

Chapter 15

An Interpretation of Sustainable Development and Urban Sustainability in Low-Cost Housing and Settlements in South Africa

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Introduction: Sustainable development and sustainable urban form

The sustainable development paradigm can be viewed as a convergence of two paradigms that initially evolved in an antagonistic manner, possibly as far back as the industrial revolution. The first one is the growth and development paradigm, which was strongly rooted in economic growth based on the economic output of an economy as measured by GDP (gross domestic product). Until the late 1900s, governments and communities had committed themselves to a vision of improved standards of living through increasing the GDP of their respective economies, while paying minimal attention to environmental and resource impacts.

Then in the 1950s to 1970s the environmental movement coalesced after almost a century of isolated pronouncements on resource and environmental degradation arising from exponential population growth as well as increasing levels of production and consumption. The movement argued that unless humanity voluntarily controlled population and economic growth, environmental and resource degradation would put a limit on human survival. The strongest substantiation of the argument was presented in the Club of Rome Report, *Limits to Growth* (Meadows *et al.*, 1972).

The challenge of reconciling the concerns of the two movements or paradigms emerged as a global imperative in the 1970s in an effort to prepare for action in the twenty-first century. The United Nations Conference on Environment and Development held in Stockholm in 1972 laid the foundation for this process. Through this conference, it became clear that the two issues could no longer be addressed separately or through the antagonistic approach that had been applied until then. Similarly, the need for a global framework of action became evident.

A United Nations-led initiative was launched under the World Commission on Environment and Development (WCED) in 1984. In 1987, the commission released its final report (*Our Common Future*), which has now become a primary reference on sustainable development. It is in this report that a globally derived definition of sustainable development was first presented, and it is the definition that has become most commonly used. The report defines sustainable development as:

... development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987:43).

The important point to note about this definition is that it retained the development vision but with a condition that it should not be pursued at the expense of future generations. Several variations of the definition have emerged out of the intense debates over the relevance and implications of the paradigm (see for example the review of definitions in Mawhinney, 2002:2–24).

The elaboration of the paradigm during both the Earth Summit in Rio de Janeiro in 1992 (see Agenda 21 (UN, 1992)) and the World Summit for Sustainable Development (WSSD) in Johannesburg in 2002 (see *Johannesburg Plan of Implementation* (UN, 2002)) has gone a long way towards establishing the roadmap for humanity in the twenty-first century and beyond.

The key implication of the paradigm is that for the wealthy developed countries, the challenge to be addressed is the stabilisation of economic growth through a shift away from over-production and over-consumption, as well as towards the redistribution of resources to the minority poor within these economies (and the majority poor in developing countries). For the poorer developing countries, the challenge is to stabilise population growth and fast-track growth responsibly in order to meet the basic needs of the majority now living in squalor, and to stabilise over-consumption by the wealthy elite.

These differentiated requirements of sustainable development for developed versus developing countries have been the root of intense debate and negotiation during the two earth summits (Earth Summit – Rio de Janeiro, 1992, and World Summit for Sustainable Development (WSSD) – Johannesburg, 2002). For example,

during the WSSD in Johannesburg, no firm targets could be agreed upon on the issue of over-production and over-consumption, especially in developed countries. Instead a ten-year framework was established within which to formulate appropriate programmes.

The redistribution of resources from developed to developing countries received much attention during the WSSD. For example, facilitation for the establishment of partnerships between the developed and developing countries' stakeholders (through *Type II* partnerships) has opened an opportunity for both public- and private-sector resources to be channeled to developmental programmes in developing countries. Key *Type II* partnerships launched during the WSSD cover programmes in a variety of areas like water and sanitation, energy, health, agriculture and biodiversity.

In spite of the frustrations expressed by stakeholders with regard to the WSSD outcomes (for example, slow progress in implementation to date, refusal of the US to sign the Kyoto Protocol, inability to set targets for renewable energy and over-production/over-consumption for developed countries), the summit provided a plan for increased momentum in the realisation of sustainable development.

This articulation of a new development paradigm for human civilisation in the twenty-first century has meant a re-examination of all facets of human activities and lifestyles with a view towards re-alignment for sustainability. This chapter provides a review of the implications of the paradigm for cities and human settlements, as well as the local interpretations of the paradigm in South Africa's settlement policy and practice. However, the main focus of the chapter is on sustainable low-cost housing in South Africa in terms of policy and practice.

Sustainable cities and human settlements

Cities and human settlements constitute one of the most powerful tools of human civilisation and development. Lozano (1990:5) argues that:

Cities are civilization; the word 'civilization' – related to the Latin *civilitas*, *civis*, and *civitas* – refers to culture of cities, places where a heterogenous mixture of people are concentrated in clusters of meaningful size to exchange – exchange goods, services, and ideas.

When seen as systems of habitation, production and consumption, human settlements, and especially contemporary cities, can be treated as macro-scale systems that require inputs for their metabolism. These inputs in turn generate by-products that often lead to waste and pollution. These two aspects of inputs and by-products of urban metabolism translate into major impacts on resources and the environment in general.

The concept 'ecological footprint' of a city or settlement has been applied as a measure of the ecological impacts of individuals. The Redefining Progress Organisation in the USA estimates that the average American's footprint on the planet is 24 acres (the requirement to sustain current lifestyles) compared to 17 acres for the average Canadian and nine acres for the average Italian (Redefining Progress: www.progress.org/programs/sustainability/ef/).

Under this concept, one tries to capture and quantify in one indicator the flow of key resources and the waste of a system or subsystem through various networks of channels. Beyond the ecological footprint, which captures only the environmental impacts, urban sustainability calls for development of human settlements guided by three additional pillars of sustainable development: economic growth, socio-cultural responsiveness and institutional capacity (Irurah *et al.*, 2002:6–16).

Under environmental conservation, sustainable settlements and buildings envisage the emergence of cities and buildings that are responsive to the resource and sink limits of the planet. The resource limits entail the finite resource base especially for some of the key inputs in sustenance of cities and buildings. These include land and natural habitats, energy, water, construction materials and other raw materials for inputs to manufacturing and service industries. The sink limits focus on the finite capacity of air, land and water systems to receive and process waste generated as by-products of human production and consumption patterns. Greenhouse gases such as CO₂, wastewater and solid waste are some of the examples.

Economic sustainability arises out of the need to ensure sustained functioning of the economic system, which sustains the flow of goods and services essential for human consumption and further production of wealth. Employment and job creation is one of the key goals of economic sustainability. However, the key sustainability challenge is the equitable distribution of benefits generated through economic activities as well as the mitigation of externalities generated by such activities and their impacts on those who do not necessarily benefit from the respective activities. Poverty alleviation is therefore a major component of economic sustainability.

Socio-cultural sustainability addresses the impacts of buildings and settlements on the social system and the related cultural values of households, communities and nations. The need for an enabling, equitable, non-discriminatory and just social system has emerged as the most pressing one in modern times. In this regard, the rights of vulnerable groups such as women, children, the aged and those with disabilities require special attention in the context of sustainable cities and buildings (both in production and habitation processes). In countries like South Africa, where an HIV/Aids epidemic is prevalent, a spatial and built environment response to the needs of the affected people is emerging as a critical challenge to sustainability.

Institutional sustainability addresses the need for appropriate policy, legislation and implementation frameworks or structures in the public, private and civic sectors of society. Participatory processes in decision making, democratic and transparent governance, as well as public accountability in all the three sector-entities, are the key requirements for sustainability under this pillar.

The four pillars above (environmental, economic, socio-cultural and institutional) indicate that the concept of urban sustainability implies the need for assessment of the threat to continuity of a harmonious and vitalised inter-relationship between the inhabitants of the city and their social, economic and environmental subsystems. This perspective constitutes the motivation for sustainable development and urban sustainability indicators that are regularly derived and reported in order to track the state of, and changes in sustainability levels.

This in turn constitutes a framework for responsive action and strategies by the inhabitants to address the threats using the capacity and resources at their disposal. It is in this context that sustainable development and urban sustainability are considered to be a human-centred rather than an ecology-oriented paradigm. It is also in this context that the institutional component of urban sustainability emerges as it emphasises the need for both individual and collective responsibility and the appropriate strategies in addressing such threats.

Urban sustainability and urban form

The challenge of urban sustainability has generated intense debate on the appropriate urban form that can ensure the realisation of the respective sustainability objectives. Consequently, a variety of contrasting characterisations of urban forms have been regularly applied in the debate. Key characterisations include:

- The compact versus the sprawl city
- The integrated versus the segregated city
- The ecological versus the non-ecological city
- The just versus the unjust city

The compact versus the sprawl city

One of the primary resources consumed by cities is land, which is required for siting and development of the different urban functions such as commercial, industrial, residential and socio-cultural activities. Being a scarce resource, land-take for such urban functions means an opportunity cost with regard to alternative uses such as agriculture, nature conservation, mining and quarrying, among others.

In the context of rapidly growing cities and settlements, the distribution of urban functions as well as the typologies used in the development of specific sites can translate into low- or high-density urban form and land utilisation. Low-density urban form is characterised by the suburban approach to development of housing and commercial facilities, as well as socio-cultural amenities in the form of pavilions or objects within a garden or park. The office park, suburban house and mall are typical examples of this approach. This in turn requires the development of long runs of bulk and connector infrastructure for various properties.

The main disadvantage of this approach is the high cost of infrastructure and services per property, as well as the need for commuting (which is mainly motorised) over long distances between the different functional zones of the city. Increasing segregation, loss of urbanism and weakening of socio-cultural practices (loss of cohesion) are often cited as additional shortcomings of this approach (Lozano, 1990:6).

The compact city is frequently viewed as the more desirable urban form with regard to sustainability. Besides a higher density (mainly supported by low-rise buildings), compact cities exhibit high levels of mixed use in different zones or neighbourhoods, as well as enhanced quality of urban space, socio-cultural cohesion, safety and security (arising out of passive surveillance and social cohesion). Such cities therefore demonstrate high levels of environmental and socio-cultural sustainability and their ecological footprint is relatively low.

It is highly unlikely that any city can be considered to be totally sprawled or entirely compact. In most cases, examples of compact city neighbourhoods and sprawling suburban areas co-exist in a single city. A city can then be characterised on the basis of the predominant pattern of urban form. It is on this basis that American cities are on average considered to be sprawled cities while most European cities are considered to be compact.

Other contrasts in city form

The integrated versus the segregated city: When functional zoning of cities was the main planning and development control tool, the approach was to differentiate and segregate key urban functions based on their perceived levels of incompatibility. The non-compatible functions were zoned far apart with clear buffer zones of more compatible functions in-between. The sprawl city is one of the legacies of extreme functional zoning among other factors. The integrated city facilitates higher levels of mixed use in neighbourhoods and only zones off highly incompatible functions as well as those which require a large reservoir of land for their future growth (airports,

major industries and harbours, for example). South Africa's cities are segregated and sprawled primarily as a result of racial zoning applied in the apartheid era (Gelderblom and Kok, 1994:101–105).

The non-ecological versus the ecological city (green or eco-cities): This characterisation of urban form is based on the ecological footprint of a city. Cities that make special efforts to tap into renewable resources (renewable energy, for example) or those which minimise resource and waste throughput in their metabolism (through conservation interventions or re-use/recycle, for instance) are viewed to be ecological. Most contemporary cities are considered to be non-ecological because of their heavy dependence on motorised transport, grid electricity (fossil-fuel, nuclear- or hydro-generated power), virgin raw materials, low levels of re-use/recycle and sprawl over large tracts of land.

The socio-cultural dimensions of the debate about city form are often captured in the just versus the unjust city contrast. Besides ensuring environmental health and economic sustenance for all, a just city form exhibits interventions in response to threats to human rights and marginalisation of certain population groups. Key among such groups are the disabled, women and children. For countries such as South Africa, poverty reduction and narrowing of the income differential are major challenges in the just city context.

Before ending this section, it is important to note that all the urban characterisations above are at times inclusive of one another and conflicting in other instances. For example, the ecological city form has requirements that contradict with those of the compact city form (for example, emphasis on ample space for independent and organic food production based on permaculture and recycled waste or compost). Such contradictions between the ecological city and other sustainability requirements are comprehensively reviewed in Wortmann (1999:8–18).

This overview of the general sustainable development and sustainable city debates provides the framework used in reviewing the translation of the paradigm in the sustainable city and low-cost housing or settlement practices in South Africa.

Sustainable low-cost housing, urban sustainability and the sustainable development debate in South Africa

Although South Africa is a signatory to most of the international protocols on environmental conservation and sustainable development, their influence on the local development agenda is still minimal. For example, although Agenda 21 for Sustainable Development (including Local Agenda 21) and Habitat Agenda are well recognised in most policy frameworks of different government departments and local

authorities, there is no overall sustainable development framework to guide development policy in various sectors of the economy. Attempts at formulating a National Strategy for Sustainable Development (NSSD) under the Department of Environmental Affairs and Tourism (DEAT) have not delivered the required framework, even after several years in the process. Similarly, *ad hoc* sustainability initiatives now evident in the private sector have not converged to a coherent or systematic approach as yet. In contrast, the NGO and CBO sectors have managed to attract significant resources (financial, technical and managerial skills) from local and international donor agencies with the objective of addressing environmental and socio-economic sustainability issues such as energy efficiency, water conservation and poverty alleviation.

Since homelessness and poverty are the most glaring sustainability issues in South Africa (especially because of the 'human face' component and the impacts on the environment), a number of such NGOs and CBOs have focused on housing, social services, job creation and the related environmental challenges which can be addressed through housing delivery and habitat management. However, most of these initiatives are implemented on a project-by-project basis without significant synergy or impact on the broader housing delivery programme and urban development agenda.

It is the activities of such NGOs, CBOs and their related projects that have raised the sustainability debate around low-cost housing to heights well above the minor role of this sub-sector in the building construction sector and urban development in general. In so doing, two contradictory scenarios are emerging. The first scenario (business as usual) is one where such initiatives are confronted by immense challenges as they attempt to mainstream the practice of sustainable housing and human settlement. Consequently, they are ignored by government and/or the private sector, and none of the emerging lessons percolate into the construction sector and urban development or mainstream policy in general. If such challenges prove to be overwhelming to a point where diffusion of lessons learned from specific projects to general practice gets inhibited, momentum will be lost and the debate will dwindle.

The second scenario is where the initiatives as well as the related advocacy among different stakeholders translate into the adoption of such responses into policy, legislation and urban development frameworks at various levels of government. This could even translate into appropriate responses by the private sector, as the business case of such practice starts to emerge. Such a scenario would boost the momentum and could even see the low-cost housing sub-sector being the driver of sustainability in the building construction sector, urban development and the rest of the economy in general.

The question at this point is: Which of the two scenarios is likely to prevail? A response to the question will be attempted in the concluding part of this chapter. The subsequent sections will map out the minor role of the low-cost housing sub-sector in building construction and the economy in general. This will be followed by examples of sustainability initiatives in housing by NGOs and CBOs in the context of South Africa's housing subsidy programme. The final section before the conclusion will deal with indications of recent government response in terms of policies and guidelines in sustainable housing and the implication for urban sustainability.

Low-cost housing in the context of the building construction sector

Building construction is one of the 90 sectors of the South African economy, as applied in the input-output tables compiled by Statistics South Africa (see Statistics South Africa, 1995). The sector is also used as a data-capture category with regards to plans passed and buildings completed under different local authorities, employment opportunities and fixed capital formation, among others. Although there is no regular data capture of the environmental impacts of settlements and buildings, isolated studies on energy impact through production (embodied energy) and operation cycle of buildings have been undertaken (Irurah, 1997, 1998; Irurah and Holm, 1999). Irurah (1998) provided a preliminary overview on some of the environmental impacts of the cradle-to-grave cycle of building production, habitation, demolition and disposal of construction waste.

Although data on the low-cost housing sub-sector is not regularly captured under the above categories, there are indicative pieces of information showing that low-cost housing plays only a minor role in terms of economic and environmental impacts of the larger building sector. With regard to GDP and fixed capital formation, BIFSA (2000a:31) shows that in 1999, building construction contributed 3.3% and 20.4% respectively compared to 2.4% of GDP by civil construction. With regard to overall formal employment in 1999, civil construction absorbed 67 000 employees compared to 222 000 in building construction (BIFSA, 2000a:24). This clearly indicates that within the construction industry, the building construction sector dominates over civil construction.

Data from the Reserve Bank (2002:S-120) and BIFSA (2000b:13) indicates that although the residential sub-sector contributes almost the same ratio as the non-residential with regard to fixed capital formation, formal low-cost housing contributes only 10% of the sector's turnover and capital formation. Equally, its consumption of inputs in production (construction materials, labour and services) and habitation (energy, water, waste disposal, etc.) can be assumed to be relatively low compared to

the other two sub-sectors (middle- to high-income residential and non-residential). However, in terms of absolute land take for settlements and impacts such as pollution (water, air and solid waste) from informal settlements without adequate levels of infrastructure and services, low-cost housing might entail significantly higher impacts compared to the other sub-sectors.

Total residential consumption of electricity accounts for less than 20%, while industrial and mining consumption shows the highest consumption of 63% (Doppegieter *et al.*, 2001:49–50). On materials consumption, Statistics South Africa (1997:83) indicates that construction of homes contributed a mere 25% to the purchase value of cement in 1994, 15% for ready-made concrete and 40% for bricks and blocks. It is likely that in each case, low-cost housing contributes less than a quarter of these percentages (6.25%, 2% and 10% for cement, ready-made concrete and brick or blocks respectively). Similar patterns can be expected for water consumption and wastewater, solid waste generation and other such impacts.

In view of this minor role of the sub-sector, it is surprising that it has received some of the most intense sustainability attention especially from NGOs and CBOs. On the other hand, the attention can be justified in terms of numbers of people and households affected (the backlog in housing and services like water, sanitation and waste disposal, and expensive and inadequate public transport, among others). Any attempts to address such a large backlog in total disregard of sustainability issues would entail major impacts on the sustainability of the other urban subsystems. The subsequent section provides an overview of such initiatives. It demonstrates the spectrum of issues addressed and how this influences housing policy at the national, provincial and municipal levels, as well as the interests of the private sector.

Sustainable housing and settlement initiatives: Overview of case studies

Since 1994, housing delivery for low-income households has been one of the key programmes of the South African government. The estimated backlog of three million houses set the government's focus on mass delivery at the highest possible rate with an emphasis on so-called greenfield development. Targets of about 300 000 houses per year were set for the ten-year period from 1994. Given the limited budgetary resources, delivery focused on the lowest possible investment per household (in the form of a subsidy) and the widest coverage in terms of beneficiaries.

Key subsidy categories of the housing programme are the project-linked, relocation, consolidation, institutional and rural subsidies (Department of Housing,

2000). Since April 2002, there was a change of policy on the subsidy programme. In particular, subsidies for different categories were increased to match price increases and inflation, a minimum contribution by beneficiary households was set and emphasis was shifted to institutional subsidies and projects through the People's Housing Process.

Even though several subsidy categories were defined, the largest proportion of resources has been spent on the project-linked subsidies. This is the category of 'greenfield' development with minimum stand size of 250 m² and a minimum house size of 30 m². Minimum standards for services are also stipulated (Department of Housing, 2000). Through this programme, hundreds of thousands of houses have been developed on cheap land located on urban peripheries and with minimal levels of shelter or services. The typical product of the programme is the so-called matchbox typology replicated over tens or hundreds of hectares in a single project with minimal regard to sense of identity, pedestrian circulation, urban design and density, open spaces, integration of social services (police stations, schools, libraries, clinics, etc.). Even though minimum service standards are set for sanitation, electricity and water, the overall shelter performance and standards of design and construction are only marginally better than the 'shack', which the so-called matchbox seeks to replace. Loss of community coherence and social networks creates further deficiencies in such settlements when compared to informal settlements.

The above factors, coupled with others such as the absence of urban integration (contributing to sprawl), the poor market value of the properties developed and the implications of high life-cycle costs (for households, municipalities, provincial and national government), contribute to the perpetuation of poverty, segregation and environmental degradation. In response, several NGO and CBO initiatives have emerged in an attempt to demonstrate alternative housing delivery, which aims at alleviating the above shortcomings. Details of most of the project examples and cases mentioned in this section can be found in Irurah *et al.* (2002), which constitutes the first attempt at consolidating cases on good practice in sustainable housing and settlement since 1994.

The relationship between poverty and environment in this housing scenario has become a major opportunity for NGOs and CBOs to attract donor funding to supplement the government subsidy in pilot projects. Shelter-performance has emerged as the most strongly supported component, especially because it is linked to energy and water efficiency or conservation. Energy efficiency in turn is linked to the mitigation of greenhouse gas emission (a key contributing factor to global warming and climate change, which has now become a key global environmental challenge). The link to the Kyoto Protocol and emergent finance mechanisms for mitigation

projects has generated enthusiasm among housing stakeholders on the potential for meeting the additional costs incurred by making housing sustainable.

Consequently, technologies and capacity building in energy-efficient housing have been piloted by a variety of NGOs in partnership with CBOs and beneficiaries. Kutlwanong in Kimberley, Tlholego near Rustenburg, Midrand Eco-city and the Soweto energy-efficient house are some of the project examples. The All Africa Games Village near Alexandra in Johannesburg is one example where a conventional 'greenfield' project has been enhanced for energy and water efficiency without NGO and CBO participation. Unfortunately, most of the interventions have not been adequately sustained, because owners and community in general were not empowered for the task of appropriate habitat management from the perspective of sustainable settlement.

With regard to capacity building, NGOs such as Planact, IIEC (International Institute for Energy Conservation) and SEED (Sustainable Energy, Environment and Economic Development), as well as private-sector consultancies such as PEER Africa Pty Ltd., have partnered with communities, municipalities and provincial and national government for both advocacy and capacity facilitation at the decision-making level.

Since urban integration is a major requirement for poverty alleviation and resource efficiency at the urban scale, well-located projects such as the various settlements of Cator Manor in Durban and the Johannesburg Housing Company projects (Douglas Rooms, Carr Gardens, etc.) demonstrate sustainable housing with regard to urban integration.

Turning to the socio-economic dimension, job creation, skills development, support for entrepreneurial opportunities and empowerment of women are some of the key responses demonstrated in some projects. Kutlwanong in Kimberley was developed through the People's Housing Process of the national housing programme and has therefore demonstrated how socio-economic needs could be addressed even through an energy-efficient housing focus. The Tlholego project constitutes a strong rural example of integrated housing delivery that addresses both environmental requirements (energy, water and materials efficiency) and socio-economic needs (skills development, organic agriculture based on permaculture, empowerment of rural women, affirming social structures and cultural values, etc.). Enhancement of access especially through pedestrian circulation and for disabled people has been demonstrated in several projects. A demonstration house in Kutlwanong has been enhanced for access by disabled persons. In Cato Manor (Durban), the Riverdene settlement demonstrated prioritisation of pedestrian rather than vehicular circulation as well as enhancement for access and use by disabled persons.

The management of waste in human settlements is a crucial environmental sustainability requirement, especially with regard to environmental health and resource recovery. Communities and municipalities have also realised that this component has major potential for socio-economic benefits. In this regard, partnerships between municipalities, NGOs, CBOs and the private sector have ensured that community-based enterprises are generating economic value out of collection, sorting and recycling of waste. The Itlake and Mitchell's Plain projects, as well as the Durban Solid Waste Management Programme, are some of several examples in this regard.

Regarding institutional sustainability, one of the common features of all the projects that aim at piloting and demonstrating sustainable housing alternatives is that they involve partnerships between different stakeholders. Besides the NGOs and CBOs, public-sector resources or contributions in terms of land and subsidies or other forms of facilitation have been essential. In some rare cases, private-sector participation and contribution has been achieved. The Abahlali project (Irurah *et al.*, 2002:48) is a unique example where a private-sector entity was directly involved in bridge financing of the project.

One critical requirement for institutional sustainability is continuity and evolution of policy frameworks that facilitate the initiatives. Continuity of contribution and facilitation by other stakeholders, especially NGOs and CBOs, is also critical. Consequently, appropriate funding, management skills and transparent and accountable governance are essential ingredients. This is particularly critical for NGOs and CBOs, which mainly rely on external funding for survival. The Kutlwanong Civic Integrated Housing Trust (KCIHT) and the Cato Manor Development Association (CMDA) provide examples of how to tackle this sustainability component while also spreading the benefits and lessons learned to several projects (Irurah *et al.*, 2002:15–16, 99–100).

Sustainable housing and settlement: Policy initiatives

The emergence of South Africa as a democratic state in the mid-90s has gone hand in hand with the rapid adoption of international frameworks and protocols related to sustainable development and sustainable settlement. Key among these are Agenda 21 (United Nations, 1992 and its derivatives, such as Local Agenda 21) and Habitat Agenda (UNCHS (Habitat), 1996). The translation of such frameworks into national and local legislation or policy has also been systematically undertaken.

However, the translation from policy and legislation to implementation of programmes by national, provincial and local governments has not been systematic.

This section reviews the related policies and legislation that are currently in place and how they relate to sustainable settlement and housing. The section also reviews the sustainable housing policy of the City of Johannesburg as an illustrative example of an approach towards mainstreaming the lessons learned from demonstration projects into the practice of implementing sustainable housing and settlements in South Africa.

Policy and legislation with reference to sustainable housing and settlement

The process towards a national strategy for sustainable development (NSSD) for South Africa commenced almost two years ago under the Department of Environmental Affairs and Tourism (DEAT). There was a high expectation that the process would yield the draft or final version of the NSSD by the time of the Earth Summit in Johannesburg (August 2002). This has not happened and no clear timeframes have been set for this outcome. On the other hand, the country has in place several pieces of legislation and policies, that directly relate to sustainable housing and settlement.

The constitution (RSA, 1996) entrenches the right of access to housing opportunities, an environment that is not harmful to one's wellbeing, and protection of the environment for present and future generations. The Reconstruction and Development Programme (RDP (ANC, 1994)) and its successor (Growth, Employment and Redistribution Strategy (GEAR (ANC, 1996)) have identified housing and economic growth with employment and economic empowerment (poverty reduction) as the key development challenges which the country must address.

The *Urban Development Strategy* (RSA, 1995a) and the *Urban Development Framework (UDF)* (see Department of Housing, 2000, Chapter 3, section 3.7)) have more specific relationships to sustainable housing and settlement. Both policy documents envision South African settlements that are:

- Spatially, racially and socio-economically integrated;
- Economically sustainable;
- Democratically governed with participatory planning as a key ingredient;
- Environmentally sustainable; and
- Adequately financed through public sector budgets and public-private sector partnerships.

The *UDF* identifies four key programmes for the realisation of this vision. These are:

- Integrating the city (undoing the legacy of apartheid planning);
- Improving housing and infrastructure with a view towards sustainable communities;

- Promoting housing and infrastructure with a view towards sustainable communities;
- Promoting urban economic development; and
- Creating institutions for delivery.

The local level institutional requirements for urban development have been provided for through the *Local Government: Municipal Systems Act* (RSA, 2000). It is this piece of legislation, above all others, which attempts to facilitate the realisation of integrated urban planning and development. The act makes the formulation of integrated development plans (IDPs) a mandatory requirement for all municipalities in the country. However, inadequate capacity in local authorities (especially financial capacity and skills) has meant an extremely slow start to the process of formulation and implementation of such IDPs.

The most recent policy framework in this line is being articulated through the *White Paper on Spatial Planning and Land Use Management* (Department of Agriculture, 2002). The paper is part of the process towards drafting a *Land Use Bill*, which is aimed at replacing apartheid-legacy legislation currently impairing the systematic implementation of the *Development Facilitation Act (DFA)* (RSA, 1995b). The paper aims to facilitate:

- A holistic approach to urban development;
- A reduction in the range of existing policies and legislation on this issue; and
- Integration with related legislation or policies in governance, environmental and resource management (including environmental impact assessment requirements).

One of the key features of the *DFA* (RSA, 1995b), which will be reinforced by the anticipated land-use bill, are the general principles for land development, which discourage low-density, segregated, fragmented and mono-functional urban development in favour of compact, integrated and mixed-use settlements.

Other policies and legislation which impact on settlements at another level include the *White Paper on National Transport and Moving South Africa* (Department of Transport, 1998), the *National Environmental Management Act – NEMA* (RSA, 1998), the *White Paper on Energy Policy* (Department of Minerals and Energy, 1998) and the *Water Services Act* (RSA, 1997). Similarly, extensive legislation and policies with regard to socio-cultural challenges have been formulated by respective national and provincial governments.

Although the examples of legislation and policy papers highlighted above indicate that strong facilitation towards sustainable housing and settlement in the country is already in place, their translation into the implementation of programmes and

projects has not been consistent. Hence, the set vision and goals have not been achieved in any significant manner. Instead, urban sprawl, desegregated settlements, inadequate shelter in low-cost housing, inadequate responses to resource and environmental degradation, as well as continued disregard of the rights of vulnerable groups, continue to dominate housing practice and habitat management in South Africa. It is in this context that the City of Johannesburg initiated its sustainable housing policy, which is reviewed in the section below.

Sustainable housing policy of the city of Johannesburg

From the point of view of housing and settlements, the lessons derived from the diverse demonstration projects by NGOs and CBOs have not yet percolated upwards into policy revisions and enhancement to facilitate mainstreaming of related principles and practices at national, provincial and local governments. However, continued advocacy and lobbying by various stakeholders and interest groups have managed to convince the City of Johannesburg to pioneer the road to a sustainable housing policy in spite of an absence of a comprehensive policy at provincial and national levels.

Through a stakeholder consultation process in 2000 on the Metropolitan Housing Strategy 2010, feedback (especially from NGOs and CBOs working on various challenges of sustainable housing) identified a total absence of sustainability considerations in the strategy. The outcome of the consultation process was that the City of Johannesburg undertook to amend the strategy to reflect such considerations. This was implemented in 2001 when the Sustainable Housing Policy for Johannesburg was formulated, followed by capacity building (implementation guidelines, training and project assessment tools) for implementation by 2004 (City of Johannesburg and Syn-Consult Africa, 2001).

The mainstreaming of sustainable housing and settlement practice would thus assist the City of Johannesburg in the realisation of its housing vision of:

Healthier, wealthier and secure households and communities in environmentally responsive, spatially, socio-culturally and economically integrated housing and habitats within a resource- and environment-conserving city, for the benefit of current and future generations of Johannesburg and South Africa (City of Johannesburg Council and Syn-Consult Africa, 2001:22).

Through integration of several sustainability components (energy and water efficiency, land-use optimisation, alternative or green finance, job creation and response to rights of vulnerable groups, among others) and the key stages of a housing-project cycle (from conceptualisation through to monitoring and

evaluation), the policy commits the Council to progressively play a leadership and facilitation role for the realisation of sustainable housing and settlement for the city. The formulation of implementation guidelines, training of officials and councilors and institutional arrangement are now being implemented as part of the capacity-building process for policy implementation. This policy process marks a turning point in sustainable housing and settlement in South Africa as it shows a commitment by a public sector stakeholder to mainstream lessons derived from the various projects implemented by NGOs and CBOs at grassroots level.

Conclusion

The emergence of the sustainable development paradigm has kindled debate on urban sustainability and sustainable urban form. Characterising and contrasting cities through concepts such as compact versus sprawl, ecological versus non-ecological and just versus unjust cities serve as clear indications of the evolution of this debate which in turn feeds into the re-definition and understanding of sustainable development.

Although South Africa has adopted key international protocols and agreements on sustainable development (including Agenda 21 and Habitat Agenda) into its development policies and legislation, this has not been systematically followed through in implementation. Even in the absence of an explicit national strategy for sustainable development, there exist several pieces of legislation and policy frameworks that could significantly contribute to sustainable development and urban sustainability if effectively implemented. Inadequate capacity (especially skills and financial resources) has been the key contributing factor to this outcome.

On the other hand, the country has enjoyed intensive piloting and demonstration of sustainable housing or settlement projects by NGOs and CBOs mainly with donor funding. Lobbying and advocacy by such NGOs and CBOs has convinced the City of Johannesburg Council to pioneer the process of formulating a sustainable housing policy and the necessary capacity building for its implementation. In the other sub-sectors in construction and the economy in general, there have been no significant initiatives towards coherent sustainability programmes.

In view of the above scenario, it is now an appropriate moment in which to attempt an answer to the question of whether sustainable low-cost housing initiatives can influence the transformation towards sustainable urban development and construction in South Africa. In view of the tremendous international commitment to sustainable development and South Africa's political will to align itself with this movement, the search for sustainable housing and urban development will continue to attract political attention in the foreseeable future. Equally, lessons on

implementation strategies will be systematically sought as the implementation agencies endeavour to ensure coherence and reliability in their programmes.

It is also clear that, given its current momentum, the low-cost housing or settlement sub-sector will continue in the search for sustainable urban development and construction. When this is coupled with the sustainability-oriented pieces of policy and legislation, one can reach the conclusion that there will be a convergence, which will allow the mainstreaming of lessons from sustainable housing projects into sustainable urban development and sustainable development in South Africa. However, the timeframes and exact process for this convergence would be difficult to predict at this stage.

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