring that a diverse, supportive network is available to absorb the pressures that households are subject to, are becoming increasingly fragmented and defunct.

These factors require close inspection when considering the responses to the challenge of low-income housing in Africa. Moreover, the role of the community in relation to households needs careful consideration, as the community constitutes the networks of players that adapt to different pressures and exploits new opportunities for growth i.e. to regenerate. **communiTgrow** places tremendous focus on positioning the family unit/homestead as the centre of life and interaction.

In order for housing to be part of a regenerative urban development approach, it needs to fulfill its role in increasingly wider circles, reaching further into social fabric, economic activity and the civic sector. Communities mediate this reach, as it is through the players and networks within communities that coordinated action and support is engendered at different scales (i.e. household, neighbourhood, etc.). Consequently, homes need to be seen as facilitators for transition into the broader community life and local economies, acting as the builders of these bridges.

Where macroeconomic challenges are concerned, there are numerous factors which create difficulties for the housing markets in both South Africa and the broader African context. These general trends include the following:

- A low rate of growth;
- High levels of debt financed consumption;
- An unequal distribution of income with the greatest effect on the low-income groups;
- Mass unemployment;

- Low levels of gross domestic investment;
- Declining personal domestic savings within the lower-income groups; and
- Persistent inflation.

In the African context, where sufficient water, energy, and food provision are real development challenges, cities need to be designed from the outset with the capacity to adapt to different circumstances, for example, changes in the costs of energy, fuel, transport, food and goods, the availability of water, different vocational opportunities, and so forth. This can only be achieved by establishing mechanisms for adaptive capacity within the household. This may include design considerations that locate the household within a compact urban form, which lowers water and energy costs and reduces household usage and waste footprints, or through the avenues that are enabled by other pillars, such as access to education, skills development and vocational training. Through equal access to these opportunities and infrastructure benefits at the household level, communities will be better positioned to adapt to changing circumstances, and to sustain their own development and growth. Conceptualising the household as a generator of sustainable behaviours, where consumption behaviours and patterns are established at the consumer level and as the fundamental unit from which communities and societies are constructed, is central to the **communiTgrow** approach.

6.3 Lessons from Latin America

6.3.1 Housing Delivery Programmes

The value in drawing on the learning and experiences of other developing world urban contexts is that it helps us frame housing delivery approaches more specifically. In this respect, the Chilean housing delivery policy is regarded by most as very successful. In the late 1980's, the Chilean government was struggling to overcome its housing needs for the lowest income level in their communities and forged a new approach to housing as result. Its main policy interventions included the ending of the illegal occupation of land, the provision of housing solutions for all families that required them and making basic services available to almost the entire population.

Another was the introduction of a capital subsidy scheme for housing, which was subsequently replicated in other developing countries including Latin America, Colombia and Costa Rica. The South African capital subsidy model introduced in 1994 was founded partially on the Chilean model. Though this type is easily budgeted for and is used to restrict government expenditure, the result is that allocated resources are generally inadequate, meaning that too few subsidies are delivered and the actual reach of this programme does not meet the need. This is only overcome and the housing backlogs substantially reduced when housing is made a priority and when it is adequately resourced[3].

6.3.2 Lessons Learned

A number of similarities between the Chilean and the South African housing policy are mentioned below and need to be considered when developing regenerative cities and communities.

Most new housing projects were poorly located on the urban periphery, as a result of high land prices. This means that often these projects are far removed from the economic nodes, thus increasing transport and living costs, and subsequently increasing the economic risk for the vulnerable. In the South African context access to well located inner city land in close proximity to urban opportunities for affordable housing developments have been hampered by both legislative as well as structural constraints. This is particularly the case for well located land in public ownership which has the potential to unlock the facilitation of numerous national policy imperatives such as densification, inclusionary housing, social housing initiatives and the addressing of Apartheid derived spatial inequities.

Legislative constraints include, amongst others, the Municipal Finance Management Act, disposal procedures for public land, inappropriate and outdated zoning regulations, complex and lengthy approval procedures, the lack of coordination of urban development objectives between departments and directorates, and lack of capacity within local authorities. Structural constraints include the resistance by surrounding residents to high density affordable housing precincts which are incorrectly linked to diminishing property values and other negative urban impacts, the reluctance of the formal banking sector to participate in such projects due to perceived risks, and the absence of well informed precinct plans to facilitate such developments.

Low levels of community cohesion and participation generally accompany these new housing projects due to the fact that the projects were generally not well-integrated and managed. This has highlighted the absolute need for engagement with legitimate and credible community based organisations and other key stakeholders in defining the parameters of a housing programme and gaining insight into eligibility to participate in the project and the management of the allocation process. Effective community leadership inclusive of political representation at the local level is needed in this regard; several levels of governance and partnering is required to address building community cohesion through active participation.

There has traditionally been a lack of an integrated development approach or understanding of the dynamics of the beneficiary community, with more focus being placed on the provision of houses and not on the broader economic, social and urban needs of the new resident communities: there has also been a complete absence of monitoring and evaluation tools to establish levels of post-occupancy satisfaction;

It is evident that access to facilities, tenure and well managed microcredit has allowed families to consistently increase their economic and social status through a variety of avenues for education and skills development, and through diverse economic and employment opportunities within the city.

As result, a new approach for regenerative community development is needed, one which addresses the weaknesses that were identified in the list above. The **communiTgrow** development approach focuses on the provision of well-located sites for development, with all necessary bulk and civic infrastructure to ensure that project residents are not alienated from economic and civic opportunities, as well as being connected to the growth corridor moving along the West Coast of South Africa. Low levels of community cohesion are overcome through the interventions proposed by the education, housing and governance pillars which focus on providing each household with the necessary means to integrate into their wider communities on equal terms, with equal access to services community networks. In short, **communiTgrow** incorporates the need for housing, economic stimulation, social development and the creation and maintenance of the civic sector.

6.3.3 The Road Ahead

communiTgrow envisions home-ownership as an essential part of a greater socio-economic and cultural system whose cohesiveness and functionality is essential to the sustainability of households and to their continued progress. In order for households to grow financially, the following become important, namely education, gainful employment, and skills development opportunities. In addition to this, equal access to services, opportunities and skills as provided through the **communiTgrow** development approach results in reductions in household budget costs as a whole, which in turn results in a larger percentage of disposable household income, thus increasing supporting and improving the local economy. With local economic stimulation, the entire community benefits again, thus acting as stimulators for increased benefits for communities.

6.4 South Africa's Constraints

Housing delivery in South Africa has generally resulted in deepening the entrenched polarisation between rich and poor. A home, whether viewed as an asset, having cultural value or the heart of a family, acts as a differentiator due to its location and its value. With mass housing projects, as repositories for the lower income levels, being located in peripheral areas with very little infrastructure, little/no ability to stimulate economic growth and low levels of social cohesion, the poor are placed in a position where it becomes almost impossible for them to rise above their own poor economic circumstances while incurring high transport and other transactional costs in seeking employment and access to urban opportunities, facilities and amenities.

This marginalisation of the poor revolves around the lack of choice, access, location, income, and the loss of a collective voice. The hard reality is that wealth affords a lot of opportunity and choice and the poor have very little choice in where they are located. Their inability to access adequate healthcare and education leaves them economically vulnerable and unable to form social cohesion, thus making it impossible for the poor to develop a collective voice.

High urbanisation rates have led to a concentrated need for housing in urban areas for socio-economic reasons. This quick urban population increase has resulted in a wasteful settlement structure, exorbitant infrastructural costs and inefficient and inequitable cities. South African cities have become characterised by "*geographic segmentation of living areas according to race and class, urban sprawl and disparate levels of service provision and access to amenities in different areas*"[4] . As a result, cities are quite inequitable and inefficient and are relatively expensive to manage and maintain. In addition, the dispersed nature of rural settlement patterns makes the provision of services difficult, causing a number of challenges to arise.

Here are a number of persistent constraints for housing delivery in South Africa. We have identified seven such constraints and will briefly discuss each below.

6.4.1 Scale of the Housing Need

The first constraint is the sheer size of the housing and services backlog, coupled with the rapid growth of the housing demand poses a substantial challenge for the future of housing delivery practices and approaches. The current rate of housing delivery is 8500 units per annum in the public sector. At this rate, South Africa will require 271 years to build 2.3 million units. In Africa, the urbanization levels are residing at 62 percent, thus requiring a focused approach to housing delivery. Compounding this problem is the fact that there are geographic disparities between the housing conditions for the rural and urban areas and that a large proportion of the South African population are physically unable to afford formal housing.

6.4.2 Integrated Service Delivery and Infrastructure Provision

Secondly, the lack of effective integrated service delivery and infrastructure provision in the poorer areas poses a constant threat to the development of healthy and sustainable, multi-class communities. Bulk services and basic infrastructure provision ensure that the community residents all have access to basic services, thereby fulfilling basic needs. However, the capacity of the existing

physical infrastructure which is already under extreme pressure as a result of overcrowding and high people densities coupled with the backlog of the supply of new infrastructure, is a serious concern especially when seen in the light of the public sector difficulties aligning its budget and service provision channels to adequately meet this need. This problem will need to be addressed differently.

6.4.3 Institutional Frameworks

Thirdly, the institutional framework in South Africa has been, and still is, a constraint to housing delivery. A number of the challenges that arise here include:

- The housing institutional mandates, line functions for aspects of settlement including housing, and delivery mechanisms are fragmented and ineffective in delivering integrated settlements

- The inability and lack of capacity of authorities to carry out their respective responsibilities (very few municipalities for example have been accredited to Level 1 or beyond which precludes them from the implementation of numerous national housing programmes) which results in delays in the process and severe shortcomings in integrated planning and delivery;

In addition to this, the policy framework consists of duplicated and inequitable policy approaches and legislation regarding housing, land and services.

6.4.4 End-user Finance and Subsidies

A fourth constraint is that there are a number of constraints regarding the structure and availability of end-user finance that only exacerbates the housing problem. These include the poorly focused use of statutory housing funds, the duplicated and poorly targeted subsidies coupled with the unavailability of reliable end-user finance for low-income households. Institutions set up by national government such as the National Housing Finance Corporation (NHFC) have been unable to fulfill their originally intended mandate of providing either wholesale funding into the affordable housing sector or discounted end user finance due to challenges from the commercial banking sector claiming unfair business practices.

6.4.5 Land and Planning

Fifthly, South Africa has generally had a wasteful approach to land which requires the allowance for higher densities and the innovative use of land within the housing context. A number of the challenges in this arena include a lack of a coherent policy on land, challenges with the land identification process, insufficient land assembly, land invasions of informal housing and the resultant legal challenges, and, then lastly the question of land title and different tenure arrangements. The existing zoning legislation is largely committed to producing mono-functional residential developments targeting selective income bands. There is very little incentive to increase densities or produce vibrant mixed use zones that facilitate a range of housing opportunities. The realisation of such precincts usually involves protracted negotiations with the local authority and other stakeholders and the need for complex and lengthy land use applications to enable such developments.

Despite the fact that there are a range of planning instruments and mechanisms aimed at redressing the lack of well located affordable housing opportunities, the single biggest challenge remains access to such land parcels in public ownership. In the absence of such land being made available expeditiously at discounted prices to affordable housing providers such as the Social Housing Regulatory Authority (SHRA) accredited Social Housing Institutions (SHI's), the realisation of the objectives of numerous national housing imperatives will be negated. The same holds true for achieving the housing objectives contained in the Housing Plan section of the majority of local authorities Integrated Development Plans (IDP's).

6.4.6 Housing Construction Sector

The building materials supply, building and civil sector poses its own unique set of challenges to housing delivery. And herein lies the sixth constraint namely that there is an inadequate development framework which makes it difficult for the developer to undertake housing developments expeditiously and retain skilled capacity and delivery infrastructure. The sporadic and unpredictable demand for materials, products, goods and services makes the supply of these inflationary and inconsistent. Large scale project delivery will also have to address the sources, supply chains and environmental sustainability of materials. Strategically linking these to the large infrastructure projects can yield multiple benefits.

6.4.7 Sociological challenges

Finally, there are a number of sociological factors of the South African society that also pose challenges to effective housing delivery in the country. These include unrealistic expectations of the wide base of housing beneficiaries, high levels of crime and violence that often hamper housing development, inadequate housing consumer education, non-payment of services, the lack of special-needs housing and the fact that many people still do not see housing as a measure to increase their equity and security.

In addition to this, the housing projects provided often do not provide any opportunity for the residents of these new projects to create linkages with wider social networks, causing the further breakdown in social fabric and resultant societal ills, including all forms of abuse, illness, disease and anti-social behaviours.

6.5 The communiTgrow Solution: Homes as Regenerators of Communities

There are a number of practical implementation measures that will ensure that housing delivery is kept within the realm of regenerative city-making. The **communiTgrow** housing solution is focused on addressing these challenges in a manner that is sustainable and focused on the betterment of families and communities as a whole.

6.5.1 Affordable and Connected Land at Scale

The first step in the delivery of any project is the availability of land that is affordable, has ready potential and which is substantial enough to support a new urban node/city. Thus land is required at scale. In South Africa, the public sector often owns vast tracts of land both in the CBD's and rural areas, but accessing it is largely impossible due to the lack of a clearly articulated land disposal policy that understands the objectives of affordable housing programmes such as social housing and the public good that derives from such investments, the ability to understand the urban regeneration opportunities inherent in well located public land and its development, the opportunity cost of selling off public land for short

term financial gain and the slow-workings of the government. Thus the benefits of large scale coordinated delivery will need to seek affordable land that is nearest located to the economic cores and corridors if possible.

6.5.2 Walkable and Well-Connected Neighbourhoods

Walkable communities are characterized by the ability of the residents of these areas to access a variety of services (commercial, social, civic) within a 15min walking distance from their place of residence. Furthermore, the principles of reduced dependence on vehicular transport whilst increasing the use of non-motorised transport means are relevant here.

Urban planning and design built around public transportation, walkable and mixed-use spaces have enormous potential to make economic opportunities local and in turn make urban colour and class distinctions more permeable. This assists in the creation of dynamic urban environments and precincts that are more equitable and sustainable.

6.5.3 Jobs, Skills and Ladders

As a means to ensure equal access to adequate housing options, the economic foundation of the family unit needs to be ensured. The provision of various forms of employment, across various skills levels and income groups, is key in this goal. CommunTgrow has developed modelling tools that correlate settlement making capital, associated jobs in different sectors, and housing cost and affordability. This is correlated to the diagnostic and transitioning matrices and models to ensure jobs are the key to housing access. Furthermore, **communiTgrow** will provide skills-upgrading and personal development programmes, acting as well-defined and structured ladders for growth and development, ensure that the family/individual has access to a higher standard of living, and avenues for continual learning, re-skilling, and improvement of livelihoods and quality of life. See Figure 4.10 in chapter 4 – The Economic Pillar chapter for further explanation.

6.5.4 Integrated Service Delivery Development and SMART Designs

In order for the best value to be obtained from the settlement to be created by **communiTgrow**, optimal design and shared-space principles are implemented. As a result, neighbourhoods and community facilities will be designed to ensure the maximum space utilisation for optimum value and use by residents and the wider community.

In addition to this, integrated/clustered service delivery is central in the **communiTgrow** approach as supporters of the household and act to position the actual housing units and the households that reside in them within supportive environments which can be drawn upon to improve their quality of life. This clustered service provision will ensure that the necessary services (education, healthcare, small business, civic) work together and are available within the neighbourhood or at the village scale, in accordance with the principle of walkable communities.

6.5.5 Creating Memorable and Integrative Places and Spaces

Cities are liveable and memorable through the distinctive places and spaces and the culture of the people. Specific focus will be placed on creating places and spaces that provide the environment for community activities to occur. These are the settings within which people live, work, learn and play. Programmes will support households and family units to form communities with strong social networks, thus ensuring resilience in the societal fabric. These spaces will be part of an entrenched design approach that is mindful of the needs and value of a strong social network and a strengthening in the unity in communities is foreseen.

6.5.6 Nested Scales of Governance

In order for communities to be able to enjoy a walkable environment, a well-managed and proactive governance system is needed with effective governance measures including a well-integrated safety and security system. **communiTgrow** approaches these challenges through a system of nested governance scales, which refer to the use of symbiotic governance mechanisms at different community scales. Vertical integration between governance frameworks at different scales is required. Three levels of governance support the aspects that are to be regenerated. These address behavioural, institutional and intra-institutional and settlement and extra settlement related roles, responsibilities and behaviours. **communiTgrow** responds to this need in its governance framework.

6.5.7 Models of Partnership

The social role of business is being broadened in the **communiTgrow** approach through a "business in the community" approach. Business ceases to be solely an employer and provider of goods and services and a tax-payer to centralised systems of governance. In the **communiTgrow** approach, business boosts functions, services and adaptive capacity at local scales through cross-funding mechanisms and joint community action. Moreover, the community holds 25 percent of the development in trust, which empowers the community and its ability to participate in constructing its own future considerably within the PPP environment.

6.5.8 Alternative and Renewable Resources

communiTgrow will employ a wide variety of options with regard to the delivery of quality housing solutions across its projects. This will be achieved through the integrated use of alternative, renewable and linked water, waste, sanitation and transport infrastructure, sustainable building materials, products and goods, smart grids and design principles and systems. The procurement framework will provide the necessary RFP's, EOI's, and impact assessment target requirements to guide procurement that support regenerative living systems.

6.6 Tools for Creating Regenerative Homes

A number of tools are necessary to shape and inform regenerative community design and development. These thinking tools are merely guidelines of what needs to be considered and include the following:

6.6.1 Consumer Education and Support

In order for families to experience and extract the optimal value out of their homes, they need to understand the correct way to interact with it, the wider community and the systems which govern the entire **communiTgrow** housing programme. As result, **communiTgrow** employs a standard consumer education programme which focus on informing and teaching all project residents the basic rules for interaction with the physical unit, the avenues for recourse available, and ways in which to engage with the community at large. Aspects such as family budget, asset and investment management, lifestyle support planning will be available as they are a part of how cultural co-evolution through learning, skills development, education, health and social facilities are accessed and used. It will act as a support mechanism for residents and will provide opportunities for the creation of community unity.

6.6.2 Managing Relationships and Expectations

There is a need to ensure that the maximum amount of choice is provided for project residents regarding their own environments, the services and products that they desire and their role in wider decision-making processes. The need to be active participants in their own development and not merely recipients is imperative.

In order to accommodate this, a system of participatory governance is implemented, one that holds both institutional and community representation at all times. Transparent access is granted on all levels, coupled with a number of interventions and mechanisms provided within which project residents are given the opportunity to participate and co-evolve the programmes and activities, thus giving them voice and agency.

6.6.3 Diversity-Bridging Community Model

One of the main principles of the **communiTgrow** model for regenerative community development is to overcome socio-economic fragmentation, providing communities with equal access to services and products and affording them the right to live equally satisfying lives. In this light, the **communiTgrow** multi-class community model gains significance. It uses a system of matching a wide variety of housing consumer profiles to the various housing options available in the project with the clear goal of affording every family the widest choice possible of areas in which to live.

By providing greater freedom through economic stimulation and sociological support, as covered in the economics pillar Chapter 4 – The Economic Pillar, **communiTgrow** works towards the creation of truly integrated multi-class communities that are brought together by choice. Key learning institutions such as the teachers training facilities, health training facilities, and the urban governance school, offering high quality programmes will support leadership training, managing diversity and growing a culture of tolerance and conflict resolution as key aspects of citizen education and learning programmes.

6.6.4 Participation at Different Scales

As already explained in the section on nested scales of governance, the principle of both institutional and community representation in governance mechanisms at all scales of the project is relevant. However, the form of this participation from both sides does differ at each scale. What is important, however, is that joint community ownership is always in effect. This form of ownership creates a point for family unity and the wider community to mobilize around this and to gain empowerment.

6.6.5 Space Economy and Population Growth

Currently, and increasingly in the future, there is a need to ensure compact city-making design that ensures optimal use of space and land, coupled with the need to ensure that the most value is obtained from shared spaces and places.

In addition to this, the need for integrated service provision will ensure that time, money and effort is used efficiently in the servicing of the urban landscape. Hinterland relationships and the open space systems will create a range of portfolio classes for settlement that offer particular lifestyle choices in addition to more urban experiences located around the hierarchy of well serviced and programmed urban places. The linking of market demand and supply to planned rollout and economies of scale will support the location of secondary and green infrastructure service industries within the settlement. Relationships with other supplier locations will also be leveraged to support more sustainable locations for production and supply of key goods and services required by the settlement.

6.6.6 Disaster Risk Preparedness

Regenerative cities residents have access to community-based care networks that are positioned to deal with unexpected and sudden events that threaten, lives, livelihoods, property and the environment. This is assessed at the outset and included in the designed environment, governance, programmatic and operational aspects of all institutional agencies.

6.7 Property Value Creation

Match-Making and Portfolio Classes: communiTgrow has developed a matchmaker matrix to support potential property and home owners with the maximum amount of desired environmental (commercial, education, social, districts etc.) qualities as possible. Portfolio classes refer to specific characteristics of different areas as desired by a homeowner/resident. The following graphic indicates the different kinds of portfolio classes, tenure and title options and housing typologies as an example. Sustainable infrastructure, living systems landscapes and a well connected hierarchy of artfully destined public places and spaces ensure that all classes of property hold sustainable and increasing asset value.

6.8 Implementation: Toward a New Community

6.8.1 Foundational Elements of Community Development

The building of communities starts with the first settlement of construction sector teams arriving on site to be part of the community that will build the city over many years. The supportive social and training infrastructure and magnets to kick start the process will start building the process of transitioning to a regenerative culture from day one.

The **communiTgrow** approach absorbs new home-owners into a spatial, socio-economic, governance and services framework where housing is a foundational element for healthy community growth and development. The purpose of housing in Wescape is to provide safety and security, as well as affordable accommodation options that create self-esteem and a sense of belonging in order for all residents to enjoy safe spaces for children to grow, play and learn; build healthy and stable communities that thrive and the ability to lead productive lives. **communiTgrow** aims to facilitate greater social cohesion in communities where greater choice and access to opportunities and services are afforded for everyone, resulting in an improved quality of life.

6.8.2 Practical Implementation Issues and Roll-Out

The roll-out of the **communiTgrow** concept starts with the design of urban fabric to facilitate and co-evolve governance systems that respects cultural practices and community living, i.e. diversity and core values and norms of communities. The provision of fully integrated and safe medium-density neighbourhoods, characterized by non-motorised transport options, and safe and secure environments is the next step. In preparation for the increasing population, a range of housing opportunities is provided to match the diverse categories of households and income profiles, whilst giving specific focus to the vulnerable sectors of our society including single-parent/child-headed/elderly-headed households, and the elderly as a market on their own.

In addition to the above, a diversity of lifestyle opportunities is provided through the integration of employment, ready access to required services and training and skills-upgrading to increase available choice. And lastly, portfolio classes are identified for housing consumers and are defined by multi-modal access routes, access to the market and services and public places and spaces to promote walkable communities.

6.8.3 The Real Value

The real value of the **communiTgrow** housing programme can be seen in the following:

- Financial structure of whole project that makes social housing and lower GAP housing opportunities available.
- A training division for home-ownership, budgeting and social governance;
- Serviced, child-friendly walk-able neighbourhoods;
- Matching consumer profile and housing type to portfolio classes;
- Service centres working with business and civic sector nodes to support family and social functionality and cohesion.(inter-generational centres)

These programme objectives result in a fully-integrated community structure, which provides safe and secure neighbourhoods with increased equality in terms of living standards, access to location and choice and the ability granted to individuals and families to form their own futures.

6.8.4 Phased Housing Delivery

The **communiTgrow** model for Wescape will provide 30 000 housing units per phase. Each phase will last 3 years and will consist of both housing and civic infrastructure construction. Seven phases have been planned to ensure that any necessary adaptations can be made when moving from one phase to the next. The **communiTgrow** model will stimulate economic opportunity in the project and surrounding areas, providing the market for housing delivery. A worker base-camp with the necessary social infrastructure (educational and health facilities) will be

established prior to the commencement of any construction to reduce increasing transport and living costs for workers. It is assumed that a large percentage of the workers will eventually become residents within the project itself.

6.8.5 Procurement

Smart urban design and logistic systems will ensure higher efficiencies and lower energy-usage footprints during the construction, and eventual life of the project. This will be achieved through the accessing and deployment of green technologies, water recycling and re-use systems, the use of efficient transport systems, incorporating on feedback loops into general management systems, renewable energy technologies for the creation and utilisation of energy sources.

6.8.6 Delivery

A strong relationship with the worker community will be created during the delivery of the project and will take the form of a ladder of training and skills upgrading, increasing access to economic and social opportunities. Citizens will be part of an intentional community that strives to build a culture of respect, clear communication and fair play.

6.9 Conclusion: Housing and Dignity

In conclusion, rapid urbanisation in the future will need to address a number of challenges including; (1) increased urbanisation rates, population growth shifts as well as changing migration patterns between rural and urban areas; (2) changes in supply and demand on local, country and international scales; and (3) shifting capacities of the public and private sector to meet the increasing needs for housing and service provision in urban areas.

Regenerative city-making offers an approach which addresses a wide variety of these complex challenges that reach across sectors and economic divides. **communiTgrow** is actively developing innovative ways to address these challenges and to increase the potential of homes as catalysts for urban socio-economic development. The **communiTgrow** approach locates housing within

a developmental framework that is sensitively attuned to household needs for lower usage footprints (and hence costs), and nearby access to a variety of social and economic support services. The **communiTgrow** approach employs design principles to achieve this (i.e. through the regenerative pillar), supported by the various pillars that enable support services (e.g. education and healthcare) and the governance framework, which vertically integrates across nested scales. **communiTgrow** envisions that a home that is located within such a support framework is likely far more valuable, and its occupants more empowered within the urban social and economic fabric.

Chapter 7

The Education Pillar

7.1 Purpose of Chapter

The purpose of this chapter is to illustrate the value of the education pillar in the Wescape project as a foundation for creating a new sustainable community that is capable of anticipating and adapting to demanding present and future conditions.

A CSIR density study specifically done for the project and available at www.wescape.co.za, concludes that at least 200 new schools are needed to accommodate the expected Wescape population of 800 000 to 1 million people. Such a need places huge pressure on the public sector. However, through the provisions of the Wescape project, the public sector will be in a better position to design, finance and deliver educational facilities, thereby advancing the national goal of a literate and educated nation.

The Millennium Development Goal for education endeavours to deliver children to educational institutions and grant each child the opportunity to education. In the **communiTgrow** approach, children are seen to have the right to receive quality education and become literate, numerate and skilled members of society who can re-skill themselves as new opportunity spaces unfold in the urban fabric. Of equal importance is that education acts as one of the attractors from which new opportunities for business development, innovation and employment is generated. With the **communiTgrow** education system's core focus of creating a culture of learning that spans across age and class, the opportunity to enhance the ability of communities to become more resilient to economic and social pressures is increased. Education also is seen as instrumental to regenerating families and community, and the environment.

This chapter takes cognizance of and thus explores the current challenges in a South African and African context to fully understand what needs to be overcome. It also illustrates the thinking tools necessary to create a system of education capable of providing a relevant service for all sectors of society.

7.2 Contextual Considerations

Education is a cornerstone of community development, especially as it pertains to early childhood development. Without appropriate opportunities for quality education, poverty traps are reproduced and become entrenched in communities and societies over generations. Breaking this cycle, however, need not take more than a few generations if education is employed as an instrumental and foundational developmental catalyst. Education regenerates the capacity of individuals within society to adapt to new, often unforeseen circumstances, and to harness new opportunity spaces. Lifelong learning is central to this objective, as re-skilling and vocational training is necessary for adaptation.

At the community level, this has special significance. "Learning communities" is a term derived from what Senge[1] used to refer to as "learning organisations". These communities are comprised of people who see themselves as connected to each other and the world where creative thinking is nurtured and where people are continually learning how to learn together. A learning community is a place where critical inquiry is practised by partners who share a common vision and engage in shared decision making.

The longing for a sense of community has become a major theme in recent writings about educational and social issues. An analysis of the potential for creating viable and meaningful community in schools is one of the key factors of this entire book.

The political and economic realities of educating a population, and more specifically the youth, require community builders to adopt a new realism that recognises some of the conditions of modern life. The dangers, such as increased layers of bureaucracy and a less personal environment are some of the main hurdles one has to overcome in education.

A learning mode in communities only occurs when the leaders of these learning organisations understand the process, where they see learning as something to be valued and are prepared to personally commit to the process of building learning organisations.

"People only save what they love,
They only love what they know
And for them to know they need to learn"
Anonymous

A common culture needs to emerge in communities of learning. This has the potential to contribute to greater social cohesion and competitiveness through;

- Increasing community interaction around learning and education,
- Increasing staff capacity to adapt to different pressures and opportunities,
- Provides a caring productive environment, and
- Promotes increased quality of output.

At **communiTgrow** the focus is not just on building organisations of learning but rather creating communities that are committed to lifelong learning. By allowing for individuals and communities to quickly transition to new skills regimes, **communiTgrow** envisages that communities will be better able to make the adaptations that are necessary to overcome the skills mismatches in African economies.

For communities to achieve long-term regenerative growth, i.e. continual, adaptive and resilient growth across all sectors, it is necessary to cement foundational principles in the collective psyche of the community. Education assists in this regard by providing the opportunity for building multiple platforms for learning that target the full range of age groups within the settlement, which creates the competence base for the community to transition into the future by aligning local growth sectors with global ones and ensuring access to these growth industries through training, skills development and mentorship.

Comprehensive education systems can be defined as encompassing initiatives, syllabi and programmes for early childhood development as well as primary, secondary and tertiary education. These systems also include the bridging mechanisms used to support the smooth transition from one developmental stage to the next. The chances of achieving a higher percentage of balanced individuals at the end of this period are improved by ensuring that children experience the least amount of difficulty and stress during their schooling years.

Comprehensive education systems have a definite role to play in creating regenerative and self-sustaining communities as the required foundational principles are absorbed during this period, ensuring a mind-set more willing to accept a shared responsibility for our communities and environments. Furthermore, through partnering the education system across sectors, different opportunities for interaction emerges.

The economic generator that such an education system can provide is considerable. Early childcare that is regulated and operated at a neighbourhood level can create many jobs as it provides care and training to both children and their educators and caregivers. Similarly, afterschool care programmes can have many interesting modes of engaging children in learning-by-doing in the life of the community and environment.

7.2.1 The Importance of Early Childhood Development

A critical emphasis and need is in the area of childhood development. The data supplied by the Centre for Early Childhood Development reminds us that while facts that impact on child development in South Africa may be well known[2] the challenge remains to do everything in our power to ensure that early childhood development, particularly on the African continent, remains a priority.

The purpose of early childcare development is to protect childhood, ensure the context is created to protect the rights of children, provide the opportunities for them to realise their full potential and to invest in them as the future leaders of all our collective futures. The reality in the rapidly urbanised and urbanising South Africa and Africa is far from this.

The South African context regarding early childhood development is an interesting indicator of the gap between the needs and what needs to be regenerated. If households are the test of cities, then Early Childhood Development (ECD) is the test of the capacity of households and communities to support this foundational function in our processes of development. For many households that are barely managing to put three meals on the table, children before school going age grow up in the environments where young or teenage parents and even adults themselves have missed out on the grounding that positions them to build a solid foundation for the physical, emotional, psychosocial, cognitive, and healthy development of these young children. The burden then falls on the few women and households to do what they can with very limited resources and support to protect this crucial developmental stage of the growth of children. Households are thus locked in vicious and perpetual cycles of these untenable conditions. This poor beginning in life leaves a persistent disadvantage which neither households nor our education systems are geared to address. Problems of hopelessness, violence, alcohol and substance abuse, add to a high burden of disease and the fundamental breakdown in the fabric of families and communities.

Among other challenges, the 2001 white paper on ECD cites that children raised in poor families are most at risk of infant death, low birth weight, stunted growth, vulnerability to disease, violence and abuse, poor adjustment to school, High drop-out rates and increased repetition.

CommuniTgrow has translated and transposed these challenges into the design layout of the new city informed by an integrated and holistic approach to community building and care. As such, the **communiTgrow** approach of localized facilities for crèches and primary schools and the use of local intergenerational centres as the base for providing training and support are thus crucial to optimizing a solution to this need. The design layout of a **communiTgrow**-styled city offers a unique opportunity to address rapid learning and culture co-evolution that has to be addressed. This sector of work is also a largely invisible activity that does not currently receive the recognition and skilled job creation investment that it needs. This huge lag of services for the 0-9 year olds is a key investment in the future that we cannot afford not to make as part of regenerative citymaking.

7.2.2 Planning for the Future Skills Need

*"What we must do now is begin the 20-or-more year process
of creating a new tomorrow" – John Goodlad[3]*

Most countries wrestle to find a model that will not only educate but also produce leaders in the community and prepare the youth for a future facing global pressures. The current education system, despite a number of interventions from both the public and private sectors that have created isolated pockets of success, is in need of reform. Unfortunately, the vast majority of skills that are available often do match the skills required in the economy, creating pressure on both the economy and households who need to make living providing services that have a reduced demand. This sentiment is supported by John Goodlad[4], when he questions the goals, functions and aims of schools, i.e. the education system. Education should be focusing on assisting young people with interactions, relationships, and helping young people understand interdependence. Key here is the idea of a school as a healthy organism – a micro-community that extends into the broader community as an attractor, and regenerates social capital through continual learning and improvement.

7.2.3 The Development of Africa

"For everyone everywhere, literacy is…a basic human right"[5]

UNESCO reports that 176 million adults in Sub-Saharan Africa are unable to read and write and that 47 million youths between the ages of 15 and 24 are illiterate as well[6]. This translates to 47 million potentially economically-active individuals being excluded from their formal economies due to a lack of formal education. The UNESCO 2010 Global Monitoring Report[7] also shows that 21 million adolescents and 32 million primary aged children are not attending school at all.

The long term social burden that results from an uneducated and hence largely disempowered society is especially felt in the engines of economic growth, and the levels of productivity in industry will likewise remain constrained. Leapfrogging towards new growth trajectories requires that education and skills development takes on new social dimensions.

Though international donor organisations and the governments of African countries are doing their best to ensure a good education for all, the reality is that children are not receiving the necessary education to find their place in an increasingly technology-driven global economy.

7.3 Education Challenges in South Africa

Most social ills flourish in the absence of a successful education system. A better educated society begets lower unemployment, which leads to less poverty and a decrease in crime. South Africa is a country grappling with challenges on many fronts: unemployment (2.8m unemployed youth between the ages of 18 and 24), poverty, a crime rate regarded as one of the highest in the world, and an education system in crisis. One of the primary focus areas has been in the educational milieu which represents the fundamental basis for addressing the wider challenges in our society.

South Africa's educational context is sobering. According to the Progress in International Reading Literacy Study (PIRLS) in 2006[8], South Africa attained well below the international PIRLS standard in each of the 4 benchmarks: advanced, high, intermediate and low.
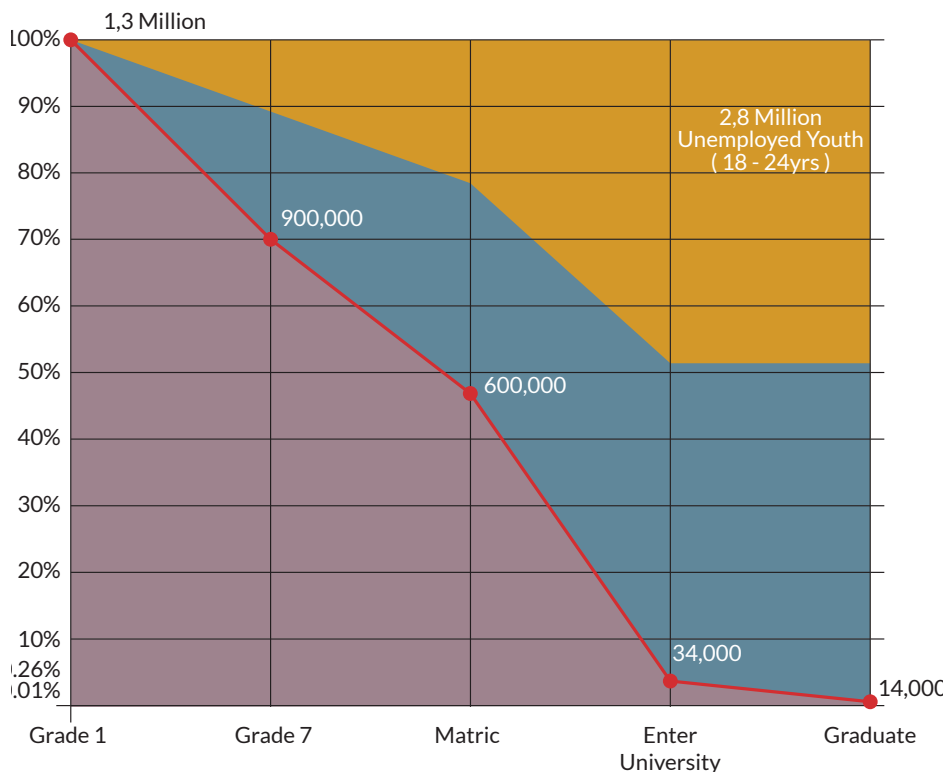
Figure 7.1 Unemployed Youth Statistics

The reasons for these results are complex. Indications are that South Africa is making great strides in meeting the Millennium Development Goal of universal access to education. High gross enrolment rates in basic education suggest that SA is close to achieving universal primary access [9]. However, whilst the majority of eligible learners attend school in Grade 1, a significant number of them do not complete their schooling careers. While access to education should remain a priority, we must acknowledge that continued retention and success within the educational pipeline requires urgent attention, with retention rates residing at 44

percent. These numbers are too low to have any significant impact on alleviating poverty for those whose disadvantage precludes them from finding gainful employment against those with a completed education.

In order for this to change, changes in the leadership, instructional capacity and the culture of learning and organisational capacity are needed. In addition, the lack of basic resources presents a challenge as well. Although it is easy to assume that a lack of resources automatically results in dysfunctional education systems, there are sufficient examples of severely under-resourced schools attaining surprisingly good results to disprove that assumption.

We must look deeper and wider to identify the true stumbling blocks. If a school is a composite of infrastructure and people and infrastructure alone does not guarantee success or failure, this must mean that the functionality of schools is directly linked to human capacity. From a systemic point of view we hold the standpoint that if the human capital which drives the organisation itself is "stuck" in some way, they will not be able to successfully deploy whatever resources they may have, to deliver operations at any functional level. This was recently highlighted with the text book saga.

There appears to be both political will and fiscal means to address all these problems and yet, despite the vast amounts of time, money and energy that has been spent on these challenges over the past decade, it appears that progress, if any, has been disproportionately inadequate to the resources expended. Individual victories exist but systemic challenges render these pockets of excellence statistically insignificant. South Africa's challenges to meet the Millennium Development Goals in a meaningful manner (quality education for all children versus mere access to schooling of any quality or lack thereof) are becoming more urgent, and these challenges are echoed throughout the African continent. Sustainable, replicable, workable solutions have to be found in order for South Africa and Africa, to realise their vast potential that still lies untapped.

The Department of Basic Education has realized that any remediation at secondary school level on a low base of skills is unsustainable, unsuccessful, and highly costly. What has also become evident is that there is a need for meaningful education to take place at primary school level. Without this, it is unlikely that a meaningful skills transfer in secondary school can be sustained. Young people are faced with the commensurate consequences of unmarketable skills, lack of job

opportunities for unskilled labour and if they are fortunate enough to be given employment, the paltry wages they receive cannot sustain anything other than a low level quality of life, and do not enhance socio-economic mobility within the greater society.

There are a plethora of initiatives deployed annually- private, non-profit and government – that are aimed at addressing the above problems that are prevalent in our communities. In fact, it could be argued that there are too many similar individual initiatives. In order to understand this failure to bring about meaningful and impactful change, despite commitment and intention, a "systems thinking" perspective is required.

Communities are composed of complex, interdependent sub-systems in continuous interaction. Deploying an intervention in one sub-area, without taking the systemic interdependencies into account means that the effectiveness of that intervention, however expensive, and however well deployed, will always be blunted and undermined by the unresolved shortcomings in adjacent areas where sub-systemic interfaces cause blockages and systemic friction. This approach, in fact, often ends up causing more harm than good as the unintended consequences of intervention implementation build up and escalate. The only sustainable solution is to conduct a comprehensive, systemic diagnosis (identify the underlying factor(s) that has caused the entire system to malfunction) and then implement a coordinated, collaborative, structured and facilitated approach to find the road to long term impact and change.

This sustained collaborative effort is only possible with a vehicle for funding to be deployed meaningfully - to minimize wasted funding due to duplication and for infrastructural procedures such as administration to be shared - so that organisations can focus on the crisis at hand. Economies of scale bring large scale interventions into the realm of scale and wide reaching change. In addition to this, consensus amongst community leaders is required to ensure a collective approach to the success of the education system, focusing on the need to support the entire educational continuum as a means to affect change in specific sectors.

In addition to the above, there are a number of challenges that only exacerbate the problem which we will now discuss.

7.3.1 Lack of Equal Access to Opportunity for Education

A number of the educational challenges portrayed in Africa are mirrored in South Africa with a large percentage of our youth unable to access proper education. A number of factors are to blame for this, including geographic location and economic status of the family unit. Literacy rates in rural areas are substantially lower than in urban areas, and have resulted in a number of initiatives from both the public and private sectors to fill the gaps. This has unfortunately only worsened the problem as these initiatives have not been equal in quality and duration and have resulted in an increased level of inequality in education levels across South Africa.

7.3.2 The Responsible, Respected Educators

Professor Jonathan Jansen, international acclaimed educationist and rector of the University of the Free State recently said in an article that what is needed is the re-introduction of school inspectors. However, teachers unions vehemently opposed this because they perceive inspection a ghost of the Apartheid-era. Yet no modern education system functions without independent accountability. As Professor Jansen puts it, "Teaching can't be exempt because of a particular historical event".[10]

Maintaining standards requires monitoring and measurement, as well as astute management practices that recognise and catalyse the professionalism of teaching as a career. According to Professor Jansen, it will be incredibly difficult for the government to take back schools as the unions are incredibly powerful and senior government officials and cabinet ministers who depend on unions for political office and its benefits are not going to interfere with the ruin they are imposing on the school system. The fact that the youth are the ones who are suffering seems to go unnoticed. Numerous individuals, including Mamphela Ramphela, have asked on more than one occasion that education should be declared a crisis. These calls seem to go unnoticed. The reason probably lies in the fact that those in power all send their children to private or Model C schools. The divide between the have's and the have-not's seemed to grow ever wider."

The crisis in education that South Africa and the continent faces, requires a systemic response that addresses education from the perspective of what the role of education is in relation to the households and communities that educational services are located, orientates the institutional and governance systems for education on the needs of communities and society, and structures these systems so that professionalism is ensured and reproduced over time in the education sector itself.

7.3.3 Unemployment and Skills Mismatch

The current unemployment statistics indicate that South Africa is struggling with a 29.4 percent unemployment percentage level[11]. What most people are unaware of is that 51 percent of our youth (aged between 15 and 24) are unemployed[12]. The formal economy unfortunately does not lend itself to absorbing the maximum amount of skilled and un-skilled individuals and what is worrying is that these unemployment rates are highest among African women in the age category at 63 percent.

As the growth of the South African economy has unfolded in the post-1994 democratic dispensation, de-regulation and lowered trade barriers with Asia have impacted negatively upon employment in the manufacturing sector. Yet in cities such as Cape Town and Johannesburg, the growth of tertiary sector activities (such as in finance, real estate, insurance and banking) has seen high levels of growth and employment creation. In this respect, employment opportunities are better for professionals and graduates than they are for skilled and semi-skilled workers and labourers in the economy. The lack of employment amongst skilled and semi-skilled workers – a sector which grows rapidly with each year due to the large numbers of working age youth – is in part responsible for the high levels of inequality that persists in South Africa.

That is, the production base of the economy is not growing quickly enough to absorb the part of the workforce that needs employment the most. A skills mismatch between macro-economic growth and the workforce has taken effect. As a response to this, the New Economic Growth Path of South Africa seeks to create 300 000 jobs through renewable energy and green technologies, which will in part address the skills transition that is necessary in the secondary sectors of the economy. Education, skills development and vocational training is required to enable the skills transitions that is necessary to migrate to new modes of productivity and growth.

7.3.4 Bridging Cultural and Diversity Divides of Foundational Culture of Children and Their Families

The wide diversity of cultures in South Africa poses a unique problem for the education system in terms of language and development level and capacitation. For example, English is not the first language of most families in rural areas and is often left to the school to teach at the stage when children are already too old to absorb the language instinctively. Thus children who enter the primary school stage of their education often struggle to adapt and suffer academically.

7.3.5 Youth at Risk in School and After School

A large percentage of our youth are currently classified as "at risk" due to the levels of violence and substance abuse in the age group 7 to 18 years. Reasons for this problem include physical and mental abuse at home, abuse within the school environment, the breakdown of family units, emotional and/or intellectual problems, stress and depression. These problems seem to go unnoticed or there certainly aren't enough systems in place to protect these young people.

7.4 The communiTgrow Solution: Education as Attractor for Regeneration

Viewed in the context of the aforementioned list of challenges, what becomes clear is the need for a refinement of the role of education as an attractor for the regeneration of the community. Education reignites the capacity of individuals and communities to engage with a wide range of opportunities for development. **communiTgrow** introduces a system of education that has learning as a lifestyle choice at its core, and which focuses on providing opportunities for skills development and training, in addition to formal schooling, to all, regardless of class and age. A number of interventions and principles are implemented to ensure that this goal is achieved. Thus education regenerates the capacity of individuals and communities to engage with a diverse range of opportunities for development. This is enabled through the following considerations that **communiTgrow** emphasises in tacking education:-

Smart Design and Shared Space: In Wescape, **communiTgrow** will employ the principle of designing and creating efficient and integrated shared educational facilities by making better use of the available space for educational facilities and sports fields. This is made possible with the establishment of education nodes in conjunction with clustered services. In each node, all educational facilities will make use of intergenerational centres which will be regarded as extensions of the schools in the area and can be used by such schools for their various activities.

Training and Leadership: Establishing school principals as community leaders in their respective areas is a core development approach of **communiTgrow**. This is done to ensure that the teachers and principals reside in the areas in which they teach. By giving the community exposure to the educational staff in their areas, a greater level of trust and stability can be created. Also, through ensuring that regular parent-teacher evenings are held, the education system can stay abreast of any problems that arise in those communities and be able to act in a pro-active manner.

Teacher Training: One of the greatest needs within the education system currently is a well-managed and well-trained group of teachers able to effectively deal with the academic pressures and social challenges that children face. **communiTgrow** aims to meet this need through the creation of teacher training colleges and mentorship programmes in Wescape.

Effective Regenerative Neighbourhood Governing Bodies: The role of regenerative neighbourhood governing bodies embeds the learning and healthy community role through the use and programming of programmes and facilities within a social , economic and environmental perspective.

Early Childhood Development: Not enough focus is placed on ensuring that the ECD sector is closely aligned with the rest of the education system. Often ECD centres are merely repositories for children who spend most of the day in these facilities, but don't receive real targeted training in order to prepare them to transition into the primary school arena. With that in mind, **communiTgrow** has placed additional focus on creating an ECD syllabus that is fully integrated with the primary school syllabus. Furthermore, the syllabus will focus on all developmental areas of the child to ensure balanced growth. A spectrum of ECD facilities are regulated and supported to support appropriate child-centred learning contexts and experiences, and contributing to job creation and skills upgrading.

Parent-Teacher Bodies: Effective parent-teacher bodies have an important role to play as a support means to ensure that the learning environment remains productive whilst also ensuring that the learning continues from a formal school environment to a home environment. It acts as a means to monitor the development of the family unit as a whole.

Equal funding opportunities: A fundamental problem within the education sphere is that a good quality education is expensive and cannot be afforded by everyone. Through **communiTgrow**'s financial model of providing jobs for the residents of the project (see Economic chapter and Finance chapter), each household is given the financial means to afford the best quality education possible.

Technology and Good Practice integration: With the greater integration of technology into the daily activities and practices of schools, higher levels of efficiency can be achieved, ensuring that staff and teachers are able to spend more time with students. Also, by having interactive technological tools in the classes, children are allowed to adapt at a young age to a faster pace of interaction and learning technological skills.

7.5 Tools for Educational Regeneration

Creating a successful education system with innate capability to deliver the necessary skills requires a number of contextual and practical implementation measures capable of achieveing this goal. Within this light, **communiTgrow** employs a number of tools that can be used as thinking frameworks surrounding the development of communities where education acts as a facilitator for change in the fabric of society.

7.5.1 Aligning Mind-Sets

There is a disparity in the mind-set regarding educational service provision across different sectors. Focus is predominantly placed on the areas of maths and science, to the neglect of the areas of arts and culture, vocational skills and technological colleges. Aligning mind-sets would allow exposure of learners to a greater variety of options at a younger age.

7.5.2 Building Relationships

As mentioned earlier, there is a need for the public, private and civic sectors to be aligned in more effective ways. Each of these sectors provides for different sectors of the income market, but there is little continuity across these sectors. As a result, the level of education obtained at these institutions and through these initiatives differ substantially, depending on whether these schools are located in rural or urban areas. **communiTgrow** will provide a variety of schooling options across the public and private sector, but will also ensure that the standard of schooling is equal and fair.

7.5.3 Short-Fall Analyses

communiTgrow provides for the shortfall in the current provided service, including Early Childhood Development, the elderly, the transition from secondary school to tertiary education systems, comprehensive schooling systems and the youth at risk sector of our society. This is done in conjunction with the focus on traditional services of primary and secondary schools and the FET and technical college arena.

Figure 7.2 Education - Status Quo VS communiTgrow

STATUS QUO

EDUCATION

communiTgrow

UNIVERSITY

TERTIARY

SECONDARY

PRIMARY

EARLY CHILDHOOD CARE
DEVELOPMENT
(AFTER SCHOOL CARE)

life long

foundation

c d

a b

access to facilities & programs

facilities & programs provided
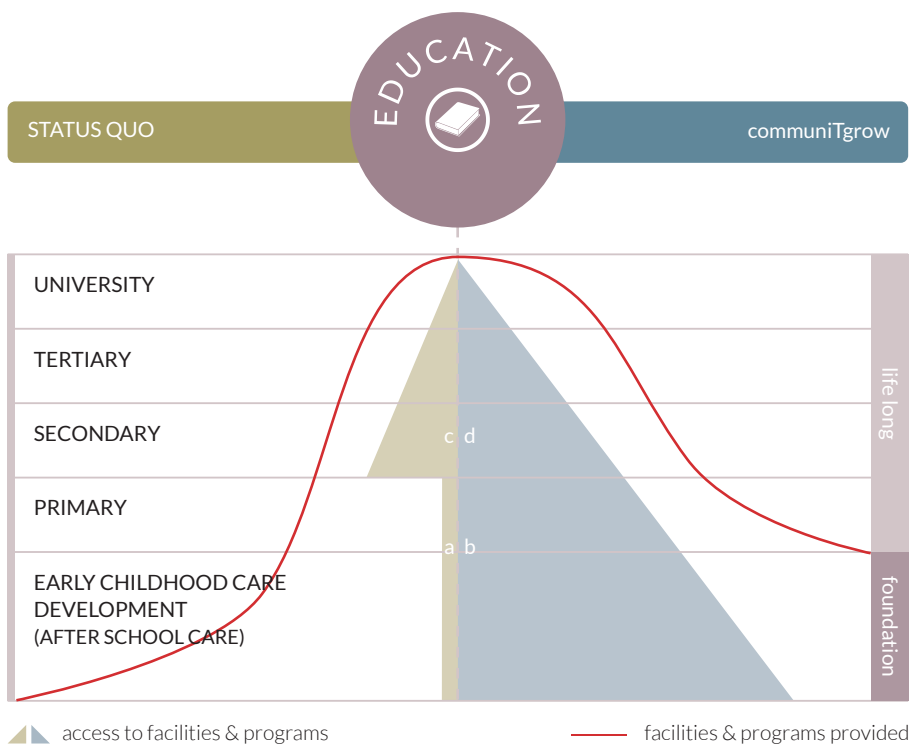
NOTE:
a minimal & poorly co-ordinated
b increases foundations for good education
c poorly accessed facilities
d integrated services through intergenerational centres

Education: cradle to grave educational philosophy

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7.6 Implementation: Toward a New Community

7.6.1 Foundation Elements of Community-Minded Education

communiTgrow's approach to education, as with all the other pillars, is to provide products and services in addition to and in support of what is currently provided through the public, private and civic sectors. By folding various focus areas into a few focused solutions, the eventual reach of the programmes are increased and better results will be seen in the long run. This also ensures that all initiatives and programmes will be more cost-effective, better-managed and more easily monitored. It also eliminates the chance of isolated pockets of success in different areas, ensuring equal service provision.

A few of the basic principles of **communiTgrow**'s education approach are:

- Individuals deserve the opportunity to be locally and globally relevant;
- The creation of a life-long learning curriculum with defined ladders of learning and exit opportunities, enabling all citizens to access opportunities for a broader worldview, horizontal and vertical learning, and expanding their skills base;

To ensure a project wide acceptance of these goals, Wescape will ensure that all participants within the sector will be custodians of the green and public environment ensuring that community consensus is achieved regarding the responsibility towards the environment and their fellow community members. In addition to this, all institutions will subscribe to a lifelong learning approach.

7.6.2 Practical Implementation and Roll-Out

The general objectives of the **communiTgrow** approach to education for Wescape will include the following:

- A comprehensive "custody of care" model will be achieved through a partnership between the educators, the parent body, the learners and the broader community;

- Safe and affordable public transport and Non-motorised transport modes (NMT) will be available to all education precincts, ensuring that children of all ages have easy and safe access to the education system. By making this principle practical, children will never be more than a 15 minute walk away from any education precinct throughout the project;
- Quality education precincts will act as drivers of behaviour change and asset/property value in their local context, ensuring that families will feel comfortable sending their children to schools in these educational zones.

7.6.3 The Real Value

The real value that **communiTgrow** offers in terms of its educational programme is found in its area of service provision which stretches further than what is currently provided for by the public, private and civic sectors. Whilst focus is placed on traditional areas such as youth development and primary, secondary and tertiary education, additional focus is placed on the following areas which generally "fall between the cracks":

- Early Childhood Development, ensuring that all children entering the schooling system are either on par or are at a higher development level than what is required at that age;
- Establishing a Teacher Training college, ensuring that teachers receive the best possible training and support;
- Establishing school principals as community leaders in their respective areas, ensuring a culture of trust and safety;
- Provision of Inter-Generational Centres (IGC's) to act as centres from which training and a variety of other activities and initiatives will be run. These IGC's will form part of an already established node such as healthcare or education, and act as an extension for the node.
- Providing a bridging mechanism from secondary to tertiary education by ensuring that matriculants are at the correct development level for easy access into the tertiary education sphere;
- A greater focus on a wider range of learning areas, including arts and crafts, vocational skills and technological development;
- Integrative initiatives acting as repositories for a combination of public, private and civic initiatives into a new "tailor-made" solution;

7.6.4 Clustered Services and Functions

As part of the value created by **communiTgrow**'s approach to education, focus needs to be placed on the provision of clustered services and functions i.e. the clustering of services across different sectors to ensure that all the education initiatives and programmes provided are relevant at all times. **communiTgrow** typically offers five forms of clustered services and functions within education. The reach of each of these clusters is extended through Inter-generational Centres (IGC's) which are multi-purpose centres where the products and/or services provided by each cluster is practically implemented either through classes, mentorship or support services. These clusters include the following:

7.6.5 Procurement

Procurement within the education sector revolves around three core focus areas, and these include , levels of governance, the need for integrative technology services and products, effective leadership as well as teaching and supporting staff who are well-trained and committed to the developing children for a challenging future. A number of main areas within these core focus points are identified in Figure 3.6 - Procurement protocols and regenerative systems, captured in Chapter 3.

7.7 Conclusion – Education as Lifestyle

"The importance of partnerships for development is becoming more and more evident. We know of many partnerships in Africa that work and change people's lives, but not enough of them are replicated or brought to scale." Kofi Annan [13]

In reference to the statement by Kofi Annan, the challenge is clear in respect of achieving development and service delivery at scale. This is the challenge that **communiTgrow** addresses, that is; creating a replicable education model that has the innate ability to build the capacity of society to be able to address global, national and local pressures through increased resilience and a varied economic base. This is only achieved if education is used as a means to facilitate the development of healthy and sustainable communities. By doing so, it builds the capacity to overcome increasing global shifts and pressure, and the increasing speed of urbanization in Africa calling for a need for effective service delivery.

Kania & Kramer[14] highlight five conditions for collective success if we are to achieve the **communiTgrow** goal. These include the following:

- A common agenda: a shared vision for change;
- Shared measurement systems: collectively holding each other accountable and becoming the practical interface of the Common Agenda agreed upon. It is easy on a high level to agree to share a common viewpoint; the details of the measurement would be commensurate with taking it seriously enough to share minute details of each intervention and holding it under scrutiny to establish the commonalities;
- Mutually reinforcing activities: coordinating the efforts of multiple diverse stakeholders to align their activities to enhance and support each other's efforts rather than working against each other;
- Continuous communication: to develop trust, intimacy, honesty, vulnerability and hence the ability to work cohesively together for a common cause;
- Backbone support organisations: the creation and maintenance of this kind of collective impact requires specific sets of skills and coordination; and an independent organisation to draw all the pieces together keeping their eye on the common cause whilst others focus most of their effort on their own individual strengths and implementation agenda.

communiTgrow aims to create an educational system that is adaptive and flexible and which can prepare its learners and participants with the necessary skills to be able to adapt to changes in macro-economic and local economies. It also aims to put in place institutional and governance frameworks for education that instills a strong sense of the role and value of education within the community. Community learning requires that all age groups are able to engage in learning activities, whether for professional advancement or personal growth. Schools will therefore accommodate a wider range of activities (including after-hours adult education) and cater to a broader service base than they currently do. The school, acting as an attractor for learning activities for the community, is envisioned as serving a critical function within communities, by reproducing the skills and capabilities for them to adapt to different opportunity spaces and to transition between different skills sets.

Chapter 8

The Healthcare Pillar

8.1 Purpose of Chapter

As has already been mentioned, the **communiTgrow** model of city-making has six fundamental programmes (pillars) upon which it is based. This chapter discusses the **communiTgrow** approach to healthcare, both the challenges and solutions offered.

In the World Health Organisation (WHO) Primary Healthcare Strategy made the statement that health improvements were not merely the result of biomedical and technological advances; a focus on the poor and community participation in healthcare also contributed to positive health outcomes. Often the settings in which people are located contribute to ill health (e.g. a lack of sanitation and proper shelter). Although we recognise that there is no all-encompassing solution that can be provided for healthcare at a **communiTgrow** level, we hope to eliminate some of the location based factors that create health problems. The **communiTgrow** approach is to support existing initiatives where they sustain the philosophy of regenerative city-making, as well as provide additional programmes where there are gaps in approach. The Ottawa Charter states that "health is created and lived by people within the settings of their everyday lives: where they live, work, play and love."[1] It is also worth mentioning that the causes of ill-health generally are often closely related to the lack of services such as potable water provision, sewage and sanitation and waste disposal.

8.2 A Working Definition of Healthcare

8.2.1 Social Determinants of Health

The World Health Organisation defines health as "a state of complete, physical, mental , social (and spiritual) wellbeing."[2] The **communiTgrow** approach to healthcare focuses on the factors that support human health and well being, rather than focussing solely on the factors that causes disease. That is, a health promoting approach is adopted towards healthcare provision, rather than a symptomatic approach. The link between social determinants of health, including social, economic, and environmental conditions, and health outcomes is widely recognised in the public health literature.[3] Moreover, it is increasingly understood that inequitable distribution of these conditions across various populations is a significant contributor to persistent health disparities.[4] The **communiTgrow** approach is therefore to reduce the locational disparities in its model city and to address the social conditions that cause ill health. The purpose of the chapter is to explain how we are going to achieve this.

8.2.2 Community Participation in Healthcare

The current healthcare policy environment includes weak or non-existing mechanisms to allow people to engage meaningfully in decisions about health programmes.

According to case study evidence published in the Lancet;

> *"For public health to succeed, it must be re-crafted in a framework that locates organised and active communities at the centre as initiators and managers of their own health. In this paradigm, nongovernmental, governmental, private sector, and international stakeholders form the periphery—listening to and learning from the people, then, discussing and making decisions jointly" (39:845).[5]*

Therefore residents should be encouraged to not only utilize local health services, but to design the programmes and participate in decisions regarding healthcare. At **communiTgrow**, our approach is to empower residents to be able to take part in these kinds of decisions, through skills upgrading, life-skills training and a participative governance framework that allows for real choice. The healthcare system will be community focused, while servicing the greater area as well. The scheme will also find ways to accommodate patients from surrounding areas and may link to the national health insurance system, should it become a reality in South Africa as has recently been proposed.

8.2.3 Area Based Approach

There is a growing understanding of the role that "place" plays in influencing individuals' and communities' levels of exposure to health risks, as well as their opportunities for being healthy. The problems of unemployment and crime are acute and completely enmeshed with health, housing and education.[6] There are good reasons why an area-based approach to tackling health inequalities is an effective regenerating tool.

Poor people have higher exposure to biophysical hazards such as environmental pollution, traffic volume and rates of road accidents[7]. Poor communities have deficient access to public services, including primary healthcare, public transportation, retail and recreation facilities[8]. The research evidence suggests that unemployment, or employment in jobs with poor working conditions, is generally damaging to health.[9,10] Changes in employment status have been shown to be linked to changes in health. Poor housing is associated with a range of physical and mental health conditions. If we offer access to decent housing, employment, facilities and public transportation as well as access to education about health issues and intergenerational support centres (See explanation in next section), will we be able to decrease the vulnerability of residents of the new city? At **communiTgrow** our model of jobs linked to housing and access to healthcare programmes will enable the health problems to be linked to support networks and health programmes, not just for the advantaged but equitably for all. Our approach reflects an ecological model of health promotion which understands health to be determined by a complex interplay of environmental, organisational and personal factors, largely determined outside of health services."[11]

8.2.4 A Range of Approaches

It seems logical that programmes which combine a range of approaches offer the best prospects for changing health inequalities. Therefore, the health pillar must not be read in isolation from the remainder of the **communiTgow** approach. It is but one of the building blocks in creating healthy communities and but one of the pathways to a regenerative city. This implies greater participation in decision making through a governance framework that is inclusive and participatory.

8.3 Healthcare in Africa

8.3.1 Undue Burden of Disease

Although Africa contains only 11 percent of the global population it has 60 percent of the world's HIV/AIDS cases and 90 percent of world malaria cases, mainly in children under 5.[12] According to the World Health Organisation, there is a "silent epidemic" in African countries, which has 19 of the 20 countries with the highest rates of maternal mortality worldwide and the highest death rate worldwide for babies up to a month old.[13] Only 58 percent of the people living in sub-Saharan Africa have access to safe drinking water. The United Nations estimates that 2.5 billion people were still without improved sanitation in 2010 and around 1.1 billion practice open defecation. Diarrhoea, as a result of these conditions, is one of the biggest contributors to child deaths in the world.[14] There are a numbers of factors that influence these figures as will be pointed out below.

8.3.2 Rural/Urban and Public/Private Divide

Africa's healthcare industry is characterised by a huge division between the private and public sectors both in terms of facilities and funding. Perhaps the biggest problem facing the public sector currently is the rising incidence of HIV/AIDS, which is and will continue to place considerable strain on the public health system in many African countries.[15]

Despite billions of dollars invested into health in Africa, the shortage of appropriate health workers particularly in rural areas in many countries is a major barrier to health service coverage for the poor.[16] In most if not all

countries in Sub Saharan Africa, urban and - especially urban - prosperous areas are disproportionately home to the countries' professional and highly skilled workforce .[17]

8.3.3 Lack of Skilled Healthcare Workers

The health crisis in Sub- Saharan Africa suffers from 25 percent of the world's burden of diseases and has an estimated 750 000 health workers that serve over 682 million people. By comparison, the ratio is ten to fifteen times higher in OECD countries. This estimated workforce of doctors, nurses and allied health workers in sub-Saharan Africa compose 1.3 percent of the world's health workforce.[18]

The African health system is woefully lacking in facilities to train health workers. According to 2004 statistics, two-thirds of sub-Saharan African countries had only one medical school while eleven had no medical schools at all. Kenya, for instance, has only one school of dentistry.[19] A country with a population of over thirty million people, has only 656 dentists. The ratio of dentist to citizen is thus 1- 45 732 instead of the WHO recommended 1 - 7000.

In addition, healthcare workers are lured to developed countries by higher wages and better working conditions. Therefore although Africa is paying for their education and training, the developed countries are deriving the benefits.[20]

8.3.4 A Significant Knowledge Gap

Many diseases with a high prevalence in Africa are either almost exclusive to it (for example, onchocerciasis, and malaria) or disproportionately affect the continent (e.g. HIV/AIDS and Tuberculosis). World Health Organisation (WHO)[21] estimates indicate that this group of diseases accounts for more than 50 percent of Africa's total disease burden. Despite the terrible impact these diseases have on Africa's economic development and welfare, they have been seriously under researched: with the exception of HIV/AIDS and malaria. Their almost exclusively African incidence means that interest from the international research community is low.[22]

8.4 Healthcare in South Africa

8.4.1 Two Tiered System

South Africa too, has a highly unequal health system. The public sector is stretched and under-resourced in places. While the state contributes about 40 percent of all expenditure on health, the public health sector is under pressure to deliver services to about 80 percent of the population. [23]

The private sector, on the other hand, is run largely on commercial lines and caters to middle- and high-income earners who tend to be members of medical schemes. It also attracts most of the country's health professionals. [24]

This two-tiered system is not only inequitable and inaccessible to a large portion of South Africans, but institutions in the public sector have suffered poor management, underfunding and deteriorating infrastructure. While access has improved, the quality of healthcare has fallen.

8.4.2 Quadruple Burden of Disease

The situation is compounded by public health challenges, including the "quadruple burden of diseases" characterised by HIV/AIDS; communicable diseases including Tuberculosis (TB), non-communicable diseases such as diabetes and hypertension (around 35 percent of all deaths in South Africa result from non-communicable conditions), malnutrition and mental illness and finally violence and injury[25]. This is compounded by a shortage of key medical personnel. With some 5.6 million South Africans infected by the virus, Aids was the biggest killer of South Africans in 2009 (310 000 South Africans died of AIDS-related causes)[26]. In 2009, Statistics South Africa estimated the life expectancy of South Africans to be 53.5 for males and 57.2 for females. South Africa is one of only five countries in the world where maternal and child mortality rates are getting worse, rather than better.

8.4.3 Weak Administration

The Bill of Rights as enshrined in the South African Constitution states that, "Everyone has the right to have access to, a) healthcare services, including reproductive health, b) sufficient food and water: and c) social security…"[27] Health is a concurrent function of both of National and Provincial Government. However the National department lacks the capacity to monitor the provinces and the provincial departments are administratively weak and under capacitated.[28]

The country has 52 health districts as part of the drive to decentralise health services. However there is huge inequity between these districts geographically. For instance, the Western Cape has the highest number of doctors with 135 per 100 000 people, while Limpopo Province has 17 per 100 000.[29]

The explosion in patient numbers as a result of HIV/AIDS and the decline in health funding has further undermined the quality of the health services provided. Weak administration, poor leadership, widespread corruption and theft and a shortage of health workers have compounded this situation. The system does not provide for the training of home based carers and this may be one area of intervention that may make a very large difference in people's lives.

The proposed National Health Insurance (NHI) system has created a lot of debate. However it aims to bring greater equity into the healthcare system. It will not be implemented overnight and has a long road to go before it is. The Green Paper on NHI proposes that it should be implemented gradually in three phases over a fourteen year period starting in 2012. It is hoped that the **communiTgrow** approach can partner with NHI to create truly meaningful interventions.

In general, poor patients in the public health system feel voiceless and do not have the tools to participate meaningfully in programmes that affect their lives regarding healthcare. The system of governance at **communiTgrow** is designed to support this need.

8.4.4 Locational Disparity

The former structure of the public sector system inherited from an Apartheid system that advocated separate health facilities for different races resulted in informal barriers to access that have survived the legal barriers that have now been

removed. These barriers relate to location and appropriateness of the service. Many public facilities are situated in areas that make services inaccessible to the poorer population now legally entitled to use them, and to the appropriateness of the service. Many of the services and personnel are inappropriate for low-income and socio-economically deprived communities. These services are all located in formal urban areas, yet there are a growing number of people living in informal settlements on the periphery of cities who cannot access these facilities with ease. The design of the **communiTgrow** settlement will ensure that these locational disparities are eliminated.

8.4.5 High Rates of City Growth, Slums and Informal Settlements

Healthcare challenges are particularly acute in the informal settlement areas of South Africa. What holds true for South Africa may well hold true for many other similar settings on the African continent. We review these challenges here in an attempt to locate **communiTgrow's** solution. In informal settlement sanitation, food storage facilities and drinking water quality are often poor, with the result that inhabitants are exposed to a wide range of pathogens and houses may act as breeding grounds for insect vectors. Cooking and heating facilities are often basic, with the consequence that levels of excessive exposures to indoor pollution may occur. Access to health and other services may be limited; overcrowding can contribute to stress, violence and increased problems of drugs and other social problems. Together, these pose special risks to children both during the prenatal period and after birth.

A common thread among the "social" factors is the burden placed on women to ensure that their families' healthcare needs are met, despite the barriers to health and welfare that life in informal settlements presents.[30] This is particularly important for creating health related programmes, as projects aimed at women will have a higher impact on the health of the community as a whole.

In addition, there are a number of specific behaviours associated with poverty, informal settlements and health that need to be addressed if we are to improve health and well being of communities. These include;

Health-Seeking Behaviour: An important factor that drives the patronage of healthcare services in informal settlements is a lack of demand from the residents. Many informal settlement dwellers do not seek available services as they may not know that services (affordable or not) are available to them; or they may not know where or how to access services (and may be afraid to ask), even if they know that they need medical help. An effective programme design can address these behavioral dimensions of health-seeking behaviour by mobilising the community to actively seek out healthcare and raising awareness about the range of available services. At **communiTgrow** we propose to create Inter-Generational Centres that will become the service point at which this knowledge is imparted. The Inter-Generational Centres will be placed at the centre of each "walkable community" and therefore will be highly accessible. A walkable community comprising a settlement of 600m x 600m will provide all the necessary institutional and residential and retail functions for a resident within a walkable, human scale environment. (See below Chapter 9 – The Regenerative Pillar for an elaboration of this concept.)

Risk Behaviour: The urban poor are "significantly more likely than their wealthy counterparts to have an early sexual experience and a greater incidence of multiple sexual partnerships.[31] They are at a higher risk of having unplanned pregnancies and a higher chance of contracting sexually transmitted diseases, particularly HIV, or of having pregnancy or labour-related complications.[32] Health awareness campaigns, peer education and condom distribution/education programmes are of vital importance to address these needs. These programmes can all be run from the intergenerational centres, which will have private counseling areas for sensitive issues such as HIV and family planning. These programmes can be run in partnership with state health providers and with civil society organisations.

Money: Economic realities are closely tied to the availability and quality of healthcare, as well as access to and use of services, in the informal settlements. Alongside the inability to pay for health services, poverty limits the procurement of other goods and services that directly affect health: food, water and waste disposal.

"Recognizing that income generation is a priority for slum residents, USAID suggests that "health improvement efforts would be most effective if associated with livelihood improvement and local empowerment strategies"[33]

Access to employment as well as being provided with the skills to undertake employment are recurrent themes in the literature on healthcare. Income generation is an essential component of the **communiTgrow** approach.

Infrastructure and Services - sanitation and water: A lack of adequate sanitation and water has a threefold impact. The first impact is on health of individuals. A lack of sanitation and adequate drinking water can lead to health problems, (e.g. increased exposure to pathogens can lead to diarrhoea and other diseases). Chronic diarrhoea can hinder children's development by impeding the uptake of essential nutrients that are critical to the development of children's minds, bodies, and immune systems.[34] Second, poor sanitation impacts negatively on the economy. Poor health keeps families in a cycle of poverty and lost income. The national cost of lost productivity, reduced educational potential and curative healthcare is substantial. Third, there are negative environmental effects. Inadequate sanitation leads to dispersed pollution of water sources. This in turn increases the cost of downstream water treatment, as well as the risk of disease for communities who use untreated water.[35] Sanitation improvement is a bigger process than merely providing toilets; it must include health and hygiene education as well as water supply. At **communiTgrow** we aim to address this through the provision of adequate services in the types of housing provided as part of the development of the new city.

Food and Nutrition: Access to food, whatever the nutritional content, is a major challenge for residents of informal settlements. Urban poor populations often rely on street food, fast food, processed and cheap food leading to nutritional problems such as vitamin/mineral deficiencies, obesity, diabetes, cardiovascular problems, and dental problems. Street food can also be dangerously unhygienic and spread diseases.[36] Therefore access to affordable, healthy food and nutritional advice is a key component of a successful programme to deal with health issues. The introduction of home or communal food gardens will increase access to sources of nutrition. In addition, the **communiTgrow** approach advocates for social support for a healthy diet. The design of the settlement will reduce barriers to access to healthy food, by ensuring that fresh produce is available in shops and by offering advice on healthy meal planning and preparation. In addition, local food production in the form of local food production vegetables and honey will be introduced in the City. In this way, locally produced agricultural products such as leafy vegetables, can contribute significantly to the everyday nutritional needs of the urban citizenry.

Unemployment, risk behaviour and crime: Unemployment leads to a lack of food and feelings of inadequacy and increases the risk for domestic violence. An important element of improving people's ability to attract employment is through imparting skills that increase an individual's competitiveness in the job market. The **communiTgrow** approach offers more than just the opportunity for employment, but also access to appropriate skills training. In South Africa, alcohol abuse continues to be one of the biggest contributors to an increasing HIV-infection rate.[37] Other high risk behaviours associated with alcohol abuse include, alcohol addiction, foetal alcohol syndrome, risky sexual behaviours, violent acts, rape, murder, death, and disability[38]. It was recently reported that 40 percent of rape victims are children who are under the age of 15 years. Supportive programmes are vital in addressing the issues of alcohol abuse and domestic violence.

8.5 The communiTgrow Healthcare Model

From an overview of the health challenges listed above, it is clear that people's health status is determined by multiple, intersecting factors including income, food, water, security, sanitation and waste disposal, family structure, political and policy frameworks, and availability of quality health services. Therefore all of these areas need to be addressed to truly make an impact. The role of intergenerational centres as attractors, providing a range of services and opportunities for residents, will lead to participatory behaviour. A governance framework will assist to regulate and manage this behaviour. The introduction of health promoting schools is another tool for health promotion which will be adopted by **communiTgrow** schools. A health promoting school is one that "constantly strengthens its capacity as a health setting for living, learning and working." [39]

The **communiTgrow** approach will therefore provide health promoting systems and structures that are socially, commercially and organically integrated, with due recognition of the variety of cultures that exist in these communities.

This integrated approach will assess needs and match them to programmes for community and individual health from the start of the settlement construction for all residents arriving at the new city.

The **communiTgrow** approach is about generating community building programmes that address health and care, safety and security, skills training, positive engagement of schools and crèches, home based care –givers, orphans, at risk groups and the vulnerable.

In order to achieve its objectives, there are a number of principles which inform the **communiTgrow** approach;

Principle 1: Health Promotion through design: The community will be optimized for health, safety, security, and access through careful spatial design that promotes a healthy active lifestyle and security of each individual living in the development. At **communiTgrow**, the urban villages are the centre of community life and each of these will be equipped with an intergenerational centre. This centre will be the focus for dissemination of educational materials, training and workshops on nutrition, sanitation and hygiene. **communiTgrow** will create fully integrated and safe medium-density neighbourhoods. The City will provide housing opportunities defined by multi-modal access routes, access to the market and services, and public places and spaces to promote walkable communities.

The model also provides for a diversity of lifestyle opportunities. All of these elements provide choice and a high degree of involvement from the residents in the factors that influence their lives.

Principle 2: Better Staff and Facilities: Improvements in the health of the urban poor can be achieved by improving the quality of services they receive from the providers they frequent. The **communiTgrow** City will also create healthcare solutions and facilities that function at operational efficiency. Some of the attitudinal barriers mentioned in the section above can be addressed by providing training in cultural sensitivity for healthcare workers. This is done by engaging a consulting healthcare operations firm to build a framework for best operational approach and by planning explicitly for alternative healthcare solution opportunities. A further programme is the creation of a management entity to support the fluid interaction between clinics, hospitals, and community care facilities. The training of home based carers and the creation of training centres for nurses are some of the methods for achieving these ends.

Principle 3: Providing adequate services to prevent healthcare problems: The **communiTgrow** approach is to provide an environment where there are programmes and facilities for the continued education of healthcare professionals created at the outset. This ensures that there is a vehicle built into the community that will deliver on capacity and expertise within the healthcare sector. The idea of health promoting schools will provide a healthy environment and include programmes such as school health education, and school health services along with school/community projects and outreach, health promotion programmes for staff, nutrition and food safety programmes, opportunities for physical education and recreation and programmes for counselling, social support and mental health promotion.

Principle 4: Addressing the basic needs: The **communiTgrow** model is premised on the fact that everyone living in the city will have access to employment and thus be able to purchase or rent to buy a decent living unit. Access to employment is the key factor in addressing the basic needs of shelter, food, sanitation and water. The **communiTgrow** objective is therefore to reduce demand on the formal healthcare system through promotion, primary, and environmental programmes and facilities.

Principle 5: Bringing business into the community - models for partnership: At **communiTgrow** our approach of "business in the community" creates the opportunities for the private sector that are able to bring additional resources to bear upon addressing a problem into the health sector, where they may not normally intersect. Where there is a convergence between the goals of the private sector (e.g., soap companies) and that of the public good (e.g. hygiene improvement), partnerships can be actively pursued.

In addition, partnerships can be actively pursued between existing health providers including the private sector, academic institutions, NGOs and government to create a healthcare model that covers all aspects within the continuum of healthcare.

Figure 8.1 below summarises the problems we are attempting to address, the principles with which we hope to address them and some of the programmes that can be made available through a partnership programme with the local health authorities and academic institutions.

Problems	Principles	Programmes
Two tiered system.	Addressing culture and structure of healthcare delivery.	Equitable healthcare system for all residents of the communiTgrow city. Healthcare inextricably bound to city functionality.
Weak administration, Staff shortages.	Addressing culture and structure of healthcare delivery.	Continued education of healthcare professionals and caregivers. Nurses training centre. Healthcare extension facilities partner with existing institutions.
Quadruple burden of health: • Communicable diseases • Non-communicable diseases • Malnutrition • Violence and injury	Addressing culture and structure of healthcare delivery. Addressing basic needs.	Education programmes through intergenerational centres. Access to healthcare. Access to employment. Food gardens and nutritional advice. Settlement design with pedestrian priority and emphasis on public transportation. Alcohol and drug abuse education programmes.
Locational disparity.	Prevention through Design.	Settlement design that creates village structures allowing equal access to healthcare services for all residents.
High rates of urbanisation and informal settlements: • Overcrowding • Stress • Violence • Drugs	Prevention through Design.	Settlement and building design to reduce overcrowding. Alcohol and drug abuse education programmes.
Health seeking behaviour: • Lack of access to health services • Don't know services are available • Don't know how to access services	Addressing culture and structure of healthcare delivery.	Cultural sensitivity training for healthcare workers. Nurses training centres. Increase knowledge in community on reducing risk or delaying onset of diseases such as diabetes, tuberculosis, HIV (Aids) through education programmes linked to schools and community facilities. Identify and create opportunities for safe, enjoyable, and low-impact physical activities for community members. Raise awareness of programmes. Run through intergenerational centres. Child health and breastfeeding awareness training and education programmes.
Sexual norms: • Risk of HIV /Aids • Unplanned pregnancies	Addressing culture and structure of healthcare delivery.	Health awareness campaigns. Peer education. Condom distribution. Education run through the intergenerational centres.
Access to Money.	Addressing basic needs. Partnership models.	Build partnerships. Activities include: training community leaders, sponsoring workshops for community residents. Access to employment. Providing skills which enable access to employment. Education programmes through intergenerational centres.
Access to sanitation and water.	Addressing basic needs. Prevention through Design.	Health and hygiene education programmes.
Access to food and nutrition: • Food storage facilities • Reliance on street/cheap food	Addressing basic needs.	Increase resources (e.g. community gardens, social support for a healthy diet) and reduce barriers (e.g. lack of affordable fresh produce in shops) to enable healthy meal planning and preparation.
Unemployment and domestic violence.	Addressing basic needs.	Access to employment. Providing skills which enable access to employment. Education programmes through intergenerational centres.

Figure 8.1 Problems, **communiTgrow** *Principles and Programmes*

8.6 Making it Happen: Tools and Instruments

8.6.1 Transitional Matrix

The transitional matrix is a tool that can be used in the formulation of city-making. It provides a method of analysing the issues and problems currently being faced by urban dwellers, in order to ensure that there is a seamless transition from informal settlement or other form to a new regenerative settlement.

The transitional matrix begins by assessing the situation. It then identifies all the gaps at each stage of the continuum of care from birth to the aged. There are a number of stages that people enter in their lives, which all have different healthcare needs and issues. For instance nutrition and diarrhoea prevention programmes for infants is very different to education programmes on drugs and family planning services for teenagers. The key issues are identified and then the possibilities for filling these gaps are created. In South Africa, many of the programmes are proposed by the state, yet inefficiencies in administration and a lack of skilled staff hamper efforts. **communiTgrow** provides an opportunity to partner with health providers to fill in the gaps in the system, which may be via private hospital approach. The figure below is an example of how different age categories require different health programmes.

Linked to the above-mentioned programmes is a general **communiTgrow** programme of orientation, coaching and mentorship that will be made available to all residents. This will include programmes such as skill upgrades, specializations and community programmes. All participants will be involved with community outreach, programmatic electives and immersion programmes within business and the wider community.

8.6.2 Strategic Built Environment Interventions

A number of interventions in the built environment are required to support the abovementioned programmes. The real value of the **communiTgrow** healthcare programme can be seen in the following interventions proposed for the Wescape Pilot project in Cape Town;

Age categories	Age specific problems	Programmes currently offered	Additional support offered by communiTgrow
0 - 5	Mother to child transmission of HIV, Malnutrition and stunting, Exposure to childhood disease.	Reduction in the mother-to-child HIV transmission rates. Breastfeeding education. Malnutrition and stunting amongst children education. Basic Antenatal Care (BANC). National immunisation education.	Programme support though intergenerational centres. Nurses and home-based care training.
6 - 11	Delay in detecting impairments that may affect schooling, Malnutrition, Violence and abuse.	School-based health programme. Learning barrier screening (e.g. impaired vision and hearing, assessment of cognitive development and oral health services). School feeding.	Support through school programmes. Nutritional support though food gardens. Access to nutrition education and programmes.
12 - 18	HIV, Teenage pregnancies, Drug abuse, STDs.	HIV prevention, counselling and testing. Teenage pregnancies prevention. Drug abuse prevention. Access to safe Choice Termination of Pregnancy (CTOP). Condom distribution at all health facilities.	Programme support though intergenerational centres . Access to information and testing. Management entity to support the fluid interaction between clinics, hospitals, and community care facilities.
19 - 40	HIV, TB, Hypertension, Diabetes, Asthma, Smoking, Alcohol abuse, Violence and abuse, Cervical cancer.	Condom distribution at all health facilities. Increasing health seeking behaviour. HIV counseling and testing. Access to ART. Screening for Tuberculosis (TB). Education on hypertension, diabetes and asthma. Smoking and alcohol consumption education. Increased physical activity. Improving diets and dietary habits. Reducing tobacco use. Reducing alcohol intake. Victim friendly health services. Training of nurses on Sexual Assault Act and cultural sensitivity. Cervical cancer screening.	Programme support though intergenerational centres. Access to information and testing. Access to nutrition education and programmes. Fitness equipment available in open space systems. Incentives schemes for healthy lifestyles. Management entity to support the fluid interaction between clinics, hospitals, and community care facilities.
40 - 60	Heart disease, High blood pressure, High cholesterol, Diabetes, Smoking, Being overweight, Poor nutrition, Lack of exercise, Stress and anxiety, Depression.	Education on hypertension, diabetes and asthma. Smoking and alcohol consumption education Increase physical activity. Improving diets and dietary habits. Reducing tobacco use. Reducing alcohol intake. Victim friendly health services. Training of nurses on Sexual Assault Act and cultural sensitivity. Cervical cancer screening.	Programme support though intergenerational centres. Access to information and testing Access to nutrition education and programmes. Fitness equipment available in open space systems. Incentives schemes for healthy lifestyles.
+ 60	Hip fractures, High blood pressure, High cholesterol, Diabetes, Smoking, Being overweight, Poor nutrition, Lack of exercise, Stress and anxiety, Depression.		Social support and personal control are major factors in creating well-being for ther elderly. Programmes offered though the intergenerational centres. Bone density screening. Education on adequate calcium intake.

Figure 8.2 Age Specific Problems and Programmes

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Training College for Nurses: A new nurses training college is to be provided at Wescape, the pilot project in Cape Town, that will train nurses as well as home based carers. It will be accredited with the Nursing Council of South Africa.

Health Services Extension Facilities from Existing Institutions (eg. UCT, UWC): There are a number of existing medical research institutions in Cape Town. The approach proposed is a partnering with these institutions that will focus on research and community health to generate strategic community interventions.

Partnerships with Sport-Science Related to Health Insurance Programmes: The **communiTgrow** approach is one in which partnerships are created with Health Insurance bodies to formulate programmes that offer incentives for preventative health initiatives. Some of these incentives include rewards for buying healthy food or for testing for medical ailments or for increased physical activity. Currently there a number of health incentive schemes aimed mainly at upper income individuals who can afford private health insurance. Through the **communiTgrow** model, we aim to develop these schemes so that they are available to all residents of Wescape. As part of this incentive scheme, it is proposed that we partner with institutions such as the Sport Science Institute or similar centres to develop outreach programmes. These programmes would then be made available and run from the intergenerational centres and civic/cultural precincts.

Inter-Generational Centres as Additional Healthcare and Fitness Precincts: The construction of intergenerational centres at the heart of each urban village is a fundamental component to the success of the healthcare pillar. Its aim is to encourage health-seeking behaviour and to act as the central venue for information dissemination. The intergenerational centres will have dedicated treatment spaces, and shared space for administration and logistics. They will be secure places located close to the convenient pedestrian walkways and in close proximity to well functioning public transport systems.

The Inter-Generational Centre will be the venue for additional healthcare staff training as well as the community wellness programmes. The **communiTgrow** approach of creating strategic partnerships with NGOs and other agencies to procure equipment and operational support will ensure effective functioning of the centres.

Commercial Precincts with Alternative Healthcare Facilities: It is proposed to provide additional or alternative healthcare facilities within the green open space system that runs throughout the Wescape design. The aim is to create dedicated treatment space in shared services centres. These will also provide luxury treatments in the form of a retreat facility.

Fitness Facilities Along the Open Space Route: In addition, it is proposed to identify and create opportunities for safe, enjoyable, and low-impact physical activities within the open spaces provided for community members. This will promote healthy lifestyles and aid lifestyle disease prevention.

8.7 Conclusion: Healthcare in the Future

Through the **communiTgrow** city model we cannot hope to address all of the health problems currently plaguing African cities. However, we propose a comprehensive, cohesive set of tools to support existing programmes. We believe that addressing the location inequities and environmental and social problems is an important factor in setting the continent on the right path to healing. The **communiTgrow** approach is about integrating a commitment to health within the cultures, structures and processes of organisations, institutions such as schools and universities and households thereby creating conditions that promote a healthier life for more people.

Chapter 9

The Regenerative Pillar

9.1 Purpose of Chapter

The purpose of this chapter is to discuss the concept of regenerative city-making as one of the six pillars making up the IP of **communiTgrow**. We will explore why this is a fundamental concept underlying our approach and how we apply it in an African context using the Wescape pilot project in Cape Town, South Africa, as an example.

9.2 What is a Regenerative Approach?

There is an ongoing debate regarding the definition and meaning of sustainability and the notion of sustainable cities. The Brundtland Report "Our Common Future" defines sustainable development as the kind of development that meets the needs of the present without compromising the ability of future generations to meet their own needs.[1] Yet most approaches to sustainability have had an "eco-centric" focus concentrating on addressing biophysical phenomena such as climate change, water scarcity and resource depletion.

More recent research and literature alerts us to the consideration that the future urbanisation needs of Africa will be coupled with global resource constraints, and thus there is a need to decouple development and growth. In other words to pursue development with reduced material consumption[2] as an end-goal.

Regenerative design and development is a body of work that addresses the opportunity to optimise the productive potential of well managed urban ecologies. This can be achieved through closing the loops of materials and resources that flow through a city and cascading them through many more designed cycles of beneficial use, that in turn structure urban ecologies and space making. Among

others, this work is demonstrated through the efforts of the Regenesis Group, the Zeri Foundation, Herbet Giradet's work through the Cities Commission for "Regenerative Cities" for the World Future Council and HafenCity University, Hamburg (HCU) Commission on Cities and Climate Change; and many other agencies and professional practices.[3]

At the same time we are aware that cities in Africa are in a state of crisis at many levels. The after effects of colonisation, rampant urbanisation and the subsequent growth of informal settlements, growing inequalities, weak administration and unemployment and all the negative consequences that follow from these phenomena are creating and reproducing societies that are fractured.

The extent of social breakdown that has occurred in African urban settings is reflected in increases in; crime, family structure break down, drug and alcohol abuse, teenage pregnancy increase, youth radicalisation, sexual and physical abuse and the marginalisation of the poor . Wealthy residents hide behind walls and gated enclaves, while poor inhabitants in urban areas have fewer social safety nets available to adapt to crises and disasters that may occur.

The **communiTgrow** approach develops the theme of sustainable design and extends it to positively enhance and even regenerate the ecosystem services within and around the City's boundaries. Regenerative development theory sees humans, human developments, social structures and cultural concerns as an inherent part of ecosystems.[4] **communiTgrow**'s understanding of regenerative design, however, extends far beyond the biophysical realm and addresses - not just developmental and social agendas - but seeks to actualise the healing of society as fundamental to regeneration. Regeneration is about creating a context that nurtures an alternative future, one based on understanding equity, accountability, and commitment.

This is an evolutionary approach, one that evolves over time and through changing of mindsets. Regenerative development starts with the current context, but works from an understanding of place and people, whose self-organisation is the basis for evolutionary behaviour, and whose potential can be realised if avenues for development are opened up. This regeneration can be achieved through structures, controls and functions that guide the practical steps that support the transition from current conditions to the preferred reality namely cities for our common future that support communities with capacities to thrive and flourish.

9.3 Why are we Adopting a Regenerative Approach?

As described in chapter 1 above, Africa has a set of problems that are generic across the continent. These problems include the after effects of the history of colonisation; fragmented social and civic structure, poor governance, maladministration, a heavy dependence on extractive resource economics, growing informal settlements, poverty, HIV/AIDS, malaria and other diseases that are not found in developed countries. It is rich in resources but lacks infrastructure. If Africa is to develop further and to a level matched with its socio-economic needs, then infrastructure investment required to access its resources could provide opportunities for unlocking the potential in sectors where Africa possesses unique advantages.

What are these advantages? Africa does indeed have a set of advantages over developed countries. Africa possesses a large percentage of the world's mineral resources and a young population that can provide labour and skills to an ageing population in Europe and other developed countries. Africa also needs to accommodate the growing population in new cities and developments. The pace of African urbanisation and the sheer numbers in urban consumers pose some exciting development opportunities for investors. So we need to make a choice. Do we continue to develop along our current trajectory of unsustainable resource consumption, fossil fuel dependence, creating waste, pollution and fractured communities, or do we place African cities on a different pathway. This is especially the case when current and future projected resource constraint conditions are considered .

Sustainable green technology and infrastructure has moved beyond a growing field of scientific research to tried and tested innovation and design solutions that offer diverse solutions to Africa's infrastructure and energy demands. Sustainable green infrastructure and technology , however, is only one aspect of the regenerative city vision. As environmental educator David Orr put it, *"The challenge of ecological design is more than simply an engineering problem of improving efficiency, … of reducing the rates at which we poison ourselves and damage the world."* Orr argued that "(t)he success of ecological design will depend on our ability to cultivate a deeper sense of connection and obligation."[5]

There is agreement with this sentiment on the part of **communiTgrow**. However, the connection is not just to the earth. The vital connection is to each other, to our community, village and to systems of governance. We must nurture the ability to; (1) connect our skills gaps to education programmes that will address them, (2) connect our health problems to supportive ecosystems, environments, networks and health programmes, (3) connect our waste streams to economic opportunities and jobs that close the water and nutrient cycles, and (4) to achieve this not just for the advantaged but equitably for all. This reconnection to regenerative development strategies is what will ultimately heal a fractured society.

communiTgrow supports the creation of the kind of connections indicated above because it will mean an improvement in the welfare of the people and their appreciation of the welfare of the environment they depend on. An improvement in the welfare of the people and the environment that support them will mean increased ongoing productivity. Increased ongoing productivity will mean sustainable wealth as people will have sufficient - not only basic needs, but time to do things that make a human being complete and whole and able to lead a fulfilled life. They will also have supported a context that has created a sustainable and productive urban garden in the process.

9.4 Principles of a Regenerative Approach

There are a number of principles at work in a regenerative approach, which are based on ecological principles.[6] Yet what distinguishes our approach is that these ecological principles are applied to not only the biophysical realm, but also to the social and economic sphere with the aim of creating a society that is healthy. We have identified and adopted seven core principles as foundational to the **communiTgrow** approach.

Principle 1 - Ecologically bounded area: Our approach begins with an ecologically-bounded area, stresses the integration of social, economic, and environmental factors, and seeks to involve all the relevant interests and power-holders in identifying desirable futures, evaluating alternative pathways and implementing preferred solutions. This is not a new approach. Many of the principles are already widely available and accessible. However, our approach implies a change of mindset and integrative practice to bring those principles

together in a holistic way[7] and to tailor the approach for the African context. The African context is one where the overwhelming bias and need is towards the social leg of the sustainability pillars.[8]

Principle 2 - Nested Systems: The **communiTgrow** approach, as with other ecosystem approaches, requires organisation to be nested and overlapping, boundaries to be contingent with respect to purpose and perspective and scale to be directly attached to processes and functions[9]. Nested systems allow for activities, services and institutional mechanisms to be deployed at different scales throughout the system, ensuring that equitable access to service is ensured. In other words, it ensures that skewed patterns of growth and service provision are mitigated from the outset of development.

Principle 3 - Zero waste metabolism: More directly, this implies creating a system that generates no waste (closed loop system) where one species' waste becomes another species' food. Or one businesses byproduct becomes another's resource. Closing waste loops through recycling and re-use opens up possibilities for the participation of small to medium scale businesses and enterprises, non-profit and cooperative organisations, and for cooperation with non-governmental organisations and projects. Waste recycling has the potential to play a critical role in stimulating activities that effectively exploit waste interdependencies in the system. Waste to energy, in particular, has significant potential for gas power generation.

Principle 4 - Cycling matter: In this approach, as with a natural ecosystem, where matter cycles continually through the web of life, materials and resources are re-used or recycled a number of times in the city system before they enter a waste stream. This includes nutrients, water, soil, carbon and so forth. Closed loop systems require that the socio-metabolism of the city is understood. This in turn requires that material flows and life cycle analyses are conducted and used in planning processes. It also requires the close consideration of the physical systems - or infrastructures - that underlie the flow of materials.

Principle 5 - Diverse renewable energy sources: Stimulating renewable energy technology deployment and use has two-fold benefits. It increases the energy "resilience" of the settlement, while opening up opportunities for small to medium scale operators to become involved in infrastructure and technology deployments

and their maintenance thereafter. Energy mixes will likely be required; where mixes of solar, wind, hydro, ocean and conventional energy sources are used as appropriate.

Principle 6 - Diversity: As in a natural ecosystem, the diversity of a system increases its resilience; so pluralism is key to the success of the city. This implies choice of house types, neighbourhoods, diversity of economic opportunities and education and health programmes. It implies reducing dependencies on external factors such as energy from oil; and building internal resources that can adapt to shocks and change over time. This is done in order to prepare for an uncertain future. Infrastructure choices are key to the extent to which diverse functions and services can be developed along the value chain of service provisions. For example, decentralised infrastructures, such as mobile phone technologies, create opportunities for a wider range of small to medium scale players in the market, increasing employment for skilled workers at the same time.

Principle 7 - Partnerships and networking: Lastly and most importantly it should be noted that life, from its beginning more than three billion years ago, did not take over the planet by combat but by cooperation, partnership, and networking. Building partnerships and collaborative networks is therefore core to the regenerative approach.

9.5 Praxis: The Wescape Example

Praxis is a word that gives expression to the dialectical relationship between theory and practice. A useful way to visualize praxis is imagining a swinging pendulum that moves between theory on the one end and practice on the other – much like the swinging arm of a stand up clock. The constant movement of the pendulum between these two ends indicates a constant motion as opposed to a linear understanding of the relationship between theory and practice, where movement is mono-directional.

With a praxis frame of reference it will be easier to interact regarding the manner in which theory and practice inform each other in terms of a **communiTgrow** approach, and as applied to the test-bed at Wescape.

The design of regenerative city systems can benefit from using a combination of smart design, grids, systems and governance that can be supported by information technology and communication systems. This can work together with more embedded modes of communication that are appropriate to the context.

Note:
Smart grids and technology can reduce inefficiencies and support effective use of investments to support regeneration.

Figure 9.1 Regenerative e-linked Neighbourhoods

The principles that integrate the living systems are demonstrated through the work on the Wescape project. All interventions are place based, located in institutional and governance structures and have programmes and operations that support a balanced threefold regeneration through the pillars, namely economic regeneration in service of human regeneration in service of environmental regeneration. This is illustrated in Figure 9.1 showing how the social, environmental and economic aspects interface in a regenerative context. The examples that follow are snapshots that illustrate the regenerative principles outlined above.

The Wescape project envisages the co-evolution of a diverse society that will have the following regenerative outcomes;

- *An urban city system* that is environmentally healthy, where soils, water, productivity and biodiversity and waste systems are able to support local needs for food, water, energy, good air quality and reduce external dependencies. Smart grids, transport, energy, water, waste and foods systems are integrated with the functioning of the natural ecosystems.
- *A social system* where the community moves from high unemployment to being able to work locally and be net suppliers of regenerative community and development leaders, educators, teachers, health workers, practical urban managers, green sector economy workers, technologists; into the city region and to other regenerative African cities.
- *An economic system* where people define prosperity through quality of life and not possessions; the system retains and circulates its wealth in the settlement refuelling the internal economy and is a net exporter of regenerative goods and services.

There are key ecological principles that have guided our designs and provide the touchstones for the integration and regeneration that the **communiTgrow** pillars seek to address. These assist in understanding the scope, boundaries and conditions that have to be worked with to create conditions for greater wholeness or workability; self-reliance, resilience, adaptation capacity and manageability.

9.5.1 Praxis 1 - Ecologically Bounded Area

The most effective regenerative response to the magnitude of the urbanisation challenge is one that is applied at a large enough scale that it can take advantage

of economies of scale in production and at densities that can sustain public transportation systems, social and education infrastructure and internal and city regional economies. This should ideally occur within an ecologically bounded area, the smallest unit of which is usually a sub watershed . Access to water is a key precondition for settlement and this is the most important factor in deciding whether the location is adequate for new settlement. Where the site is part of a shared watershed, this critical resource will have to be considered in relation to its upstream and downstream implications to support regenerative conditions.

Other preconditions for settlement include accessibility (viz. is the location for the new city connected to the markets?) Is it along transport routes, or can these be created? Access to electricity and other infrastructure is not as critical as these can be created internal to the city system. Available residual infrastructure capacity and networks are beneficial in kick-starting the development process. Understanding the evolving food, nutrients, biodiversity and economic patterns that define this place supports investments in regenerative patterns of developments that close the resource use loops and reduces external dependencies and impacts. Regenerative growth must maintain a dual focus on both the internal conditions for regeneration, and on being a net contributor to the city region in what is regenerated.

As an example, in the Wescape, pilot project, the development proposed accommodates 200 000 households and is situated over one watershed, that of the Soutrivier, within a naturally occurring basin. However there are links to a wider food web. It is situated along a major transport and future trade route that will connect Cape Town to Namibia and Angola along the West Coast Growth Corridor.

Wescape as a distinct sub-watershed catchment based urban design system within the future growth corridor for Cape Town. Figure 9.2A maps the watershed and current biodiversity areas. With the anticipated increase in aridity, extreme weather events, and depleted soils, this fragile ecosystem will struggle to survive. The conventional approach to city design would be to flatten the earth and lay a grid. We have worked with the gentle topographic undulation to locate roads on ridges and reserved valley for greenways , water, food and biodiversity corridors.

9.5.2 Praxis 2 - Nested Systems

Figure 9.2B illustrates the nested scales of development of Wescape. The Wescape development is nested within its broader city region. It is well connected by rail, road and infrastructure into a functional city system which connects it back to the existing practises of the city and extends a new way of city-making for the future growth.

A   B
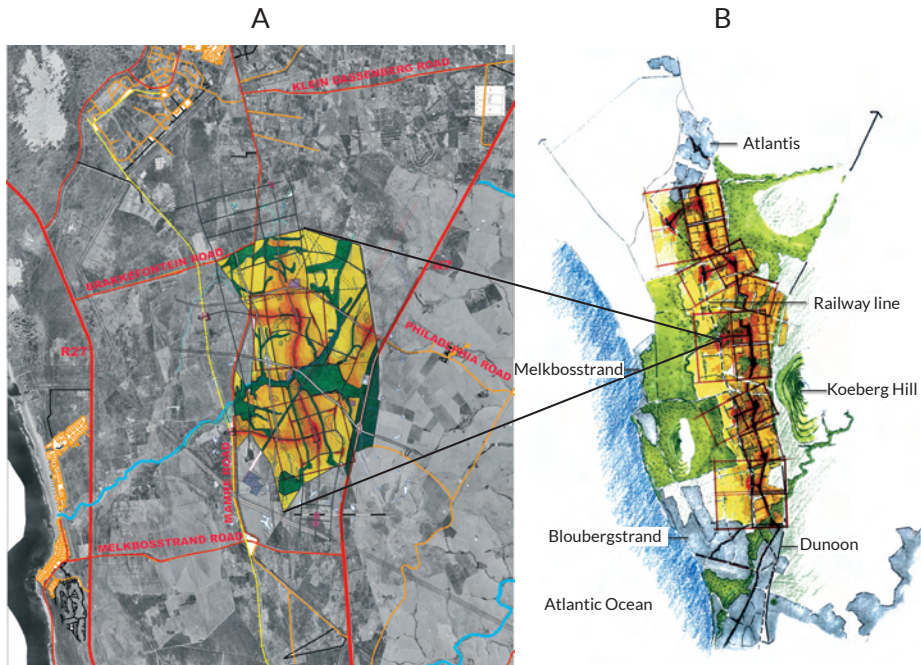
Note:
Building the growth corridor as an extension to the City of Cape Town using functional urban blocks.

Figure 9.2 Wescape in the Western Cape Future Growth Corridor

The new city-making is thought about with the largest functional urban unit being the urban block, inside of which the smallest functional unit is the neighbourhood block. This is illustrated in Figure 9.3. Such a structure addresses the nested scales within which all the economic, institutional and environmental systems have to have integrity and interdependence. We do well to be reminded that;

"Nature is made up of systems that are nested within systems. Each individual system is an integrated whole and — at the same time — part of larger systems. Changes within a system can affect the sustainability of the systems that are nested within it as well as the larger systems in which it exists."[10]

Nested hierarchies involve levels, which consist of and contain lower levels. Ecosystems are hierarchical and can be viewed as nested sets of open systems in which physical, chemical and biological processes form interactive subsystems. If we apply this to city-making, then we can create a nested hierarchy of urban places and spaces, nested scales of community, economy and ecosystems, and governance and a system that regenerates and reproduces success at different scales in the hierarchy.

In the Wescape project, which is being used as an example of how these principles can be implemented, there is a hierarchy of places and spaces, that are nested. These offer specific design interventions appropriate at different scales. It begins with building the community from the neighbourhood scale to the larger scale of urban quarters and the whole settlement.

Note:
The neighbourhood as the smallest scale of local economic and social functionality and diversity.

Figure 9.3 The Neighbourhood - 300mx300m

The Neighbourhood: The neighbourhood is the basic building block. It is 300mx300m in extent, which is a comfortable walking distance and accommodate approximately 1000 to 1500 households (see Figure 9.3). Walking is the most energy efficient mode of travel. This choice is to be facilitated via an interconnected street network that enables pedestrian's choice of routes at intersections, and accessibility to a wide range of community facilities in an attractive and safe environment. A walkable scale city is a human scale city. It places the emphasis on people walking and bicycling and also on public life in general over the dominance of the motor vehicle. A walkable scale creates environments that are safer and communities that are healthier as it eliminates the dependence on motor vehicles to reach basic services. This removes some of the costs of transport for residents and gives them the ability to redeploy this saving in the local economy. Walking also allows for social interaction between neighbours to build the sense of community. If neighbours know each other there is a stronger sense of collective responsibility for the appearance and governance of the neighbourhoods. All local level personal and commercial facilities and market stalls are located around neighbourhood squares. Primary schools and early childcare centres have access to pedestrian prioritised circulation which are off the main circulation routes.
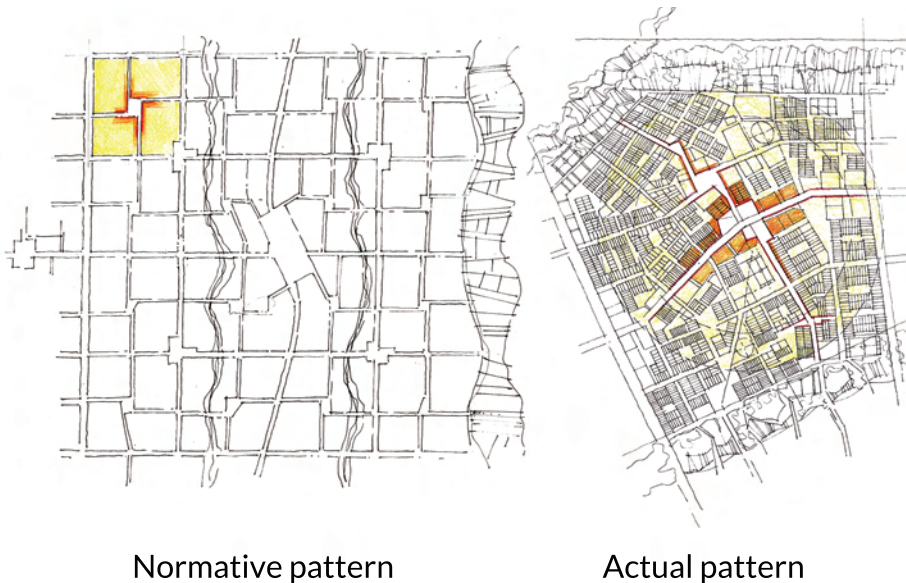
Figure 9.4 Walkable Community Precinct - 600m x 600m

Walkable Community Precinct: Four neighbourhoods constitute a walkable community precinct measuring 600mx600m and accommodating between 6000 and 10 000 households (see Figure 9.4). The precinct will have an appropriate scale of development and retail functions. This is the scale at which there is a location of the intergenerational centres, which are a key component of the **communiTgrow** strategy. The intergenerational centres act as a venue for many of the programmes for learning around education, health and economic opportunities and vocational training etc. **communiTgrow** has identified the institutions of civic pride that can act as the local places from which a learning and caring community grows. This is underpinned by comprehensive school environments and cultures, supported by well resourced inter-generational programmes and activities.

At this scale, high quality community facilities and parks support a vibrant community life with big enough economic thresholds to offer training and recreation activities.
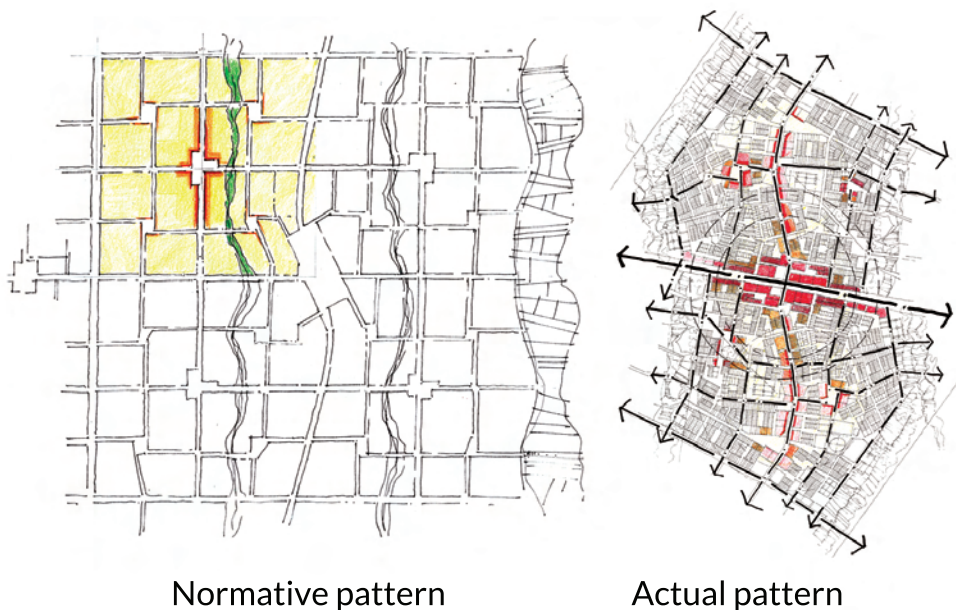
Figure 9.5   Urban village - 1200m x 1200m

Four walkable community precincts of 600mx600m constitute an Urban Village with its village square and other amenities relating to the village scale (See Figure 9.5). This scale supports approximately 20 000 to 24 000 households. Each village has a village centre/square, which includes retail and commercial uses, offices, admin and services, schools, tertiary education centres and a market. Throughout history, public spaces have had a very important role in day-to-day human life. It has been the meeting place, it's been the marketplace. Public spaces have provided access to the various things happening in the city. The urban village has a number of different scales of park and is likely to have a greenway along its edges. The location of larger tertiary education facilities such as the healthcare training centres, teacher-training facilities, and urban management training centres, would be located in the urban villages giving each village distinctive characteristics.
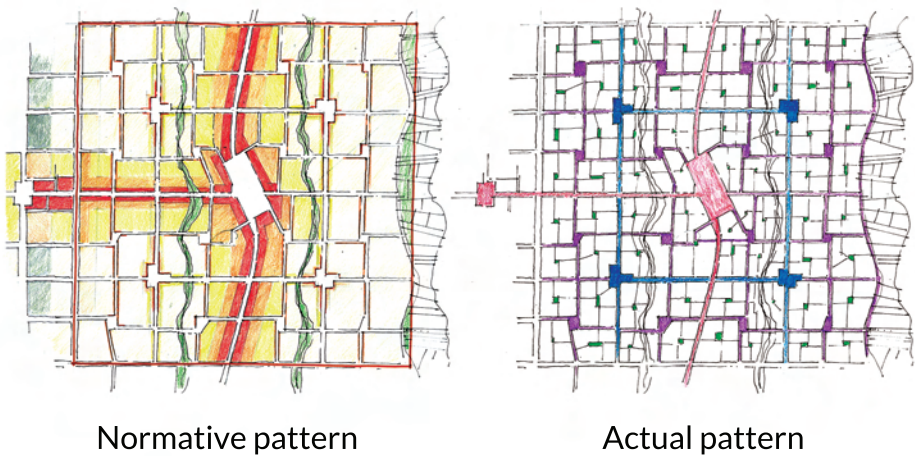
Figure 9.6   Urban Quarter - 4 x Urban Villages

Urban Quarters: Four Urban Villages then make up an Urban Quarter and each village quarter hold approximately 100 000 households. See Figure 9.6. This is the scale at which the central office of CORPCO and all district level and externally

connected services will be based. The urban quarters have nature reserve areas along their edges and also contain a Metropolitan Urban Park in the main valley system between them.

The social facilities are enhanced by greenway, waterways, electrical servitudes which becomes green feature, urban park, residential investment have asset value because the precincts are investment worthy. Every residential plot has value. Value change leads to behaviour change.

The type of education, health systems and urban governance are foundational to how the settlement itself works and in turn to how it can make a contribution to the broader city region and in general to the broader community.

9.5.3 Praxis 3 - Zero Waste Metabolism (Closed Loop) and Cycling of Matter

In ecology, the concept of a zero waste metabolism is a basic principle of ecosystem functioning. This means simply that every output by an organism is not waste or pollution, but is also an input, which replenishes and sustains the whole living environment see (Figure 9.7). In contrast, the metabolism of cities is linear, with resources flowing through the urban system, being used once and then flowing out the system as waste or pollution. Inputs and outputs are considered as largely unrelated.[11] Raw materials are extracted and processed into consumer goods that ultimately end up as rubbish in a landfill site or burnt in incinerators, which cannot be beneficially reabsorbed into living nature.

Similar processes apply to food: Normally nutrients and carbon are taken from farmland as food is harvested, processed and eaten. The resulting sewage, is then discharged into rivers and coastal waters downstream from population centres, and usually not returned to the farmland from whence it came. At Wescape we reverse this "normal" occurrence. It is crucial to convert organic waste into compost, and to return plant nutrients and carbon to the agricultural areas that feed cities, to assure the land's long-term fertility. The city then becomes the machine to increase the level of productivity on the farms using existing resources from a local area, so external sources do not need to enter the system.

Creating a circular urban metabolism in this way can create resilient cities and create many new local businesses and jobs. Living and natural systems are not merely closed loop systems, but continually evolving open systems. John Lyle in his book on regenerative design states that;

Linear metabolism cities consume resources and create waste and pollution at a high rate
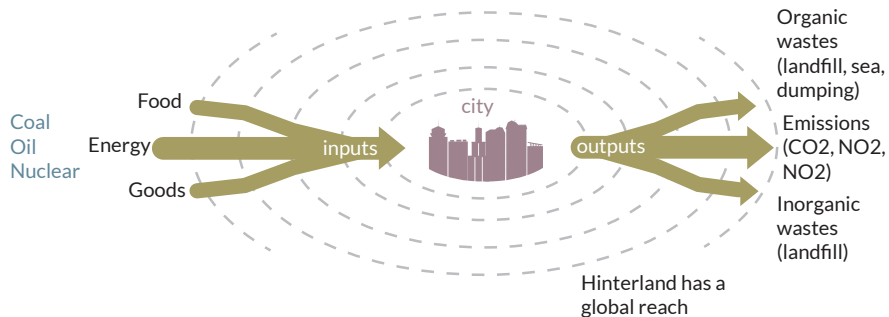
Circulative metabolism cities reduce consumption and pollution, recycle and maximise renewables
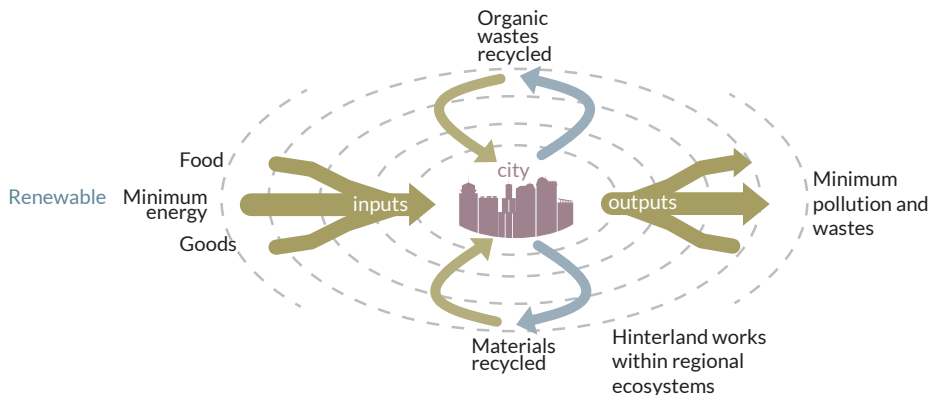
Girardet, Herbert. Regenerative Cities. World Future Council and HafenCity University Commision on Cities and Climate Change. 2010.

Figure 9.7 Sustainable Cities and "Circular Metabolism"

"We can learn to co-evolve and co-create with them, and must do so if we are to create regenerative systems that will empower a more abundant future in which healthy human communities thrive."[12]

Sewerage system and food production: As people have been urbanizing and moving towards the cities in the more developed countries, agriculture has had to respond by mechanization of farming methods and an increased reliance on technologies most of which rely heavily on fossil fuels.[13] According to Girardet "ten times more fossil fuel energy goes into this type of food production system than the calories that are actually contained in the food we get to eat." Carbon and plant nutrients are removed from farmland as food is harvested and these are not returned back to the land. Agricultural land is kept productive by applications of artificial fertilizers. In a regenerative city, these nutrients, as well as the carbon content of food waste and sewage are intercepted, treated and all water and nutrients recovered for safe re-use.

The African continent should not have to evolve in the same way, if a different approach to city-making and its relationship to agriculture is implemented before the cities have even been built. The Wescape project explores a decentralized localised linked water, sanitation and waste system that is capable of recovering and re-using these resources productively. The net available rainfall, urban water and the nutrients can then be deployed on a fit for purpose basis to support intensive urban agriculture and return valuable resources to its productive hinterland. The productive viability of the targeted Wescape site areas can thus be regenerated by the use of recycled water from the sewage system, and the aforementioned recycling of nutrients from the same stream and recycled streams by means of composting and the use of biochar, both of which will dramatically build soil fertility from their currently depleted levels[14] and restore the ground water recharge capacity. Generating food production systems within the Wescape area mitigates the risk of spiralling food prices and promotes food security for the community, whilst producing jobs and keeping money cycling in the micro-economy, for the financial benefit of all. In the Wescape pilot project **communiTgrow** has created a tool that calculates the amount of jobs that can be created from this alteration of resource flows. This is illustrated in Figure 9.8.
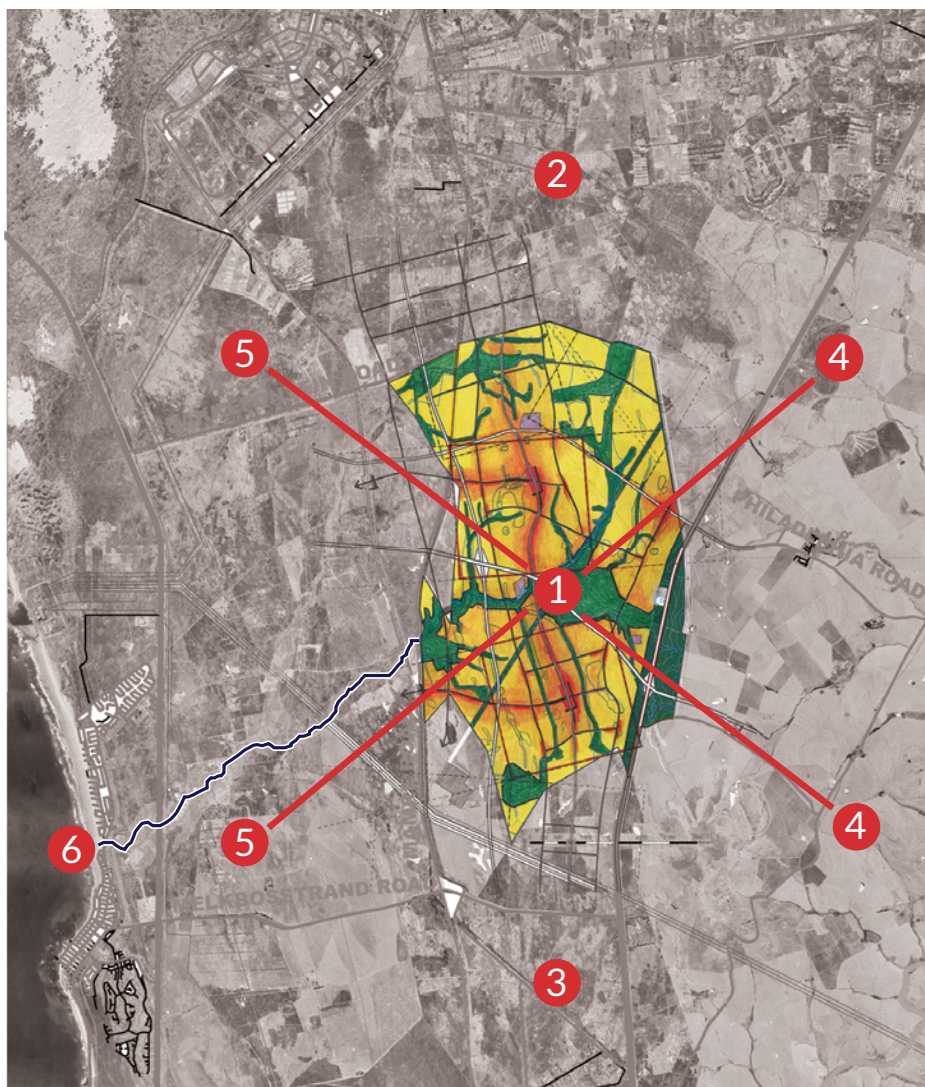
1. Wescape   Peri-urban interior farms 4.
2. Northern smallholdings settlements   Nature reserve / agriculture 5.
3. Future urban development blocks   Estuarine health and revitalization 6.

Figure 9.8   Regenerative Connectivity to Surrounding Land
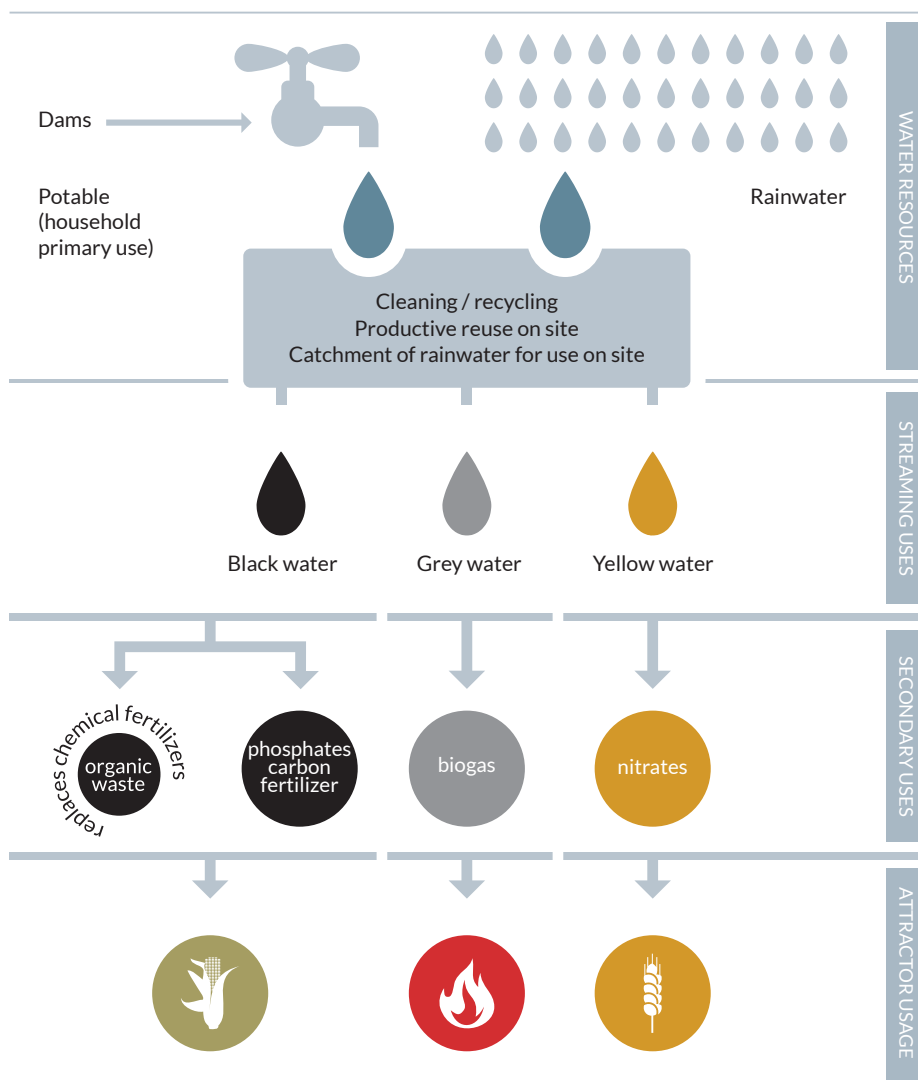
Figure 9.9 Principles of Nutrient Recycling

Wescape is part of a city regional food, water and nutrient web : In conventional city systems, water and food are brought into the city and leave the city as waste and pollution carrying away critical resources that have value.

These result in downstream problems and high costs to bring these resources to the city and take the waters off site to treat. By using different systems of water sanitation and urban landscape systems, these resources can be recovered and used locally and deployed into the surrounding hinterland.

Individuals provide effluent for system

Traditional sewage cycle

| Fresh water arrives on site via bulk infrastrucure | Water is used by various sources | Water is sent into the sewage system | Water is sent off-site for treatment | Water is sent back to watershed |

Regenerative sewage cycle

Water | Nutrient capture | Black water and grey water | Yellow water | Surplus

| Cleaned, recycled, productively reused on site | System collects black, grey and yellow water | Produces phosphates and carbon fertiliser Biogas produced | Produces Nitrates | Water is sent back to watershed |

Local market

Embedded population of 200,000 households plus institutional, industrial and commercial use provides a captive audience which to market products.

In addition to:

Surrounding hinterland market

City region

Export market

Business category 1:
Core mineral, nutrient and water capture and distillation

The phosphates, carbon fertiliser, nitrates, biogas and clean water all provide the foundation for generating an agricultural economy at Wescape along with addidtional business export opportunities.

Business category 2:
Agricultural production

The fertiliser and water generated on site greatly reduce overhead for agricultural production and revitalise the soil so products such as vegetables, bamboo and tres can grow.

Business category 3:
Downstream processing

Agricultural products provide material for additional processing opportunities such as fibre and bamboo product manufacture and vegetable canning.

Business category 4:
Downstream processing

Green innovation
Skills,
Experts,
Technology,
Products,
Strategy,
Design

Figure 9.10 Value Creation in Nutrient Recycling

Principles for recovering the nutrients and water from solid and liquid waste cycles: Traditional sewage and storm-water capture rely on solutions to, at best, mitigate the impacts of development. This Infrastructure merely serves to pass effluent downstream, there is sub-optimum value creation in the system. The Wescape Development will uitlise the effluent of the proposed 200 000 housing units to recover the raw nutrients, water and minerals necessary to support local food production.
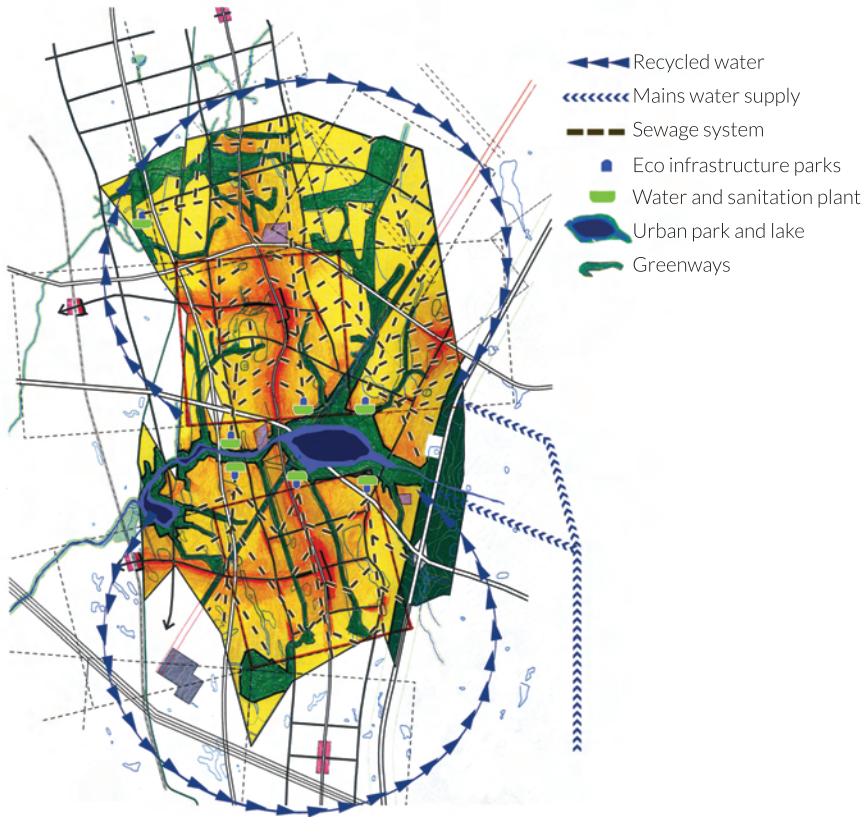
Figure 9.11 Whole-Systems Water Planning

Decentralised linked sewerage and waste systems are tried and tested technologies that have multiple outputs in methane, soil builders, water and nutrient recovery and reducing the footprint of water and energy in production

systems that feed urban areas (See Figure 9.10). This type of system can be structured on a modular basis to support core ecological and urban systems and capacities. Much of technology and design solutions are advancing rapidly. Thus modular solutions allow for adaptation and course correction over time. The layout below shows the semi-decentralized system with six eco-infrastructure industry systems linked to the large urban park. This design works with optimizing the web of ecosystems to build resilience and support adaptation.

Wescape productivity zone	Hectares available	Agricultural unit	Percentage of area	Potential jobs provided
Central zone	300	Bamboo	40%	240
		Vegetables	40%	300
		Trees	10%	15
		Water	10%	30
				585
Riparian zone	200	Bamboo	40%	160
		Vegetables	40%	220
		Trees	10%	10
		Natural vegetation	10%	20
				410
Servitude (utility) zone	100	Vegetables	70%	170
		Hedgerows	20%	40
		Natural vegetation	10%	10
				220
Urban agriculture (external)	300	Vegetables	100%	700
				700
Total	900			**1,915**

Figure 9.12 Productivity Zones Jobs Calculator

Semi - decentralised linked water and sanitation systems: The land use budgets and designed ecologies have a phased productive potential over time. These can be modelled and put into calculators to factor in the business, jobs, green products and carbon outputs over the 20 year planned duration of the project rollout.

This calculator takes the land use and productive categories as an inventory of the green systems in the settlement, and calculates the productive outputs and number of jobs that can be created for each zone. **communiTgrow** customises these calculators for each context. There are a number of business units that are created to utilise the full value chain of this system.

Water: As we have previously stated, the solutions for each city will need to be locally based and will differ between regions and environment. We are using the Wescape project to illustrate how we deal with the issues in this particular location and the kind of tools we have created in order to do this. The Wescape site is in an area of low rainfall – 430 mm per annum on average. The soil is sandy and doesn't retain water so it is difficult to capture and reuse. Increasing the Water Holding Capacity (WHC) of the soil and reducing evaporation, can simultaneously increase the effective rainfall of the site and reduce its water demand.

The strategy pursued allows for water to be collected in high capacity sponges, utilizing various media such as natural fibre, clay and biochar[15], which will trap and slow the movement of water through the landscape, reducing peak runoff and sinking it. This is then filtered through a system of reed beds and forested areas, and collected for recycling, reducing the development's water demand by over 70 percent year on year. Along the way, we will recycle the water as many times as practical, before allowing it to flow into the river system. The key to this concept is a system of decentralised linked water and sewerage facilities. These facilities can be connected to the city regional systems and to each other to provide the balancing effects of conventional systems as a backup and to kick start the project.

In an urban context and an arid climate like Cape Town, the ground hardening through urbanisation has multiple impacts with regards to the ground and micro-climate systems. In addition the denser building fabric can also increase the

Natural ground cover

40%
evapotranspiration

10% runoff

25% shallow infiltration

25% deep infiltration

10-20% Impervious

38%
evapotranspiration

20% runoff

21% shallow infiltration

21% deep infiltration

30-50% Impervious

35%
evapotranspiration

30% runoff

20% shallow infiltration

15% deep infiltration

75-100% Impervious

30%
evapotranspiration
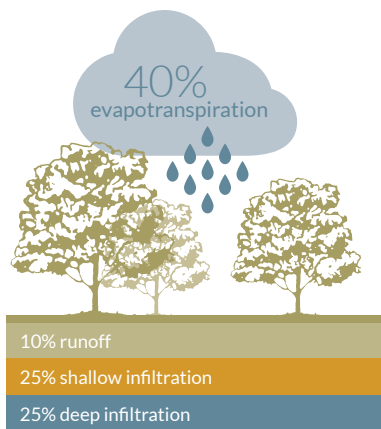
55% runoff
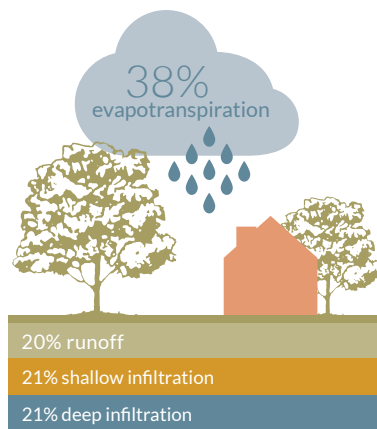
10% shallow infiltration
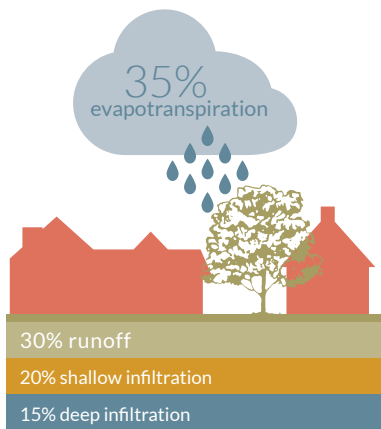
5% deep infiltration
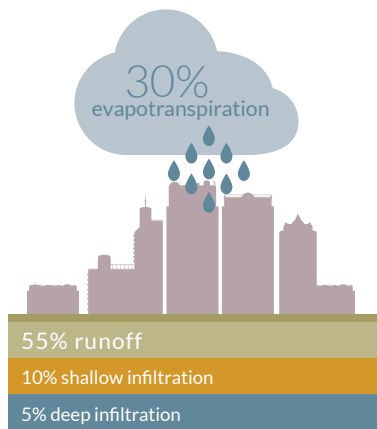
Figure 9.13   Effects of Imperviousness on Runoff and Infiltration

local atmospheric heating through the urban island heat effect. The strategies proposed allow the creation of a microclimate which can position this settlement from having a more arid result under conventional design to having a potentially subtropical micro- climate. This will have beneficial impacts both upstream and downstream. This concept is illustrated in Figure 9.13.

The design of symbiotic natural and urban systems suited to the topography and earth conditions, allows for the capture, targeting and reuse of available water and nutrients. The reservoir created in the valley is able to polish treated water naturally while it supports biodiversity and acts as a sponge for the seasonal rainfall. This water can be recycled for reuse through the urban system. This can significantly reduce the demand on the mains supply system.

9.5.4 Praxis 5 - Diverse Renewable Energy Sources

In most ecosystems, sunlight is absorbed and converted into usable forms of energy via photosynthesis. These usable forms of energy are carbon-based. In cities, however, there is an over reliance on fossil fuels for production of energy. As issues relating to rising fossil fuel prices, energy security, and climate change increase, renewable energy can play a key role in producing local, clean and inexhaustible energy from the sun for new cities in Africa. Renewable resources, over the long term, can provide energy at a known cost that is not susceptible to the vagaries of fossil fuel supply and demand. In addition to assuring urban energy security, investments in renewable energy can stimulate the growth of a very large new green economy sector. Could the creating of resource efficient cities, largely powered by renewable energy, help regenerate African urban economies and bring jobs back to our cities and if so, How? At **communiTgrow** we believe that this is possible. The Wescape example is used to illustrate some of the strategies that can be adopted to achieve this.

Our strategy at Wescape is to interconnect available renewable energy generators, and obtain a yield from a number, rather than seeking one single solution. Possible technologies to be investigated further during the development process could include:

- Non invasive and low water demanding naturalised Bamboo plantations, which will function to clean water run-off, create jobs, supply raw materials for processing and construction, but also supply material for biochar and carbon sequestration.
- Energy harvested from Plasma waste treatment; the resulting slag could be used to reduce cement usage by up to 50 percent.
- Methane harvesting from sewage and organic waste treatment, which has been used around the world to drive sewerage works, other industrial uses and internal bus systems.
- Biomass creation and composting, which will remove and recycle phosphates and nitrates from the system, obviating the need for energy intensive chemical fertilizers, and removing them from the water cycle.
- Solar PV that generate heat, power and chill, reducing the development's energy demand substantially.
- Intelligent design will allow for the inclusion of efficient energy solutions such as variable intensity public lighting and the use of next generation LED.
- Smart grids manage and reduce the energy demands substantially
- Walkable communities and local food as part of a larger system of local production and consumption reduce the urban energy demand substantially.

9.5.5 Praxis 6 - Diversity

The diversity of species and genes in ecological communities affects the functioning of these communities. Biologically diverse communities appear to be more productive (in terms of biomass production) than are less diverse communities, and they appear to be more stable in the face of disturbances or changes. They are also more resilient, with a higher adaptive capacity for change in response to outside pressures. Can designing diversity into a city also ensure resilience and increase the adaptive capacity for change?

At **communiTgrow** we believe that well designed cities and neighbourhoods offer a wide variety of lifestyle choices and experience to choose from. The **communiTgrow** City needs to provide the space and conditions for innovation

so that more adaptive capacities can be generated. Therefore, developing greenfields cities offer a greater opportunity to effect change than intervening in an existing city system. This diversity can be found in the built form, as the city provides a number of choices for its residents, whether it be neighbourhood area or house type. The diversity can also be found in the types of jobs created and the ability of residents to access these jobs through education and vocational training that allows for greater choice of employment.

Figure 9.14 shows a range of scales, typologies and system of connected green open space systems in the settlement.

Pocket park / playground

Treed street

Street courtyard

Neighbourhood square

Car court

Community square

Sportsfield

Common

Fingers

City park
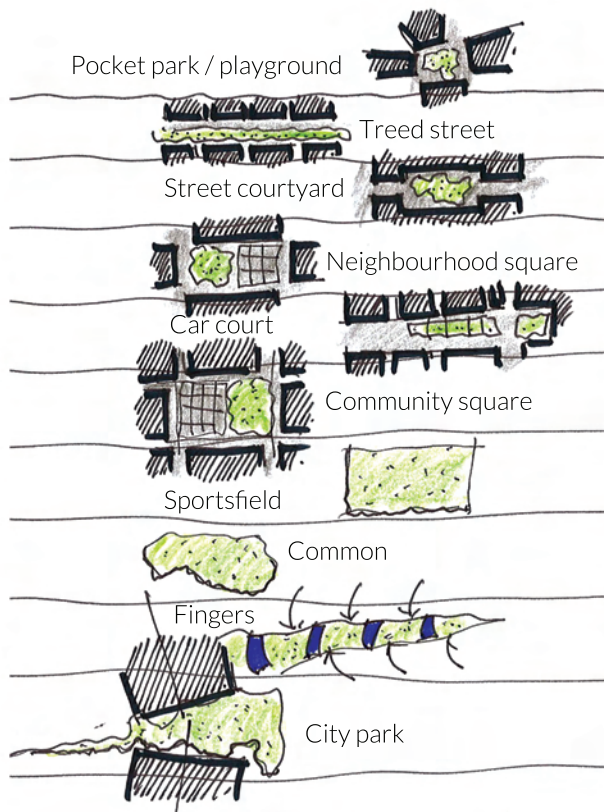
Figure 9.14 Green Space Typology

The diversity can also be found in the Governance structure which is both vertical and horizontal with constant feedback loops allowing citizens to participate in decisions that govern their lives. The levels of governance are addressed in chapter 5 (The Governance Pillar). Diversity and evolutionary culture has to be supported and managed such that it co-evolves into self organising systems at different scales. The levels of governance uses existing forms and links them to connect and regenerate the aspects of local economic systems, community building and regenerative place based environmental systems from the scale of the neighbourhood to the whole settlement and its city region.

The components of these have a spatial dimension that defines distinctive qualities of places and spaces. Figure 9.15 shows the elements that work together to create this hierarchy of places and spaces that offer the diversity and identity.

9.5.6 Praxis 7 - Partnerships, Networking and Communication

As noted above, life, did not take over the planet by combat but by cooperation, partnership, and networking. These partnerships too are essential to creating cities that can regenerate communities. At **communiTgrow**, we view partnerships between residents and urban players as essential to evolving together a new set of social behaviours and attitudes towards the city and the resources within it. We propose to do this through the governance structures that we have created (described in more detail in the governance pillar) and through the social facilities that we provide such as the intergenerational centres and education institutions. **communiTgrow** supports intentional and targeted community building through the institutional structure we are proposing and the type of governance we embed into the settlement.

An example of how this would be implemented is in the area of safety and security, which is a key element of creating sustainable cities in Africa. The cities would be designed for crime prevention through the design of streets prioritised for pedestrians and non-motorised vehicles, surveillance in key places, highly accessible and well used public spaces and places, but also through agreements with the community about responsibility for public areas. Instruments like neighbourhood watches and CIDs can be used at local levels to address security issues. Security can also be dealt differently at the different hierarchies in the nested system. The technologies would be connected to a smart grid.

1. Vegetable production
2. Primary school and
   Pre-school
3. High school with
   intergenerational centre
4. Neighbourhood park with
   local urban centre

Figure 9.15   Building Walkable Communities

Green system

Public Space and Street

Medium density system

High density system

Reports to track progress and measure and analyze outcomes in relationship to the larger aims of the project would be provided on an ongoing basis. This feedback loop allows for ongoing learning and course correction as we proceed with the development project. *i*CO, **communiTgrow**'s information, communication, and training company, plays a major role in acting as the eyes, ears and the disseminator of communication and information.

We invite partnerships with a common purpose that can add value to this process of regeneration. We need to find this behaviour change that is capable of creating the evolutionary change we seek, to create truly regenerative cities.

9.6 Conclusion

Regenerative cities can be realized through adopting three key strategic objectives. In the first instance it will be through building adaptive capacity (i.e. the capacity to leverage networked interdependencies between actors). This can be achieved through ensuring the functional diversification of value chain activities. It can also be achieved through creating an educated workforce who is able to rapidly adapt to different challenges and roles through local educations, skills transfer and development programmes. Secondly, achieving measurable sustainability requires that growth is decoupled from resource exploitation and environmental degradation[16]. This in turn requires that a systems level understanding of material flows through the city system is acquired, interpreted and factored into the integrated management of materials such as waste, water, nutrients, energy and so forth. In this respect, understanding how to employ feedbacks within the system, so that controls can be exercised to close loops and increase efficiencies, is of paramount importance. It will require measureable management systems that integrate between human activities and environmental systems. Finally, regenerative city-making connects needs to preferred outcomes and rapid demand to supply that regenerates people, the environment, and liveable places that restore the dignity of people.

There is a sense in which the regenerative pillar of the **communiTgrow** IP serves as a safety net, ensuring that nothing is lost or under-utilised in the settlement. The closed-loop approach is a vital framework in which every aspect, product and by-product of the system is considered valuable and re-usable.

We accept that a regenerative approach may be new to city-making. But, at the same time, we also acknowledge that regeneration is so fundamental and such a natural part of human existence, that we take it for granted. What **communiTgrow** has done is simply to remind us all of how nature works and how we can and should align ourselves with the natural systems and power of the universe so that more people can enjoy a healthier and wealthier life.

Chapter 10

Operational Implementation through the Pro-Frame

10.1 Purpose of Chapter

The purpose of this chapter is to explain how the six pillars are put into action. In this regard, the key instrument used to guide the implementation process is called the PRO-FRAME (i.e. the procedural framework).

10.2 Radical Pragmatism

communiTgrow continues to develop its comprehensive capability within a very broad-based approach to city-making. This is a dynamic process characterized by radical pragmatism. The only way to test whether the sterile theories conjured up in the ivory tower is practical and workable is through implementation. What is required is a radical pragmatism to ensure that the dynamic relationship between theory and practice is enriching and ultimately achieves the objectives desired.

The six pillars which outline the core principles, values and methodology of the **communiTgrow** approach constitute the IP of the company. While it draws on a wide range of theoretical approaches and considerations it is also informed by what works in practice. Anyone taking on the task of city-making in Africa, or anywhere in the world, will certainly need to be innovative, have great tenacity, be embedded in the work and in the local context and constantly play the tension inherent between radicalism and pragmatism.

While the procedural framework for implementation (PFI) that is outlined below is consistent with a typical project roll-out it goes further by including the full range of components of the **communiTgrow** design strategy and both the procedures and lobbying required to proceed through time. The project has to

be initiated (project initiation) and gain sufficient momentum for further actions to be taken. This will lead to pre-feasibility, feasibility, project development assembly, statutory applications, detail design and procurement, implementation and long term operation.

Roleplayers & Stakeholders	Work stage & timeframe	Primary activity	Outcomes	communiTgrow
Client	**0** Project initiation	Vision & intention	Partnership	Appointment
Client & communiTgrow in Common Purpose Partnership	**1** Pre-feasibility 6 - 8 weeks	Access viability	Pre-feasibility report Secure Finance Go / No Go decision	6 Pillars Analysis and Concept Design Process + Financial Model
	2 Feasibility 12 - 18 months		Feasibility report Secure Finance Go / No Go decision	
PRECONTRACT RISK FINANCE				
	3 Project component assembly 12 - 18 months	Design	Preliminary design of all aspects of the new City Economy, Built environment, Education, Health, Governance	Establish CORPCO and PROPCO
	4 Rezoning and EIA approvals 6 - 8 months		Approvals for Development Rights as required in local context	
PROJECT DEVELOPMENT FINANCE				
Client, Investors, communiTgrow, Authorities and Community in Common Purpose Partnership	**5** Design, documentation and tender 12 to 18 months	Delivery	Detailed design of all aspects of the new City Economy, Built environment, Education, Health, Governance	Design Supervision across all Pillars & Project Management of all processes Manage Training and Institutional Establishment (COMCO, SERVCO, RESCO, iCO)
	6 Implement training, infrastructure, buildings, institutions Establish pioneer community		Parallel implementation of training, building, institutional establishment and pioneer community of full construction team	
	7 Phase 1 - Community moves in Operate & manage all public facilities and institutions Further phases occupied	Operations & maintenance	Infrastructure & buildings complete Phase 1 community at work, live & play and all public and private facilities operational	Oversee all operational institutions and ensure good governance

Figure 10.1 **communiTgrow** *Procedural framework*

The accompanying Figure 10.1 identifies the full spectrum of typical activities expected at each of the 7 primary stages of the implementation procedure, the outcomes of each stage and the role of **communiTgrow** through the process. The procedural framework or "pro-frame" can be adapted to suit the specific requirements and context of each city-making initiative. Thus, Wescape will

have its own unique Pro-frame, for example. For ease of application, the ensuing discussion will outline the general (generic) framework rather than the unique project plan linked to a specific project.

10.3 The Seven Primary Work Stages

Figure 10.1 identifies seven primary work stages from pre-feasibility to "operate and manage". However, as also indicated in Figure 10.1, there is also a stage zero, albeit confined to initiation. Therefore, technically speaking, there are eight stages but we commonly refer to the Pro-frame as a seven stage process noting that a firm decision needs to be made before moving from stage zero to stage 1 of the process.

10.3.1 Stage 0: Project Initiation Stage

Stage zero may sound strange to some, but it is the stage of initiation and the first contact between the client and the service provider, in this case **communiTgrow**. This stage is not one which is "project managed" or predictable as it is the formative stage that may evolve from any number of sources and come together over time. It culminates in the specific action of commissioning a pre-feasibility to establish the high-level viability of the project. This in turn requires at least three things; vision, land and common purpose partnerships.

   Vision and Initiative: The *action* starts with someone or a group, somewhere, being prepared to stand up and say they want to initiate a city development. This may be a politician, an entrepreneur, a community leader or an activist. The person may be an individual or a leader of an organisation. If this person or organisation led by a particular person, take deliberate actions that gain momentum the project will be initiated. The source of the initial inspiration or idea that is articulated as the intention to start a new city or extend an existing settlement by a large proportion will be varied and relatively unpredictable. The fact that a need exists in a particular area does not necessarily lead to the creation of an **intentional** new settlement. A settlement may arise incrementally through many people converging on the same location and setting up their houses. This may lead to a city being made at some time but is not the intentional city **communiTgrow** is promoting.

communiTgrow interacts with the many divergent stakeholders that drive investments in city regions. These include government, business people, professional experts and people in communities. History shows us that investments by these agencies have been mostly divergent and often exclusionary.

communiTgrow believes that by bringing these divergent investments, together, local regenerative development potential can be realized. The triple bottom line of building social, economic and environmental capital can work together (i.e. in symbiosis) with the need for cities to access resources and energy.

The **communiTgrow** City is one for which its initiators have a vision of a place that is intended to rise above mere human survival and eking out an existence; a vision that sees people create a city in which they thrive and are able to invest in their own well being, the well-being of future generations and the environment around them.

Land: It goes without saying that a city needs land. However, the initiator may or may not have access to appropriate land. If they don't already have land, the initiator may have other attributes that enable her/him to secure land; such as access to capital, political or social influence. The person/organisation may choose to launch a land search as part of the pre-feasibility. However, there would have to be enough substance to the initiative – finance, political will, business intention – to justify launching a pre-feasibilty investigation.

The land would have to be of sufficient size to accommodate more than 25 000 households and all required facilities and, where possible, agricultural development or vegetable production. A density of 50 dwelling units per hectare (gross) is regarded as the minimum for a viable city form, regardless of context (i.e. minimum 500 hectares). How that density is achieved will vary from place to place. The land would also have to have access to a reliable source of water and would be best located a reasonable distance, not more than 20km, from existing logistical supply lines like road, rail or ship. It does not need to have access to any other infrastructure or energy source as all of those requirements can be met in the making of the city. A large proportion of the land should have a stable geology and slopes of not more than 10 percent. Preference would be given to using marginal agricultural land that is adjacent to good agricultural land so that the joint objectives of urban settlement and food security can be pursued in one locality.

Common Purpose Partnerships: Given the magnitude of the task of building a city it is not possible to proceed without the creation of a series of partnerships. **communiTgrow** calls these common purpose partnerships. They will be structured around the offerings that each partner has toward the common purpose of creating a regenerative city. It is the coherence of these partnerships, together with sufficient financial means and either land, or some clear plan to access land, that will enable the Initiative to begin the pre-feasibility phase.

The outcome of this stage of the procedural framework is a formal agreement between a number of parties, collectively or bilaterally, that secures a commitment to finance the pre-feasibility stage of the project, with the intention to finance, or seek finance, for the feasibility stage, if the project proves to be feasible.

- **Decision point before moving to next stage.**

10.3.2 Stage 1: Pre-Feasibility Stage

This stage is intended to assess the project at a high-level using a broad set of parameters, at a relatively low cost, to establish whether it is worth proceeding to a full feasibility.

Assessment: Undertake an environmental assessment for physical, resource, infrastructure, demographic, economic and political characteristics (potentials and risks) of the place or places (if more than one location is being considered). In all instances it is critical that local people contribute their knowledge and understanding of the place whether they are local farmers, professionals, teachers or residents. The design framework being used is the **communiTgrow** six pillars.

Initial Spatial Concept: Even at this early stage it is useful to conceive a broad conceptual layout of the city that relates to its context and identifies the main opportunities and constraints inherent in the location. The local people know the land and its characteristics and it is the role of the urban designer to listen to them and interpret their knowledge into city-making informants. The concept may change substantially as the project proceeds but the main features should be clear at this stage. The most critical data emanating from this concept will be the minimum land area available for urban development as this is critical to the financial feasibility model.

High Level Financial Feasibility using the communiTgrow Financial Model: With relatively few primary data inputs the **communiTgrow** model is designed to enable a rapid assessment of various scenarios for the development and to test the financial viability of each one. It also computes the cash flow and peak funding requirement based on a phased development approach. It will also give an indication of the number of jobs that could be created in various categories, which can be adjusted relative to one another.

Pre-Feasibility Report: The report will provide a strategic contextual overview of the information obtained in the environmental scan, the city concept and the results of the financial feasibility. It will highlight the opportunities and risks and recommend the viability or otherwise of the project. If positive, it will also confirm the physical location or locations for the project/s as a fundamental starting point for the feasibility stage of the procedure.

Form a Common Purpose Partnership: If the pre-feasibility report is positive and the role-players want to proceed, the first action is to form a common purpose partnership that binds in all critical role-players to the project. The partnership may not need to be one binding agreement but could be a "daisy-chain" of partnerships that are mutually beneficial. It is critical that this/these partnership/s is/are structured to empower the project initiator/s to drive the project, secure political support at relevant levels and financial resources sufficient to proceed to the next stage.

- **Decision point before moving to next stage.**

10.3.3 Stage 2: Feasibility Stage

During this phase the overarching parameters of the city-making project are mapped out. All issues that could possibly influence the physical form, economy, community and resource requirements of the city are investigated and factored into the design of the city. The design parameters are then computed through the **communiTgrow** Financial model to ensure the viability is maintained and then investment and political support is secured. During this process strategic engagement is sought with local community, professional and business people who would contribute to the understanding of the local context and play a significant role in the design and implementation. This is a potentially large employment and economic opportunity for the local area.

The activities carried out at this stage include the following:

Identify Local Partners: Scan local environment to secure local partners and experts in various fields.

Baseline Environmental Site Assessment: All natural systems, resource and infrastructure availability, quality and capacity information available is gathered and analysed.

Local Socio-Economic Assessment: The six pillar diagnostic matrices will be applied to demographic, local and national economy, building prices etc. to gain a good understanding of the human ecology of the area.

Establish Potential of Place through Regenerative Systems Process: Each place on the planet has its own unique characteristics. These range from geological to climate to human habitation and everything in between. The regenerative systems approach enables a cognitive mapping of these characteristics in such a way that the highest potential of the place can be ascertained such that the proposed development will benefit rather than degrade the local environment.

Legal and Statutory Assessment: All planning, land policy, development and built environment regulations that pertain to urban development in the chosen location will be assessed. This is done to ensure that the future processes are understood and to understand the legislative context within which the development will be formed.

Preliminary Conceptualization of the Six Pillars: A broad approach to the development within the **communiTgrow** six pillars will be conceptualized with reference to the concerns outlined in each of the pillars. The regenerative pillar frames the integration of the pillars. This ensures a comprehensive and holistic approach to the development.

Broad Urban Design Concept: Through the understanding of the local environmental characteristics of the area a broad urban design concept will be generated that will identify the carrying capacity of the land, a broad land use pattern, yields of residential, commercial and industrial land and infrastructure requirements. This activity will follow on from the *potential* of place process and result in the definition of a unique *purpose* of place. This will also form the basis for calculating data to be entered into the financial model.

Business Case Based on communiTgrow Financial Model: The **communiTgrow** financial model will be manipulated with further detailed data from the environmental studies and urban design concept to refine the feasibility and test various scenarios within the preferred direction identified in the pre-feasibility. Through this iterative process a preferred business case will be agreed with the client and other important stakeholders.

Political Support: Engagement with politicians, decision-makers and other role-players to secure support with sufficient certainty to move to next stage is required. This may require formal political processes and decisions, depending on specific context.

Investor Support and/or Commitment: Engagement with potential investors to secure sufficient support/commitment will be essential to move to the next stage. This, together with political support and statutory approvals are key to ensuring the project moves forward towards implementation.

Statutory Approvals: Depending on the planning context it may be necessary to seek high level statutory approvals in order to de-risk the project sufficiently to get financial support to proceed to next stage. For example, the Wescape project required an application to have the land included within the urban edge of Cape Town to enable potential Investors to gain sufficient confidence in the project to be able to commit investment.

Feasibility Report: A full feasibility report that is sufficient to secure financial investment and confidence of local and national authorities.

- **Decision point before moving to next stage.**

10.3.4 Stage 3: Project Component Assembly

Moving from feasibility to full project component assembly is a major step in the process. It assumes that all of the high level risk has been removed from the project and that the shape and form of all the components are largely defined. The subsequent environmental and planning applications and approvals would therefore impact on the final detail of the project but not on its overall design and viability. **communiTgrow** is expert at negotiating the process through to this stage and ensuring that the project stays true to its essence through the preparation and delivery stages.

The project component assembly stage entails defining in some detail all the components of the project across all six pillars, without becoming bogged down in the finer detail of implementation. Every aspect of the project is therefore planned out to enable proper resourcing of the detailed design and implementation stages. The staffing of this stage will not be very large but will consist of key, high level experts and professionals, **communiTgrow** and local, working intensely together to ensure complete coherence across all six pillars; economy and finance, homes/ housing, education, health, regenerative ecology and governance.

By the conclusion of this stage every aspect of the city project will be defined to enable coherent roll-out of the detailed design stage.

Detailed Environmental Assessment: During the feasibility stage an environmental scoping will have been completed. This would have identified issues that require further detailed assessment but which will not be high-level risks to the project. The detailed environmental assessment will therefore inform the detailed design of relevant parts of the project without fundamentally affecting the overall project viability. Feedback from the detailed assessment will be incorporated into the definition of project components and detailed design where required.

Detailed Assessment of Legal and Planning Requirements: Steering through the statutory approvals process can be a minefield and unexpected or unknown policies, documents, legal clauses, etc. can unsettle or prolong application processes and/or make them vulnerable to challenges in the future. Expert assessment on every aspect of the regulatory framework will be conducted to reduce the risk of legal difficulties and challenges. Given that large-scale city projects are not the order of the day in most of Africa it is likely that some innovation in approval processes and policy will be required.

Detailed Plans for Each Pillar: Plan each pillar of the **communiTgrow** design strategy in sufficient detail to support statutory applications and enable procurement and briefing of staff and consultants for each work-stream.

Urban Design Framework and Precinct Planning: While the urban design framework forms part of the regenerative ecology pillar it is important that it be advanced at this stage as the spatial layout of the settlement informs all of the other pillars to a significant degree. The urban design framework would at

least comprise of land use mix, housing options, cadastral layout responsive to natural land systems, movements systems including active mobility (NMT), public transport and private transport, urban infrastructure systems including water, wastewater, energy, communication grids, etc. and urban design guidelines.

Form Core Governance Structures: The institutional organisation of the project that progresses through the entire life of the future city begins with setting up the appropriate management structure at the core of the project. As the development process progresses, the institutional structure grows, people are trained and prepared for long term governance while fulfilling vital functions in the day to day project workstreams. It is at this stage that CORPCO, the overall holding company for the city, and PROPCO, the initial property holding company, will be formed, or if they already exist, their specific mandates and operations will be formalized.

Formulate Procurement Strategy: communiTgrow exists to create local solutions for local people to maximize local development. At every juncture in the project every attempt will be made to ensure a procurement strategy that is consistent with **communiTgrow**'s intention. The procurement strategy outlined in chapter 3 above is generic at this stage and will be adjusted to suit the local conditions in readiness for the detailed design and implementation stages.

The result of this stage of work in the project will be a comprehensive implementation framework for all pillars, within a clear spatial structure and with a robust institutional structure designed to facilitate all project activities and develop into the city management structure.

10.3.5 Stage 4: Statutory Applications

There is an overlap in timeframe between the completion of stage 3, project component assembly, and the beginning of the statutory applications. Since the application processes are usually very long, two to five years, it is important to start as soon as possible and generate sufficient information to fuel the process. As the process develops, more detailed information can be made available. Stage 3 will definitely precede stage 4 start-up by up to 6 months, depending on the country specific legislation. There will be an ongoing feedback loop between the definition of each pillar in stage 3, the statutory process in stage 4 and detailed design in stage 5.

The end of stage 4 will be marked by the land use planning approval and whatever other approvals are necessary to begin the first phase of the built environment implementation, together with whatever bulk infrastructure is required.

Environmental Impact Assessment: In South Africa there is very strong legislation governing environmental management and it is very broad and far reaching in its scope. In practice it has caused great difficulty in the planning process as the simultaneous processing of environmental and urban planning applications has become very difficult. This may or may not pertain in other countries.

communiTgrow is very supportive of strong environmental controls and measures but would seek to streamline and integrate the environmental and urban planning procedures so that the fundamental intention of the environmental legislation can be fully realized in the urban planning process. Detailed understanding of the country specific conditions and the engagement of local planners and environmental managers will be required to manage this process.

Land Use and Zoning Applications: Development rights are fundamental to the implementation of the project. Again legislation may differ from country to country but the essence of the land use planning policy and approach has a common heritage and **communiTgrow** has sufficient experience and knowledge to be able to engage local planners in a process that may be way beyond, in terms of scale and complexity, what has been experienced to date.

Any other Statutory Applications: Typically other legislation that requires applications and approvals may include urban land transport, water extraction and use, energy generation and distribution, education standards and regulations, health standards and regulations. Some of these may apply at a settlement level while others to a specific facility. The requirements will be assessed and adhered to in a manner that ensures minimum delays to the development process.

10.3.6 Stage 5: Establish Delivery Institutions, Detail Design and Procurement

The cornerstones for the successful implementation of the city project are the establishment of the Institutions that will develop and operate the various components of the city. They will be responsible for overseeing the programme design of each component, for the procurement of the physical infrastructure and human resources and for the training of the staff, initially and in an ongoing fashion.

CORPCO, the overall holding entity, and PROPCO, the property holding entity, will already have been formed earlier in the project. New institutions, RESCO, COMCO, SERVCO and *i*CO, will be responsible for defining the programmes and infrastructure required for each of their operations. The detailed design of each aspect of the infrastructure will be commissioned through PROPCO to ensure consistent design co-ordination.

The following activities and role-players will be required and managed through this stage of the delivery process:

Implement communiTgrow Procurement Strategy

- See Chapter 3 above for a detailed discussion on Procurement as practiced in the **communiTgrow** model.

Establish Management Companies and Training Academy

- RESCO – Housing Procurement and Management.
- SERVCO - Transport Operations, Health and Education Programmes, Urban Infrastructure, Public Facilities and Public Space Management.
- COMCO – Commercial Property Holding, Management and Enterprise Development.
- *i*CO – Information and Communications within the City.
- Urban Management Training Academy.

Health Systems Strategy and Procurement

- Health and Wellness Programme Design and Procurement.
- Health and Wellness Infrastructure Requirements.
- Health and Wellness Training Academy.

Education Systems Strategy and Procurement

- Education Programme Design and Procurement
- Education Infrastructure Requirements
- Education Training Academy

Urban Design and Planning

The Urban Design activity co-ordinates the physical design that is required for the engineering, landscape architecture and architecture disciplines. The urban design framework developed in stage 3 is in place and this will be realized through the detailed development of designs for:

- Streets and Public Spaces
- Open and Natural Spaces
- The relationship of buildings to Public Spaces of whatever kind.

Engineering

The design and procurement of the following systems and infrastructure facilities are required:

- Energy Generation and Water Management Systems and Facilities.
- Streets and Related Services.
- Public Transport Systems.
- Communications Systems.
- Service Agreements and Approvals as required by Authorities.

Landscape Architecture and Agriculture

The design and procurement of the following systems and facilities are required:

- Water Management Systems.

- Food Production and Livestock Management Enterprises.
- Open Space Systems.
- Street and Park Landscaping.

Architecture

The design and procurement of the following facilities are required:

- Public Facilities – Administrative Offices, Schools, Clinics, Sports facilities, Community Centres.
- Housing – Single Residential to Medium Rise Apartments.
- Commercial – Retail and Office.
- Light Industrial Sheds and Warehouses and Purpose Built Facilities where required.
- Building Plan Approvals for All Buildings.

Initiate Local Enterprises

COMCO will be responsible for managing the initiation of local enterprises:

- Construction Related Manufacture and Supply.
- Retail Suppliers of All Categories.
- Education and Training Enterprises.
- Security, Home Services and Maintenance Enterprises.
- Green Innovation and Technology Enterprises.
- Food processing and Supply Enterprises.
- Other Enterprises.

With the exception of the establishment of institutions, most activities of this stage continue through all phases of the project. The institutions will grow and mature while design and procurement will proceed from one phase to the next. In the case of WesCape in Cape Town this may go on for duration of 20 or more years. However, a critical requirement is that each phase is planned and implemented as a whole settlement with all services and facilities required for a healthy community to thrive.

10.3.7 Stage 6: Implementation

The detailed implementation sequence for a city will depend a lot on the local context and the overall character of the place. However, it is a given that people will be engaged early on in preparing the land for development. It is therefore likely that planting and livestock activities will be the first to be established to prepare the way for coming urban development.

The following activities will be part of the implementation of the project:

Land Preparation: Pioneer plantations of food, biomass and building materials on land not being used for early phases to secure water, soil and recharge capacities of land will be established. Livestock herds and flocks will also be part of this early phase of land preparation and scaled according to carrying capacity and economic viability.

Pioneer Village: The small farmers engaged in the agricultural activity will form a pioneer village (if there isn't already one in existence). If necessary, temporary houses will be built while the first 3 storey apartment blocks are under construction. This village will include the first provision shop, a school, a clinic and other community facilities. If necessary a bus shuttle service to the nearest town will be provided to establish the principal of public transport. All the ecologically appropriate infrastructure and systems such as biogas, rainwater harvesting, solar power, etc. will be implemented on a small scale to establish living patterns which will be elaborated and evolved as the settlement develops. As the larger urban development progresses more and more people fulfilling a broader and broader range of activities will join the village as it increases fairly rapidly in size.

Personal Development: Life skills training and personal development training will be made available for all workers and their families. This will be in addition to the formal training academies to be established in the education, health, construction and urban management sectors.

Bulk Infrastructure Construction: Bulk infrastructure construction will be phased where possible in accordance with long term roll-out of development. The primary concern will be water supply and treatment while energy will be based on local generation as far as possible.

Building Materials Production Enterprises: As far as possible building materials must be grown or made as part of the creation of the city. This establishes job opportunities and long term businesses right from the start.

Infrastructure Services for Phase 1: Within the overall infrastructure plan, phase 1 services will be installed. A key consideration will be the training and development of skills and the creation for local enterprises that will continue to implement services for subsequent phases and enable local people to benefit from jobs and owning businesses.

Facilities and Houses for Phase 1: Once the services are well under way and building materials are available, building of houses, apartments and facilities can begin. People who are building the buildings may well be the first occupiers of the homes, which they then pay for from their income as builders.

Commercial Premises: Commercial premises for retail, office and industrial activities will be built simultaneously as soon as demand is secured. These activities then provide jobs for people who then occupy homes as they become available.

This ongoing interrelated building process is repeated for subsequent phases of the development, elaborating and evolving the diversity and complexity of the city all the time.

10.3.8 Stage 7: Governance - Management, Operations and Maintenance

CORPCO will be the governing authority for the settlement. It will be established by the Client and **communiTgrow** and over time will become representative of the residents and enterprise owners of the city.

COMCO, RESCO, SERVCO and *i*CO, under the governing umbrella of CORPCO, will be responsible for managing everything that is required to facilitate the full functioning and participation of all enterprises and individuals as a developing community.

PROPCO will be responsible for the ongoing physical infrastructure development and the maintenance of all physical infrastructure and will contract operational maintenance to the various operating entities who make use of facilities like schools, halls, clinics, sports grounds, waste treatment plants etc. Local enterprises will be employed to undertake maintenance tasks on an ongoing basis.

Life skills and personal development training for growing communities will be made available to the community to instill and promote a culture of learning and growth as a continuous process and to promote integrity, respect and responsibility as the basis for a healthy community.

Overall Financial Administration is the Responsibility of CORPCO: While the revenue streams will flow through COMCO, RESCO, SERVCO and *i*CO they will be collected and accounted for centrally to ensure that the Investors are taken care of and the social services are supported. It will be critical to instill a culture of payment for services from the start and to make it easy for people to fulfill their obligations on a regular basis.

Governance of the settlement will evolve continuously and how it is integrated into the administrative and political life of its local context will be worked out along the way.

10.4 Conclusion

The making of **communiTgrow** cities is essentially a fast track organic city development in which the community develops in parallel with its physical environment and its productive systems. These eight procedural steps, while generic, may require adaptation in different contexts, and it is robust enough to carry through the key objectives of **communiTgrow** into new city developments.

Part Four

Next Steps

Chapter 11

Embracing the African Challenge

11.1 The Growing Giant

The ambitious aim of this book was to communicate the **communiTgrow** response to the profound challenge presented by rapid African urbanization with particular reference to the need for housing and employment. We have embraced these challenges within our own South African context where the housing backlog alone is currently around 2.3 million units and the unemployment rate around 25 percent. The unofficial figures place unemployment and the housing needs at a much higher percentage.

A golden thread running through the book is the realization that over the next four decades and at current rates of migration, Africa will need to create at least another 800 new (secondary) cities to accommodate the current influx of people to the urban areas. As explained in the foregoing chapters, our response to this challenge is in the form of our unique IP expressed in the form of a six pillar approach to city building accompanied by a comprehensive financial model. We hold the view that an integrated and holistic approach is required if we want to move away from the dominant image of African cities as overburdened and overcrowded.

It is worth highlighting the observations (dare we say findings) of the well respected Institute for Security Studies (ISS) who recently published their analysis and forecasts relative to African Futures 2050[1] – a forecast of issues that will face Africa over the next four decades. For ease of reference and as a way of contextualising the **communiTgrow** approach to African city building, it will be useful to extract some key observations pertinent to the topic under discussion in this book, namely the building of sustainable African cities. The ISS report, African Futures 2050, poignantly alerts us as follows:

"The youthful momentum of Africa's growing population means that, by 2050, almost one in four of the world's people will live in Africa" (page xii)

"By 2025, the majority of Africans will be living in towns and cities and the continent will cease to be predominantly rural. (page xii)

"By 2050, its [Africa's] share of global population will reach 23 per cent and it will be considerably larger than either China or India." (page 13)

"The total size of the African workforce will exceed that of China before 2030 and India before 2035 – and continue to grow thereafter. Africa already has more middle-class household (with an income of more than $20 000) than does India." (page 15)

"By 2030, the [African] continent's top 18 cities could have a combined spending power of $1.3 trillion. Industries related to consumers (such as retail, telecommunications and banking), infrastructure development, agriculture and resources would be worth $2.6 trillion in annual revenues by 2020." (page 17)

If the above forecasts are only 50 percent accurate, there is no doubt that African urbanisation presents the biggest and most exciting opportunity for Africa to shift its image and status from being characterised as a place of poverty to being a place of prosperous growth. In this regard, it is absolutely critical that Africa rapidly finds a way to create places for its growing population - places and spaces to live, work and play. We have used this book to explain our view; that 21st century African urbanisation must be characterised by more than just the provisioning of a house – a place to live. What is needed is a deliberate, conscious and well thought out programme of action to build community and ensure that place, dignity and belonging remain the key elements that inform our African identity and prosperity. In order to achieve this we require a holistic, integrated and regenerative approach. We accept that the provision of a housing unit is the key catalyst. But in order to create long term sustainability for a community, a viable economy needs to be created alongside the provision of housing. It is our view, based on our six pillar approach, that a viable economy will emerge and be capable of sustaining livelihoods within the newly created city/settlement.

We have taken a bold step through the publication of this book to introduce ourselves, communiTgrow, as a specialist property development company with skills to design and build African cities. Our approach goes beyond the traditional

approach of only building houses. We believe that an entire city infrastructure and a supporting institutional framework must be built to support and sustain the influx of people to the city. Our business model and offer to clients is that we provide this full turnkey solution. In consultation with our clients and maximizing local people and talent, we will design and build the entire city – from scratch if necessary.

11.2 Salient Features of our Approach

At the risk of oversimplifying the complex discussions in the foregoing chapters, let us conclude with a summary of the eight salient features of the **communiTgrow** approach to African city building.

First, **communiTgrow** aims to establish communities that are socially, economically, environmentally, politically and technologically (infrastructure) sustainable in the long-term through an innovative model for public-private partnerships for large-scale urban development. As an intrinsic feature of its strategy, **communiTgrow** develops a practical approach to unpacking and addressing the transitions that the urban residents who will reside in these cities need to undergo, and identifies the mechanisms that are needed to catalyse and support this transition in practical terms.

Second, the development process that is outlined in this book is aimed at achieving these goals, and this book outlines how **communiTgrow** can play a role in tackling new, large scale, short to medium-term builds that have long-term growth potential for local scale economies of scale that are resilient to global linkages (especially in terms of resources scarcities, price fluctuations, and global financial speculation) through building and establishing the capacities for flourishing and thriving socio-economies, neighbourhoods and communities. It essentially involves establishing wholly new urban reform zones that are set up in public-private partnerships that are based on the understanding that a portion of business profits will be leveraged for cross-funding services and social development functions within the community that the business is located .

Third, our approach promotes and constitutes a form of decentralised governance, where both the social and business realms adopt mutual

responsibility for their continued socio-economic growth and sustainability. The settlement is managed through an institutional structure where officials and citizens participate in urban development from a position of tangible economic and local political power with common purpose and smart objectives. The community eventually holds a share of the development, and it is managed through elected officials, yielding a considerable source of security and leverage to the community, so that it can participate in urban development from a position of real economic and local political power. In this way, participation ceases to be a series of endless talk-shops where participation constitutes expensive efforts to legitimise "master plans" that have already been hatched.

Fourth, where environmental sustainability is concerned, decoupling economic growth from resource exploitation and ecological degradation is required in order to ensure long-term growth. The benefit to business is in terms of boosting the long term security of business through improved stability and increased growth of consumer markets. Decoupling at local scales can be achieved through establishing a variety of value chains, while at the same time creating more employment opportunities through green technologies and renewable energies technologies than through conventional infrastructures and technologies, and at the skilled and semi-skilled levels of employment, where currently a dearth of employment opportunities persists, exacerbated by the recent financial crisis. Moreover, the settlement is designed from the watershed up to support urban ecological integrity and productive ecosystem capacity within the city.

Fifth, the **communiTgrow** approach is being implemented in the Western Cape of South Africa, where a range of local, contextual considerations must be made in order to generate an appropriate strategy for development. It provides a valuable test of the **communiTgrow** framework, and will constitute the first site where the principles that underlie the pillars and processes that underlie the approach are developed and refined. **communiTgrow** itself, instantiated at first as a think-tank, is now poised to adopt a critical role as a strategic intermediary, especially in respect of the need to generate new green-fields, city-scale developments. By acting in partnership with government, civil society and skilled and committed professionals and businesses, **communiTgrow** will play a critical role in steering integration within the Wescape development, and will serve as a locus for learning and engendering shared understanding about the project.

Sixth, generating livelihoods, increasing accessibility and mobility, and ensuring sustainable growth is required in order to ensure urban liveability, while more creative and innovative participatory-based urban strategies and frameworks are required to guarantee that inclusive urban development is ensured. As such, urban planning and design must accommodate multiple, mutually competing factors, and find creative and innovative strategies for integrating development. This is especially the case in Africa, where drastic inequalities characterise the urban socio-economic fabric, and where segregation and uncontrolled development persists in the form of slums and informal settlements. Many slums and informal settlements have intractable conditions, being located on low-quality land which is often unsuitable for development in the first place. The highly unequal development patterns in African cities constitute a considerable challenge for urban planners and designers, as well the public and private sector actors who carry out urban developments. Skewed spatio-economic growth patterns characterise African cities[2], and development responses that can address this are required.

Seventh, **communiTgrow** is a response to the challenges of urbanisation in Africa. In other words, it is intended to act as a strategic intermediary – partnership with government, civil society and business – in conceptualising, planning and implementing new large-scale, green-fields urban developments in Africa, and in Sub-Saharan and Southern Africa in particular, and especially along development corridors that connect cities and regions. The urban development model that is proposed in this book is being implemented by **communiTgrow** in the Wescape development (along one of its major development corridors that stretches up along the West Coast of Africa and constitutes a trans-regional development corridor), where **communiTgrow** effectively acts as a strategic intermediary, and Wescape serves as a test-bed for large scale integrated urban housing, service delivery and economic development that emphasises stimulating local scale economies to boost employment and economic production, or service delivery activities and consumption.

Lastly, the **communiTgrow** approach is based on a robust financial model that integrates between business interests, community interests and urban governance from the city-scale, to the urban quarter, walk-able community, urban village to urban quarter scales. It integrates across a range of service provisions that enable both business growth, and the growth of communities within the area.

Our proposals are not mutually exclusive from current systems of governance, and so may be integrated with them over time, but it does offer unique features that distinguish it from the status quo. In particular, the way in which public private partnerships is conceived and formulated is focused on the mutual enhancement and sustainability of both business and community agendas. It constitutes a bold new approach to the urban development challenge that faces newly emerging small to intermediate African cities, and many that are yet to emerge in the new developmental African urban landscape, across and within regions and the globe.

11.3 Join Us and Dream Big

With this book **communiTgrow** presents itself as a partner and a solutions finder to stubborn stains on an African canvass dominated by the migration of people into the urban space. We dream big and we have taken the risk to allow our words on these pages to explain our core business and intent. We trust that this book provides enough information and inspiration to contract the services of **communiTgrow** as we dream of converting the African urban landscape away from the threat of squalor, poverty and socio-cultural alienation into a place where people can live, work and play – a place of belonging and where human dignity and sustainable wealth are as predictable as the fact that the sun will rise again in the morning. We invite you to join us and dream big.

Arise Africa! Arise!

Afterword

My motivation to explain the simplicity of designing, building and setting up the management systems of a **communiTgrow** African sustainable city, was to ensure that any group could be guided to making a difference in their community, town, city, country, continent and by so doing, changethe world.

Injustice and inequality runs rampant across the world and a constant companion, particularly on the African continent which seems to have an inordinate share of misery. So, what do we do when we feel that we can no longer tolerate the injustices of the world? Resorting to violence is not a solution. What we are meant to do is to empower ourselves and others to rid the world of selfishness and greed. It is for us as individuals to work as a team to become a community that cares for those less fortunate and helpless.

When confronted with selfishness and greed, it is our responsibility to understand the fear and ignorance underlying these acts, that we may dismantle them. The world will always have scared, insecure people who are prone to being easily swayed by those with selfish agendas ready to indoctrinate others into thinking that violence and intimidation are the only means to security.

We, in Africa, must demand better from those who continue to adopt violence and intimidation, those who have an extractionist mind-set about Africa. Unfortunately, these include many of our African and world leaders in

government and business. They continue to rape Africa and steal her resources sending it overseas at the cost of not uplifting and enriching the disenfranchised Africans who are homeless, starving and sickly.

It has been estimated that US$50 billion is illegally exported from Africa each year. I beseech you to have the courage to hold your country's business leaders and government officials to account for their fearful and selfish agendas. Work with **communiTgrow** and use your country's need for housing, education, healthcare and jobs to build new **communiTgrow** cities. Take back Africa from those that steal her wealth and send it overseas and from those who seek to empower themselves only.

We will gladly share the complex frameworks and financial modelling required for developing a **communiTgrow** city in your country. Our calling and mission is to see a stronger Africa comprised of communities of people who care enough to create a sustainable future for our 2 billion strong continent.

David Lee Pearson

Founder

Endnotes

Preface

1. UN-Habitat, 2010. *State of the African Cities 2010: Governance, Inequality and Urban Land Markets.* Nairobi: UNEP.
2. Watson, V., 2009. 'The Planned City Sweeps the Poor Away ...' Urban Planning and the 21st Century. *Progress in Planning.* 72, p.151-193.

How to Read this Book

1. We acknowledge the contribution of Dr Camaren Peter as the primary writer of chapter one. We also thank him for helping stitch together the fabric of the book, thereby assisting the editorial team create order out of the many disparate pieces of writing which ultimately made up the book in its current form.

Chapter 1

1. In reference to:
   a. Ehrlich, P.R., & Levin, S.A., 2005. *The Evolution of Norms, Public Library of Science Biology*, 6, p.943-948, and,
   b. Stern, P.C., 2000. Toward a Coherent Theory of Environmentally Significant Behaviour, *Journal of Social Issues*, 5 (3), p.407-424.
2. Swilling, M. (forthcoming). Africa 2050: Growth, Resource Use & Sustainability.
3. In reference to:
   a. Fischer-Kowalski, M. & Swilling, M. (2010). Decoupling and Sustainable Resource Management: Scoping the Challenges, UNEP International Panel for Sustainable Resource Management.
   b. Krausmann, F., et al., 2008. The Global Socio-Metabolic Transition: Past and Present Metabolic Profiles and their Futures, Journal of Industrial Ecology, 12 (5/6), p.637-656.
   c. McKinsey Global Institute, 2011. Resource Revolution: Meeting the world's Energy, Materials, Food and Water needs. McKinsey.
4. UN-Habitat, 2010. *State of the African Cities 2010: Governance, Inequality and Urban Land Markets.* Nairobi: UNEP.
5. Malhotra, Y.,1999. *Toward a Knowledge Ecology for Organisational White-Waters, Knowledge Management*, 2 (6), p.18-21.
6. John, L., 2012. *Secondary Cities in South Africa: The start of a conversation - The background report*, South African Cities Network (SACNET).
7. Watson, V., 2009. 'The Planned City Sweeps the Poor Away ...' Urban Planning and the 21st Century. *Progress in Planning.* 72, p.151-193.
8. ibid.

9.   Swilling, M. & Annecke, E., 2012. *Just Transitions: Explorations of Sustainability in an Unfair World*. Cape Town, Juta.

10. United Nations, 2006. *Global Environmental Outlook 3.* Nairobi, United Nations Environment Programme.

11. ibid.

12. References:

     a.   Swyngedouw, E. and Kaika, M., 2000. *The Environment of the City – Or the Urbanization of Nature.* [In: Bridge, G. & S Watson, S. (Eds.), A Companion to the City, Oxford: Blackwell.]

     b.   Swilling, M. et al., 2010. *Cities, Decoupling and Urban Infrastructures: Scoping the Challenges - Decoupling Working Group.* International Panel for Resource Management. CDUI

     c.   Swilling, and Annecke, *Just Transitions: Explorations of Sustainability in an Unfair World*.

13. ibid.

14. Watson. 'The Planned City Sweeps the Poor Away …' Urban Planning and the 21st Century. p.151-193.

15. Swilling, and Annecke, *Just Transitions: Explorations of Sustainability in an Unfair World*.

16. Swilling. Africa 2050: Growth, Resource Use & Sustainability.

17. Swilling, and Annecke, *Just Transitions: Explorations of Sustainability in an Unfair World*.

18. For reference

     a.   UN-Habitat, 2011. *State of the World's Cities 2010/11: Bridging the Urban Divide.* United Nations Human Settlements Programme, UN HABITAT, London, Sterling, VA.

     b.   UN-Habitat. State of the African Cities.

19. UN-Habitat, 2008. State of the African Cities Report: 2008a. p5. In:

     a.   Swilling. Africa 2050: Growth, Resource Use & Sustainability.

20. Swilling, and Annecke, *Just Transitions: Explorations of Sustainability in an Unfair World*.

21. John. *Secondary Cities in South Africa: The start of a conversation - The background report.*

22. Ibid.

23. Krausmann, F., et al., 2009. Growth in Global Materials Use, GDP and Population during the 20th Century. *Ecological Economics,* 68 (10), p.2696-2705.

24. Fischer-Kowalski and Swilling. Decoupling and Sustainable Resource Management: Scoping the Challenges.

25. Fine. B. & Rustomjee, Z., 1996. *The Political Economy of South Africa - From Minerals-Energy Complex to Industrialization.* Colorado, Westview Press.

26. Swilling, and Annecke, *Just Transitions: Explorations of Sustainability in an Unfair World*.

27. UN-Habitat, 2011. *State of the World's Cities 2010/11: Bridging the Urban Divide.*

28. Ibid.

29. UN-Habitat. State of the African Cities.

30. Friedman, T.L., 2009. *Hot, Flat and Crowded: Why the world needs a green revolution – and how we can renew our global future.* Penguin, 2009.

31. International Energy Agency, 2009. *Key World Energy Statistics 2009*, Paris: OECD.

32. Lumsden, T.G., et al., 2009. Evaluation of potential changes in hydrologically relevant statistics of rainfall in Southern Africa under conditions of climate change. *Water SA*. 35 (5), p. 639-656

33. Worldwatch, 2008. *Green Jobs: Towards Decent Work in a Sustainable Low-Carbon World – Policy Messages and Main Findings for Decision-Makers*, UNEP, ILO, OIE, ITUC.

34. Ibid.

35. Bloomberg New Energy Finance (2011). Clean Energy Investment Storms to New Record in 2010, [Press Release] Available: http://bnef.com/PressReleases/view/134.

36. Boeing, 2006. *Annual Company Report*, [online] Available at: http://www.boeing.com/companyoffices/financial/finreports/annual/05annualreport/05AR_links.pdf

37. Peter, C., 2012. Sustainable, Resource Efficient Cities in the 21st Century: Making it Happen! UNEP.

38. Hodson, M., and Marvin, S., 2009a. Urban Ecological Security: A New Urban Paradigm? *International Journal of Urban and Regional Research*. 33 (1), p.193–215.

39. Muller, M., 2007. *Adapting to climate change: water management for urban resilience, Environment & Urbanization*, 19 (1), p.99-113, International Institute for Environment and Development.

40. In reference to:
    a.   UN-Habitat. State of the African Cities.
    b.   UN-Habitat, 2011. *State of the World's Cities 2010/11: Bridging the Urban Divide.*

41. UN-Habitat. State of the African Cities.

42. In reference to:
    a.   UN-Habitat, 2011. *State of the World's Cities 2010/11: Bridging the Urban Divide.*
    b.   UN-Habitat. State of the African Cities.

43. Swilling, M. et al., 2011. *Growing Greener Cities - Discussion Paper for UN HABITAT*. Growing Greener Cities.

44. In reference to:
    a.   Krausmann. The Global Socio-Metabolic Transition: Past and Present Metabolic Profiles and their Futures. p.637-656.
    b.   Swilling, and Annecke, *Just Transitions: Explorations of Sustainability in an Unfair World.*

45. Swilling. Africa 2050: Growth, Resource Use & Sustainability.

46. UN-Habitat, 2011. *State of the World's Cities 2010/11: Bridging the Urban Divide.*

47. Pieterse, E., 2011a. Recasting Urban Sustainability in the South. *LSE cities.* [online] Available at http://lsecities.net/media/objects/articles/rethinking-african-urbanism-from-the-slum , last accessed 17/9/12.

48. Simone, A., 2002. *Principles and realities of urban governance in Africa*, UN-HABITAT

49. Hodson, M. and Marvin, S., 2009b. Cities Mediating Technological Transitions: Understanding Visions, Intermediation and Consequences. *Technology Analysis and Strategic Management.* 21 (4), p.515–534

50. In reference to:

    a. Pieterse, E., 2011b. Recasting Urban Sustainability in the South. *Development*, 54 (3), p.309-316.

    b. Swilling, and Annecke, *Just Transitions: Explorations of Sustainability in an Unfair World*.

51. Watson. 'The Planned City Sweeps the Poor Away …' Urban Planning and the 21st Century. p.151-193.

52. Fuller, B. & Romer, P., 2012. *Success and the City: How Charter Cities Could Transform the Developing World*. MacDonald-Laurier Institute Publication

53. Potts, D., 2012. *Whatever Happened to Africa's Rapid Urbanisation?* Africa Research Institute, Counterpoints Series.

54. World Bank, 2001. *World Bank Regional Reports: Africa Region.* [online] Available at http://web.mit.edu/urbanupgrading/upgrading/case-examples/overview-africa/regional-overview.html

Chapter 2

1. Central Intelligence Agency, 2012. *The World Factbook.* [online] Available at https://www.cia.gov/library/publications/the-world-factbook/geos/sf.html

2. ibid

3. Misselhorn, M., (n.d.). *A New Response to Informal Settlements.* [online] Available at http://www.afesis.org.za/Sustainable-Settlements-Articles/a-new-response-to-informal-settlements

4. Un Habitat. *State of the World's Cities 2010/2011: Bridging The Urban Divide.*

5. John. *Secondary Cities in South Africa: The start of a conversation - The background report.*

6. Department of Economic and Human Development, 2009. *Review of the Economic Development Strategy*. City of Cape Town.

7. Department of Environmental Affairs and Development Planning, 2003. *Green Paper: A Settlement Framework for Western Cape Province*, 2003. PGWC, Pretoria.

8. Van der Merwe, I. J. 2004. *Growth Potential of Towns in the Western Cape.* Centre For Geographical Analysis: University Of Stellenbosch

9. Preiss A.B. and Shapiro, Inc. 2002. *CRCOG Best Practices Manual Chapter 5. Transit Oriented Development Factsheet.* CRCOG. Available at: www.crcog.org/publications/.../TCSP/Ch05_FactSheet_TOD.pdf

10. South African Cities Network, 2006. *State of the Cities Report*. Pretoria, South Africa

11. Watson. 'The Planned City Sweeps the Poor Away …' Urban Planning and the 21st Century. p.151-193.

12. Department of Housing, 2009. *Inclusionary Housing Discussion document: Western Cape Provincial Spatial Development Framework*. PGWC. Pretoria.

13. Financial and Fiscal Commission, 2011. Report on the Public Hearings on Housing Finance B*uilding an Inclusionary Housing Market: Shifting the Paradigm for Housing Delivery in South Africa. p13*

14. ibid

15. Urban Landmark Case Studies, 2011. *Strategies to help poor people access urban land markets.* [Online] Available http://www.urbanlandmark.org.za/research/x18.php[19 September 2012]

16. Financial and Fiscal Commission. Report on the Public Hearings on Housing Finance B*uilding an Inclusionary Housing Market: Shifting the Paradigm for Housing Delivery in South Africa. p13*

17. Ibid.

18. Department of Housing, 2005. *Provincial Budgets and Expenditure Reviews: Chapter 6: Housing. 2005/06 – 2011/12*. PGWC, Pretoria.

19. Schwab, K. 2011. *The Global Competitiveness Report 2011-2012*. World Economic Forum

20. Hopkins, J. 2006. *Social Housing in South Africa*. The Southern African Housing Foundation

21. *The Constitution of the Republic of South Africa*, 1996. Chapter 2, S26. Pretoria, South Africa.

22. Financial and Fiscal Commission. Report on the Public Hearings on Housing Finance B*uilding an Inclusionary Housing Market: Shifting the Paradigm for Housing Delivery in South Africa. p.13*.

23. Battersby, J. D. 1988. *Blacks Pressing a Rent Boycott in South Africa*. Special to the New York Times. [press release] [Accessed 22 February 1988]

24. Sebugwawo, M. (n.d.). *Service Delivery Protests in South Africa: Lessons for Municipalities.*

25. ibid

26. Bertelsmann Stiftung, BTI .2012. *South Africa Country Report*. Gütersloh: Bertelsmann Stiftung, 2012

27. Ibid

28. Ibid

29. Schwabe, C. 2004. *Fact Sheet: Poverty in South Africa*. Human Sciences Research Council. [Online]. Available http://www.sarpn.org.za/documents/d0000990. [19 September 2012]

30. Ibid.

31. Altman, M. 2008. *Identifying appropriate interventions to support the transition from schooling to workplace*. Human Sciences Research Council

32. Schwab. *The Global Competitiveness Report 2011-2012*.

33. Ramdass, K. 2009. *The challenges facing higher education in South Africa*: University of Johannesburg

34. Altman. *Identifying appropriate interventions to support the transition from schooling to workplace.*

35. Ibid

36. Fine. *The Political Economy of South Africa - From Minerals-Energy Complex to Industrialization.*

37. McKinsey Global Institute, 2010. *Lions on the move: the progress and potential of African economies.* [pdf] Available at http://www.mckinsey.com/insights/mgi/research/productivity_competitiveness_and_growth/lions_on_the_move

38. Mwakasonda, S. A. 2007. *South Africa Low Carbon Scenario Report*. Energy Research Centre. University of Cape Town.

39. Ibid

40. Mail and Guardian, 2010. *Zille says ANC stands to make R1bn from Medupi.* [online] Available at: http://www.mg.co.za/article/2010-04-03-zille-says-anc-stands-to-make-r1bn-from-medupi [Accessed 03 Apr 2010]

41. Eskom, (n.d.). *Coal Power.* [online] Available at www.eskom.co.za/c/article/200/coal-power/ *[Accessed 21 September 2012]*

42. Hartnady, Chris J.H.. South Africa's diminishing coal reserves. *S. Afr. j. sci.* [online]. 2010.H(9-10), p.1-5.

43. Mail and Guardian, 2012. *Maize Crisis Looms in SA.* [online] Available at http://mg.co.za/article/2012-08-17-maize-crisis-looms-in-sa [Accessed 21 September 2012]

44. World Bank, 2012. World Bank Data by Country . [Online]. Available at http://data.worldbank.org/indicator/AG.LND.ARBL.ZS [Accessed 21 September 2012]

45. Molewa 28 February 2012 SA facing a water crisis [Online]. Availablehttp://www.news24.com/SouthAfrica/News/SA-facing-a-water-crisis-Molewa-20120228 [20 September 2012]

46. Storm Warning: SA's looming water crisis. 2010. *Environment: South Africa.* [Online]. Available at http://www.environment.co.za/environmental-issues-news/page-21.html [Accessed 21 September 2012]

47. Paul J. Oberholster and Peter J. Ashton. 2008. *State of the Nation Report An Overview of the Current Status of Water Quality and Eutrophication in South African Rivers and Reservoirs.*

48. Sanchiahs Symposium, 2009. *14th Sanchiahs Symposium: The Water Crisis in South Africa.* 21-23 September 2009

49. Cape Higher Education Consortium, 2012. *Future Cape Contextual Report- Discussion paper by ACC & Sustainability Institute.* Stellenbosch

50. Healthcare in South Africa, 2012. *South Africa Info.* [Online]. Available at http://www.southafrica.info/about/health/health.htm#ixzz24jRwfUiK [Accessed 20 September 2012]

51. Ibid

52. UNAIDS, 2011. UNAIDS World AIDS Day Report 2011. [press release] 21 November 2011, Available at: http://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2011/november/20111121wad2011report/

Chapter 3

1. See especially Chapter 2 and Chapter 6 where the South African housing crisis is discussed in detail.

2. Social Housing Foundation, 2010. *Social Housing Trends.* [online] Available at www.shf.org.za

3. See Chapter 1 above for an in-depth discussion on the urbanization challenges facing Africa.

4. The **communiTgrow** definition of a turnkey solution is where the developer takes full responsibility for the entire development which includes the building of the "house" and all the required and supporting city/settlement infrastructure. The six pillar strategy encapsulates the full extent of the turnkey solution. Significantly, we point out that "turnkey" does not describe an approach defined as a one-size-fits-all solution. Rather, the **communiTgrow** approach is premised on a customised or tailored approach to suit different contexts, which may vary widely across Africa.

5. See Chapter 4 for further discussion on the content of the institutional framework and organisational structures that will govern the settlement including the number of elected representatives and the roles of the various subsidiary companies. The Community Development Trust will be set up long similar principles to those which guide the organisational framework of a Friendly Society.

Chapter 4

1. Please see Chapters 1 and 2 for a greater elaboration of the forecasted growth for African cities

2. Storper, M., 2004. Society, Community, and Economic Development. *Studies in Comparative International Development.* p.14.

3. Choe, K., and Roberts, B., 2011. *Competitive Cities for the 21st Century: Cluster-based Local Economic Development.* Urban Development Series, Asian Development Bank

4. At this point in the discussion we emphasize that there is a difference between the corporate business structure of **communiTgrow** (Pty) Ltd as a specialist consulting company. Furthermore, the composition of the Board of Directors for **communiTgrow** (Pty) Ltd is discussed in subsequent sections.

5. Isenberg, D., 2011. *How to Foment an Entrepreneurial Revolution.* Babson Entrepreneurship Ecosystem Project. p. 7.

Chapter 5

1. The "failed" societies analysed by Diamond include traditional and modern case studies as well as those under threat in modern times. The traditional societies analysed include the Greenland Norse which collapsed due to the effects of climate change, environmental damage, loss of trading partners, irrational reluctance to eat fish, hostile neighbors and most unwillingness to adapt in the face of social collapse; Easter Island, a society that collapsed entirely due to environmental damage; the Polynesians of Pitcairn Island which collapsed due to environmental damage and loss of trading partners; the Anasazi of southwestern North America which did not survive due to environmental damage and climate change; the Maya of Central America which collapsed due to environmental damage, climate change, and hostile neighbours. The modern societies analysed include the collapse into genocide of Rwanda, caused in part by overpopulation; the failure of Haiti compared with the relative success of its neighbour on Hispaniola, the Dominican Republic, and the problems facing a developing nation, China and the problems facing a first world nation such as Australia. Diamond also discusses three past success stories within the traditional society framework which include the tiny Pacific island of Tikopia, the agricultural success of central new Guinea and the Tokugawa era forest management in Japan. (Diamond, 2005)

2. Diamond, J., 2005. *Collapse: How Societies Choose to Fail or Succeed.* [online] Available at http://www.newyorker.com/archive/2005/01/03/050103crbo_books?currentPage=all

3. Muller. *Adapting to climate change: water management for urban resilience*, Environment & Urbanization. p.99-113

4. Ostrom, Elinor. Coping with Tragedies of the Commons. 1998. Workshop in Political Theory and Policy Analysis Center for the Study of Institutions, Population, and Environmental Change Indiana University, Bloomington.

5. The specialization goes one step further and becomes geo-politically specific as indicated by a recent collection of essays published by Cawthra, G. (ed.) (2009), *African Security Governance: Emerging Issues* (Wits University Press, Johannesburg). African regions are clustered and receive specific attention within that context.

6. In some instances organisations such as the United Nations have established discipline-specific governance watchdog bodies. An example of this is the UNEP – United Nations Environmental Program which has a specific focus on **International Environmental Governance Reform. (**United Nations Environmental Program. *International Environmental Governance Reform.* [online] Available at http://www.unep.org/environmentalgovernance/)

7. Chuter, D., 2011. *Governing and Managing the Defense Sector*. Institute for Security Studies. Pretoria.

8. The World Bank website, under the heading "WHAT IS GOVERNANCE", provides a useful thumbnail sketch of the definitional debate that is worth repeating here at length as it provides the quickest orientation to the topic.

   a. **Governance**
      i. "The traditions and institutions by which authority in a country is exercised" – Kaufman et al
      ii. The way "… power is exercised through a country's economic, political, and social institutions." (World Bank. What is Governance? Arriving at a Common Understanding of "Governance". [online] Available at http://web. worldbank.org/WBSITE/EXTERNAL/COUNTRIES/MENAEXT/EXTMNAR EGTOPGOVERNANCE/0,,contentMDK:20513159~pagePK:34004173~pi PK:34003707~theSitePK:497024,00.html)
      iii. "The exercise of economic, political, and administrative authority to manage a country's affairs at all levels. It comprises mechanisms, processes, and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations, and mediate their differences.". (United Nations Development Program (n.d.)**.** *Governance for Sustainable Human Development: A UNDP Policy document.* [online] Available at http://mirror.undp.org/magnet/policy/glossary.html)

   b. **Dimensions of governance**
      i. "Fundamental aspects of governance" are: graft, rule of law, and government effectiveness. Other dimensions are: voice and accountability, political instability and violence, and regulatory burden. (Kaufman, D., et al.**, 1999.** *Governance   Matters: WorldBank Research Working Paper No.2196***.** [online] Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_ id=188568)
      ii. Property rights and rule-based governance; the quality of budgetary & financial management; the efficiency of revenue mobilization; the efficiency of public expenditures; and transparency, accountability and corruption. (World Bank**.** *CPIA public sector management and institutions cluster average.* [online] Available at http://data.worldbank.org/indicator/ IQ.CPA.PUBS.XQ)

   c. **Good governance**
      i. It is "… among other things participatory, transparent and accountable. It is also effective and equitable. And it promotes the rule of law." – UNDP.
      ii. "…encompasses the role of public authorities in establishing the environment in which economic operators function and in determining the distribution of benefits as well as the relationship between the

ruler and the ruled." (Organisation For Economic Co-operation and development, 1995. *Participatory Development and Good Governance*. Development Co-operation Guideline Series. OECD. [online] Available at http://www.oecd.org/dac/governanceanddevelopment/31857685.pdf)

    iii.   It is "... epitomized by predictable, open and enlightened policy making; a bureaucracy imbued with a professional ethos; an executive arm of government accountable for its actions; and a strong civil society participating in public affairs; and all behaving under the rule of law." (World Bank, 1994. *Governance: The World Bank's Experience***.** [online] Available at http://www.google.co.za/url?s a=t&rct=j&q=&esrc=s&frm=1 &source=web&cd=1&ved=0CB8QFjAA&url=http %3A%2F%2Fwww-wds. worldbank.org%2Fservlet%2FWDSContentServer%2FWDSP%2FIB%2F1 994%2F05%2F01%2F000009265_3970716142854%2FRendered%2FP DF%2Fmulti0page.pdf&ei=CGZtUNKbHoOXhQeNYHYBg&usg=AFQjCN Hig0_v0Mdes93vuVLiV_ReUYfy3A)

    iv.   Mechanisms for assuring good governance have three key elements: Internal rules and restraints (for example, internal accounting and auditing systems, independence of the judiciary and the central bank, civil service and budgeting rules); *"Voice" and partnership* (for example, public-private deliberation councils, and service delivery surveys to solicit client feedback); and *Competition* (for example, competitive social service delivery, private participation in infrastructure, alternative dispute resolution mechanisms, and outright privatization of certain market-driven activities). (Swiss National Finance Foundation, 1997. *Causes of and Solutions to Social Conflicts in Contexts of Weak Public Institutions or State Fragility*. Swiss Programme for Research on Global Issues for Development. [online] Available at http://www.snf.ch/nfp/r4d/SiteCollectionDocuments/ r4d-ap_social-conflict.pdf)

9.   Fuller, B & Romer, P., 2012. *Success and the City: How Charter Cities Could Transform the Developing World*. MacDonald-Laurier Institute Publication

10.   Cape Higher Education Consortium. *Future Cape Contextual Report- Discussion paper by ACC & Sustainability Institute.*

11.   ibid, p.14

12.   ibid, p.28

13.   ibid, p.34

Chapter 6

1.   Van Kerkhoff, L., and Lebel, L., 2006. Linking Knowledge and Action for Sustainable Development. *Annual Review of Environmental Resources*. 31. p.445-477.

2.   UN Habitat, 2010. The State of African Cities 2010: Governance, Inequality and Urban Land Markets. Nairobi: United Nations Environment Program (UNEP)

3.   Smit, W. 2006. *International Trends and Good Practices in Housing: Some lessons for South African Housing Policy*. Development Action Group

4.   Department of Housing, 1994. *WhitePaper: A New Housing Policy and Strategy for South Africa*. South Africa, Pretoria. [online] Available at 1994http://www.info.gov.za/ whitepapers/1994/housing.htm#3.

Chapter 7

1. Senge, P. M., 1990. *The Fifth Discipline: The art and practice of the learning organisation*, London: Random House

2. *World Vision South Africa.* Early Childhood Development (ECD). [online] Available at http://www.   worldvision.co.za/core-issues/early-childhood-development

   ECD Context in South Africa:

   Facts that impact on child development in SA: 6.5 million children are under 6 years of age. 84% of these have no access to any form of ECD. Under 5 mortality rate has risen to 42%. HIV&AIDS continues to destroy livelihoods at family and community level. Women account for 55% of people living with HIV&AIDS. HIV prevalence in informal urban settlements is almost twice as high as formal urban areas (17.6% vs 9.1%). 39% of households are headed by single women and these households have half the income in comparison with male-headed households. 1 out of 10 children in 2000 were found to be severely malnourished and 1 in 3 children suffer from Vitamin A deficiency. The Child Support Grant has been shown to have a positive impact on child nutrition, growth and hunger. Even though the Western Cape is one of the better resourced provinces we could assume that the situation as follows would not be better – 60% of children did not achieve the reading and numeracy levels set in the national curriculum and 15% could not read and calculate at the most basic level. Of the 54 503 working in ECD sites only 12% are qualified, leaving 88% requiring additional training. (23% have no training at all.) International research reveals that "regardless of cultural distinction or level of development, it is that pre-school education for children greatly improves their chances of subsequent success in school. In particular, early childhood education can make a critical difference in the lives of disadvantaged children".

3. The Washington Post, 2010. *Goodlad on school reform: Are we ignoring lessons of the last 50 years?* The Answer Sheet. [online] Available at http://voices.washingtonpost.com/answer-sheet/john-goodlad/goodlad-straight-talk-about-ou.html

4. Goodlad, J.I., 1979. *What Schools are For: Stimulating Necessary Dialogue for the Reconstruction of Schools in our Democr*acy. Washington, USA.

5. MUNFW (Model United Nations of the Far West), 2000. *50th Annual Session on Equity and Justice in the 21st Century.* Tempa, AZ. United Nations.

6. UNESCO, 2010. *Education for All Global Monitoring Report 2010: Reaching the marginalized.* Regional fact sheet: Sub-Saharan Africa.

7. Ibid.

8. PIRLS, 2006. *Chapter 2: Performance at the PIRLS 2006 International Benchmarks.* [online] Available at http://timss.bc.edu/PDF/P06_IR_Ch2.pdf

9. Kgobe. "*Inching Along.*"

10. Townsend, T. and Bates, R., (eds) 2007. *Handbook of Teacher Education: Globalisation, Standards and Professionalism in Times of Change.* Springer. Dordrecht: Netherlands.

11. UNESCO Institute for Statistics, 2012. *Adult and Youth Literacy: Global Trends in Gender Parity.* UIS Fact Sheet. (2)

12. SA Institute for Race Relations, 2011

13. Africa Progress Panel, 2011. *Africa Progress Panel highlights continent's economic recovery.* [online] Available at http://www.africaprogresspanel.org/en/pressroom/press-releases/africa-progress-panel-highlights-continents-economic-recovery

14. Kania, J., and Kramer, M., 2011. Collective Impact. Stanford Social Innovation Review: Winter 2011 [online] Available at http://ssireview.org/articles

Chapter 8

1. World Health Organisation, 1986. *The Ottawa Charter*. [online] Available at http://www.who.int/healthpromotion/conferences/previous/ottawa/en/

2. Ibid

3. Baker, E.A. et al., 2008. *Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health*. Atlanta: U.S. Department of Health and Human Services, Centres for Disease Control and Prevention; 2008.

4. Hunter, D. J. and Killoran, A. 2004. *Tackling health inequalities: Turning policy into practice?* Health Development Agency: UK

5. Macfarlane, S. et al., 2000. Public Health in Developing Countries. *The Lancet*. Vol 356.

6. Hunter and Killoran. *Tackling health inequalities: Turning policy into practice?*

7. Briggs, D., 2003. Environmental pollution and the global burden of disease. *British Medical Bulletin*, Volume 68 (1) p.1-24.

8. DFT, 2003. *Making the Connections: Final Report on Transport and Social Exclusion*. Social Exclusion Unit, UK

9. United Nations, 2012. *Report of the Secretary-General: Causes of conflict and the promotion of durable peace and sustainable development in Africa*. General Assembly Security Council. [pdf] Available at http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N12/445/19/PDF/N1244519.pdf?OpenElement

10. Hunter and Killoran. *Tackling health inequalities: turning policy into practice?*

11. Dooris, M., 2005. Healthy Settings: Challenges to generating evidence of effectiveness. *HPI*. Volume 21 (1). p. 55

12. NewsMedical, 2006. *Africa's health problems are getting worse says the WHO*. [online] Available at http://www.news-medical.net/news/2006/11/20/21060.aspx [Accessed 20 November 2006]

13. Ibid

14. United Nations, 2010. *International decade for action: Water for Life 2005-2015*. [online] Available at http://www.un.org/waterforlifedecade/sanitation.shtml

15. NewsMedical, 2006. *Africa's health problems are getting worse says the WHO*

16. Africa's Regional Health Development Department Health Workers Needed: Poor Left Without Care in Africa's Rural Areas [online] Available http://go.worldbank.org/IUY3J2M0A0

17. Ibid

18. NewsMedical, 2006. *Africa's health problems are getting worse says the WHO*

19. Juma, J., 2006. *Teething Problems in Africa's Healthcare*, [online] Available at http://www.africanexecutive.com/modules/magazine/articles.php?article=699

20. Packer, C. 2007. Globalisation and the Cross-Border flow of Health Workers

21. World Health Organisation, 2011. *World health statistics 2011*. WHO

22. De Vré, R. et al., 2010. *Closing the Research and Development Gap in African Healthcare.* Mckinsley Quarterly

23. Kerry, C. and Thom, A. ed., 2011. *The State of the Nations Health in Opinion Pieces by South African Thought Leaders.* Penguin Forum

24. Ibid.

25. Ibid.

26. UNAIDS, 2010. *UNAIDS report on the global AIDS epidemic 2010.* [online] Available at http://www.unaids.org/globalreport/global_report.htm

27. *The Constitution of the Republic of South Africa*, 1996. Pretoria, South Africa

28. Kerry and Thom. The State of the Nations Health in Opinion Pieces by South African Thought Leaders

29. Ibid.

30. Merkel, S and Otai, J. 2007. *Meeting the Health Needs of the Urban Poor in African Informal Settlements: Best Practices and Lessons Learned.* Urban Institute: Washington

31. Ibid

32. Ibid

33. Environmental Health Project (EHP), 2004. *Improving the Health of the Urban Poor: Learning from USAID Experience.* EHP Strategic Report 12. U.S. Agency for International Development: Washington, D.C

34. Bill and Melinda Gates Foundation, 2012. *Water, Sanitation and Hygiene.* Global Development Foundation

35. Department of Water Affairs and Forestry, 1996. *National Sanitation Policy.* Republic of South Africa

36. Environmental Health Project. *Improving the Health of the Urban Poor: Learning from USAID Experience.*

37. UNAIDS, 2009. *UNAIDS report on the global AIDS epidemic 2009.* [online] Available at http://www.unaids.org/globalreport/global_report.htm

38. Addiction Action Campaign, 2011. *Alcohol statistics in South Africa.* [online] Available at http://www.theaac.co.za

39. World Health Organisation, 2012. *What is a health promoting school?* [online] Available at http://www.who.int/

Chapter 9

1. United Nations, 1987. *Development and International Co-operation: Environment A/42/427. Our Common Future: Report of the World Commission on Environment and Development* [online] Available at http://www.un-documents.net/wced-ocf.htm

2. Fischer-Kowalski and Swilling. Decoupling and Sustainable Resource Management: Scoping the Challenges.

3. a. *The Regenesis Group.* [online] Available at http://www.regenesisgroup.com/articles.php

   b. *The Blue Economy.* Cases of the Blue Economy Innovations. The Open Source from the Source. [online] Available at www.TheBlueEconomy.org

4. a.   Girardet, H. (n.d.). *Regenerative City Report: A road map to a 'regenerative' urban development.* [online] Available at www.worldfuturecouncil.org

    b.   Girardet, H. (n.d.). *Regenerative Cities.* World Future Council and Hafen City University Hamburg (HCU) Commission on Cities and Climate Change

5. Orr, D. W. 1994. *Earth in mind: On education, environment, and the human prospect.* Covelo, CA: Island Press.

6. Ecology is the scientific study of the interactions between organisms and their environment.

7. Carmel, Y. and Naveh, Z., 2002. The paradign of landscapes and the paradign of ecosystmes – Implications for land planning and management in the Mediterranean Region. *Journal of Mediterranean Ecology.* 3.

8. The mutual sustainability of economic, environmental and social systems is generally required in order to realize sustainable development agendas. Where urban sustainability is concerned, Pieterse (2011) adds physical (infrastructure) and political stability to the aforementioned three sectors.

9. Vasishth, A., and Sloane, D., 2000. *Returning To Ecology: An Ecosystem Approach To Understanding The City.* CSUN

10. Stone, M., 2004. *Centre for ecoliteracy: Ecological Principles.* [online] Available at http://www.ecoliteracy.org/essays/ecological-principles

11. Girardet, H., 2004 and 2008. *Cities, People, Planet – Urban Development and Climate Change.* Wiley, London

12. Lyle J.T., 1994. *Regenerative design for sustainable development.* John Wiley & Sons, Hoboken

13. Girardet. Cities, People, Planet – Urban Development and Climate Change.

14. Knight, F., 2011. *Agricultural Baseline Assessment conducted for Amber Falcon Properties.* AgriInformatics, Durbanville. South Africa.

15. CSIRO, (n.d.). *BioChar.* [pdf] CSIRO. Available at: http://www.csiro.au/resources/Biochar-Factsheet.html

16. Fischer-Kowalski and Swilling. Decoupling and Sustainable Resource Management: Scoping the Challenges.

Chapter 11

1. Cilliers, J., et al, 2011. African Futures 2050: The Next Forty Years. Institute for Security Studies, Monograph 175, Pretoria, South Africa.

2. John. *Secondary Cities in South Africa: The start of a conversation - The background report.*

Acronyms

ABE	Adult-Based Education
ADB	Asian Development Bank
AFDB	African Development Bank
ANC	African National Congress
BANC	Basic Antenatal National Care
BBBEE	Broad-Based Black Economic Empowerment
BEE	Black Economic Empowerment
BPO	Business Process Outsourcing
CBO	Community-Based Organization
CDT	Community Development Trust
CDUI	Cities, Decoupling and urban Infrastructures
CHEC	Children's Health Environmental Coalition
CTOP	Choice on Termination of Pregnancy
DEADP	Department of Environmental Affairs & Development Planning
ECB	European Central Development Bank
ECD	Early Childhood Development
EHS	Environmental Health Sciences
EIA	Environmental Impact Assessment
FET	Further Education & Training
FIFA	Fédération Internationale de Football Association
FLISP	Finance-Linked Individual Subsidy Programme
GDP	Gross Domestic Profit
GGP	Gross Geographic Product
GHG	Green House Gasses
GIZ	German Agency for International Cooperation

HCU	Hamburg Commission on Cities and Climate Change
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council
ICT	Information & Communication Technology
IGC	Inter-Generational Centres
IMF	International Monetary Fund
IP	Intellectual Property
IPCC	Intergovernmental Panel on Climate Change
LED	Light-Emitting Diode
M&E	Monitoring & Evaluation
MEC	Mineral Energy Complex
MOI	Memorandum of Interest
NEPAD	The New Partnership for Africa's Development
NGO	Non-Governmental Organization
NHFC	National Housing Finance Corporation
NHI	National Health Insurance
NMT	Non-Motorized Transport
NPK	Denotes chemical elements nitrogen (N), phosphorus (P), and potassium (K) commonly used in agricultural fertilizers.
OECD	Organisation for Economic Cooperation & Development
OIE	Office of International Education
PFI	Procedural Framework for Implementation
PIA	Procurement Impact Assessment
PIRLS	Progress in International Reading Literacy Study
PMS	Procurement Management System
PPIP	Public-Private Investment Program
PPIT	Pillar Planning & Implementation Tool

PPP	Public-Private Partnership
PV	Photovoltaic
R&D	Research & Development
RDP	Reconstruction & Development Programme
RFP	Request for Proposal
SACNET	South African Cities Network
SACNET	Secure Automatic Communication Network
SADB	South African Development Bank
SDF	Spatial Development Framework
SHRA	Social Housing Regulatory Authority
SMART	Specific, Measurable, Attainable, Relevant, Timeous
SMME	Small, Medium & Micro Enterprise
SPV	Special Purpose Vehicle
STD	Sexually Transmitted Disease
TB	Tuberculosis
TPAS	Target Procurement Access
TPMS	Target Procurement Management System
TPSP	Target Procurement Support
UCT	University of Cape Town
UN	United Nations
UNESCO	United Nations Educational, Scientific & Cultural Organization
USAID	United States Agency for International Development
USD	United States Dollar
UWC	University of Western Cape
WEF	World Economic Forum
WHC	Water Holding Capacity
WHO	World Health Organization

Glossary

Clustered services
The provision of services and products in groups for ease of access.

Communal Development
Development shared by all the members of a community.

Community
The context within which people share and own the responsibility for their economic, social, environmental and institutional well-being.

Comprehensive education system
An approach to life-long education, making provision for traditional schooling, skills-upgrading and training for all ages in society.

Cradle-to-cradle Design
An emerging concept of cradle-to-cradle design aims to create buildings, communities and systems that generate wholly positive effects on human and environmental health (Dept. of Environment and Tourism, 2009).

GAP housing
"GAP housing" is a term that describes the shortfall, or 'gap' in the market between residential units supplied by the state (which cost R100 000 and less) and houses delivered by the private sector (which are not less than R250 000). The gap housing market comprises people who typically earn between R3 500 and R15 000 per month, which is too little to enable them to participate in the private property market, yet too much to qualify for state assistance.

Holistic
Holistic theory refers to the importance of the whole and the interdependence of its parts i.e. bringing together community, ecology, economy, programmes, operations and governance.

Inter-Generational Centers
Multi-purpose community centers which are attached to different service nodes (education, health, or business) and act as extensions of the services provided in that node.

LSM

Living Standards Measure Indicator.

Multi-modal access routes

Transport thoroughfares allowing access for more than 2 forms of transportation, inclusive of pedestrians, vehicles, and cycles.

Multi-class communities

Communities where families of different income groups reside.

Public-Private Partnerships

These are a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies.

Regenerative

Refers to a dynamic/evolutionary ongoing process of regenerative solutions which bring new life to an area or institution. Within the context of development, refers to three aspects, namely: Specific (grown from local nature and local culture of place); Holistic (integrating people and ecological systems for mutual benefit); Bold (manifesting a vision of people as contributing members of nature's family); Evolving urban, natural, economic, environmental and community systems to support healthy lifestyles.

Sustainability

Refers to conserving an ecological balance by avoiding depletion of natural resources.

WCEDP Programme

The Western Cape Economic Development Partnership (EDP) Programme was established to lead, coordinate and drive the economic growth, development and inclusion agenda for Cape Town and the Western Cape.

Whole-System

Integration of all disciplines of property development and strategic economic thinking interwoven into the urban fabric of settlements underpinned by social, economic and environmental systems.

Table of Figures

Bibliography

Abrahams, G. and Berrisford, S. 2012. Addressing the crisis of Planning Law Reform in South Africa. South African Cities Network: Pretoria

Addiction Action Campaign, 2011. *Alcohol statistics in South Africa.* [online] Available at http://www.theaac.co.za

Africa Progress Panel, 2011. *Africa Progress Panel highlights continent's economic recovery.* [online] Available at http://www.africaprogresspanel.org/en/pressroom/press-releases/africa-progress-panel-highlights-continents-economic-recovery

Ajibogun, O.D., (n.d.) *Approaches to Governance and Development in 21st Century.* [online] Available at http://www.scribd.com/doc/16574668/Approaches-to-Governance-and-Development-in-21st-Century

Altman, M. 2008. *Identifying appropriate interventions to support the transition from schooling to workplace.* HSRC

Anon, 2011. Global Growth 2011. *The World Bank.* [online] Available at http://web.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/EXTGBLPROSPECTSAPRIL/0,,contentMDK:22932830~menuPK:659166~pagePK:2470434~piPK:4977459~theSitePK:659149,00.html> [Accessed 26 January 2012]

Anon, 2012. No rosy picture for co-operatives, *Government Communication and Information System,* [Online] Available at www.buanews.gov.za/news/12/12022113151001. [Accessed 20 Feb 2012]

Background Note: South Africa, *Bureau of African Affairs* [online]. Available at http://www.state.gov/r/pa/ei/bgn/2898.htm [Accessed 9 February 2012]

Baker, E.A. et al., 2008. *Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health.* Atlanta: U.S. Department of Health and Human Services, Centres for Disease Control and Prevention; 2008

Battersby, J. D. 1988. *Blacks Pressing a Rent Boycott in South Africa.* Special to the New York Times. Press Release. 22 February 1988

Bertelsmann Stiftung BTI, 2012. *South Africa Country Report.* Gütersloh: Bertelsmann Stiftung

Bill and Melinda Gates Foundation, 2012. *Water, Sanitation and Hygiene.* Global Development Foundation

Bloomberg New Energy Finance, 2011. *Clean Energy Investment Storms to New Record in 2010,* [press release] 11 January 2011, Available at: http://bnef.com/PressReleases/view/134

Boeing, 2006. *Annual Company Report.* [online] Available at: http://www.boeing.com/companyoffices/financial/finreports/annual/05annualreport/05AR_links.pdf

Briggs, D., 2003. Environmental pollution and the global burden of disease. *British Medical Bulletin,* Volume 68 (1) p.1-24

Cape Higher Education Consortium, 2012. *Future Cape Contextual Report- Discussion paper by ACC & Sustainability Institute.* Stellenbosch

Carmel, Y. and Naveh, Z., 2002. The paradigm of landscapes and the paradign of ecosystmes – Implications for land planning and management in the Mediterranean Region. *Journal of Mediterranean Ecology.* 3.

Cawthra, G. 2009. *African Security Governance: Emerging Issues.* Wits University Press, Johannesburg.

Central Intelligence Agency, 2012. *The World Factbook.* [online] Available at https://www.cia.gov/library/publications/the-world-factbook/geos/sf.html

Choe, K., and Roberts, B., 2011. *Competitive Cities for the 21st Century: Cluster-based Local Economic Development.* Urban Development Series, Asian Development Bank

Chuter, D., 2011. *Governing and Managing the Defense Sector.* Institute for Security Studies. Pretoria.

Cilliers, J., et al, 2011. *African Futures 2050: The Next Forty Years.* Institute for Security Studies, Monograph 175, Pretoria, South Africa

City of Cape Town Economic Development Analysis, (n.d.). City of Cape Town, Cape Town.

Collins, J.P. et al., 2000. A New Urban Ecology: Modeling Human Communities as Integrated Parts of Ecosystems Poses Special Problems for the Development and Testing of Ecological Theory. *American Scientist,* 88, p.416-425.

CSIRO, (n.d.). *BioChar.* [pdf] CSIRO. Available at: http://www.csiro.au/resources/Biochar-Factsheet.html

De Vré, R. et al., 2010. *Closing the Research and Development Gap in African Healthcare.* Mckinsley Quarterly

Department of Economic and Human Development, 2009. *Review of the Economic Development Strategy.* City of Cape Town.

Department of Environment and Tourism, 2009. *Green Building in South Africa: Emerging Trends: 2009.* Pretoria. [online] Available at www.kss.co.za/Portals/0/4_%20Green_Building_in_South_Africa_Emerging_Trends_GyzKE.pdf [Accessed 10 February 2012].

Department of Environmental Affairs and Development Planning, 2003. *Green Paper: A Settlement Framework for Western Cape Province,* 2003. PGWC, Pretoria.

Department of Housing, 1994. *WhitePaper: A New Housing Policy and Strategy for South Africa.* South Africa, Pretoria. [online] Available at 1994http://www.info.gov.za/whitepapers/1994/housing.htm#3.

Department of Housing, 2005. *Provincial Budgets and Expenditure Reviews: Chapter 6: Housing. 2005/06 – 2011/12.* PGWC, Pretoria.

Department of Water Affairs and Forestry, 1996. *National Sanitation Policy.* Republic of South Africa

Department of Housing, 2009. *Inclusionary Housing Discussion document: Western Cape Provincial Spatial Development Framework.* PGWC. Pretoria.

DFT, 2003. *Making the Connections: Final Report on Transport and Social Exclusion*. Social Exclusion Unit, UK

Diamond, J., 2005. *Collapse: How Societies Choose to Fail or Succeed*. [online] Available at http://www.newyorker.com/archive/2005/01/03/050103crbo_books?currentPage=all

Dooris, M., 2005. Healthy Settings: Challenges to generating evidence of effectiveness. *HPI*. Volume 21 (1). p. 55

Ehrlich, P.R., and Levin, S.A., 2005. The Evolution of Norms. *Public Library of Science Biology*. 6, p.943-948

Environmental Health Project (EHP), 2004. *Improving the Health of the Urban Poor: Learning from USAID Experience.* EHP Strategic Report 12. U.S. Agency for International Development: Washington, D.C

Eskom, (n.d.). *Coal Power*. [online] Available at www.eskom.co.za/c/article/200/coal-power/ [Accessed 21 September 2012]

Financial and Fiscal Commission, 2011. *Building an Inclusionary Housing Market*: Shifting the Paradigm for Housing Delivery in South Africa. [pdf] Midrand: FFC. Available at www.ffc.co.za/index.php/component/docman/doc_download/1

Fine, B., and Rustomjee, Z., 1996. *The Political Economy of South Africa - From Minerals - Energy Complex to Industialisation.* Colorado, Westview Press

Fischer-Kowalski, M. & Swilling, M. (2010). *Decoupling and Sustainable Resource Management: Scoping the Challenges.* UNEP International Panel for Sustainable Resource Management

Friedman, T. L. 2009. *Hot, Flat and Crowded: Why the world needs a green revolution – and how we can renew our global future.* Penguin, 2009

Fuller, B. & Romer, P. 2012. *Success and the City: How Charter Cities Could Transform the Developing World.* MacDonald-Laurier Institute Publication

Girardet, H. (n.d.) *Regenerative Cities*. World Future Council and Hafen City University, Hamburg (HCU) Commission on Cities and Climate Change

Girardet, H. (n.d.). *Regenerative City Report: A road map to a 'regenerative' urban development.* [online] Available at www.worldfuturecouncil.org

Girardet, H., 2004 and 2008. *Cities, People, Planet – Urban Development and Climate Change*. Wiley, London

Goodlad, J.I., 1979. *What Schools are For: Stimulating Necessary Dialogue for the Reconstruction of Schools in our Democr*acy. Washington, USA

Hartnady, C.J.H., 2010. South Africa's diminishing coal reserves. *South African Journal for Science*. Vol.106, n.9-10, p.1-5. [online]

Healthcare in South Africa, 2012. *South Africa Info*. [Online]. Available at http://www.southafrica.info/about/health/health.htm#ixzz24jRwfUiK [Accessed 20 September 2012]

Health Development Agency, (n.d.). *Turning policy into practice?* UK: Health Development Agency

Hodson, M. and Marvin, S., 2009a. Urban Ecological Security: A New Urban Paradigm? *International Journal of Urban and Regional Research*, 33 (1), p.193–215

Hodson, M. and Marvin, S., 2009b. 'Cities Mediating Technological Transitions: Understanding Visions, Intermediation and Consequences'. *Technology Analysis and Strategic Management*, 21, 4, 515–534

Hodson, M. and Marvin, S., 2010. Can Cities Shape Socio-Technical Transitions and How Would We Know if They Were? *Research Policy*. 39 (4), p.477-485

Hopkins, J. 2006. *Social Housing in South Africa*. The Southern African Housing Foundation

http://web.mit.edu/urbanupgrading/upgrading/case-examples/overview-africa/regional-overview.html

Hunter, D. J. and Killoran, A. 2004. *Tackling health inequalities: Turning policy into practice?* Health Development Agency: UK

IMF Marks down global Growth forecast, Sees risk on rise. *IMF World Economic Outlook*, [online] Available at http://www.imf.org/external/pubs/ft/survey/so/2012/NEW012412A.htm [Accessed 9 February 2012]

Integrated Development Plan 2012-2017, 2012. City of Cape Town, Cape Town

International Energy Agency, 2009. *Key World Energy Statistics 2009*. IEA. Paris, Organisation for Economic Co-operation and Development

International trends and Good practices in Housing, *DAG*, [Online]. Available at www.dag.org.za/docs/research/4.pdf. [Accessed 9 February 2012]

Isenberg, D., 2011. *How to Foment an Entrepreneurial Revolution*. Babson Entrepreneurship Ecosystem Project. p. 7

John, L. 2012. *Secondary Cities in South Africa: The start of a conversation - The background report*. South African Cities Network (SACNET), March 2012

Juma, J., 2006. *Teething Problems in Africa's Healthcare*, [online] Available at http://www.africanexecutive.com/modules/magazine/articles.php?article=699

Kania, J., and Kramer, M., 2011. *Collective Impact*. Stanford Social Innovation Review: Winter 2011 [online] Available at http://ssireview.org/articles

Kaufman, D., et al., 1999. *Governance Matters: WorldBank Research Working Paper No.2196*. [online] Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=188568

Kerry, C. and Thom, A. ed., 2011. *The State of the Nations Health in Opinion Pieces by South African Thought Leaders*. Penguin Forum

Kgobe, P. (n.d). *Inching Along: Education Survival in South Africa: Part 1. Consortium for Research on Educational Access, Transitions and Equity (CREATE)*. [Online] Available at (http://www.create-rpc.org/pdf_documents/botswanapaper1.pdf

Knight, F., 2011. *Agricultural Baseline Assessment conducted for Amber Falcon Properties*. AgriInformatics, Durbanville. South Africa

Krausmann, F. et al., 2008. The Global Socio-Metabolic Transition: Past and Present Metabolic Profiles and their Futures. *Journal of Industrial Ecology*. 12 (5/6), p.637-656

Krausmann, F. et al., 2009. Growth in Global Materials Use, GDP and Population during the 20th Century. *Ecological Economics*. 68 (10), p.2698-2705

Lumsden, T.G. et al., 2009. *Evaluation of potential changes in hydrologically relevant statistics of rainfall in Southern Africa under conditions of climate change. Water SA*, vol. 35, No. 5, pp. 639-656

Lyle J.T., 1994. *Regenerative design for sustainable development*. John Wiley & Sons, Hoboken

Macfarlane, S. et al., 2000. Public Health in Developing Countries. *The Lancet*. Vol 356.

Mail and Guardian, 2010. *Zille says ANC stands to make R1bn from Medupi*. [online] Available at: http://www.mg.co.za/article/2010-04-03-zille-says-anc-stands-to-make-r1bn-from-medupi [Accessed 03 Apr 2010 07:48]

Mail and Guardian, 2012. *Maize Crisis Looms in SA*. [online] Available at http://mg.co.za/article/2012-08-17-maize-crisis-looms-in-sa [Accessed 21 September 2012]

Malhotra, Y., 1999. Toward a Knowledge Ecology for Organisational White-Waters. *Knowledge Management*. 2 (6), 18-21

McKinsey Global Institute, 2010. *Lions on the move: the progress and potential of African economies*. [pdf] Available at http://www.mckinsey.com/insights/mgi/research/productivity_competitiveness_and_growth/lions_on_the_move

McKinsey Global Institute, 2011. *Resource Revolution: Meeting the world's Energy, Materials, Food and Water needs*. [online] Available at http://www.mckinsey.com/en/Features/Resource_revolution.aspx [Accessed November 2011]

Merkel, S and Otai, J. 2007. *Meeting the Health Needs of the Urban Poor in African Informal Settlements: Best Practices and Lessons Learned*. Urban Institute: Washington

Misselhorn, M., (n.d.). *A New Response to Informal Settlements*. [online] Available at http://www.afesis.org.za/Sustainable-Settlements-Articles/a-new-response-to-informal-settlements

Muller, M., 2007. Adapting to climate change: water management for urban resilience. *Environment & Urbanization*. 19(1), p.99-113

Model United Nations of the Far West, 2000. *50th Annual Session on Equity and Justice in the 21st Century*. Tempa, AZ. United Nations

Mwakasonda, S. A. 2007. *South Africa Low Carbon Scenario Report*. Energy Research Centre. University of Cape Town

Ndeke, E. N., 2011. *A Critical review of the development of sustainability indicators for the City of Cape Town: A focus on environmental and socio-economic sustainability*. Stellenbosch University, University Press

News24, 2012. *SA Facing a water crisis – Molewa*. [online] Available at: http://www.news24.com/SouthAfrica/News/SA-facing-a-water-crisis-Molewa-20120228 [Accessed 28 February 2012 14:54]

NewsMedical, 2006. *Africa's health problems are getting worse says the WHO.* [online] Available at http://www.news-medical.net/news/2006/11/20/21060.aspx [Accessed 20 November 2006]

Nkomo, J. C., 2005. Energy and Economic Development: Challenges in Africa. *Journal of Energy in South Africa.* 16 (3)

Oberholster, P.J., and Ashton, P.J., 2008. *State of the Nation Report: An Overview of the Current Status of Water Quality and Eutrophication in South African Rivers and Reservoirs.* [online] Available at http://npconline.co.za/MediaLib/Downloads/Home/Tabs/Diagnostic/MaterialConditions2/An%20overview%20of%20the%20current%20status%20of%20water%20quality%20in%20South%20Africa.pdf

Organisation for Economic Co-operation and Development. *Territorial Reviews, 2009.* OECD. Toronto, Canada, Paris

Organisation For Economic Co-operation and Development, 1995. *Participatory Development and Good Governance.* Development Co-operation Guideline Series. OECD. [online] Available at http://www.oecd.org/dac/governanceanddevelopment/31857685.pdf

Orr, D. W. 1994. *Earth in mind: On education, environment, and the human prospect.* Covelo, CA: Island Press

Packer, C. 2007. Globalisation and the Cross-Border flow of Health Workers

Peter, C., 2012. *Sustainable, Resource Efficient Cities in the 21st Century: Making it Happen!,* UNEP

Pieterse, E., 2009. Post-Apartheid Geographies in South Africa: Why Are Urban Divides So Persistent? *Interdisciplinary Debates on Development and Cultures: Cities in Development – Spaces, Conflicts and Agency.* Leeuven University

Pieterse, E., 2011a. Recasting Urban Sustainability in the South. *LSE cities,* [online] Available at http://lsecities.net/media/objects/articles/rethinking-african-urbanism-from-the-slum [Accessed 17 September 2012]

Pieterse, E., 2011b. Recasting Urban Sustainability in the South. *Development.* 54 (3). P.309-316. [online] Available at http://isecities.net

PIRLS, 2006. *Chapter 2: Performance at the PIRLS 2006 International Benchmarks.* [online] Available at http://timss.bc.edu/PDF/P06_IR_Ch2.pdf

Potts, D., 2012. Whatever Happened to Africa's Rapid Urbanisation? *Africa Research Institute, Counterpoints*

Preiss A.B. and Shapiro, Inc. 2002. *CRCOG Best Practices Manual Chapter 5. Transit Oriented Development Factsheet.* CRCOG. Available at: www.crcog.org/publications/.../TCSP/Ch05_FactSheet_TOD.pdf

PriceWaterhouseCoopers (2006) "Cities of the Future – global competition, local leadership". London

Ramdass, K. 2009. *The challenges facing higher education in South Africa*. University of Johannesburg

Rape Survivor Journey, 2011. *Rape Statistics – South Africa and Worldwide 2011*. [online] Available at http://www.rape.co.za/index.php?option=com_content&task=view&id=875

SA'S R800bn infrastructure drive, 2011. *SouthAfrica.info* [online] Available at http://www.southafrica.info/business/economy/policies/minibudget2011b.htm [Accessed 26 January 2012]

Sanchiahs Symposium, 2009. *14th Sanchiahs Symposium: The Water Crisis in South Africa*. 21-23 September 2009

Schwab, K. 2011. *The Global Competitiveness Report 2011-2012*. World Economic Forum

Schwabe, C. 2004. *Fact Sheet: Poverty in South Africa*. Human Sciences Research Council. [online] Available at http://www.sarpn.org.za/documents/d0000990. [Accessed 19 September 2012]

Sebugwawo, M. (n.d.). *Service Delivery Protests in South Africa: Lessons for Municipalities.*

Senge, P. M., 1990. *The Fifth Discipline: The art and practice of the learning organisation*, London: Random House

Simone, A., 2002. *Principles and realities of urban governance in Africa*, UN-HABITAT.

Smit, W. 2006. *International Trends and Good Practices in Housing: Some lessons for South African Housing Policy*. Development Action Group

Social Housing Foundation, 2010. *Social Housing Trends.* [online] Available at www.shf.org.za

South African Cities Network, 2006. *State of the Cities Report*. Pretoria, South Africa

South African Cities Network, 2012. *Secondary cities in South Africa: The start of a conversation: Background report.* Pretoria, South Africa

Stassen, W,. 2012. World needs 3.5 million health workers. http://www.health-e.org.za/news/article.php?uid=20033614

State of African Cities, 2008. *State of the African Cities Report* (2008), UN Habitat 2008a: p5. In: Swilling, M. (forthcoming). *Africa 2050: Growth, Resource Use & Sustainability*

State of the World's Cities, 2011. *State of the World's Cities Report 2010/11: Bridging the Urban Divide, United Nations*. Human Settlements Programme, UN HABITAT, London, Sterling, VA

Stern, P.C., 2000. Toward a Coherent Theory of Environmentally Significant Behaviour. *Journal of Social Issues*, 5 (3). p.407-424

Stone, M., 2004. *Centre for ecoliteracy: Ecological Principles*. [online] Available at http://www.ecoliteracy.org/essays/ecological-principles

Storm Warning: SA's looming water crisis. 2010. *Environment: South Africa*. [Online]. Available at http://www.environment.co.za/environmental-issues-news/page-21.html [Accessed 21 September 2012]

Storper, M., 2004. Society, Community, and Economic Development. *Studies in Comparative International Development.* p.14

Swilling, M. (forthcoming). *Africa 2050: Growth, Resource Use & Sustainability*

Swilling, M. and Annecke, E. 2012. *Just Transitions: Explorations of Sustainability in an Unfair World*. Juta, Cape Town

Swilling, M. et al., 2010. *Cities, Decoupling and Urban Infrastructures: Scoping the Challenges - Decoupling Working Group*. International Panel for Resource Management. CDUI

Swilling, M. et al., 2011. *Growing Greener Cities - Discussion Paper for UN HABITAT*. Growing Greener Cities

Swiss National Finance Foundation, 1997. *Causes of and Solutions to Social Conflicts in Contexts of Weak Public Institutions or State Fragility*. Swiss Programme for Research on Global Issues for Development. [online] Available at http://www.snf.ch/nfp/r4d/SiteCollectionDocuments/r4d-ap_social-conflict.pdf

Swyngedouw, E. & Kaika, M. 2000. *The Environment of the City – Or the Urbanization of Nature*, In: Bridge, G. & S Watson, S. (Eds.), A Companion to the City, Oxford: Blackwell

The Blue Economy. Cases of the Blue Economy Innovations. The Open Source from the Source. [online] Available at www.TheBlueEconomy.org

The Constitution of the Republic of South Africa, 1996. Pretoria, South Africa

The New Growth Path Framework 2009. The Presidency. Pretoria. South Africa

The Regenesis Group. [online] Available at http://www.regenesisgroup.com/articles.php

The Washington Post, 2010. *Goodlad on school reform: Are we ignoring lessons of the last 50 years?* The Answer Sheet. [online] Available at http://voices.washingtonpost.com/answer-sheet/john-goodlad/goodlad-straight-talk-about-ou.html

ThunkTank, 2011. *The Online Journal of Next Generation Economic Development: 2011 Economic Development Trends for Rural Communities*. Available at http://thunktank.wordpress.com/2011/01/04/2011-economic-development-trends-for-rural-communities/ [Accessed 09 April 2012]

Townsend, T. and Bates, R., (eds) 2007. *Handbook of Teacher Education: Globalisation, Standards and Professionalism in Times of Change*. Springer. Dordrecht: Netherlands

UN Habitat, 2008. *State of African Cities Report*: 2008a. p5. In: Swilling. *Africa 2050: Growth, Resource Use & Sustainability*

UN Habitat, 2011. *State of the World's Cities 2010/2011: Bridging the Urban Divide*. London: Earthscan

UN Habitat, 2010. *The State of African Cities 2010: Governance, Inequality and Urban Land Markets*. Nairobi: United Nations Environment Program (UNEP)

UNAIDS, 2009. *UNAIDS report on the global AIDS epidemic 2009*. [online] Available at http://www.unaids.org/globalreport/global_report.htm

UNAIDS, 2010. *UNAIDS report on the global AIDS epidemic 2010*. [online] Available at http://www.unaids.org/globalreport/global_report.htm

UNAIDS, 2011. UNAIDS World AIDS Day Report 2011. [press release] 21 November 2011, Available at: http://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2011/november/20111121wad2011report/

UNESCO Institute for Statistics, 2012. *Adult and Youth Literacy: Global Trends in Gender Parity.* UIS Fact Sheet. (2)

UNESCO, 2010. *Education for All Global Monitoring Report 2010: Reaching the marginalized.* Regional fact sheet: Sub-Saharan Africa

United Nations Centre for Human Settlements. 2003. *The Challenge of Slums: Global Report on Human Settlements.* London: Earthscan

United Nations Development Program (n.d.). *Governance for Sustainable Human Development: A UNDP Policy document.* [online] Available at http://mirror.undp.org/magnet/policy/glossary.htm

United Nations, 2006. *Global Environmental Outlook 3*, Nairobi, United Nations Environment Programme

United Nations Environment Programme, 2011. *Decoupling Natural Resource Use and Environmental Impacts from Economic Growth: A Report of the Working Group on Decoupling to the International Resource Panel.* Nairobi: United Nations Environment Programme (UNEP)

United Nations Environmental Program. *International Environmental Governance Reform.* [online] Available at http://www.unep.org/environmentalgovernance/

United Nations, 1987. *Development and International Co-operation: Environment A/42/427. Our Common Future: Report of the World Commission on Environment and Development* [online] Available at http://www.un-documents.net/wced-ocf.htm

United Nations, 2010. *International decade for action: Water for Life 2005-2015.* [online] Available at http://www.un.org/waterforlifedecade/sanitation.shtml

United Nations, 2012. *Report of the Secretary-General: Causes of conflict and the promotion of durable peace and sustainable development in Africa.* General Assembly Security Council. [pdf] Available at http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N12/445/19/PDF/N1244519.pdf?OpenElement

United Nations, 2012. *Substantive Session of 2012: Annual Ministerial Review. [pdf] New York: Economic and Social Council.* Available at: http://www.un.org/en/ecosoc/docs/adv2012/oesc_12_amr_sg_rep.final.26_apr_2012.pdf

Urban Landmark Case Studies, 2011. *Strategies to help poor people access urban land markets.* [online] Available at http://urbanlandmark.org.za/research/x18php. [Accessed 19 September 2012]

Van der Merwe, I. J. 2004. *Growth Potential of Towns in the Western Cape.* Centre For Geographical Analysis: University Of Stellenbosch

Van Kerkhoff, L., and Lebel, L., 2006. Linking Knowledge and Action for Sustainable Development. *Annual Review of Environmental Resources.* 31. p.445-477

Vasishth, A., and Sloane, D., 2000. *Returning To Ecology: An Ecosystem Approach To Understanding The City.* CSUN

Watson, V., 2009. 'The planned city sweeps the poor away. . .': Urban planning and 21st century urbanization. *Progress in Planning.* 72. p.151–193

World Bank, 1994. *Governance: The World Bank's Experience.* [online] Available at http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CB8QFjAA&url=http%3A%2F%2Fwww-wds.worldbank.org%2Fservlet%2FWDSContentServer%2FWDSP%2FIB%2F1994%2F05%2F01%2F000009265_3970716142854%2FRendered%2FPDF%2Fmulti0page.pdf&ei=CGZtUNKbHoOXhQeN_YHYBg&usg=AFQjCNHig0_v0Mdes93vuVLiV_ReUYfy3A

World Bank, 2001. *World Bank Regional Report.* [online] Available at http://web.mit.edu/urbanupgrading/upgrading/case-examples/overview-africa/regional-overview.html

World Bank, 2012. *World Bank Data by Country.* [Online]. Available at http://data.worldbank.org/indicator/AG.LND.ARBL.ZS [Accessed 21 September 2012]

World Bank. *CPIA public sector management and institutions cluster average.* [online] Available at http://data.worldbank.org/indicator/IQ.CPA.PUBS.XQ

World Bank. *What is Governance? Arriving at a Common Understanding of "Governance".* [online] Available at http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/MENAEXT/EXTMNAREGTOPGOVERNANCE/0,,contentMDK:20513159~pagePK:34004173~piPK:34003707~theSitePK:497024,00.html

World Health Organisation, 1986. *The Ottawa Charter.* [online] Available at http://www.who.int/healthpromotion/conferences/previous/ottawa/en/

World Health Organisation, 2012. *What is a health promoting school?* [online] Available at http://www.who.int/

World Health Organisation, 2011. *World health statistics 2011.* WHO

World Vision South Africa. *Early Childhood Development (ECD).* [online] Available at http://www.worldvision.co.za/core-issues/early-childhood-development

Worldbank, (n.d.). *Africa's Regional Health Development Department Health Workers Needed: Poor Left without Care in Africa's Rural Areas.* [online] Available at http://go.worldbank.org/IUY3J2M0A0

Worldwatch, 2008. *Green Jobs: Towards Decent Work in a Sustainable Low-Carbon World – Policy Messages and Main Findings for Decision-Makers.* UNEP

Profiles

The communiTgrow Team

A word of appreciation from the Editors

This book is the final product of the collective effort and sweat of many dedicated individuals who contributed in different ways to make this complex subject matter accessible. Their collective experience amounts to over two hundred years in the field. While some were content and chapter writers, others were compilers, graphic designers, reviewers, proof readers and still others did whatever else needed to be done to complete the book – sometimes, rewriting and re-reading chapters written by others, again and again and again.

Our learning curve as a team has been steep, and we are the first to recognize that the last word is still to be written on the topic. Nevertheless, as Editors, we express our sincere thanks to the communiTgrow team. With this Appendix of Profiles we acknowledge the contribution of all who participated and contributed to making this book a reality and we hope we are able to call on this team to create the 2nd edition when required.

Thank you very much.

Gita Goven, Ruben Richards, Alastair Rendall

October 2012

Editors

GOVEN, Gita – Chairperson and Co-founder at **communiTgrow** (Pty) Ltd

Ms Gita Goven is a founding partner of **communiTgrow** and executive director of ARG Design. Gita is a qualified architect and one of South Africa's foremost sustainability thinkers and practitioners. Gita is a tenacious, passionate, multi-talented and an inspiring designer and strategist. She is the only black woman to head a large multidisciplinary design practice located in Cape Town. Gita has refused to be confined by the strictures and imposed limitations of both race and gender as practiced during the Apartheid era in South Africa. As a result of her enormous talent and determination she graduated as an architect, becoming the second black woman to accomplish this goal during the oppressive Apartheid era.

Gita has pioneered a design practice that focuses on social and environmental transformation in the built environment. Gita is responsible for strategy, research, promotion, project conceptualization and integration at ARG Design. She enjoys building networks and partnerships for the delivery of sustainable innovation through projects.

Her many professional engagements include; Chairperson of the Sustainability Institute of Southern Africa; Appointed as a member of the Western Cape Provincial Government Inter-Ministerial Advisory Board of GreenCape; and a member of the climate change think tank process of the City of Cape Town and the African Centre for Cities; and member of the physical planning committee for the Cape Peninsula University of Technology.

RICHARDS, Ruben (Dr.) – Managing Director at **communiTgrow** (Pty) Ltd

Dr Ruben Richards is the quintessential African Renaissance man. He has accumulated a wealth of experience and a reputation as a trustworthy and effective leader with a proven track record in nation building, criminal justice reform and community regeneration. From humble beginnings, as a fitter and turner tradesman in Cape Town, Ruben has developed a varied and eclectic career holding significant executive leadership positions and portfolios in government, business, academia and civil society. These include Executive Secretary of the

Truth and Reconciliation Commission of South Africa and, CEO of one of the largest marine and general engineering companies in Southern Africa, and also founding Deputy Director-General of the Directorate of Special Operations (commonly known as the Scorpions).

Ruben is a global citizen, widely travelled. In addition to his mechanical engineering certificate studies and his under graduate degree, he has gone on to complete post-graduate degrees in Europe, USA and South Africa, graduating with a PhD in religious studies from the University of Cape Town in 1995. He has served as a visiting adjunct Professor at the Graduate School of Public and Development Management (University of the Witwatersrand, Johannesburg), visiting Professor, Albion College, Michigan-USA, and is currently Post-graduate Supervisor (external) and also Chairman of the Advisory Board of the Department of Entrepreneurship in the Faculty of Business at the Cape Peninsula University of Technology. Ruben's breadth of experience and skills enables him to advise governments as well as agencies of the United Nations and other international development agencies, academic institutions, civic organisations, and business on topics linked to sustainable nation building for societies and communities in transition. Ruben publishes widely and is the author of a recently published book: *BULLETS OR BALLOTS-the ultimate solution to crime and unemployment in South Africa.*

Ruben's professional experience combined with his humanity uniquely qualifies him to lead the company in its innovative and yet brave pursuit of creating sustainable African cities.

RENDALL, Alastair - Managing Director at ARG Design (Pty) Ltd and Co-founder at **communiTgrow**

Alastair Rendall is a founding partner of ARG Design and a founding partner of **communiTgrow**. He completed his Bachelor of Architecture at the University of Cape Town in 1985 and a Master of City Planning and Urban Design in 1989. Since his early work with the Urban Foundation and the Development Action Group (1986 to 1996), he has been concerned with the complex interplay of institutional, economic and environmental sustainability in the built environment. Through a combination of experience in private practice and with NGO's he is able to deliver high-quality public projects that win community acceptance.

Alastair is committed to building strong and fulfilling relationships, pushing the boundaries of innovation and delivering excellent projects. His strategic vision ensures that these projects deliver developmental and sustainability outcomes. Alastair's calm and consistent leadership is a hallmark of ARG Design's project delivery. His experience and ability to span projects across scales and disciplines in an easygoing and adroit manner facilitates the delivery of challenging projects.

Compilers

GABLE, Christian (Associate)

Christian's professional qualifications include a Masters of Regional and Urban Planning from the Georgia Institute of Technology in the United States of America which focuses on all components of urbanization and urban design. He also obtained a Masters of Business Administration from the Rotterdam School of Management at Erasmus Universiteit in the Netherlands. These qualifications have conjoined to support his understanding of spatial economic development activities and tools for emerging market nations. His experience and knowledge is grounded in the arena of land use policy and management, and assisting municipalities to analyze their resources and constraints. Christian has spent time working as both a private sector consultant for various African governments, and at times also holding positions within government institutions. He has extensive experience working with diverse stakeholder groups within the context of community engagement. In addition, he is a *Leadership in Energy and Environmental Design* (LEED) Accredited Professional qualified by the United States Green Building Council and has been involved extensively with sustainability issues and initiatives. Working with multiple cities and provincial governments has helped him develop a keen interest on the intersection between spatial land development, government policy, and investment. In addition to assisting in the compilation of the book as a whole, Christian's combined academic and professional experience has placed him in a unique position to coauthor Chapter 4 – The Economic Pillar.

HUMAN, Nicola (PACT Developers)

Nicola is employed fulltime at PACT Developers and is responsible for the sustainability portfolio. She completed her BPhil Honnours at the Sustainability Institute of the University of Stellenbosch, specialising in Sustainable Development Planning and Management. She believes in challenging stale development paradigms and combines this with her passion for true sustainable development within the context of holistic community regeneration. This underpins her approach to Sustainability at PACT. Nicola's knowledge and experience includes sustainable development planning and management, social funding ratios and planning for community welfare.

Other Contributors

BLOOM, Jonathan Dr. (Associate)

Dr Jonathan Bloom completed a BComm, HonsBComm, Masters degree as well as a PhD in Corporate Finance at Stellenbosch University. He is currently employed as part-time Associate Professor in Corporate Financial Management, specialising in Real Estate Investment and Financing in the Department of Business Management, Stellenbosch University. He also serves as Managing Member of Multi-Purpose Business Solutions, a niche business advisory and economic development consulting firm with a specific focus on the public and government sector. Jonathan has business and advisory experience in various fields, including Project Management, Public-Private-Partnership facilitation and procurement, Commercialisation Initiatives, Real Estate Development Services, Financial Appraisals and Feasibility Studies, Social and Economic Impact Assessments, Customer Surveys, and Local Economic Development Planning with project development focus. The Editors wish to express a special word of thanks to Jonathan for his review of Chapter 4 – The Economic Pillar.

BRUK, Tali (ARG)

Tali heads up the Urban Planning and Environmental Section at ARG Design Built Environment Practitioners. She holds a master's degree in Environmental Management from University of Cape Town as well as a Masters Degree in

Town and Regional Planning from the University of Stellenbosch with an undergraduate degree in Architectural Studies. She also holds postgraduate diplomas in Marine and Environmental Law (UCT) and Land Use Management and Informal Settlement Regularisation (IHS, Erasmus University). Tali is both a town planner and Environmental Manager with over 16 years' experience in the built environment and environmental fields. Tali's particular area of interest is in the study of the urban condition and in creating strategic, productive urban spaces. Tali combines her knowledge of the environmental and built environment fields to explore sustainability issues. She is passionate about the developmental field and the role of city planning in promoting this agenda. Her experience includes city planning, feasibility studies, spatial development frameworks, land use plans and studies, small town renewal, housing, public and stakeholder consultation and environmental impact assessments in the built environment. She has a strong policy background and has provided many legal frameworks for projects such as PG:WC Inclusionary Housing Guidance Document and Rural development Guidelines for Western Cape. Tali is also a Green Building Council Green Star Professional. Tali's wide range of professional expertise enabled her to be a primary chapter writer for Chapters 2 and 8.

GAMIET, Yaseen (PACT)

Yaseen Gamiet is the Group Operations Manager at PACT Developments. Yaseen is completing his Post-Graduate Masters degree, MTech Public Management. He also has experience as a manager in sales and marketing at one of South Africa's leading banks and has worked as an investment advisor for one of South Africa's leading insurers. Yaseen's technically minded approach to processes, management and financial experience ensures the seamless operations of PACT and the projects within the group. Currently, Yaseen is charged with responsibility of reporting to Old Mutual as is required by Bellandia in terms of PACT and Bellandia's joint venture with OMIGSA.

GOSZTOLA, Istvan (IG Architects)

Istvan Gosztola joined ARG Design and became a partner in the year 2000. In 2004, he left ARG Design and established IG Architects + Urban Designers to explore additional local and international design themes and projects. He

rejoined ARG design after varied and successful collaborative work. Istvan began practicing urban design and architecture in London in 1989 and was registered as an Architect in 1993. His early work was shaped by his association with Roelof Uytenbogaardt and Martin Kruger on various urban design projects. He has traveled extensively in Europe, and carried out various studies on sustainability, acoustic design, and a study of Italian hilltop towns. Istvan is an extremely talented designer and is responsible for design excellence at ARG Design. Istvan has further assisted at The University of Cape Town's Masters Programme for City Planning and Urban Design (3yrs) and at the Cape Peninsula University of Technology as Lecturer in the course "Introduction to Urban Design". Istvan has been involved in a number of competitions and has won numerous awards, mentions and commendations. Some of his most notable achievements are a Gold Medal (first prize) at the Buenos Aires Biennial (competition by invite only) where the judging panel was headed by Mario Botta; a Special Commendation by RIBA for an Urban Design project in Bermondsey, London; and an Honourable Mention (third place) for the design of Cape Town's Green Point Stadium.

HOEKS, Andrew (Target)

Andrew is a Director at Target Projects and obtained a Honours degree in Construction Management at UCT, and completed the Anglo Vaal Engineering Management Development Programme in 2001. He has sixteen years of experience in construction and project management in the built environment. He has always had a passion for the built environment, given the diverse opportunities that are presented through the property development process in achieving a shared vision, particularly in the context of our developing country. One's ability to influence the built environment and the positive impact that it has on society is enhanced through a collective effort as demonstrated through Target Projects' continued involvement in large scale Public Sector projects. Andrew believes that for South Africa and Africa as a whole to become a major player in the World's economy and to improve unacceptable living conditions for the poor, it is necessary to contribute in a meaningful way to the improvement of infrastructure, public spaces and basic services and housing.

HUMAN, Thys (Associate)

Thys studied Civil Engineering at Stellenbosch University and has gained knowledge and experience in the property development field, ranging from project management, property development facilitation, negotiation and process management. Thys started his career as a project manager for Murray & Roberts, completing the first Public-Private partnership project in Durban, and then acting as development consultant and project manager for Plessey SA/MTN Cellular. He has been instrumental in the foundation of a number of companies that provide services to the property development industry, including HeiCO Property solutions, responsible for the TygerFalls Project, in Bellville. His ability to visualise projects at strategic levels enables him to identify possible risks in addition to 'low-hanging fruit' which allows him to guide the development process in a way that benefits all participants and stakeholders.

JONES, Paul Allan (Associate)

Paul started his career in retail where he completed his studies in retail management, and then completed a degree in Psychology. Throughout his career, Paul has founded many companies and currently acts as the Managing Director of Tax Radar Underwriting Managers, a specialized tax insurance business. Paul is also the Chairman of Kairos Projects which is a foundation focusing on youth leadership development which he established 14 years ago. Paul has consulted on four continents in twenty three countries. He has authored numerous training manuals reaching in excess of 300 000 people. Paul is a regular speaker at conferences and seminars and sends out an inspirational newsletter entitled Sunday Reflections. Paul has had a unique career, which has enabled him to offer his clients the benefit of best business practices, combined with personal coaching and mentorship. He has been involved with designing business strategies, performance management and leadership development for the past 30 years.

KAMBOURAKIS, Anastacia (PACT)

Anastacia, affectionately known to us as Staci, studied a BA degree in Creative Brand Communications specialising in Copywriting at VEGA school of brand innovation. She joined PACT in 2011 and became involved in Creative Desk

Top Publishing, development project presentations, market positioning, graphic design and web content. Staci joined PACT in order to contribute to a cause beyond increasing sales and chasing personal success while still making use of creative branding skills. Staci keenly anticipates the rollout of **commjuniTgrow** projects such as Wescape and tries to absorb as much knowledge, insight and experience from the diverse team she is fortunate enough to work with.

KAMBOURAKIS, Demitri (PACT)

Demitri is focused on New Business Development for PACT Developments. As a graduate of the University of KwaZulu-Natal with a Bachelor's degree in Social Sciences and a Post-Graduate Honours Degree in Brand Management and Strategic Planning at VEGA School of Brand Innovation, Demitri's contribution to the strategic process of birthing new frontiers is crucial. He is motivated by a deep interest in cultural diversity and the influence of language on human behaviour. He believes that the knock on effect of ample learning in any sphere of life holds critical value, and provides humanity with a spectacle of what it is human beings are capable of.

NAIDOO, Sigarmoney (ARiYA)

Sigi obtained his tertiary qualifications in both quantity surveying and project management at Peninsula Technikon (now Cape Peninsula University of Technology) and the University of Cape Town respectively. His working career spans more than 28 years in the real estate and construction sectors of South Africa, during which time he held a number of senior executive positions at one of South Africa's leading construction groups – Murray & Roberts, whereafter he established a multi-disciplinary programme and project management consultancy – ARiYA Project Managers. His professional expertise encompasses the full spectrum of the project management discipline, with a particular expertise in the design, development and implementation of procurement systems. He has gained exposure to a diverse range of projects in almost all asset classes within both the public and private sectors. He is driven by a desire to deliver built assets of the utmost quality, which satisfy the needs of clients and leave a legacy that contributes to the development of South Africa as a prominent international market participant.

PAUW, Nadine (Associate)

Nadine is an Award Winning Educational Learning and Communications Consultant with global experience in a wide range of projects; academic, public and private. Her qualifications include Computer Aided Design as well as advanced studies in Pedagogy, Usability and Accessibility. She works with businesses designing and developing learning focused technology solutions and high quality graphical and educational materials. Supporting PACT, she collaborates and manages the delivery of strong, visual and essentially, educational communications to ensure the PACT brand and vision is understood.

PEARSON, David (PACT)

David Pearson has 26 years of experience in local and international property and finance. David has travelled extensively and credits his time in India, China, Canada, the USA, Brazil, Europe, Australia, Russia but mostly Africa, for his understanding and commitment to the establishment of sustainable entry-level communities, where industry and skills-transference are key to developing sustainable communities.

PETER, Camaren Dr. (Associate)

Dr Camaren Peter is a pure and applied scientist by training, with a strong track record in science, technology and development. He has more recently been deeply involved in the fields of sustainability and urbanisation. He consults as a researcher and writes and reviews regional, macro-economic and city-level strategies for sustainability and green transitions. His professional qualifications include a PhD from the Graduate School of Business at the University of Cape Town, an MSc in Astrophysics at the University of Cape Town, and a cum laude honours degree in Physics at the University of Natal. He has worked across a variety of fields and served as an interdisciplinary integrator while at the Council for Scientific and Industrial Research for over 8 years, progressing from a systems engineer to a senior researcher. He is currently working as a sustainability research consultant and serves as an extraordinary senior lecturer at the School of Public Leadership and Stellenbosch University. His research is concerned with transitions to sustainability at multiple scales and a key focus for him involves

formulating strategies at different implementation scales, namely; the global, regional, national, provincial and city scales. Over the past seven years, he has endeavoured to understand transitions to urban sustainability in developing world cities, and how these may be influenced by global technology trends, and changes in the global economy and ecology. In particular, this involves; (1) assessing the diverse futures that may result from the emergence of the global green technology sector and carbon economy, (2) understanding changes in the global economy, sociology and climate, and (3) assessing their implications for the developing world. Camaren was the primary author of Chapter 1 and provided supervisory guidance and oversight to the chapter writers.

PETTER, Steffen (ARiYA)

Steffen obtained an undergraduate degree in civil engineering from the Bauhaus-Universität Weimar in Germany, and a Master's degree in the management of construction, real estate and infrastructure between this same institution and the University of Stellenbosch. He also enjoys accreditation as a Green Star SA Professional with the Green Building Council of South Africa. His project industry experience includes a diverse array of projects in which he has assumed roles as a project manager, development manager and facilities manager. As result, he understands the intricacies and complexities of project life cycles from the perspectives of the client, project team and end users. He is driven by a desire to deliver quality but sustainable environments underpinned by the principle of holistic systems thinking. He believes process efficiency to be a non-negotiable, and one which serves to provide a solid foundation from which to achieve this goal of continuous improvement.

ROOMANAY, Shabodien (Associate)

Shabodien completed a BA degree in Education through the University of South Africa (UNISA) as well various other diplomas and certificates. He started his teaching career as an unqualified teacher soon after matriculation to supplement his family's income. This experience as an educator at Trafalgar High School in Cape Town combined with the fact that the school was at the time a hotbed of political activity, allowed him to see the need to educate for change and empowerment. Shabodien's experience includes managing a private college in Observatory, Cape

Town and serving as Headmaster of Islamia College in Cape Town for 13 years. He has now moved into property development and construction to draw in the many contractors who were on the periphery of the industry - because they were either too small or lacked the relevant experience. Through Shabodien's efforts many of these contractors were given many opportunities that were otherwise denied to them because of race, colour or a strong monopolistic trend in the industry.

SMITH, Terrence (Target)

Terence is a civil engineer with over 35 years' experience at a local and international level. His experience is embedded in knowledge and skill relating to construction, consulting, and project development and management fields. He has lectured at the Faculty of Civil Engineering at Peninsula Technikon and initiated and managed the Community Projects Office at Pen Tech. He has also been involved in community projects over this period as joint initiatives with non-governmental organisations such as COSBEN, DAG and as part of CSI initiatives of Target Projects, of which he is the Managing Director. Terence believes that the mandate of a Civil Engineer is to build and serve society. Having worked extensively as a built environment activist in the 80's and 90's, he is acutely aware of the challenges disadvantaged communities and government faces in post-Apartheid South Africa. He is committed to addressing these challenges wherever possible. His company has project managed major award winning projects such as the Cape Town International Airport, Cape Town International Airport. He is also involved in a number of commercial, infrastructure and strategic projects such as Cape Town Station 2030 Master Plan and District Six Redevelopment Business Plan amongst many others.

STRUTHERS, Patricia Dr. (Associate)

Dr Patricia Struthers completed an undergraduate degree in Physiotherapy at the University of Cape Town, and then obtained a Masters and PhD in Public Health at the University of the Western Cape. She has worked internationally as a clinical physiotherapist and is currently employed as Associate Professor at the University of the Western Cape where she has been teaching in both the Physiotherapy Department and the School of Public Health. She is particularly interested in the health and education of young people regardless of ability.

Although her passion started with an interest in the inclusion of learners with disabilities it has broadened to recognise that all learners need support at different times. She specifically focuses on the development of schools as health promoting schools in order that all learners will be appropriately included in their school community so learning can take place in a holistic way.

TURNER, Jason (ARG)

Jason is a professional Landscape Architect, a qualified horticulturist, a permaculture designer, a Holistic Management Practitioner, and a Keyline Designer with ARG Design. With over 20 years' experience, Jason draws on a strong technical background to design creative yet practical solutions to sustainability challenges. Working at the interface between built and natural environment, his work strives to balance the needs of communities with the carrying capacity of environment. By designing ways in which the carrying capacity can be improved and enriched, a sustainable future can be planned for both the community of people, and of all living beings coexisting within the space. Jason's key interests lie within the realm of food and water systems. As a newly emerging field, the work done in this arena is innovative and frequently untested. Precedents taken from proven technologies, some of them thousands of years old are used as inspiration for the designing of new interpretations and applications. The path ahead in this field will involve refining and expanding the range of interventions and means by which environment can be enriched.

VAN DEN BERG, Dean (PACT)

Dean Van den Berg is part of the creative team at PACT and is responsible for the 3D Architectural Visualization and Animation of each project as well as the graphic presentation plans used in reporting on projects currently underway. After 6 years as an Auto Cad Drafter and being involved in all aspects of town planning design layout, site development plans, structure plans and spatial plans, with one of our affiliated companies, Dean joined PACT and proved himself from day one as an invaluable member of the company.

WILLIAMS, David (PACT)

David Williams joined PACT as director and brings with him years of knowledge and experience in the affordable and social housing market. David comes from a corporate marketing and advertising background and enjoys the nuances of the affordable housing market and views it as the forefront for exacting social change. David's commitment to upliftment is rooted in his exposure to Sub-Saharan Africa and his experiences in Europe.

Company Profiles

ARG Design combines the professions of urban design, city planning, architecture, landscape architecture, environmental management, and food and water security planning. ARG Design is a black empowerment enterprise with a level 2 BBBEE rating. The company is a member of the Green Building Council of South Africa. ARG is committed to building awareness and capability through the delivery of well researched, excellent, innovative, sustainable solutions for regenerative settlements and public places and spaces, and through investment in research and technology; that support the social development and regeneration of our country. ARG clients include national government, provincial government, municipalities, communities and the private sector.

ARG Design has been involved in a number of projects including: Wescape, Belhar Town Centre development, Cape Town and Rustenberg bus rapid transport stations, Windhoek, Alice and Joe Gqabi transport interchanges, informal settlement upgrades, small town regeneration projects in the Eastern Cape, Lynedoch Eco-village, many urban design and local area design frameworks and architecture projects, many public places and spacs projects, food and water security and holistic land care projects. Visit http://argdesign.co.za/

ARG Board of Directors

GOVEN, Gita - Executive Director: Gita is a founding partner and CEO of ARG Design. (see Editor Profile above).

RENDALL, Alastair – Managing Director: Alastair is a founding partner of ARG Design. (See Editor Profile above).

GOSZTOLA, Istvan – Director: Istvan initially and briefly joined ARG Design in 2000. (See Contributor Profile above for more detail).

Target Projects was established in 1996 as a Development and Project Management Consultancy with a strong track record to date of delivering large, complex and high profile projects in South Africa and one of the few that has extensive experience with large scale multi-stakeholder infrastructure projects. Target Projects has also branched its activity into other parts of Africa and successfully completed the Timbuktu Archives in Mali, the first successfully completed NEPAD cultural project. Target Projects received the prestigious PMR Africa's 2008 Diamond Arrow award for achieving 1st overall in a national survey on Project Managers and has successfully completed and currently involved in a portfolio of projects that garnered national and international awards.

Target Projects provides project management services for planning, conceptual design, detailed design, procurement, construction, handover, programme management, principal agent, transportation planning, business and logistics planning and empowerment management. In addition, Target Projects also provides development management services for development business planning and feasibility studies, commercial and retail business development, financial procurement property facilitation and tenant coordination. Construction management for building, civil and human settlements are also services provided by Target Projects. Target Projects also provide services for facilitation and stakeholder communication.

Target is a sought after provider and some of their recent projects (i.e. over the last two years) include: Cape Town International Convention Centre, Valkenberg Hospital Revitalisation, Cape Town Station Revitalisation, Cape Town Station 2030, District Six Business Plan and Pilot Projects, Cape Town International Airport 2010 Terminal, Saldanha Bay LPG Handling Facility, Timbuktu Archives in Mali. Visit www.targetprojects.co.za

Target Board of Directors

HOEKS, Andrew - B.Sc Hons (Construction Management) UCT 1995; Andrew Hoeks, with 10 years experience at one of the country's leading construction organisations, entered the world of project management in 2005. This is when he joined forces with Graham Clarence and Terrence Smith at Target Projects. He brings with him a wealth of knowledge in complex building projects, including some of the Western Cape's most prominent retail, residential and missed-use developments. His shared vision with the Target Projects team has made him invaluable and he has since been instrumental in successfully completing a number of high profile projects.

SMITH, Terrence - B.Sc (Civil Engineering) UCT, 1977; GDE, UCT, 1991: Terrence Smith is an authority in the field of development and project management. With a passion for the industry and its challenges, Terrence started his career as a consulting engineer over three decades ago. To date, Terrence has enjoyed a strong affiliation with a number of industry and academic institutions and was instrumental in developing targeted procurement strategies with provincial government in the 1990s. Terrence has in more recent times headed up a number of the region's most prestigious developments including the Cape Town Convention Centre and a number of Airport Terminal upgrades at Cape Town International.

CLARENCE, Graham - B.Sc (Civil Engineering) UCT, 1998: Graham Clarence has twenty years experience on a wide variety of fast civil engineering and building projects, both from a construction management and a professional project management point of view. A civil engineer by profession, Graham initially pursued a successful career in one of the country's largest construction companies before exploring the field of professional project and development

management. Graham's strong construction background and interpersonal skills set him apart. Graham has the ability to effectively pull large complex projects together and has foresight to identify and mitigate key risks that are presented through the process.

ARiYA Project Managers ("ARiYA") was established in 2005 as a multi-disciplinary built environment consultancy with a core focus on programme and project management. Their particular expertise resides in their ability to deliver large-scale, complex infrastructure and commercial projects. They are driven by an unwavering desire to deliver built products of the utmost quality, as evidenced by their internal quality management system which has been certified in terms of the ISO 9001:2008 international quality standard. Their commitment to empowerment and transformation of the South African business environment is demonstrated by their Level 1 Broad based black economic empowerment contribution status. ARiYA's service delivery areas include programme and project management; development facilitation; procurement management; tenant coordination and installation; construction management; green building consulting; town and regional planning and property development. They have the capability to render these services across a variety of market sectors and asset classes through their internal resource base comprised of highly qualified and experienced industry professionals.

ARiYA's track record of notable completed and current projects include the construction of the Cape Town Stadium; the Cape Town Station Revitalisation project; numerous infrastructure improvements at Cape Town International Airport; Phase 1A of the Cape Town Integrated Rapid Transit System and the expansion and upgrade of the Tyger Valley Shopping Centre in Cape Town.

Visit www.ARiYAprojects.com

NAIDOO, Sigarmoney - Managing Director - Sigi is the managing director and majority shareholder at ARiYA Project Managers. He is an experienced in leading diverse teams of highly skilled professionals in a variety of competitive and demanding projects in fast paced environments. Good technical and business finance related experience of more than 20 years of hands-on experience in supply chain management, strategic planning, business unit development and project and development management. (See Contributor Profiles for more information)

Bellandia Investments (Pty) Ltd is a residential development company, which has gone through three major restructures over the past 45 years. In an effort to strategically position itself and take advantage of the changes in the housing market, Bellandia moved towards the development of larger-scale upmarket residential projects from its beginnings as a bulk supplier of affordable housing in the Western Cape. The last of these restructures was as a result of the 2008 Financial Crisis, which resulted in the purging of residential development and development finance.

Bellandia joined forces with PACT Developers (Pty) Ltd, who are currently developing one of the largest integrated affordable housing developments in the Western Cape. PACT Developers recognised the benefit of being involved with a company who are fastidious about corporate governance and the like and this secured Bellandia the appointment to act as executive project manager and co-developer for all residential projects sourced and initiated by PACT Developers. Bellandia's experience and reputation is a valuable addition to PACT Developers' commitment to delivering integrated whole-system community development projects at scale. Bellandia's mission is to build on a 45 year legacy of adaptability, delivering a quality product and ensuring customer satisfaction

through participation in innovative and holistic developments; employing a sustainable business model which fosters new relationships and leverages goodwill to continually build annuity income through timeously completed and viable developments. Bellandia acts as the executive project managers for both the Annandale Ridge development as well as the Wescape project and is far advanced in developing a Social Housing division to address the overwhelming need for affordable housing in the Western Cape. Visit www.bellandia.co.za

Bellandia Board of Directors

DANFORD, Drew - Chairman - Drew joined Bellandia in December 1974 as Quantity Surveyor / Estimator after graduating with a B.B.Sc (Building Management) from UCT. His career within the firm progressed with his appointment to the Board responsible for Construction in 1985, overall Operations in 1992 and was appointed as the Managing Director in 2001. Under his stewardship the company strengthened its position as one of the largest and most reputable residential developers in the Western Cape.

ALLIE, Jalal - Executive Director - Jalal has been involved in the property industry for over 18 years and was appointed CFO and Company Secretary of Spearhead Property Holdings Limited in 1999 which he co-founded. Jalal is a member of the Institute of Directors and joined Bellandia as Financial Director in October 2010. He has been associated with Mike and David for some 20 years, when he was appointed at Seeff Trust.

BUSH, Andrew - Executive Director - Andy joined Bellandia Plot and Plan Division in 1980. In 1991, Andy was appointed as Project Manager and has since delivered over 25 residential and commercial projects. He has served on the Board of Directors as Projects Director since 1999 and currently serves on the Board of Directors of **communiTgrow**. He has been instrumental in finalising the Annandale Ridge opportunity as a profitable scheme.

PEARSON, David - Executive Director - David is the founder and CEO of PACT Developers. (See Contributors Profile above for more detail)

GOVEN, Gita - Non-Executive Director **-** Gita is a founding partner and CEO of ARG Design. (See Editor Profile above for more detail)

FLAX, Michael - Non-Executive Director **-** Mike is an Executive Director at Spear Properties (Pty) Ltd, a Non-Executive Director of Redifine Income Fund Limited and serves as Chairman of the Investment Committee. He is a Chartered Accountant by profession and a fellow and previous President of the Chartered Institute of Management Accountants, with a long history in Property Investment and Development. In 2007, he was honoured with being selected as one of the top-ten ranking South African business leaders by the prestigious CRF Foundation. He is a member of the Institute of Directors, The International Council of Shopping Centres, SAPOA and on the Property Loan Stocks Association Board.

NAIDOO, Sigarmoney - Non-Executive Director **-** Sigi is the founder and CEO of ARiYA Project Managers. He spent many years with Murray and Roberts, serving an Executive Director of the Construction Division.

pact developers

Pact Developers ("PACT") is an inspired property development company based in Cape Town, South Africa. We focus on integrated community development and aim to consistently establish new standards in community building that go beyond merely developing residential and commercial districts. Whole-systems thinking underpins their approach to communities; including being mindful of the stimulation of local economies, safe neighbourhoods, quality homes, progressive education, integrative health and a regenerative ecology, all encompassed in a functional urban design that can grow organically and allow families to flourish. PACT only participates in projects that focus on rekindling human dignity, through providing the best quality product at all times. They have commenced with the planning, development and delivery of a number of projects, most important of which are Annandale Ridge, a new entry-level housing development in Durbanville Hills area, and Wescape which is to act as a holistic expansion of Cape Town city in the Western Cape. Its focus of delivering a regenerative settlement on 3100Ha promises to act as a hub for economic activity and societal healing. Visit www.pact.co.za

PEARSON, David – Director (See Bellandia)

ALLIE, Jalal - Director (See Bellandia)

HUTSON, Julie – Director - Julie Hutson is the Group Operations Director and has been associated with David Pearson for the past 18 years. Julie has been involved administratively with PACT since its inception and provides a wealth of experience in sales and marketing which she obtained while working for international companies such as Congara Food, Nestlé U.K. and Unilever South Africa.

WILLIAMS, David J. – Director - David Williams joined PACT as director and brings with him years of knowledge and experience in the affordable and social housing market. (See Contributors Profile above).

Professional Team

Aurecon

AURECON SA is a dynamic, leading-edge company providing sustainable solutions through integrated professional services in development and management of infrastructure for private and public sector clients globally. The group, with an office network extending across 24 countries, has been involved in projects in over 80 countries across Africa, Asia Pacific, the Middle East and the Americas and employs around 7 500 people throughout 11 industry groups. They seek to foster human achievement in all aspects of their work through their client-centric business model, enabling them to deliver the full range of their services globally.

Aurecon has a client centric business model that gives them the ability to deliver the full range of services globally. They create best teams for their key clients, develop strong client relationships and deliver market leading solutions.

Their clients benefit from their collaborative business model as it nurtures the development of market leading expertise across their industries. Their technical professionals develop business advantage for their clients based on deep understanding of the industries in which they operate.

Aurecon's values form the foundation of their commitment to their client relationships; their promise to their people; and the contribution they make to the communities in which they live and work.

- They foster human achievement through excellence, innovation and collaboration
- They celebrate diversity and respect others by acting with integrity and honesty
- They work to build a vibrant and brighter future for all

They aim to set industry standards, benefit communities and make a significant contribution throughout the developed and developing world Aurecon. Visit www.aurecongroup.com

David Bettesworth Town and Regional Planners

David Bettesworth Town and Regional Planners strives to offer a professional but personalized town and regional planning consultancy service that focuses on the needs of individual clients. Their approach is defined by attention to detail and constant monitoring and evaluation. In additional, a good business-client relationship is maintained. A consultative and multi-disciplinary approach to development projects and problem solving is favoured. The firm has an association with Leon Smith Architects and close working relationships with a full range of professional consulting firms that are specialists and well respected in the development industry, thereby allowing them to provide the best possible service at all times.

David Hellig & Abrahamse Land Surveyors

The David Hellig & Abrahamse Land Surveying company brings the wealth of 32 year's knowledge and experience, and the ability of its 25 staff members to the development process. Their focus on consulting their clients, understanding their values and aspirations and incorporating their feedback has allowed the refinement of the technical services, resources and client service approach provided by the company. This allows the company to deliver greater value through creative, clever and unique project solutions that are supported by research and investigation, consistent performance and reliability, optimum resource utilisation and holistic thinking.

Doug Jeffery Environmental Consultants

Doug Jeffery Environmental Consultants (DJEC) was established in 1999. DJEC specializes in facilitating environmental Basic Assessment, Scoping/ Environmental Impact Assessments (EIAs) and Public Participation Processes. Their team of 10 full-time consultants who are involved in EIA work and have many years of experience in the field. In addition to the expertise offered, the firm has built up a network of experienced specialists who assist in projects as required and these projects range from botanical, faunal or freshwater specialists to visual, socio-economic and many more.

Independent Economic Researchers Consulting

With more than 20 years of experience in accounting and auditing, Independent Economic Researchers is a sought-after specialist in local and international tax, cross-border trade and financial emigration. The company focuses on the analysis of projects and policies with significant environmental and development implications and its clients have included UNEP, WWF, The World Bank, USAID and others.

IG Architects

IG Architects, Urban Designers and Interiors are able to combine almost a decade of professional expertise and state of the art technology, providing a comprehensive urban design, city planning, and architecture and interior design service to their clients, users, and interested and affected communities. Their guiding philosophy is an emphasis on innovative design solutions which meet the client's requirements while respecting the total environment in which they work. Their belief in providing a professional service on time, and within budget allows them to remain competitive and sought after.

International Quantity Surveyors

International Quantity Surveyors is a company focusing on the provision of the services of quantity surveying, estimating, project management, and valuations. With a decade of success behind them, they have the skills and ability to focus on building and civil projects, whilst also acing as consulting and design engineers. Their small size of 11 staff makes them flexible and able to meet difficult challenges.

NuPlan Africa

NuPLAN AFRICA is a dynamic practice whose life has spanned over a decade, through which they are proud to claim to being associated with numerous successful projects for both the public and private sectors. The firm has established itself as one of the most reputable town planning companies in the Western Cape,

rendering a professional service of outstanding quality to both the government and the private sector. Their scope of projects has given them overarching experience into every facet of town planning and property development.

Old Mutual

Old Mutual Investment Group (SA) (OMIGSA) is a multi-boutique investment business that offers clients access to a full array of investment offerings, styles and asset classes. OMIGSA offers investors the best of both worlds, which means that clients have access to independent, focused investment boutiques as well as the backing of a large, well-governed and managed investment firm. There is no single house view, so these boutiques are able to take advantage of market opportunities.

Development Impact Funds: The Development Impact team manages a number of funds, pursuing double-bottom-line returns, that is, a commercially acceptable return and a positive social impact. The funds invest in assets/areas where gaps or backlogs in social infrastructure, economic development and job creation have not been adequately addressed by financial institutions. This includes affordable housing, black-owned SMME's and social infrastructure such as schools.

The team currently manages three funds in South Africa including: The Financial Sector Charter ("FSC") Fund; The Housing Impact Fund for South Africa ("HIFSA"); The Entrepreneurial Venture Finance ("EVF") Fund. Furthermore, the team is in the process of establishing three funds in South Africa including: The Schools and Education Investment and Grant Funds; The Housing Impact Fund for Africa ("HIFA"); The Incubator Fund. The team responsible for these funds has in excess of 140 years of relevant experience.

Regenesis

Regenesis specializes in a living systems, place-based approach to planning, design, development, and education. Founded in 1995, Regenesis is based in Santa Fe, New MexiCO with offices in Massachusetts and Arizona. Their clients include owners, developers and design professionals, communities, government and land stewardship agencies, and educational institutions. Regenesis is a coalition of

experienced design, land-use planning, business and development professionals. They bring years of experience in Permaculture design and education, integrative design and green building, organisation development, and process design and management. Their interdisciplinary teams are "expert generalists" all committed to success in regenerative planning, land-use and development. Visit www.regenesisgroup.com

Sakhiwo Health Solutions

Sakhiwo was established to bring together the best set of expertise in Health Planning, Medical Engineering, Health Facilities Design, Project, Construction and Contract Management, as well as Organisation Development for the health industry in South Africa. The company provides an all-inclusive health facilities infrastructure development service, in addition to also providing ancillary advisory services customised for the health industry, with special focus on bringing first class solutions to developing countries.

Zeri Organisation / Gunter Pauli

Zero Emissions Research & Initiatives (ZERI) is a global network of creative minds seeking solutions to world challenges. The common vision shared by the members of the ZERI family is to view waste as resource and seek solutions using nature's design principles as inspiration. It was started in 1996. The ZERI Foundation serves as an antenna in the world economy identifying the high growth industries of the next decade. When there is a crisis, many businesses suffer, but some thrive. Which are the ones that are the job providers of the future? Which are the technologies that will change the business models? With contacts on four continents, with over 50 projects that have demonstrated over the past 15 years where the opportunities are, ZERI offers insights to government on which sectors to attract, to companies which market niches to focus on, and to communities how to secure the continued build-up of social capital. Visit www.zeri.org

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communiTgrow

www.communitgrow.com

communiTgrow

We are a private specialist consultant company committed to overcoming the development challenge in Africa through building regenerative holistic communities and neighbourhoods rooted in education, dignified employment, healthcare and housing. We help create communities which are able to generate multiple income streams from a regenerative whole-systems approach to urban and economic design.

Gita Goven *Chairperson & Co-founder - communiTgrow*
"Not often does life present an African woman with the opportunity to make a significant and measurable contribution to the lives of millions of fellow Africans. I am humbled by this privilege to give back after having received so much from our African soil."

Dr. Ruben Richards *Managing Director - communiTgrow*
"For the first time in the history of modern African urban development there is a deliberate, conscious and well thought out program of action to build community and ensure that place, dignity and belonging remain the key elements that form our African identity. I am thrilled to be part of that plan."

Alastair Rendall *Director & Co-founder - communiTgrow*
"I am ecstatic about the opportunity to use my many years of professional experience as an architect and urban designer to create a sustainable urban life for many millions on our continent."