

**Measuring Social Sustainability:  
Best Practice from Urban Renewal in the EU**

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**Social Sustainability: An Exploratory Analysis of its Definition, Assessment Methods, Metrics and Tools**

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## **Social Sustainability: An Exploratory Analysis of its Definition, Assessment Methods, Metrics and Tools**

**Andrea Colantonio**

**Abstract** – In recent years social sustainability has gained increased recognition as a fundamental component of sustainable development. Previous research on sustainability has been limited to environmental and economic concerns, however, social sustainability has begun to receive political and institutional endorsement, becoming entwined with the sustainable communities agenda and the notions of governance, social capital and corporate social responsibility. This paper provides a comprehensive overview of our current understanding of social sustainability and identifies the main propositions of the concept. Further, the paper reviews the major assessment methods, metrics and tools of social sustainability and assesses the methodological and practical hurdles to their full implementation. The paper contends that the assessment and measurement of social sustainability are still dominated by the holistic versus the reductionist approach debate, which is unlikely to be resolved in the near future, and argues that a new breed of indicators containing a perceptual component is increasingly being suggested for sustainability policy prescriptions. In terms of sustainability tools, the paper demonstrates how these are often based on monetisation and accounting techniques that do not take into account the participation element of social sustainability. In addition, despite the promotion of social capital is often included in sustainable development policies, there is paucity of tools for the implementation of this concept.

## **1. Introduction**

Over the last two decades, the concept of sustainable development has emerged as a new development paradigm, combining social, economic, environmental and political aspects of development. These areas are often called 'dimensions' or 'pillars' of sustainable development and have received varying degrees of attention by the research community. Indeed, the sustainable development debate was mainly dominated by environmental issues at its beginning. Subsequently, economic concerns were also included in the debate whilst it is only in the late 1990s that social issues were taken into account within the sustainability agenda, especially after the formulation of Agenda 21 (UNCED, 1992), the EU Lisbon strategy in 2000 (EC, 2000) and the European Council meeting held in Göteborg in 2001 (EC, 2001). As a result, there is limited literature that focuses on social sustainability to the extent that a systematic study of this concept is still missing.

The aims of this paper are twofold. Firstly, it endeavours to fill an important literature gap in the examination of the multifaceted nature of the social dimension of sustainable development and to assess the main difficulties hampering its comprehensive study. The second aim is to review the principal assessment methods, metrics and tools of social sustainability. Within this context, the paper examines the theoretical rationale underpinning the main sustainability assessment methods and investigates the methodological and practical hurdles for the use of sustainability indicators as tools to inform sustainable development policies. Along similar lines, the paper also assesses the main characteristics of sustainability tools that are currently being deployed by a wide array of institutional, corporate and civil society actors to operationalise the concept of sustainable development.

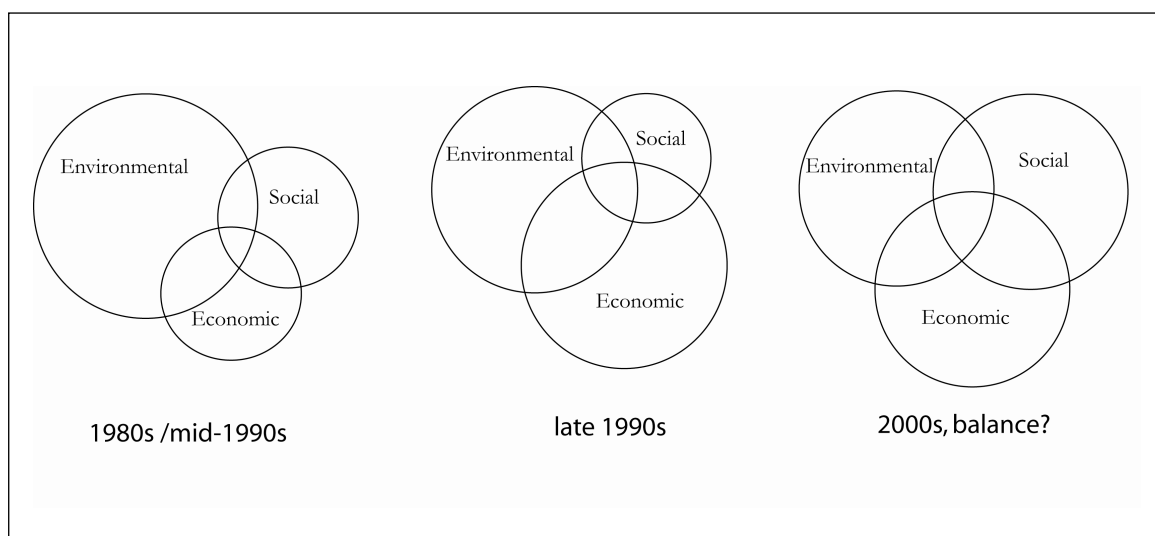
The text is divided in three parts. It begins with the literature review of the definitions of social sustainability and the theoretical frameworks for its study. This part highlights how the community space has re-emerged as the main arena for the achievement of sustainability since the 1980s, becoming interlinked with the concepts of sustainable communities, social capital, good governance and corporate social responsibility. Indeed, there can be little doubt that these notions have become fundamental milestones of the current rhetoric and political discourse of sustainability. The second part focuses on social sustainability assessment, metrics and tools and examines the debate on integrated versus reductionist approach to sustainability, elucidating the arguments in favour and against single composite sustainability metrics. This part also highlights how sustainability is increasingly being sought after at the local level through a new set of hybrid indicators that take into account local actors and residents' perceptions as part of the overall measurement process. In addition, an overview of the main tools to implement social sustainability will be examined in this section. Lastly, the paper concludes with some recommendations for future research on the social dimension of sustainable development.

## **2. Social Sustainability**

**2.1 Definition** – There is general agreement that the different dimensions of sustainable development have not been equally prioritised by policy makers within the sustainability discourse [Drakakis Smith, 1995]. As Figure 1 illustrates, environmental and economic issues dominated the sustainable development debate at its beginning whilst it is only in the late 1990s that social issues were taken into account within the sustainability agenda. This is mainly because sustainable development was born out of the synergy between the emerging environmental movement of the 1960s and the 'basic need' advocates of the 1970s, but also

because assessing social aspects of development presents measurement problems that will be discussed later. As a result, there is limited literature that focuses on social sustainability to the extent that a comprehensive study of this concept is still missing. Indeed, Littig and Grießler (2005) argue that approaches to the social sustainability concept have not been grounded on theory but rather on a practical understanding of plausibility and current political agendas. In addition, a recent study by the OECD (2001) points out that social sustainability is currently dealt with in connection with the social implication of environmental politics rather than as an equally constitutive component of sustainable development.

**Figure 1: The different dimensions of sustainable development and their relative importance**



**Source: After from Marghescu (2005)**

These fragmented approaches to social sustainability are also criticised by Metzner (2000) who contends that social sciences and social policy research have developed a plethora of social objectives strategies and measurement instruments, but with little regard for the sustainability perspective. Thus, while there exists abundant social research studies and policy documents, these have rarely been integrated into the sustainability framework. Even when cross-disciplines approaches have been attempted, covering for example the environmental and the social dimensions of sustainable development within the 'ecological footprint' concept (Reed and Wackernagel, 1996), it can be argued that such endeavours have only been partially framed within an integrated approach to sustainability.

As a result, there have been very few attempts to define social sustainability as an independent dimension of sustainable development. Furthermore, no consensus seems to exist on what criteria and perspectives should be adopted in defining social sustainability. Each author or policy maker derives their own definition according to discipline-specific criteria or study perspective, making a generalised definition difficult to achieve. For example, from a sociological standpoint (Littig and Grießler (2005: 72) define social sustainability as

*...a quality of societies. It signifies the nature-society relationships, mediated by work, as well as relationships within the society. Social sustainability is given, if work within a society and the related institutional arrangements satisfy an extended set of human needs [and] are shaped in a way that nature and its reproductive capabilities are preserved over a long period of time and the normative claims of social justice, human dignity and participation are fulfilled.*

In this definition there is a clear emphasis on both work, which is a traditional anchor concept in the German sustainability discourse, and needs as defined by the Bruntland Commission (1987).

A more comprehensive definition with a special focus on urban environments is provided by Polese and Stren (2000: 15-16) who define social sustainability as

*Development (and/or growth) that is compatible with harmonious evolution of civil society, fostering an environment conducive to the compatible cohabitation of culturally and socially diverse groups while at the same time encouraging social integration, with improvements in the quality of life for all segments of the population*

Their definition emphasises the economic (development) and social (civil society, cultural diversity and social integration) dimensions of sustainability, highlighting the tension between economic efficiency and social disintegration intrinsic to the concept of sustainable development. However, they also acknowledge the importance of the physical environment (e.g. housing, urban design and public spaces) within the urban sustainability debate.

Other authors do not provide a general definition of social sustainability but endeavour to study its main features and the key themes encompassed by the concept. For example, Baines and Morgan (2004) and (Sinner *et al*, 2004), contend that the broadly accepted common ingredients of social sustainability include:

- meeting basic needs;
- overcoming disadvantage attributable to personal disability;
- fostering personal responsibility, including social responsibility and regard for the needs of future generations;
- maintaining and developing the stock of social capital, in order to foster trusting, harmonious and co-operative behaviour needed to underpin civil society;
- attention to the equitable distribution of opportunities in development, in the present and in the future;
- acknowledging cultural and community diversity, and fostering tolerance; and
- empowering people to participate on mutually agreeable terms in influencing choices for development and in decision-making.

Their work thus identify the thematic areas of social sustainability as being basic needs and social well-being, social capital, equity and social and cultural dynamism.

Other work from Bramley *et al* (2006) identifies two overarching concepts at the core of the notion of social sustainability. These are social equity and the 'sustainability of community'. The former is linked to the notion of social justice, which urges the fair distribution of resources in society in order to allow fair access to jobs, housing and local services. The second dimension is concerned with the continuing viability and functioning of society as a collective entity. In their analysis on the interactions between social sustainability and urban form, sustainability depends upon on several aspects of community and neighbourhood life, which

include (i) interactions in the community/social networks; (ii) community participation; (iii) Pride/sense of place; (iv) community stability; (v) security (crime).

Along similar lines and with an emphasis on the elements capable of sustaining the viability of communities and neighbourhoods in the long term, Biart (2002: 6) highlights the importance of social requirements for the sustainable development of societies and notes that

*[Sustainability] aims to determine the minimal social requirements for long-term development (sometimes called critical social capital) and to identify the challenges to the very functioning of society in the long run*

This analysis emphasises the importance of time frame and social conditions for the long term functioning of societal systems. However, there is no reference to the physical environment, allowing for the traditional criticism that sociology has often suffered from a neglect of the physical and non-social realm (Omann and Spangenberg, 2002).

In recent years, social sustainability has also become an important component of the mainstream political discourse of Western governments, which have attempted to identify the issues involved with this concept. For example, a report by the European Panel on Sustainable Development (EPSD, 2004) points out that the Lisbon European Council in 2000 launched for the first time the idea of a social dimension as an integral part of the sustainable development model. An entire section of the Lisbon conclusions covered four main dimensions of social sustainability. These included a commitment to enhance education, especially in relation to the new skills required for the 'knowledge-intensive' economy; revamping employment policy so as to create 'more and better jobs'; modernising social protection to accommodate the many challenges faced by welfare states, to 'make work pay' and to promote equality; and the development of a strategy to counter poverty and social exclusion by 'promoting social inclusion'(EPSD, 2004: 18)

Lastly, Hans-Böckler-Stiftung (2001), a foundation established and funded by the German trade unions, note that the milestones of the social dimension of sustainable development include

- self-determined lifestyle through a mix of paid and voluntary work
- satisfaction of basic needs
- social security system
- equal opportunities to participate in a democratic society
- enabling of social innovation

Along similar lines, but with more emphasis on individuals' rights, Omann and Spangenberg (2002) contend that social sustainability focuses on the personal assets like education, skills, experience, consumption, income and employment and comprises every citizen's right to actively participate in his/her society as an essential element. Thus, in their analysis, access to societal resources is a key element of social sustainability.

These attempts to identify the main elements of social sustainability highlight that a coherent and comprehensive theoretical framework to a fully integrated approach to sustainability is still lacking from the literature and it is unlikely that one could be developed in the near future. This is due to the multifaceted nature of the concept of sustainability that amalgamates social, environmental and economic matters into a new independent entity. Nonetheless, for the purpose of this paper, we refer to 'sustainability' as the sustaining ability of a system to function in the long term. Thus, sustainability is an end state in which all human activities can be maintained within

the existing capacity of the planet, whereas 'sustainable development' is the process of moving towards that goal (RICS, 2007).

Most specifically, social sustainability refers to the personal and societal assets, rules and processes that empower individuals and communities to participate in the long term and fair achievement of adequate and economically achievable standards of life based on self-expressed needs and aspirations within the physical boundaries of places and the planet as a whole. At a more practical level, social sustainability stems from improvements in thematic areas of the social realm of individuals and societies, ranging from capacity building and skills development to environmental and spatial inequalities, as illustrated in Table 1. It can be seen how social sustainability blend traditional social objectives and policy areas such as equity and health with issues concerning participation, needs, social capital, the economy, the environment, and more recently, with the notions of happiness, well being and quality of life.

**2.2 Sustainable cities and communities** - Since the 1990s, sustainable development has become interlinked with the term 'sustainable cities'. The latter has increasingly been used within the sustainable development discourse and generated a debate on whether cities contribute to the achievement of sustainable development goals in light of their specific characteristics or whether sustainability can be achieved in urban environments more easily than in non-urban areas (Satterthwaite, 1997). Indeed, on the one hand, the increase of urban areas worldwide has been prompted by industrialisation, which thus far has generated severe environmental problems and a development model that is often regarded as unsustainable on the long term. On the other hand, cities have proved to be effective vehicles for the inclusive provision of health services, sanitation, shelter and other infrastructure that are essential to satisfy the basic needs of the world population.

Another important part of the urban sustainability debate has revolved around spatial, ecological, and to a less extent, social issues. Research has predominantly investigated the relationship between urban form and sustainability; density being the urban form element that has received most attention in the literature (Bramley *et al*, 2006). Most of the work has focused on the 'compact city' versus 'urban sprawl' debate. Several studies claim that higher density of compact cities can enhance public transport systems, improve access to facilities and services and reduce social segregation (Burton, 2000). Compact cities may also entail shorter travel to work and fewer car journeys, which in turn reduce pollution, congestion and noise levels. From a sociological perspective, density is also able to impact on social interactions amongst city dwellers with uncertain results on the social sustainability of urban areas. Some authors argue that higher density can facilitate social interactions (Talen, 1999) whilst others contend that social ties and the sense of community may lower in high density areas (Freeman, 2001).

**Table 1: Thematic areas of social sustainability**

Dimension	Key theme area
<i>Social</i>	<ol style="list-style-type: none"> <li>1. Access to resources</li> <li>2. Community needs ( e.g. are communities able to articulate their needs?)</li> <li>3. Conflicts mitigation</li> <li>4. Cultural promotion</li> <li>5. Education</li> <li>6. Elderly and aging</li> <li>7. Enabling knowledge management (including access to E-knowledge)</li> <li>8. Freedom</li> <li>9. Gender equity</li> <li>10. Happiness</li> <li>11. Health</li> <li>12. Identity of the community/civic pride</li> <li>13. Image transformation and neighbourhood perceptions</li> <li>14. Integration of newcomers (especially foreign in-migrants) and residents</li> <li>15. Leadership</li> <li>16. Justice and equality</li> <li>17. Leisure and sport facilities</li> <li>18. Less able people</li> <li>19. Population change</li> <li>20. Poverty eradication</li> <li>21. Quality of Life</li> <li>22. Security and Crime</li> <li>23. Skills development</li> <li>24. Social diversity and multiculturalism</li> <li>25. Well being</li> </ol>
<i>Socio-Institutional</i>	<ol style="list-style-type: none"> <li>26. Capacity Building</li> <li>27. Participation and empowerment</li> <li>28. Trust, voluntary organisations and local networks (also know as Social Capital)</li> </ol>
<i>Socio-economic</i>	<ol style="list-style-type: none"> <li>29. Economic security</li> <li>30. Employment</li> <li>31. Informal activities/economy</li> <li>32. Partnership and collaboration</li> </ol>
<i>Socio-environmental</i>	<ol style="list-style-type: none"> <li>33. Inclusive design</li> <li>34. Infrastructures</li> <li>35. Environmental Health</li> <li>36. Housing (quality and tenure mix)</li> <li>37. Transport</li> <li>38. Spatial/environmental inequalities</li> </ol>

**Source: Author**



In recent years, the sustainable urban development agenda has been broadened and been incorporated into planning practices and governments' policies for urban regeneration projects. In the 1980s, regeneration projects focused mainly on the physical and economic renewal of degraded areas. However, since the 1990s, especially in Britain, regeneration programmes have bound up the stimulation of economic activities and environmental improvements with social and cultural vitality. In this new sustainability-oriented approach to urban regeneration, the concepts of 'community' and 'neighbourhood' have become the central focus of the analysis. With reference to Britain, Cento Bull and Jones (2006: 767) note that New Labour governments evolved an urban regeneration policy framework which emphasises the need for strong communities, active citizenship and enhanced political participation. According to their analysis, these goals were to be achieved by building and strengthening networks and norms of reciprocity and trust, that is, social capital, but also promoting the notion of governance. This approach to sustainability emphasises practices of consultation and participation, especially through so-called community partnerships and the involvement of the voluntary or third sector. Further, it seeks to transform the state into an enabling partner (Bevir and Rhodes, 2003) and identifies the community space as the main arena for the achievement of sustainability.

The shift from government to governance has been concisely reviewed by Wollmann (2006) in his analysis of the rise and fall of the local community in a European historical perspective. He argues that in the 1980s, the neo-liberal attack against the centralised and interventionist welfare State policies of the 1960s and 1970s, which called for progressive market liberalisation and privatisation, has meant the re-emergence of local community as focal point of political decision making and development processes. Indeed, it is at the community level that networks of actors from the private and public sector have re-converged and generated the shift towards the governance paradigm. In his own words,

*...while varying between the countries, local community space has seen the convergent development of two causally interrelated trends. On the one hand, local government has retreated from and abandoned the previous quasi-monopoly-type delivery and production of traditional functions, while, on the other hand, the involvement of private economic enterprises and private as well as voluntary service providers has expanded and multiplied resulting in the 'economic and social communities' regaining ground (Wollmann, 2006:1431).*

According to the new governance paradigm, the different types of communities have the task of releasing a wide array of political, societal and economic resources whilst the local government has the crucial mission of advocating the common good, transparency and political accountability.

The re-emergence of the community space as focal point for the delivery of sustainable development has also moved at the heart of the European urban policy in 2005 when the Bristol Accord on the sustainable communities agenda was approved (ODPM, 2006). This new urban development agenda draws mainly upon the UK Office of the Deputy Prime Minister's (ODPM) Five Year Plans 'Homes for All' and 'People, Places and Prosperity'. The former focuses on promoting more choice and affordability in the housing market whereas the latter broadens out the government's approach to sustainable communities through the promotion of better governance; strong leadership and the revitalisation of neighbourhoods. According to the concluding document (ODPM, 2006: 9-10) the concept of sustainable communities (see also Box 1) can be considered

*'as a framework or unifying set of principles to be applied across all towns and cities..... The core components of sustainable communities present*

*a vision which has gained the commitment of many stakeholders. However, turning the vision into reality raises key questions of delivery. The success of Sustainable Communities policies will depend on the effective interaction of spatial planning, transportation, the economy, the environment and a number of other policy interventions'.*

**2.3 Participation in governance and social sustainability** - In recent years, participation in interactive governance and public involvement in the planning of development projects have been regarded as fundamental elements of social sustainability and the delivery of sustainable development policies. As Rydin and Pennington (2000: 153) note, the

*emphasis on the inherent desirability of public involvement is part of a tradition which seeks to 'open up' planning processes to democratic scrutiny and to expand the scope of public involvement as an integral part of improvements in policy delivery.*

The importance of participation for the social sustainability of communities and places can be rationalised following three main arguments. The first argument maintains that participation allows for communities to express their needs and aspirations, which subsequently feed through the policy making, delivering and monitoring processes. This representation of the community also results in collaborative governance, that is, the interactive process through which problems of governance are defined, interests constituted, policy agendas identified, and governance programmes followed through (Healey, 1999). The second approach focuses on the democratic right to be involved in the public policy process. This is an intrinsically good quality of societies. The third argument is associated with the greater effectiveness of policy delivery if it is "more in tune with society's values and preferences" and could thereby result in "better" policy delivery (Rydin and Pennington, 2000: 155). This efficiency argument is based on the assumption that a more democratic participation in the *res publica* can raise awareness of the cultural and social qualities of localities at the policy-making stage and avoid conflicts that may emerge in policy implementation later.

Participation in governance has also been conceptualised by institutional theory and generated the debate on the differences between traditional institutionalism and new institutionalism. Indeed, traditional institutionalism envisages institutions in the orthodox way of the formal set of structures and procedures as in the traditional view of public administration. Within this approach, state, civil society groups and the private sector are often seen as negotiating agents in the policy making-implementing-monitoring process. Governance results from the position and power of the different participating agents, emphasising the importance of "partnership" and "empowerment" in the analysis (Phelps and Tewdwr-Jones, 2000). In the theory of New Institutionalism, an institution is not understood as an organisation as such but as an established way of addressing certain issues (Healey 1999). Here the power redistribution exercise between institutions and civil society, and planners and individuals becomes blurred into collaborative action and social communication.

## BOX 1 The Sustainable Community approach to Sustainability of the Bristol accord

### Definition of a 'sustainable community'

Sustainable communities are places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all

### The components of a 'sustainable community'

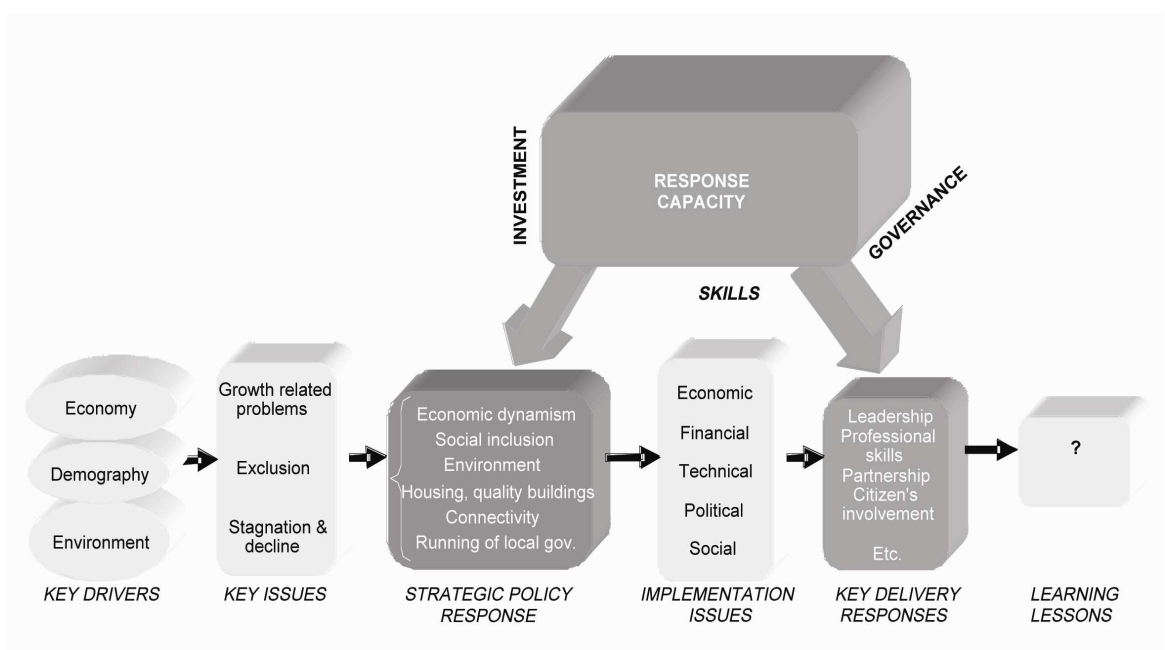
Sustainable communities embody the principles of sustainable development. They do this by:

- balancing and integrating the social, economic and environmental components of their community
- meeting the needs of existing and future generations
- respecting the needs of other communities in the wider region or internationally to make their own communities sustainable

### Eight key characteristics of Sustainable Communities

1. **Active, inclusive and safe** - Fair, tolerant and cohesive with a strong local culture and other shared community activities
2. **Well run** - with effective and inclusive participation, representation and leadership
3. **Environmentally sensitive** - providing places for people to live that are considerate of the environment
4. **Well designed and built** - featuring quality built and natural environment
5. **Well connected** - with good transport services and communication linking people to jobs, schools, health and other services
6. **Thriving** - with a flourishing and diverse local economy
7. **Well served** - with public, private, community and voluntary services that are appropriate to people's needs and accessible to all
8. **Fair for everyone** - including those in other communities, now and in the future

### The Chain approach to Sustainable Communities



Source: OPMD (2006)

Governance does not stem from the struggle for power, since institutions are already the expression of societal values, beliefs and norms. This allows policies to be locally-informed and place-based. However, in this context, it is worth pointing out that would be over-simplistic to think of communities as monolithic blocs where all members have the same aspirations or values. Indeed, the latter vary according the socio-economic and demographic composition of communities.

**2.4 Social Capital** - A growing amount of literature has highlighted the role that 'social capital' plays in the social sustainability of places and communities. Social capital is increasingly being deemed an essential ingredient of sustainability and a tool capable of improving the situation of deprived communities in social, economic and political terms to the extent that it is often considered the distinguishing element between successful and unsuccessful communities (Middleton, 2005). The original usage of the term social capital is normally attributed to Coleman (1988), whose broad definition was refined by subsequent writers (see Rydin and Pennington, 2000, and Adler and Kwon, 2002, for a review). Broadly speaking social capital encompasses the set of social norms of conduct, knowledge, mutual obligations and expectations, reciprocity and trust that are widespread within a given region or community. The level of social capital determines the "thickness" of a locality in terms of both the cohesion and mutual understanding existing among its members. Furthermore, it enhances self-reliance, collective actions and collective decision-making within a community. These qualities are essential to avoid "free rider behaviour". Moreover, they allow a community to develop normative plans of action and strategies to be acknowledged as a counterpart in interactive governance. More recently, the concept has also become interlinked with communication theories and social network analysis that interpret communities and societies composed of social networks that overlap and intersect in complex ways. Many people operate in several networks at once which link multiple social and economic worlds (Healey, 1999).

Social capital is often regarded as a pre-condition, a *sine qua non*, to build community participation. Insufficient social capital has often been offered as a justification for technocratic approaches to governance. Technocratic-bureaucratic systems and individual social scientists have held that communities or regions are often unable to articulate their shared values and needs. Thus, it is a professionals' task to deduce societal values and preferences and feed these into the policy process. There is little doubt that this practice poses obvious problems of representation that have been extensively explored in the literature (see Brohman, 1996).

In addition to this criticism, the desirability of social capital as a policy objective has also been questioned. For example with reference to the nature and goals of community networks, it has been argued that networks can be isolated, patronage-based or working against society's collective interests (e.g. gangs and drug cartels), attributing social capital a negative connotation or unproductive purposes (Putnam, 1993, Levy 1996; Portes and Landolt 1996; Rubio 1997; Hogget, 1997). Further, Coleman (1990) contends that social capital is transitory because it consists of relations among persons and it may decrease if the affluence of a given community or official sources of support grows in times. In his views, networks and relationships are created and strengthened by adverse circumstances but public participation declines as key problems are resolved in deprived communities. According to this analysis, social capital created artificially in deprived communities by policymakers may not be sustainable on the long term if well-being improves. For this reason Middleton *et al* (2006) question the policy perspective according to which the ability

of deprived communities to respond to opportunities for regeneration and renewal improve if we increase social capital in those communities.

Another recurrent criticism to the use of social capital as a policy tools argues that there is insufficient empirical evidence that has tested the precepts of social capital theory thus far. For example, due to dearth of data and the lack of a well established methodology, Temple (2000) highlights how recent empirical work has employed the extent of trust in a society as an indicator of its underlying social capital. There can be little doubt that this is as an imperfect and over-simplistic way of capturing the ideas behind social capital, which overlooks the complexity of this concept. Further, another recent study carried out by Middleton *et al* (2006) in the Bournville Village Trust estate in Birmingham claims that some of the untested assumptions about social capital are wrong. Indeed, they demonstrate that (i) there are different types of social capital (bonding, bridging and linking) according to the distinct social, economic, demographic and physical attributes of the diverse parts of the village and (ii) social capital is a product of wealth and demographics, rather than something that can be artificially increased and sustained by policy prescriptions.

**2.5 Corporate Social Responsibility** - As part of the paradigm shift from government to governance, over the last decade there has been an increased interest in 'voluntary initiatives' and 'corporate self-regulation' as a contribution by private sector businesses to the achievement of sustainability. This is especially true for environmental sustainability issues after the 1992 Earth Summit (UN, 1992), 2001 Marrakesh (UN, 2002a) and 2002 Johannesburg (UN, 2002b) conferences called for a new way of addressing sustainability issues and sharing responsibilities between governments, business, international development agencies and non-governmental organizations (NGOs). Many state, market and civil society actors embraced ideas of 'partnership' and 'co-regulation' as opposed to 'command and control' approaches to work together to find ways to minimize the environmental cost of economic growth and development. According to Utting (2002: 1):

*the hands-on regulatory role of the state ceded ground to 'corporate self-regulation' and 'voluntary initiatives' as the best approach for promoting the adoption of instruments and processes associated with corporate environmental responsibility, such as, codes of conducts, environmental policies and management systems, the use of energy-efficient and cleaner technology, recycling, life-cycle analysis and environmental certification, labelling, reporting and audits.*

Throughout the 1990s, the research on corporate environmental responsibility has generated numerous publications which broadened the scope of the investigation to include not only environmental issues but also social and cultural concerns in what has been termed 'socially' or 'ethically' responsible practices or Corporate Social Responsibility (CSR). Murphy and Bendell (2002) and Vogel (2005) offer of two example in which business response to sustainable development required much more than policies and programmes for environmental protection and had to include social concerns such as poverty, health and child welfare as well. These examples are the early 1990s dispute between the Ogoni population and Shell in Nigeria over environmental pollution caused by the oil industry that cause the destruction of survival cultivations by the Ogoni and the use of child labour by NIKE in the production of hand-stitched soccer balls in Pakistan by mid 1990s

CSR has become the demonstration of a company's commitment to minimising the negative impacts associated with its business operations and processes, which it deems could affect society and the environment. A growing amount of literature has

identified 6 common themes encompassed by the CSR. These include (i) going beyond legal requirements and duty to shareholders (Sparkes, 2002; Fox *et al.*, 2002; Bloom and Gundlach, 2001) (ii) being voluntary in nature (EU, 2001); (iii) meeting responsibilities to internal and external stakeholders (Maignan and Ferrell, 2000); (iv) integration of social and environmental concerns into business operations (Van Marrewijk, 2003); (v) optimising positive effects and minimising negative effects of the company's actions (Lantos, 2001) and (vi) objective concern for the welfare of society (Hartman, 1998). These themes matured within the new business environment that emerged since the late 1960s urging the reconciliation of social and moral value with the business system and flagged up the business case of doing good businesses and best practices (Vogel, 2005).

At the applied level, CSR has resulted in the adoption of specific activities by corporations that are summarised in Table 2. Such activities mainly include policy statements, the setting up of advisory committees, reporting and certification schemes. The former two are normally carried out internally by companies whilst reporting and certification programmes are part of a standard compliance exercise often endorsed by third parties. Vogel (2005) notes that the amount of corporate non financial reporting has increasingly steadily since the 1990s, growing from fewer than 100 companies issuing reports on their environmental and social performance in 1993 to more than 500 in 1999. Despite this increase, it is worth pointing out that some standards are mere expressions of principles without mechanism for implementation, monitoring or verification of compliance. By contrast, some others entail a more rigorous process of examining, measuring, testing or otherwise determining the conformance with the requirements specified in an applicable standard (Font and Bendell 2002). In addition, companies have often chosen what to report on (Vogel, 2005).

Since the 1990s, CSR reporting and certification schemes have moved from a marginal to mainstream activity. Advocates of voluntary measures argue that CSR is an important vector for good environmental and social practices reforms worldwide as they might prompt environmental upgrading, capacity building and best practices for domestic firms in developing countries. This is especially true in cases where joint ventures are set up and domestic firms share corporate environmental and social welfare strategies that are devised by the foreign investor's mother branch in developed countries. However, other authors have expressed sceptical views concerning CSR. For instance, Honey (2001) argues that CSR reporting and certification often set criteria that go beyond the financial and technical capability of many small and locally-owned businesses. As a result, the consideration of certain sustainability issues amongst corporation has so far been limited to a few larger organisations (ACE, 2004). Along similar lines, Vogel (2005) argue that many standards for corporate human rights practices are ill-defined, the monitoring of particular investments tends to be media-driven, and not all global firms face similar domestic pressure to act more virtuously.

Lastly, at a more fundamental level, Porritt (2005) warns against the 'seductive illusion of CSR', that is, the limiting and illusory attempt to address the business case for sustainable development in isolation rather than within an integrated and

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**Table 2: CSR applied activities at company level**

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- Statement containing explanation of SRI in relation to investment activities, outline of actions and objectives

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- Identifiable staff responsible for CSR products and services

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- Publish regular reports of CSR activities/performance

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- Inform CSR criteria and product development through regular committee meetings (external and internal staff)

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- Offer service to institutional investors which targets engagement activities in accordance with individual organisations' preferences

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- Certification programmes and voluntary standards

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**Source: After Rapson et al (2006)**

strategic commitment to becoming genuinely sustainable in the long term. In his own words:

*The very fact that the majority of companies still opt for CSR (or, increasingly, just 'CR' without the 'S') as the self-contained box into which to pack all their 'good stuff', while they continue to pursue their core business (quite legally and, indeed, quite logically, given the failure of politicians to change the rule) without the remotest likelihood that they or their products/services will ever become genuinely sustainable, reveals all one really needs to know about the empty, seductive illusion that is CSR (Porritt, 2005: 242)*

### **3. Assessment methods, metrics and tools of social sustainability**

The search for sustainability has been entwined with the quest for sustainability assessment methods, metrics and tools as instruments to operationalise the concept of sustainable development and to inform and guide development policies. However the assessment and measurement of social sustainability has been hampered by at least six methodological and practical hurdles:

1. The *social impact assessment* presents several problems. These are linked to (i) the nature of the impacts, which may make difficult to isolate a specific impact; (ii) the existence of conflicting impacts (e.g. gain in transport system and displacement effect or gentrification); (iii) difficulties in distinguishing a specific impact of a project from changes that may be generated at macro economic level; (iv) cumulative and derived impact because the overall impact of a development plan differs from the sum of the single development projects contained in the plan; (v) lack of longitudinal studies which leads to difficulties in establishing the pre-development condition or obstacles to determine the significance of the change because of the lack of longitudinal data (Barrow, 1997; Coccossis and Parpairis, 1992; Hughes, 2002) .
2. The *concept of social sustainability has been under-theorised* and often oversimplified or incorporated within existing theoretical constructs and assessment criteria such as the concept environmental justice or ecological footprints. Further, there is no clear differentiation between the analytical,

normative, and political aspects of social sustainability whereas Grießler and Littig (2004) points out that the broad and multi-faceted connotation of the word 'social' has an analytical as well as a normative meaning.

3. There is a *divergence concerning assessment criteria and methods*. This is due to internationally heterogeneous social and cultural conditions that hamper universally accepted criteria to assess social sustainability. For example at the European level, in Germany work and employment have historically been a societal priorities while in the Netherlands consumption, gender aspects and the ageing society have been given more importance. In Italy and Spain, family relationships and religious issues have important impact on their respective societies. These divergences are even more evident when comparing communities or countries from the North and the South
- 4 . The *bad experience of the 1960s* makes social scientists hesitant to formulate normative targets and objectives. Indeed, there can be little doubt that social engineering practices of the 1960s have been criticised for promoting ill-conceived social formulations and homogenous lifestyles (Omann and Spangenberg, 2002).
4. *Social objectives* as part of an overall sustainability framework need to be contextualised within different development models. These range from neoliberalism policies to the European social security model and to more eclectic approaches to development adopted by transitional economies and continuing socialist countries (See Colantonio and Potter, 2006).
5. There is *no optimum for indicators* and it is problematic to establish *benchmarks*. Indeed, it proves difficult to establish how and who should set critical threshold values, such as minimal or optimal base level, for the indicators. In addition, the availability of data as well as the source and reliability of that data should also be taken into account when using of indicators (UNCSD, 2001).

Despite these hindrances, several assessment methods, indicators and tools of sustainability have been developed. These will be reviewed in the remainder of this section.

**3.1 Assessment methods** – Over the last few decades, a plethora of methods for the assessment of sustainability have been devised by academic researchers, policy-makers, planners, practitioners and the private sector. LUDA (2006), a recently concluded research project on urban distressed areas funded by the European Commission , compiled an extensive list of available methodologies for sustainability assessment. Out of 38 sustainability assessment methods, the project identified 27 methodologies and techniques (reported in Appendix 1) applicable to social aspects of sustainability. These approaches differ in terms of purpose, stakeholders involved and spatial and temporal framework in which they can be used. In addition, some methods are more technical and/or more participative than others. For example indicators based assessment methods such as the flag model and data-reliant methods such as cluster analysis are more technical and less participative, lets say, than focus groups and workshops. However, it can be argued that the spectrum of available assessment methods is wide, allowing the combination of theoretical perspectives and practical applications to suit context-specific assessments.

Pope *et al* (2004) argue that many approaches to sustainability assessment are example of 'integrated assessment', derived mainly from environmental impact assessment (EIA) and strategic environmental assessment (SEA), which have been



extended to incorporate social and economic considerations as well as environmental ones, reflecting a 'triple bottom line' approach (Elkington, 1994) to sustainability. They distinguish two main modes of sustainability assessment, including an EIA-based integrated assessment and an objective-led appraisal. In their views, the former replicates the one-dimensional form of assessment in the three-pillar model of sustainable development, assessing the environmental, social and economic changes that can be potentially prompted by a proposal. By contrast, the latter is similar in nature to SEA, in which the assessment is carried out to achieve specific policy goals within an explicit framework encompassing environmental, social and economic objectives.

These current integrated approaches to sustainable development are often regarded as imperfect because they confine the holistic concept of sustainability to the consideration of separate environmental, economic and social factors and focus on balancing the trade-offs between these dimensions rather than exploring the linkages and interdependencies between them (George, 2001). For this reason, Pope *et al* (2004), call for an alternative principle-based approach to sustainability according to which the 'trade-off' perspective between impacts is replaced by the vision of sustainability as a societal state in which the totality is more than the sum of the parts. Their 'assessment for sustainability' approach is led by objectives derived from sustainability principles and goes beyond the mere establishment of an appropriate 'direction to target', attempting to establish the 'distance from target', that is, the extent of progress toward the sustainability state (Baines and Morgan, 2004).

Despite the theoretical appeal of integrated approaches for the assessment of sustainability, their application has been limited because current research has not developed a systematic methodology capable to aggregate diverse metrics in a meaningful way yet. For example, Keirstead, (2007) comments that it is not clear how data of fuel poverty and quality of life can be combined into a single social sustainability metric. Even if data can be normalised and weighted, it proves difficult to aggregate social, environmental, economic and institutional metrics into a composite index that can be compared at both spatial and temporal levels. For these reasons, advocates of the reductionist approach (which considers the pillars of sustainability as discrete) call for the adoption of diverse methods and metrics rather than a single sustainability index (Gaspartatos *et al*, 2007). In their views,

*our recent awareness of economies, societies and ecosystems as complex adaptive systems that cannot be fully captured through a single perspective... Failure to describe these systems in a holistic manner through the synthesis of their different non-reducible and perfectly legitimate perspectives amounts to reductionism. An implication of the above is the fact that not a single sustainability metric at the moment can claim to comprehensively assess sustainability (Gaspartatos et al, 2007: 52).*

**3.2 Metrics and tools** – Indicators are fundamental instruments to measure the progress towards sustainability. The first major step toward the identification of sustainability indicators can be traced back to Agenda 21, a blueprint of action to be taken toward the achievement of sustainability launched at the UN Conference on Environment and Development (Earth Summit) at Rio de Janeiro (UN, 1992). In response to Chapter 40 of Agenda 21, between 1995 and 2000, the UN Commission on Sustainable Development (UNCSD) developed and tested in 22 countries a set 134 indicators in the categories of society, economies, environment and institutions with methodology sheets for each indicator (UN, 2001). This set was subsequently

revised twice and finalised in 2006 and consists of a set of 50 core indicators, which are part of a larger set of 98 indicators of sustainable development.

Since this initial attempt by the CSD, a plethora of sustainability indicators have been developed. Both a recent study by Therivel (2004) and the Compendium of Sustainable Development Indicator Initiatives, hosted on the website of the International Institute for Sustainable Development ([www.iisd.org](http://www.iisd.org)), report over 600 initiatives concerning leading indicator initiatives worldwide. These initiatives differ in terms of geographic scope; initiative type; initiative goal; issue areas and organization type. However, two main features would seem to characterise these initiatives. Firstly, the majority of the sustainability indicators concentrate on environmental issues, reflecting different weights of the dimensions of sustainability. Secondly, indicators are suggested for small-scale, discrete issues accessible to specific methodologies, rather than for holistic approaches to sustainability. This is because of the methodological constraints concerning the setting up of a single composite sustainability index outlined earlier.

Different organisations from the public and private sectors have endeavoured to develop sets of indicators to audit local, national and international development processes with respect to sustainability objectives. Appendix 2 reports a list of the main 11 indicators developed at governmental and institutional level. The indicators are ordered chronologically and reveal three main features concerning the evolution of the measurement of social aspects of sustainable development. Firstly, different sets of indicators cover specific aspects of social sustainability although it can be argued that older indexes prioritise the basic needs component. By contrast indicators developed more recently seem to emphasise the importance of governance, representation and institutional factors. Further, in older indexes the elements taken into account were weighted together with other dimensions of sustainable development in an attempt to deliver an integrated approach to sustainability. However, later sustainability indicators do not cast lights on methods to weight the different components of sustainable development. As a matter of fact, the final decision about trade-offs is left to 'sound judgement', as well as leadership and communication skills (Egan, 2004). Indeed, recent indicators do not focus on the trade-offs between the dimensions of sustainable development but, rather, they look at the long term trend of the progress of each component toward the sustainability state.

Secondly, the chronological evolution of indicators mirrors the re-emergence of the community as main spatial and operational space for the pursuit of sustainability. The list contained in Appendix 2 suggests that sustainability is increasingly being sought at the city, neighbourhood and community level rather than at national and international level. Early attempts by UNCSD aimed to develop indicators that would assist decision-makers in measuring progress towards nationally defined goals and objectives of sustainable development (UNEP, 2004). By contrast, indicators proposed more recently focus on the delivery of the sustainable communities agenda at the local level. For example, the Egan Review, a report published for the ODPM in 2004 concludes that the different dimensions of sustainable development are relevant at different spatial levels. Thus, while economic data is more relevant at regional or sub-regional level, indicators of cleanliness, safety and open space are more likely to be relevant at the neighbourhood level (Egan 2004: 24).

Thirdly, there has been a shift from purely statistics-based indicators toward hybrid sets of indicators that mix quantitative data and qualitative information. For example, the indicators proposed by the Egan review (2004) include a mixture of objective and subjective data inputs. According to the report, subjective indicators

linked to surveys and questionnaires are an essential part of the sustainability assessment and implementation process because they reflect people's perceptions of where they live. Further, the choice of indicators should depend on local circumstances and the needs and priorities of local people. The use of such indicators is a clear step toward more inclusion and representativeness that acknowledge place-specific conditions and the importance of subjective values at the policy-making level. However, it can be argued that it poses methodological problems related to the aggregation and comparison of the value of the indicators. For instance, since the choice of indicators can potentially differ from community to community, it may prove difficult to compare the performance of places and communities. In addition, it is uncertain how the performance of local communities should be aggregated to indicate the sustainability progress of cities, regions and nations. Lastly, even if statistic-based indicators are to be used, these may not be available at the local level as pointed out by Shutt *et al* (2007).

Alongside indicators and initiatives developed by governmental organisations, the corporate and research sectors have developed several sustainability tools and techniques that can be framed within the CSR and Social Capital initiatives umbrella. The most important initiatives are summarised in Appendix 3, which highlights their four main features. Firstly, sustainability tools mainly consist of reporting, rating, certification and checklisting procedures. If on the one hand, this allows for easy and measurable comparison between the performance of companies, on the other, these procedures often do not cast lights on the underlying methodologies upon which individual results are achieved. Further, as highlighted earlier, standard setting and compliance schemes are often beyond the financial and technical capabilities of smaller companies.

Secondly, several sustainability assessment tools are based on monetisation and financial accounting techniques, some of which have been considered ethically inadequate to take into account certain environmental and social issues. For example, Gasparatos *et al* (2007) note that monetary tools such as the Contingent Valuation Method (CVM) and aggregation tools like Cost Benefit Analysis (CBA), have the great advantage a strong theoretical foundations in economic theory but they can be inadequate in certain situations as progress towards sustainability goes beyond economic efficiency to include equity considerations. In addition, Cavanagh *et al* (2007) point out that monetisation predominantly relies on assumptions and discount techniques and focuses on absolute figures, which neglect the importance of subjectivity and perceptions.

Thirdly, the majority of these initiatives are grounded on traditional assessor – client relationship. This clearly fails to include the views of a plethora of actors who have a stake in the development project, process or objective been assessed. For example, in the context of SAM, Cavanagh *et al* (2007: 479) note that

*there is a need to clarify the process and purpose of SAM to participating stakeholders in order to achieve active stakeholder participation in developing alternative options to what may have originally been proposed. A key aspect in achieving this participation is recognition that the technical and data-intensive aspect of SAM is secondary to its role as presenting a debate into sensitivity of not only what the stakeholder believes to be important, but also the importance of societal externalities that may not have been considered.*

Lastly, despite a significant emphasis is given to social capital in community development policies, there exists only a handful of tools for its assessment, let alone for its promotion. Indeed, several indicators have been developed for the

measurement of the different components of social capital but these have only been deployed to design community surveys at the local level or used as proxies to deduce the level of social capital of countries from available national statistics. This indicates that more empirical work needs to be done on social capital tools if the promotion of this concept is to be included in social sustainability policies. The main hurdles to this empirical work are clearly represented by the difficulties in measuring immaterial qualities of social relationships (e.g. trust and obedience to social norms) but also in including the impact of technological developments, such as texting and emailing, that lead to shifts in lifestyle and influence the way people relate, in the analysis. It is also important to recognise that the social capital experience within one country is impacted by the events in other countries, for example, through migration and the interaction of differing cultures (Babb, 2005). Further, it proves challenging to harmonise the measurement of the diversity existing at national and international level due to the varying nature of different communities and societies and their experience of social capital (e.g. interpretation of trust).

#### **4. Conclusions**

This paper has examined the plethora of approaches and methodologies to define, assess and implement social sustainability. The study highlighted that there is a significant literature gap on the comprehensive understanding of social aspects of sustainable development. Indeed, social sustainability is a complex and multifaceted concept which has often been studied through the lenses of separate disciplines and theoretical perspectives. However, evidence has shown that the concept is gaining ever more recognition by both governments, which have included it in policy resolutions, and the private sector, which has developed sustainability tools with special emphasis on social concerns.

The analysis has also reviewed the ongoing debate concerning the diverging theoretical methodologies for the study of social sustainability that is centred around the holistic approach versus the reductionist approach. The former calls for the equal amalgamation of the pillars of sustainable development into a new entity, that is, the sustainability state. This is theoretically appealing but difficult to implement and may result in ineffective guidance for policy-making. By contrast, the reductionist approach calls for the assessment and measurement of the separate dimensions of sustainability. This approach may be more applicable and help policy makers to implement policies but it fails to capture the complex nature of sustainability

Despite these disagreements, the efforts to identify indicators to measure the progress toward sustainable development, including social sustainability, have multiplied since the publication of Agenda 21 in 1992. Early indicators were mainly based on national statistics and focused predominantly on basic needs and other traditional social issues, such as equity, health and demographics. However, a new type of sustainability indicators has been proposed more recently, following the propositions of the sustainable communities agenda. Beside traditional social concerns, these new sets of hybrid indicators emphasise the importance of participation and governance and attempt to measure sustainable development at the local or community level. Further, they are not heavily reliant on statistics and suggest the inclusion of qualitative inputs and perceptual elements. The main problem associated with them may be the availability of data and the costly collection process at the local level.

The development of indicators has been flanked by the implementation of sustainability tools. Despite their potentially valuable contribution to the achievement of sustainability, this paper has shown that they often are based on monetisation and

accounting techniques that have been subject to ethical criticisms. Further, they rely mainly on traditional certification and rating techniques and do not seem to take into account the participation element that is an essential component of social sustainability.

Social capital has also emerged as an important element of social sustainability. The research community and governments have intensified efforts to determine and measure its components but there is still scarcity of empirical studies that test the precepts of social capital theory. Existing studies demonstrated that there exist several types of social capitals depending on socio-demographic, environmental and economic variables. The linkages between these variables need to be studied further, together with social capital tools that are currently limited to a few initiatives.

Future research should explore the ingredients of social sustainability further and uncover the linkages between these and the other dimensions of sustainable development. More analysis is also needed to ascertain whether these linkages can be examined through a holistic approach to sustainability or a methodology that pursues sustainable development through small steps focusing on single aspects of the development process.

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## Appendix 1: Main assessment methods for social aspects of sustainability

Method	Main use of the method*	Stakeholders	Spatial Level	Time frame**
Analysis of Interconnected Decision Areas (AIDA)	Aiding informed choices	Policy makers, project managers, planners, experts.	building to the district level	Short and medium term
Analytic Hierarchy Process (AHP)	Aiding informed choices based on a set of criteria	Policy makers and planners, to lesser extent also private investors and service providers	building to the national level	short and short-medium term
Availability of Public, Near-Residential Green Spaces	Collecting and initial analysis of data	Planners, administrators, managers, consultants	Estate, neighbourhood, district, city level	Short term
Brainstorming	Exploring the future	All	All	Short
Cluster Analysis	Initial analysis of data	Complex method, mainly for planners, consultants, research institutes	District to national and global level	Short to medium term
Community Impact Evaluation	Assessment and evaluation of impacts	Experts (architects, planners, surveyors) in consultation with representatives of the community and businesses	Estate, neighbourhood, district	Short and medium term.
Concordance Analysis	Aiding informed choices based on a set of criteria	Mainly planners	Estate to national and global level	Short to medium term
Cross Impact Analysis	Aiding informed choices based on a set of criteria	City administrators, Local authorities, Government authorities, NGOs, Property developers, Town planners, Consultants, Urban designers	District to national level	Short to medium term
Expert Judgement	Collecting and initial analysis of data	Policy makers (particularly representatives of government agencies, NGO's and research institutions) and planners	Estate to national and global level	All but the level of uncertainty increases with the time scale

Explorative Quarter Research	Collecting and initial analysis of data	Planners, administrators, social workers, research institutes. Residents are involved as interviewees.	Neighbourhood and district.	Short term
Focus Groups	Exploring the future	All	Building to national level	Short term
Flag Model	Aiding informed choices based on a set of criteria	Planners and other Experts. he Inclusion of other stakeholders' interests through the definition of pre-defined indicators and benchmark values	Estate to national and global level	Short-medium to medium-long
Futures Workshops	Exploring the future	All	All	All
Horizon Scanning	Exploring the future	Governments agencies, NGO's, research institutions and planning consultants	City to global	All
Managing Speeds of Traffic on European Roads (MASTER)	Collecting and initial analysis of data	City administrators, Local authorities, Government agencies, Research institutions, Town planners, Urban designers, Consultants, Building and infrastructure owners, Transport and utility service providers	Neighbourhood to national	All but the greater the time scale the less certain the results
Multi-Criteria Analysis (MCA)	Aiding informed choices based on a set of criteria	Planners and local stakeholders, such as citizens and members of the business community.	All	All
Quality of Life Assessment	Collecting and initial analysis of data	All, but especially citizens	Estate to national level	Short term
Risk Assessment	Assessment and evaluation of impacts	Planners, managers, service providers (health and safety officers), policy makers and private investors	Neighbourhood to urban region, with higher level of uncertainty on larger scales	Theoretically all but but uncertainty of future affects long-term risk assessment

Scenario Development	Exploring the future	Civic service, private enterprise, planning, operational and citizens	All	All
Semantic Differential	Collecting and initial analysis of data	municipal authorities, citizens, designers, planners, consultants, researches	Estate to city level	Short-medium to medium-long
Social Cost-Benefit Analysis	Assessment and evaluation of impacts	Planners carry out the assessment. Political representatives, citizens and members of the business community aid decision-making	Building to regional	Medium to long-term.
Social Impact Assessment	Assessment and evaluation of impacts	Planners and policy makers, private investors, service providers and public bodies. Citizens are the subject of the assessment but also source of information about impacts.	Estate to city level	Short-medium to medium-long
Spider Analysis	Aiding informed choices based on a set of criteria	Policy makers, planners, service providers, property developers, citizens.	Mainly urban, regional and national	Short-medium to medium-long
Strategic Conversations	Exploring the future	Government agencies, NGO's research institutes, private investors, planners	All	All
Survey Questionnaires	Collecting and initial analysis of data	Governments, civic services, planners - commercial organisations, private investors citizens	Building to global level	Short term
SWOT Analysis	Exploring the future	Public bodies (policy makers), planners and private investors	All	All but most suited for medium term
Visioning	Exploring the future	Policy makers, private investors, planners, service providers or citizens	All	All

Wind Tunnel Testing	Exploring the future	Policy makers, private investors, planners, service providers, citizens	All	All
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Source: After LUDA (2006), a project carried out within Key Action 4 "City of tomorrow & Cultural Heritage" of the programme "Energy, Environment and Sustainable Development" within the Fifth Framework Programme of the European Commission

\* A description of the method can be found at [www.luda-project.net](http://www.luda-project.net)

\*\* Short term = 0 to 5 years

Medium term = 5 to 10 years

Long term = Over 10 years

## Appendix 2: The Evolution of Sustainable Development Metrics Initiatives by Governmental and Institutional Organisations

<i>Initiative</i>	<i>Organization/Year</i>	<i>Brief Description</i>	<i>Spatial scale</i>	<i>Inclusion of social sustainability issues</i>
Human Development Report Indices	United Nations Development Program (UNDP), early 1990s	Human Development Index, Human Poverty Index	International, National	The indices have a focus on the basic need theme of social sustainability
CSD Indicators for sustainable Development	UN, 1995	50 core indicators part of a set of 96 indicators. The framework contains 15 themes, which are no longer explicitly categorized into four pillars of sustainable development	International, National	Social indicators include (1) Poverty, (2) Governance, (3) Health, (4) Education and (5) Demographics
Well-being assessment	IUCN –The World Conservation Union and the International Development Research Centre (IDRC), mid-1990s	It is based in the Well-being of Nations survey, introducing the "Egg of Well-being" formed by the Ecosystem Well-being Index (EWI) and Human Well-being Index (HWI)	National	HWI focuses on (i) health and population (ii) wealth; (iii) knowledge and culture; (iv) Community; (v) Equity. Aggregation uses several techniques (unweighted averages, weighted, and lowest value)
Genuine Progress Indicator and Index of Sustainable Economic Welfare	Redefining Progress and Herman Daly, mid-1990s	Indicators that attempt to improve the Gross National Product measurements including environmental and social values	National	Social sustainability aspects include 1.crime and family breakdown, 2.household and volunteer work, 3. income distribution, 4.changes in leisure time and 5. lifespan of consumer durables and public infrastructure. Their aggregation methods still being developed.



Urban Audit	Eurostat and DG REGIO, piloted 1997-2000	A collection of 336 variables collected in nine statistical fields, divided into 25 domains. The data gathering is carried out every five years	1. Core city 2. Larger urban zone 3. District	These are not sustainability indicators strictly speaking. The statistical fields related to social issues are Demography, Social Aspects, Civic Involvement, Training and education, Travel and Transport, Culture and recreation.
Policy Performance Index	Jochen Jesinghaus on behalf of the European Commission, 1999	Policy Performance Index is proposed as an aggregation process of several indices in different policy fields. The index are chosen and weighted according to consensus and international standards	National	The initiative evaluates the relevance that different stakeholders assign to each value. It has not been tested yet. Could be controversial in how group consensus is built (CSD 2004).
City Development Index	Habitat, 2001	Formed by five indices: Infrastructure, Waste, Health, Education and City Product	Metropolitan	Three indices measure aspects of social sustainability, but relevant issues are left out. The overall aggregation considers all the indices to have the same weighting.
Eurostat Sustainable Development Indicators	Eurostat, 2001	Indicators are divided into 10 themes. There are level I, II and III indicators for each theme.	Regional National	The main focus on Social Sustainability is on Poverty and social exclusion, Ageing society, and Governance
The Sustainability Dashboard	Consultative Group on Sustainable Development indicators, IUCN, early 2000s	Information panel formed by three dials labelled as "Environmental Quality", "Economic Performance" and "Social Health".	National	The indicators and aggregation on Economic Performance and Social Health are very general and basic. The Social Health Index is based on the UNDP's Human Development Index (CSD 2004)

Sustainable Communities Indicators – Egan Review	Egan Review, UK, 2004	50 indicators, 30 of which are 'objective', or statistically based, and 20 of which are 'subjective', based on surveys and questionnaires	<ul style="list-style-type: none"> <li>- Regional, sub-regional</li> <li>- Neighbourhood community</li> </ul>	First attempt to develop indicators explicitly to monitor the Sustainable Communities approach as set out in the Bristol Accord. Indicators are grouped in eight themes linked to the eight characteristics of sustainable communities described
EU-Sustainable Communities Indicators	The European Regional and Business and Economic Development Unit(ERBEDU) and the Centre for Urban Development and Environmental Management (CUDEM), Leeds Metropolitan University (United Kingdom), 2007	These are EUROSTAT and Urban Audit Indicators mapped against the eight characteristics of sustainable communities. Each theme is sub-divided into a number of sub-themes	<ul style="list-style-type: none"> <li>- City region</li> <li>- City</li> <li>- Neighbourhood</li> </ul>	The initiative calls for the EU statistical services (Eurostat and Urban Audit) to collect data that monitor progress within individual communities, whether they be neighbourhoods, towns, cities or metropolitan regions

Source: Mainly after UN, 2001 and Shutt *et al*, 2007

### Appendix 3: Main CSR\* and Social Capital initiatives, tools and techniques

<b>Initiative/tool/ technique</b>	<b>Organization/ website</b>	<b>Brief Description/ comment</b>
The Sustainability Assessment Model (SAM)	British Petroleum (BP) and Genesis Limited (UK division), with the University of Aberdeen	The Sustainability Assessment Model (SAM) follows a Full Cost Accounting (FCA) approach that considers the full life-cycle of a project and identifies all its internal and external costs and translate them into monetary values. The limitations of this model stems from the lack of an operational definition of sustainability. The question of substitutability between several forms of capital and the extent to which an organisation can be held responsible are also unclear (Baxter, Bebbington et al. 2004).
SA 8000	Social Accountability International (SAI)	SA8000 is promoted as a voluntary, universal standard for companies interested in auditing and certifying labour practices in their facilities and those of their suppliers and vendors. It is designed for independent third party certification
Equator Principles	<a href="http://www.equator-principles.com">http://www.equator-principles.com</a>	The Equator Principles is a framework for financial institutions to manage environmental and social issues in project financing. The Principles are intended to serve as a common baseline for the implementation of individual, internal environmental and social procedures and standards for project financing activities across all industry sectors globally. The Principles were developed and adopted by IFC and 20 world's leading banks, and quickly became a global market standard for project finance
Global Sullivan Principles	Leon Sullivan, <a href="http://www.thesullivanfoundation.org">http://www.thesullivanfoundation.org</a>	Corporate codes of conduct designed to increase the active participation of corporations in the advancement of human rights and social justice at the international level
Global Reporting Initiative (GRI)	<a href="http://www.globalreporting.org">http://www.globalreporting.org</a>	Sustainability Reporting Guidelines set a globally applicable framework for reporting the economic, environmental, and social dimensions of an organization's activities, products, and services. It is the most widely used and internationally recognized standard for corporate sustainability measurement and reporting
Dow Jones Sustainability Index	<a href="http://www.sustainability-index.com">http://www.sustainability-index.com</a>	Dow Jones Sustainability Index (DJSI) is described as the first global index tracking the financial performance of the leading sustainability-driven companies worldwide. Company questionnaire is designed to assess opportunities and risks deriving from economic, environmental and social activities of companies. Inclusion in the Index is a competitive process; selection is considered a mark of distinction for companies that want investors to see them as sustainability leaders.
KLD Social Indexes	KLD <a href="http://www.kld.com">http://www.kld.com</a>	Indexes for investors who integrate environmental, social and governance factors into their investment decisions. Examples of such indexes include: Domini 400 Social Index, Dividend Achievers Social Index, Global Climate 100 Index ; Large Cap Sudan Free Social Index

FTSE4Good	<a href="http://www.ftse.com/ftse4good/index.jsp">http://www.ftse.com/ftse4good/index.jsp</a>	The FTSE4Good Index Series was created by FTSE, a UK-based financial index company, in response to the increasing interest in SRI. Its inclusion criteria measures the performance of companies that meet globally recognized corporate responsibility standards. The visibility and reputation of FTSE4Good provides companies with a powerful vehicle to communicate their CSR achievements. It is widely used by investors and asset managers, especially in Europe, and increasingly in Asia.
Smart Growth Network	<a href="http://www.smartgrowth.org">http://www.smartgrowth.org</a>	The Smart Growth Network (SGN) was formed in response to increasing community concerns about the need for new ways to grow local communities while boosting the economy, protecting the environment, and enhancing community vitality. Its focus is on community engagement and development, with emphasis on integrative solutions to a mix of community issues, such as traffic, housing, jobs, sprawl and environment. Smart Growth is gaining attention recently; provides alternative to single-issue focus; engages companies and stakeholders in productive problem-solving. It is widely used by companies that seek to build strong community bonds. Numerous states and municipalities have endorsed the approach in their development strategy.
Global Citizenship 360	The Future 500 or The Conference Board	Strategic planning process to measure corporate performance against the major standards, align with corporate strategic objectives, prepare GRI Report-Builders and other reports, and build team and corporate commitment.
One Report	<a href="http://www.one-report.com/">http://www.one-report.com/</a>	Web-based tool to easily submit data using GRI framework to over 20 social investment organizations and research and rating institutions, such as Calvert and Accountability
Amnesty International Human Rights Principles for Companies	Amnesty International, <a href="http://web.amnesty.org">http://web.amnesty.org</a>	Amnesty International has produced an introductory checklist of human rights principles to assist multinational companies in the following areas: 1. Company policy on human rights ; 2.Security; 3. Community engagement; 4. Freedom from discrimination; 5.Freedom from slavery; 6.Health and safety; 7. Freedom of association and the right to collective bargaining; 8. Fair working conditions; 9. Monitoring human rights
Balanced Score card	Robert Kaplan and David Norton, <a href="http://www.balancedscorecard.org">http://www.balancedscorecard.org</a>	Developed in the early 1990's, the balanced scorecard is a management system (not only a measurement system) that enables organizations to clarify their vision and strategy and translate them into action. This approach provides a clear prescription as to what companies should measure in order to 'balance' the financial perspective Other types of scorecards include stakeholder and key performance indicator scorecards.
Sustainability Balanced Score Card	Möller and Schaltegger	A modification of the Balanced Scorecard which shows a greater focus on environmental reporting. The sustainability balanced scorecard (SBSC) is consistent with the environmental and social strategies of the company is a prerequisite and include a non-market perspective (such as environmental or social impacts of a firms operations) in order to influence management's decision-making.
The Corporate Responsibility Index	Business in the Community, <a href="http://www.bitc.org.uk">http://www.bitc.org.uk</a>	Management and Benchmarking Index/tool that assesses the extent to which corporate strategy is integrated into business practice throughout an organisation. It provides a benchmark for companies to evaluate their management practices in four key areas of corporate responsibility and performance: Community, Environment, Market Place, Work Place

BRE Sustainability Checklist for Developments	BRE	The BRE Checklist provides practical tools and indicators to measure the sustainability of developments (both buildings and infrastructure) at site or estate level
SEEDA Sustainability Checklist	The South East England Development Agency (SEEDA)	The SEEDA Checklist is designed to be used by those involved in planning or building sizeable developments from estates to urban villages and regeneration projects.
Social Capital Assessment Tool (SOCAT)	World Bank, <a href="http://www.worldbank.org">http://www.worldbank.org</a>	Multifaceted instrument designed to collect social capital data at the household, community and organizational levels. It is an integrated quantitative/qualitative tool. An important feature is the detailed information about structural and cognitive social capital that is collected at the level of the household, which is crucial to link social capital information with poverty and household welfare outcomes
Social Capital Question Bank	Office for National Statistics (ONS), UK <a href="http://www.statistics.gov.uk/socialcapital/">http://www.statistics.gov.uk/socialcapital/</a>	This tool is based on the ONS survey matrix developed in 2001, and contains related questions from 15 major government and non-government surveys. It uses the same themes as the original matrix and allows users to see the actual wording of questions. The matrix is divided into accessible, interactive blocks linked together through the matrix grid.
Social Capital Impact Assessment (SCIA) and Social Capital Building Toolkit	The Saguaro Seminar at Harvard University, USA	SCIA can be used to analyse the impact of the implementation of a program or project on social capital. The building toolkit outlines and illustrates some effective ways to build social capital among individuals and groups. It includes examples about supportive settings, venues and activities for building social capital, and when possible some “smart bets” or best guesses about its different purposes and outcomes.
Social Capital as a Public Policy Tool	Policy Research Initiative, Canada	Launched in January 2003, this tool is intended as a reference tool for measuring social capital for use by the public policy research community within the Government of Canada. It presents various methodological options for adopting a social capital approach in the context of developing and evaluating public policy and government programs.
Social Capital Indicators	The Siena Group at OECD	Indicators proposed by the Siena group for social statistics based on a module of standardized questions.

Sources: The Future 500 (2007), The Accounting for Sustainability Group (2006), RICS (2007) and listed websites

\* Socially Responsible Investing (SRI) is also included in CSR