Social Sustainability: Exploring the Linkages Between Research, Policy and Practice

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1 Introduction

In recent years the social dimension (or 'social sustainability') has gained increased recognition as a fundamental component of sustainable development, becoming increasingly entwined with the delivery of sustainable communities discourse and the urban sustainability discourse. 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. Although its growing recognition has spurred an emerging body of literature on social sustainability, our understanding of this concept is still fuzzy and limited by theoretical and methodological constraints stemming from its context and disciplinary-dependent definitions and measurements. As Sachs (1999) puts it, at a fundamental level, it is still unclear whether the concept of social sustainability means the social preconditions for sustainable development or the need to sustain specific structures and customs in communities and societies.

Thus, the aim of this chapter is threefold. Firstly, it provides an overview of the concept of social sustainability and explores its evolutionary meaning, highlighting the shift from the analysis of traditional 'hard' social policy areas towards emerging 'softer' research and policy-making themes. It is important to clarify that this chapter does not seek to provide operational definitions of, or normative prescriptions for, social sustainability. Rather, it debates alternative readings of social sustainability in the light of past, present and possible future interpretations of this concept. The second main objective is to examine to what extent and how social sustainability has translated into policy, despite the ongoing debate regarding the level of integration of assessment techniques, themes and metrics. Lastly, the chapter endeavours to suggest possible future trends in social sustainability

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research and ways in which the linkages between research, policy and practice should be investigated.

The chapter is divided in four main parts. It begins with an overview of the main interpretations of social sustainability that illustrates how different worldviews amongst social scientists have thus far prevented an unequivocal and widespread acceptance of the themes at the heart of this notion. The second part examines how social sustainability theoretical research approaches have translated into policy geared towards the promotion of social capital, citizens' participation, capacity building and, more recently, city liveability strategies. The third part illustrates how impact assessment is evolving into sustainability assessment (SA), and new appraisal methods and metrics are emerging in the sustainability literature. In this context, the analysis highlights the main differences between 'traditional' and 'sustainability' indicators, suggesting a set of characteristics for the latter. The chapter concludes with an examination of possible future directions within the social sustainability debate and the challenges that will have to be overcome to assess the progress toward sustainability.

2 Social Sustainability

There is general agreement that the different dimensions of sustainable development (e.g., social, economic, environmental and institutional) have not been equally prioritised by policy makers within the sustainability discourse (Drakakis Smith 1995). 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 the intangible nature of social aspects of development presents measurement quandaries, which 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 implications of environmental politics rather than as an equally constitutive component of sustainable development.

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 objective 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-discipline approaches have been attempted, covering for example the environmental and the social dimensions of sustainable development within the 'ecological footprint'

concept (Wackernagel and Rees 1996), it can be argued that such endeavours have only been partially framed within an integrated approach to sustainability.

As a result, the concept of social sustainability has been under-theorised or often oversimplified in existing theoretical constructs and there have been very few attempts to define social sustainability as an independent dimension of sustainable development. For these reasons, it can be argued that the relationships between the different dimensions of sustainable development, or indeed between 'sustainabilities', are still very much unclear. For example, Assefa and Frostell (2007) contend that social sustainability is the finality of development whilst economic and environmental sustainabilities are both the goals of sustainable development and instruments to its achievement. Similarly, Hardoy et al. (1992) dispute interpretations according to which social sustainability is defined purely as the social conditions necessary to support environmental sustainability. 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. Nonetheless, several definitions are reported in Table 1, which provides an overview of the plethora of social sustainability interpretations.

In Table 1, it can be seen how in Sachs' views (1999) socio-economic development is an open ended historical process, which partially depends on human imagination, projects and decisions subject to the constraints of the natural environment and the burden of the living past. Thus, social sustainability can be

Table 1 Examples of definitions of social sustainability

A strong definition of social sustainability must rest on the basic values of equity and democracy, the latter meant as the effective appropriation of all human rights – political, civil, economic, social and cultural – by all people	Sachs (1999: 27)
…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.	Littig and Grießler (2005: 72)
[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	Biart (2002:6)
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	Polese and Stren (2000: 15–16)

interpreted as a socio-historical process rather than a state. In this perspective, the understanding of social sustainability cannot be reduced to a static zero-one situation where zero suggests an unsustainable situation and one indicates presence of sustainability.

From a strictly sociological standpoint Littig and Grießler (2005: 72) emphasise the importance of both 'work', which is a traditional anchor concept in the German sustainability discourse, and 'needs' as defined by the Bruntland Commission (1987). Similarly, Biart (2002: 6) highlights the importance of social requirements for the sustainable development of societies. Despite the confusion over the meaning of social capital, his approach emphasises the importance of 'time –frames' and 'social conditions' for the long term functioning of societal systems. However, in his analysis 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).

A more comprehensive definition of social sustainability with a special focus on urban environments is provided by Polese and Stren (2000: 15–16). They emphasise the economic (development) and social (civil society, cultural diversity and social integration) dimensions of sustainability, highlighting the tensions and trade-offs between development 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. Within the context of urban areas, other authors also maintain that social sustainability interpretations emphasising social equity and justice may assist cities in evolving to become 'good' places by facilitating a fairer distribution of resources and a long term vision (Ancell and Thompson-Fawcett 2008).

By contrast, from a narrower housing and built environment perspective, Chiu (2003) identifies three main approaches to the interpretation of social sustainability. The first interpretation equates social sustainability to environmental sustainability. As a result, the social sustainability of an activity depends upon specific social relations, customs, structure and value, representing the social limits and constraints of development. The second interpretation, which she labels 'environment-oriented', refers to the social preconditions required to achieve environmental sustainability. According to this interpretation, social structure, values and norms can be changed in order to carry out human activities within the physical limits of the planet. Lastly, the third 'people-oriented', interpretation refers to improving the well-being of people and the equitable distribution of resources whilst reducing social exclusions and destructive conflict. In her study of the social sustainability of housing, Chiu (2003) adopts the second and third approach to demonstrate how social preconditions, social relations, housing quality and equitable distribution of housing resources and assets are key components of sustainable housing development.

Other authors do not provide a general definition of social sustainability but suggest the main key themes at the basis of the operationalisation of this notion. A number of these key themes are listed in Table 2, which shows how basic needs and equity are consistently being held as fundamental pillars of social sustainability. These concepts are deemed necessary for the physiological and

Table 2 Key themes for the operationalisation of social sustainability

Feature	Author
• Livelihood	
• Equity	
• Capability to withstand external pressures	Chambers and Conway
• Safety nets	(1992)
• Inclusion	
• Equity	
• Poverty	
• Livelihood	DFID (1999)
• Equity	
• Democracy	
• Human rights	
• Social homogeneity	
• Equitable income distribution	
• Employment	
• Equitable access to resources and social services	Sachs (1999)
• Paid and voluntary work	
• Basic needs	
• Social security	
• Equal opportunities to participate in a democratic society	Hans-Böckler-Stiftung
• Enabling of social innovation	(2001)
• Social justice	
• Solidarity	
• Participation	
• Security	Thin et al. (2002), DIFD
• Education	
• Skills	
• Experience	
• Consumption	
• Income	
• Employment	Omann and Spangenberg
• Participation	(2002)
• Basic needs	
• Personal disability	
• Needs of future generations	
• Social capital	
• Equity	
• Cultural and community diversity	Baines and Morgan (2004)
• Empowerment and participation	and Sinner et al. (2004)
• Interactions in the community/social networks	
• Community participation	
• Pride and sense of place	
• Community stability	
• Security (crime)	Bramley et al. (2006)

social survival of human beings and communities as a whole. This is because, at a basic level there can be little doubt that shelter, food, clean water and employment are essential requirements for the sustainability of individuals and communities. Similarly, equity is considered a crucial component of social sustainability because

Table 3 Traditional and emerging social sustainability key themes

Traditional	Emerging
Basic needs, including housing and environmental health	Demographic change (aging, migration and mobility)
Education and skills	Social mixing and cohesion
Employment	Identity, sense of place and culture
Equity	Empowerment, participation and access
Human rights and gender	Health and safety
Poverty	Social capital
Social justice	Well being, happiness and quality of life

of the increasing evidence that societies with lower levels of disparity have longer life expectancies, less homicides and crime, stronger patterns of civic engagement and more robust economic vitality (GVRD 2004).

The chronological review of these themes suggests that traditional themes, such as equity, poverty reduction and livelihood, are increasingly been complemented or replaced by more intangible and less measurable concepts such as identity, sense of place and the benefits of 'social networks'. Table 3 illustrates this broad shift from 'hard' themes towards 'softer' concepts within the sustainability discourse, although it is worth clarifying that even traditional 'hard' themes such as ageing and migration are increasingly being approached from a more qualitative perspective. For example, in recent years the study of migration is not only limited to the analysis statistical figures but also entails the examination of the qualitative nature of migration and the level of integration of migrants in their recipient countries.

Despite these disagreements, for the purpose of this chapter, it can be argued that social sustainability concerns how individuals, communities and societies live with each other and set out to achieve the objectives of development models, which they have chosen for themselves taking also into account the physical boundaries of their places and planet earth as a whole. At a more operational level, social sustainability stems from actions in key thematic areas encompassing the social realm of individuals and societies, ranging from capacity building and skills development to environmental and spatial inequalities (see Colantonio 2007, for a complete list). In this sense, social sustainability blends traditional social policy areas and principles 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. The different role played by theories, principles, objectives, targets and themes in the purse of social sustainability will be reviewed in the remainder of this chapter.

3 The Linkages Between Research and Policy

Several theoretical and methodological approaches to the study of social sustainability can be identified. These include, for example:

– *Capital stock*, e.g., social capital, environmental capital and ecological footprints etc. (Coleman 1988; Putnam 1993; Wackernagel and Rees 1996).
– *Equity and Human Rights*, e.g., poverty studies and unequal development (Sen 1985, 1992; Sachs 2001);
– *Institutional Theory and Governance*, e.g., participation and stakeholder analysis (Chambers 1992 ; Healey 1992);
– *Business and Corporate studies*, e.g., Triple Bottom Line, Corporate Social Responsibility etc. (Elkington 1994);
– *Behavioural and Welfare Economics*, e.g., capabilities approach, well-being, health and happiness perspectives (Sen 1993; Nussbaum and Glover 1995; Layard 2005);
– *Transition Theory*, e.g., institutional theory and system analysis (Rotmans et al. 2001; Loorbach and Rotmans 2006).

Throughout these perspectives there has been an examination of different aspects of the 'social' dimension of development, but the exact positioning of this varies depending on the perspective adopted. For example,

• The equity and human right approach emphasises the inter and intra-generational aspect of the benefits of development;
• Advocates of the capital stock perspective focus on the importance of human relationships (social capital) and its impact on development or the physical carrying capacity of planet earth (environmental capital) and how these capitals are shared amongst individuals and societies across the globe;
• Other authors use institutional theory to highlight the importance of participation in the governance mechanisms underpinning development;
• The business approach calls for a more ethical and pro-active role of the private and corporate sectors in improving the social qualities of communities and places where they operate;
• Behavioural and welfare economy scholars have recently pointed out that both the pre-conditions and the finality of development should be to increase people's happiness and quality of life, whilst;
• Transition scholars have recently focused on the elements required to foster a systemic societal shift from the current unsustainable development model toward a more sustainable one.

It can be argued that these approaches have been incorporated into sustainable development policies promoted at both national and international level to different extents. Figure 1 shows a few examples of how social sustainability research approaches have led to the promotion of specific policies. These include for example the promotion of social capital by the World Bank; capacity building programmes promoted by the UN, and urban development policies geared toward the enhancement of quality of life and happiness in several EU cities. In addition, more recently, the Lisbon European Council held in 2000 also launched for the first time the idea of the social dimension as an integral part of sustainable development, paving the way for the Bristol Accord and the EU sustainable communities agenda in 2005.
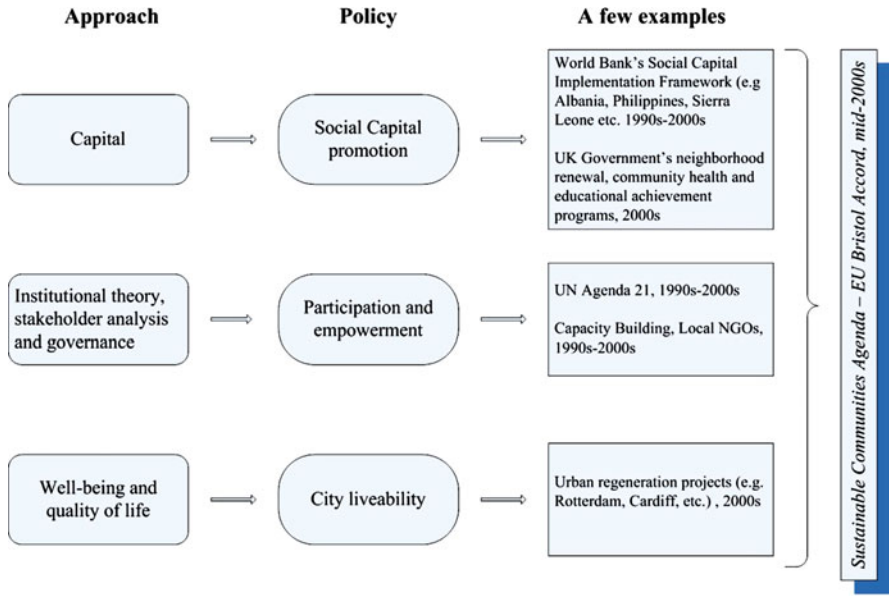
Fig. 1 Research approaches and policy linkages

However, the mechanisms through which new theories and approaches provide stimulus for new policies are still unclear. Further, there is disagreement on how long it takes for new research ideas to be incorporated into policy prescriptions. This can range from a few years to generations of policy makers. Indeed, the linkages between research and policy are influenced by several elements, including

1. *Level of abstraction of the theory*, which may have little application
2. *Feasibility and implementation costs*, including for example the cost of maintaining sets of local indicators to monitor the effectiveness of policies
3. *Complexity and sophistication*, which may preclude access to and participation of several stakeholders due for example to the existence of technical jargon etc.
4. *The nature of the dialogue and communication channels existing between researchers and policy-makers*

Furthermore, at a more conceptual level, it can be argued that another element influencing the linkages between research and policy is the shift from 'hard' themes towards 'softer' concepts within the social sustainability discourse, which has spurred a wider debate on the role that governments and policy-makers should play in delivering 'soft' objectives. For example, with regard to happiness, Ormerod and Johns (2007) question the ability of governments to embark upon happiness-oriented policies whilst they are still struggling to deliver on existing commitments. By contrast, Layard (2007) notes that governments have been

interested in happiness at least since the Enlightenment, but only recently they have begun to measure the concept and explain it systematically. Thus, understanding the conditions conducive to human happiness in all their complexity should be the central concern of social science.

Due to the speculative nature of social sciences, and the emerging mix of hard and soft themes in the social policy debate, it is may prove difficult to scientifically understand the inter-relationships between these themes and to identify optimal social targets and objectives to be pursued in order to deliver socially sustainable places. Indeed, the multiple combinations of hard and soft themes, and the disagreement over their meanings, hinder the scientific identification of what is socially sustainable and what it is not.

More dangerously, ill-conceived assumptions and theories concerning the elements conducive to social sustainability can potentially lead to the implementation of inadequate social policies. A classic example of this peril is represented by the assumption that higher income automatically fosters more socially sustainable communities, for example, by reducing crime or boosting personal and communal satisfaction. However, there is evidence in EU cities that low income communities can be more satisfied with their area than higher income communities (Blom 2009), making the whole community more socially sustainable. In such instances, social sustainability-oriented policies geared towards increasing income in disadvantages communities may be less effective in promoting sustainability than other policies addressing more pressing local social issues. This concern can be also framed within the broader difficulties of developing and applying effective *ex ante* policy assessment frameworks (e.g., identifying sound premises and purposes) as pointed out by Weaver and Jordan (2008).

4 Sustainability Assessment

4.1 Key Features

Sustainability Assessment (SA) is a key element connecting social sustainability research and policy within the context of current calls for evidence-based policies and the appraisal of policies, programmes, plans and projects against sustainability criteria. Broadly speaking, sustainability appraisal is a form of assessment that aims to inform and improve strategic decision making (Sheate et al. 2008). The assessment relies on the application of a variety of methods of enquiry and argument to produce policy-relevant information that is then utilised to evaluate the consequences of human actions against the normative goal of sustainable development (Stagl 2007: 9). Indeed, as Gasparatos et al. (2008) suggest, sustainability assessments ought to:

- Integrate economic, environmental, social and increasingly institutional issues as well as to consider their interdependencies;

- Consider the consequences of present actions well into the future;
- Acknowledge the existence of uncertainties concerning the result of our present actions and act with a precautionary bias;
- Engage the public;
- Include equity considerations (intragenerational and intergenerational).

Sustainability assessment builds on Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) and despite being a less mature assessment framework than its predecessors, there is general agreement that the assessment is characterised by four main features. These include (i) an emphasis on integration of techniques and themes, (ii) the call for multi-criteria approaches, (iii) the importance of objectives and principles-setting, and (iv) stakeholders' participation in the assessment itself. The in-depth analysis of these aspects is outside the scope of this chapter however, a brief overview of them is provided below in turn.

(i) *Integration of techniques and themes:*

The emphasis in sustainability appraisal is on integration because many approaches to sustainability assessment can be said to be example of 'integrated assessment' (see Weaver and Rotmans 2006, for an extensive analysis of this concept) derived from EIA and SEA, which have been extended to incorporate social and economic considerations as well as environmental ones (Pope et al. 2004; Dalal-Clayton and Sadler 2005). For example, Pope (2007) argues that sustainability assessment can be seen as the 'third generation' of impact assessment processes, following project EIA and the SEA of policies, plans and programmes. From this perspective, EIA-based integrated assessment has been adopted as a sustainability appraisal method by simply replicating the one-dimensional form of assessment in the three-pillar model of sustainable development. This allows for the discrete assessment of the potential environmental, social and economic changes of a proposal and reflects a systemic 'triple bottom line' approach to sustainability (Elkington 1994).

(ii) *Multi-criteria approach*:

There is an increasing call to use a multi-criteria approach in sustainability appraisal in light of the multifaceted nature of the concept that amalgamates social, environmental and economic matters into a new independent entity. For example, in the field of decision making, Multi-Criteria Decision Analysis is an emerging method for sustainability appraisal. It consists of a set of methods using dissimilar criteria, which are combined together by using scores and weightings in order to aid decision making with regards to conflicting evaluations, options and interests. Examples of these methods are Analytic Hierarchy Process, Goal Programming and Novel Approach to Imprecise Assessment and Decision Environments. These appraisal methods acknowledge a pluralist view of society (Glasson et al. 2003) and render the decision-making process more transparent (Stewart 2001). Further, because of the social learning and the reflexive participatory process involved in the assessment, these

techniques can help in the evaluation of projects or proposals whose impacts are not well understood and would therefore benefit from a participatory and multi-disciplinary approach (Stagl 2007).

(iii) *Importance of objectives and principles-setting*:

Sustainability appraisal is a form of strategic assessment linked to guiding principles and the achievement of policy objectives. Within this context, Pope et al. (2004) distinguish an objective-led appraisal and a principle-based assessment approach to sustainability. The former 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. The latter is led by objectives derived from broader sustainability principles. In their views, the objective-led appraisal focuses on the appraisal of the 'direction to target', which is usually indicated with '+' '0' or '−' for a positive, neutral and negative move toward the sustainability target. Conversely, the principle-based assessment goes beyond the mere establishment of a 'direction to target' and endeavours to establish the 'distance from target', that is, the extent of progress toward sustainability.

(iv) *Stakeholders' participation in the assessment*:

There has been an increasing call for more participation in the sustainability assessment process (Rotmans et al. 2008) because the latter is often wrongly grounded on the traditional assessor – client relationship (Cavanagh et al. 2007). This form of assessment often fails to understand the varying sensitivity attached to specific issues by a plethora of actors with a stake in the project, process or objective been assessed. Stagl (2007) points out that this traditional technical-rational model of appraisal in which 'objective assessment' by an assessor is assumed to lead automatically to better decisions has proved theoretically, politically and practically inadequate. In his views, the type of assessment can influence its outcome. In other word, the choice of appraisal method and criteria is not a wholly technical question but a 'institutionalising social choice' (Stagl 2007: 3) in which participation is likely to engender a greater sense of ownership of the appraisal process itself (Keough and Blahna 2006).

However, despite the rapid ascent of sustainability assessment techniques in the international arena, the appraisal process has also been subject to criticisms. These include for example,

- Superficiality and lack of quantification (RCEP 2002) of the assessment, which is often due to insufficient provision of benchmarks or the difficulty in establishing how and who should set critical threshold levels for non-environmental variables,

- Stakeholders' involvement is often deemed in practice more consultative rather than participative due to the complexity of the overall assessment process and the availability of resources (Sheate et al. 2008),
- Environmental, economic and social factors are ofter considered separately, with emphasis on balancing the trade-offs between these dimensions rather than exploring the linkages and interdependencies between them (George 2001),
- Lack of consensus concerning the meaning of integrated assessment (Scrase and Sheate 2002) and
- The existence of subjective judgments within the appraisal process concerning integration, win-win solutions and trade-off (Therivel 2004), which make the process not entirely scientific.

These criticisms clearly provide an overview of some of the challenges that will have to be overcome in the field of sustainability assessment, and suggest the main issues that are likely to dominate the sustainability debate in the near future.

4.2   Recent Sustainability Assessment Legislation in the EU

Over the last few decades, sustainability assessment has gained increased recognition in sustainable development policy at the European level, where four main assessment frameworks related to sustainability aspects have been legislated since 1985 (Ruddy and Hilty 2008). These include,

1. Environmental Impact Assessment, which has been typically applied to projects on land use planning at the national level since 1985 through Directives 85/337/EEC and 97/11/EC.
2. Strategic Environmental Assessment came into practice in the mid 1990s as a method to assess the impacts of certain policies, plans and programmes at a higher governance level than land planning. In 2001 the European Council formally adopted the SEA Directive 2001/42/EC that legislates this form of assessment.
3. Sustainability Impact Assessment, introduced by DG trade in 1999 to integrate sustainability into trade policy by informing negotiators of the possible social, environmental and economic consequences of a trade agreement (EC 2005).
4. The EU Impact Assessment System introduced in 2003 by the European Commission to support of the EU's Sustainable Development Strategy and to enhance the quality of the Commission regulatory activity.

If on the one hand, these frameworks demonstrate the variety of assessment techniques legislated at policy level, on the other, they highlight the confusion over the terminology used to measure sustainability and the piecemeal approach that characterises this field. For example, according to the EU terminology, Sustainability Impact Assessment is a process undertaken before and during a trade negotiation in order to identify the economic, social and environmental impacts of a trade agreement (EC 2005). Thus it can be argued that sustainability

assessment is currently limited to trade agreements rather than to wider policies, plans and programmes. Furthermore, the methodology developed for the assessment draws upon traditional EIA stages, including Screening – Scoping – Preliminary Assessment – Flanking measures (mitigation and enhancement analysis), but very little is said about the integration criteria and the sustainability principles to be adopted.

   To clarify some of the differences and similarities between the main families of assessment techniques, Fig. 2 provides a succinct overview of EIA, SIA, SEA and SA. The diagram offers snapshots of selected definitions, main characteristics and limitations of these forms of assessment. These are meant to summarise rather than replace the very extensive and comprehensive coverage of assessment related issues that can be found in the abundant literature in this field.

4.3 Conceptual Scope and Practice of Social Sustainability Assessment

From a social sustainability perspective, there is paucity of specific sustainability assessment methodologies as such. The assessment is often conducted through

Increasing integration, strategicness and comprehensiveness of themes and methods

	EIA (Since 1960s)	SIA (1970s)	SEA (1990s)	SA (2000s)
Selected definitions and objectives	A public process by which the likely effects of a project on the environment are identified, assessed and then taken into account by the consenting authority in the decision-making process	A systematic, iterative, ex-ante form of assessment that seeks help individuals, groups, organizations and communities understand possible social and cultural, or economic impacts of change, or better still impacts of proposed change	A form of environmental assessment intended to identify and assess the likely significant effects of a plan, programme or a policy on the environment, the result of which are then taken into account in the decision-making process	A form of strategic assessment that integrates environmental, social and economic parameters and relies on the application of a variety of methods of enquiry and argument to produce policy-relevant information in order to evaluate human actions against the normative goals of sustainable development
Main Features	• Focus on environmental dimension of sustainable development, though it may include separate social considerations • Physical/Quantitative approach to the measurement of selected variables • Selection of objective but contextual targets and thresholds • Limited to project level	• Focus on social dimension • Speculative in nature, does not provide precise, accurate and repeatable results • The selection of targets and thresholds relies on system values and political objectives rather than scientific criteria • Primary, secondary, cumulative and 'dead-weight' effects are difficult to calculate and measure	• operates at a strategic level • stresses process rather than detailed technical analysis • foundations in EIA but by nature more open-ended, consultative and iterative than EIA • No need for sophisticated and expensive data gathering and modelling capacity • inter-institutional cooperation and public participation key determinants of success	• Integration of sustainable development dimensions • relies upon principles and objectives rather than targets and thresholds • acknowledge the existence of uncertainties concerning the result of our present actions and act with a precautionary bias • engage the public • include equity considerations (intra generational and intergenerational).
Examples of main limitations	• Ignores politics and models of decision making • Too narrow focus on bio-physical environment	• Quality and availability of data at the local level • 'Social engineering' risk	• Environmental effects hard to predict at strategic level • Achieving integration	• Quantification issues • Trade-offs, aggregation and weights difficulties

EIA= Environmental Impact Assessment; SIA=Social Impact Assessment; SEA: Strategic Environmental Assessment; SA= Sustainability Assessment

Fig. 2 Overview of main methods to assess sustainable development and its dimensions (*Source*: Various. See also Colantonio (2008))

social impact assessment (SIA), which is extended to include other sustainability pillars. For example Hacking and Guthrie (2008) maintain that the extended coverage of sustainability appraisal is being accommodated by 'stretching' EIA or SEA and broadening the definition of 'environment' and hence the thematic coverage of theme-specific assessment such as SIA. However, they question the real level of integration of these techniques because in their views SIA may be undertaken on its own, as a component of EIA, in parallel with EIA, or as part of an 'integrated' S&EIA. It is also worth pointing out that these diverse impact assessment techniques were not designed for sustainability appraisal *per se*. As a result, their semantic or substantive integration may not be able to capture, address and suggest solutions for a diverse set of issues that affect stakeholders with different values and span over different spatial and temporal scales (Gasparatos et al. 2007).

Within this context, in a recent study of 20 Environmental Statements (ESs) concerning randomly selected urban regeneration projects implemented in the UK between 1998 and 2007, Glasson and Wood (2008) point out that SIA is covered in 80% of the cases, often in a separate chapter. According to their analysis, the scope of SIA content has widened from the 1990s experience to cover population profile and occupational groups; economic and business context; learning and employment; general well being, health, crime and deprivation; community facilities and services; recreation and public open space; and social inclusion and community integration. Further, they argue that there is increasing evidence of best practices in project-SIA after 2004, partly because of the publication of the Planning and Compulsory Purchase Act (United Kingdom Government 2004) and the Sustainability Appraisal of Regional Spatial Strategies and Local Development Document (ODPM 2005).

However, they also note that there is limited evidence of a sustainability approach that set the SIA and ESs within a wider sustainability context. This is for example because (i) only 50% of ESs contain methodological information that goes beyond a bland descriptive review of population and employment baseline (ii) there is insufficient analysis of the links between socio-economic components (e.g., between demographic profile and jobs created), (iii) quantification is limited and mainly focused on demographics, employment, services and facilities provision, and (iv) the assessment methods showed limited community engagement and reduced involvement of a wide range of stakeholders.

Lastly, at a more conceptual level it can also be argued that another fundamental problem for the deployment of SIA within a sustainability perspective concerns the target and threshold-setting exercise inherent to the impact assessment itself, which presents problems when applied to social settings. Indeed, the bad experience of the 1960s makes social scientists hesitant to formulate normative targets and thresholds, and there can be little doubt that social engineering policies of the 1960s have been criticised for promoting ill-conceived social formulations (Omann and Spangenberg 2002 In addition, social objectives against which to assess social sustainability need to be contextualised within different development models and system values. 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.

4.4 Social Sustainability Metrics

Historically, long lists of indicators were established to describe the complexity of sustainable development, with special focus on its environmental dimension. A recent study by Therivel (2004) showed that two thirds of sustainability indicators addressed environmental concerns. More recently, these rather technical lists have been enlarged to include social indicators. Long lists have also been simplified and reduced to sets of core indicators (Hens and De Wit De 2003), which are 'bundled' into sustainability themes, objectives and guiding principles. These elements are interlinked together and constitute the backbone of most sustainable development policies.

In terms of social sustainability metrics, previous work from Colantonio (2007) argued that

- The evolution of indicators shows how older indexes prioritise the basic needs component whilst indicators developed more recently seem to emphasise the importance of governance, representation and other institutional factors (see Colantonio 2007 for a review of this evolution).
- In older indexes the elements taken into account were technically weighted together with other dimensions of sustainable development in an attempt to deliver an integrated approach to sustainability. However, in later sustainability indicators the final decision about trade-offs is de facto left to 'sound judgement', as well as leadership and communication skills (Egan 2004).
- The 'community' and the 'local level' have re-emerged as main spatial and operational space for the pursuit of sustainability.
- There has been a shift from purely statistics-based indicators toward hybrid sets of indicators that mix quantitative data and qualitative information.

Broadly speaking, the review of recent developments and trends in social sustainability assessment and measurement also suggests a broad distinction between 'traditional social indicators' and 'social sustainability indicators', which is summarised in Table 4. According to this categorisation, it can be argued that traditional social indicators are used for the analysis of discrete issues accessible to specific methodologies related to individual themes that are linked to targets rather than objectives. They are also often selected by panels of experts in national and regional statistical offices. They focus on targets or outcomes and provide a static analysis of national and regional social phenomena.

By contrast, social sustainability indicators are concerned with the integration of multidimensional and intergenerational issues inherent to the notion of sustainability. Their selection is informed by sustainability principles and objectives, which stem

Table 4 Characteristics of traditional social indicators and social sustainability indicators

Traditional social indicators	[Emerging] social sustainability indicators
Static	Intergenerational and incorporating uncertainty
Predominantly quantitative	Hybrid
Product	Process
Descriptive	Strategic
Mono-dimensional	Multi-dimensional
Target oriented	Principles and objective driven
Top down selection	Deliberative and reiterative selection

from a deliberative and reiterative participation process involving a wide array of stakeholders and local agents. Moreover, sustainability indicators are *process indicators* in the sense that they analyse the processes through which sustainability principles and objectives are defined, themes agreed and solutions implemented. They allow the monitoring of the actual implementation of a project or a phenomenon and assess the progress towards specific objectives in a more interactive way than traditional social indicators.

To briefly clarify and exemplify these differences we can look, for example, at how poverty would be 'measured' from a 'traditional perspective' as opposed to a 'social sustainability perspective'. The traditional approach to measuring poverty involves establishing an income threshold and calculating how many individuals, families or households fall below it (Townsend and Kennedy 2004). Poverty is measured in a discrete way and linked for instance to a poverty reduction target. By contrast, from a sustainability perspective, poverty would be measured together with its main manifestations – e.g., ill-health, inadequate housing, limited access to basic services etc. – in a multi-dimensional index that integrates the processes and factors conducive of poverty. These include for example marginalisation, inability to access to education etc.

From an operational perspective, however, the aggregation of singles indexes and dimensions presents several difficulties. For example, current integrative frameworks still do not allow a meaningful aggregation of diverse metrics. Keirstead (2007), for instance, 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.

The development and integration process of indicators is hindered further by the shift in the social sustainability discourse from the in-depth analysis of hard themes towards the inclusion of soft themes, as reviewed earlier. As a result, new sustainability indicators are increasingly focused on measuring these emerging themes rather than improving the measurement of more traditional concepts such as equity and fairness. For example, if on the one hand, a growing number of variables and factors are being proposed to deconstruct and measure happiness and well being of individuals and communities worldwide (Veenhoven and Hagerty 2006), on the other, the main approach to equity still relies on the analysis of

income and relative prosperity, as shown for example by recommendations contained in the UK Green Book (Treasury 2005), a recent guideline document for the appraisal of governmental policies, plans and projects.

Recent sets of sustainable development indicators also illustrate the tendency of favouring the investigation of softer themes at the expenses of sophisticating the measurement of more established social sustainability pillars. For instance the latest set of sustainable development indicators released by the UK government in 2007 (ONS and DEFRA 2007) contains a Sustainable Communities and a Fairer World cluster of indicators, addressing social sustainability concerns. This cluster suggests several indicators to assess different aspects of sustainable communities, including well-being, life satisfaction etc. However, it does not recommend any index to deal with the interlinked subjects of social justice, equity, fairness, and cohesion (ONS and DEFRA 2007: 96). Similarly, a recent study commissioned by the EU Parliament (EP 2007) to look at the implementation of the Sustainable Communities approach in the EU concluded that fairness cannot be adequately measured through existing indicators and further work is needed in this area.

5   An Example of Emerging Social Sustainability Indicators: The Sociale Index in Rotterdam

Despite the theoretical and practical hurdles to monitor the social evolution of places, this section illustrates the practical example of the 'Sociale Index' (see Fig. 3), which is a composite index launched in 2008 by Rotterdam municipal authorities to monitor the transformation of the social qualities of the city's neighbourhoods.

The index collects and aggregates data concerning four main dimensions of Rotterdam's areas and their residents, including (i) *personal abilities* (language skills, health, income, education), (ii) *living environment* (level of discrimination, housing, public facilities, safety, etc.), (iii) *participation* (going to work/school, social contact, social and cultural activities, etc.), and (iv) *'bonding'* (mobility, 'feeling connected', etc.) (Leidelmeijer et al. 2007). The index produces a score between 0 and 10, which has four main purposes (Koppelaar 2009; Leidelmeijer et al. 2007; Rotterdam 2008), including:

– Measuring the social qualities of a place at a given time;
– Showing and comparing the differences between 64 of the 80 districts of Rotterdam;
– Providing a baseline for the assessment of policies;
– Analysing the strengths and weaknesses of each neighbourhood in terms of the dimensions included in the index.

The index, which is calculated yearly, comprises statistical (30%) and survey (70%) data.
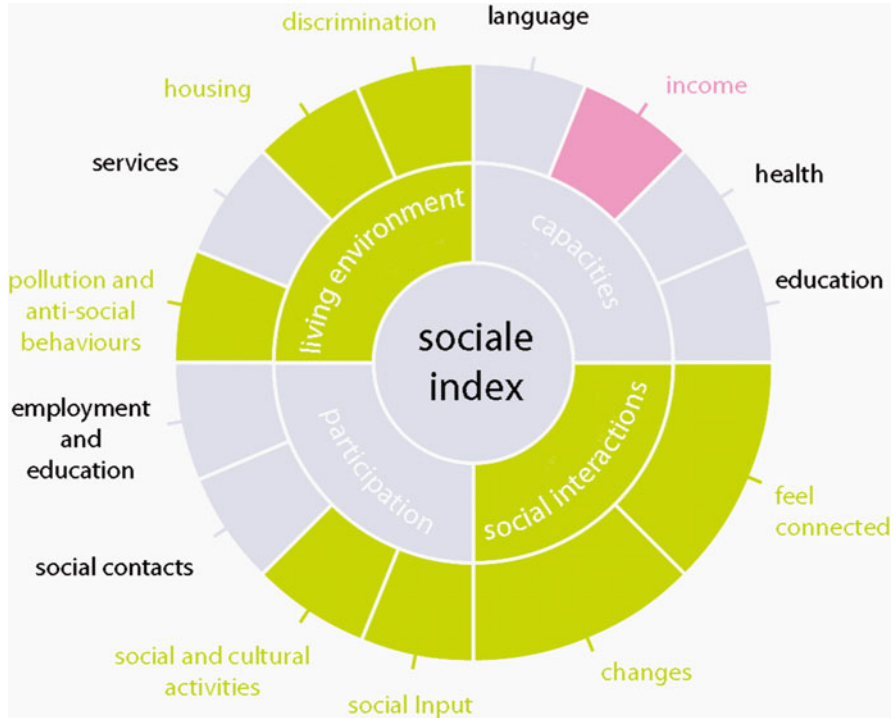
Fig. 3 The sociale index (*Source*: Translated and re-drawn by Colantonio from Rotterdam (2008))

The Sociale Index is relatively new, and no comprehensive evaluation of the pros and cons of this index have been carried out thus far. There can be little doubt, however, that this index embodies some of the main characteristics of emerging sustainability indicators reviewed in Table 4. Indeed, the Sociale Index is a multi-dimensional and hybrid indicator in the sense that it endeavours to aggregate different social sustainability themes together through a mix of qualitative (survey to measure participation and bonding) and quantitative data (official statistics for living environment and personal abilities) analysis. In addition, data for the calculation of the sociale index is gathered at neighbourhood level in order to provide an overview of how people live together, participate in local community activities and feel connected with each other (RIGO 2007).

For the purpose of this chapter this innovative indicator will not be examined further from an empirical point of view, that is, through the investigation of its operational and practical implications. However, it can be argued that, if read in conjunction with previous sections of this chapter, the brief analysis of the Sociale Index highlights the main methodological and theoretical issues involved in the measurement of social sustainability (at city level). Further it provides an

opportunity for policy-makers and practitioners alike to reflect on the key rationale and methods that should be adopted to conceptualise the evaluation of local, national and international social policies.

6   Conclusions

This chapter has provided a concise overview of the social dimension of sustainable development and suggested a taxonomical division between traditional and emergent social sustainability themes and indicators. This has been instrumental to suggest that the shift toward the analysis of more elusive concepts in the social sustainability debate may continue for the foreseeable future as larger sectors of communities and societies become more affluent and less worried about the satisfaction of basic needs. It is important however that this new focus on emerging themes is not pursed at the expense of more in-depth analysis of traditional pillars of social sustainability, such as equity and poverty, which have received less attention in recent social sustainability works.

The chapter has also illustrated how the progress toward sustainability is increasingly being appraised by extending and integrating 'Impact Assessment' and 'Strategic Impact Assessment' methods into 'Sustainability Assessment'. Techniques such as Environmental Impact Assessment, Strategic Environmental Assessment, Social Impact Assessment, Health Impact Assessment etc. are being amalgamated into a new independent form of assessment rooted in the philosophical and methodological framework provided by sustainability. However, these early forms of impact assessment were not designed to address the complexity inherent to the measurement of sustainability. As a result, there is widespread uncertainty concerning for example how different typologies of impact and assessment techniques should be integrated together.

Future research will also have to focus on unravelling the underlying inter- and intra-linkages between social sustainability assessment methods, policies, indicators and themes (for example equity and happiness or well-being and identity etc.). Further, it will have to investigate how the latter can be 'quantified' using simple and user friendly methods capable of deconstructing and monitoring these elements without losing the richness of information that is embedded within them. Lastly, another major challenge for future social sustainability research in the EU is to carry out systematic studies to understand the mechanisms, channels, processes, actors and timeline through which innovative ideas and theories are integrated in EU sustainable development policies and legislation.

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