Analysing and Measuring Social Inclusion in a Global Context[1]

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The aim of this paper is to demonstrate the analytical and operational relevance of the measurement of poverty and social exclusion, and to describe how such measures can be developed and used in a global context. The paper deals with general concepts and principles of social indicators construction; it seeks to shed light on the possible scope and usefulness of indicators in the field of social inclusion. While it tries to provide examples from around the world, it draws particularly on experiences in the construction of social indicators in the European Union and in their actual use in the policy process. A key objective of the paper is to spell out the main issues that need to be debated and resolved.

1. Introduction

This paper is concerned with social inclusion, seen here as the process by which societies combat poverty and social exclusion. In order to develop policies for social inclusion, the factors working against social inclusion – poverty and social exclusion – have to be understood. By "social exclusion", we mean the involuntary exclusion of individuals and groups from society's political, economic, and societal processes, preventing their full participation in the society in which they live. By "poverty", we mean a lack of *economic* resources. As such, it is an important cause of social exclusion, where lack of resources prevents people participating, but there are other important dimensions. Social exclusion designates a broader – complex and multi-dimensional – set of concerns. The achievement of social inclusion requires that both poverty and social exclusion be addressed in a balanced way.

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World-wide indicators have come to play an important role since the first *Human Development Report* was published by the United Nations Development Programme in 1990 (UNDP, 1990). Indicators have received political backing in the form of the *Millennium Development Goals*. In view of the diversity of circumstances across the globe, the aim of this paper is not to identify a single set of indicators. Its purpose is to illuminate the possible scope and usefulness of indicators in the field of social inclusion. While we try to give examples from around the world, we draw particularly on our experience in the construction of social indicators in the European Union (EU) and in their actual use in the policy process (Atkinson *et al*, 2002 and Marlier *et al*, 2007). The EU path has been a distinctive one, reflecting the history and culture of the countries involved. At the same time, the EU experience is that of multi-country cooperation, and, as such, may have valuable lessons for other countries and for international organisations. The fight against poverty and social exclusion is a common challenge, and there is scope for mutual learning, despite the differences in circumstances and in levels of living. One of the main aims of this paper is to spell out the key issues that need to be debated and resolved.

The paper focuses on measurement, and we believe that quantification is an essential step in the analysis of poverty and social exclusion. At the same time, quantitative indicators need to be accompanied by qualitative evidence. Qualitative evidence is important for at least three reasons. First, it helps interpret the numbers and provides a start in understanding the underlying mechanisms. One cannot just look at the statistical tables; one has also to read the text. Secondly, there are significant elements of human experience that cannot readily be reduced to a simple scale. Thirdly, and we briefly come back to this in Sub-section 9.2, qualitative evidence can also contribute to creating trust in social indicators.

2. Why is measurement essential?

The World Summit for Social Development in Copenhagen in 1995 defined an inclusive society as *'a society for all', in which every individual, each with rights and responsibilities, has an active role to play* (United Nations, 1995, para 66).

Achieving such an inclusive society is a goal with universal appeal. An inclusive society is one which over-rides differences of race, gender, class, generation, and geography. It ensures equality of opportunity, regardless of origin. An inclusive society is one which subordinates military and economic power to civil authority, and where social interaction is governed by an agreed set of social institutions. The capability of all citizens to determine these institutions is indeed a hallmark of an inclusive society. When confronted with new challenges, such as climate change, an inclusive society is one that gives everyone a say and everyone a responsibility.

Social inclusion is not only an abstract goal; it is highly relevant to today's politics. Exclusion from political and economic power fuels armed rebellion and undermines peaceful transition under democracy. In less extreme form, a sense of social exclusion lies behind urban rioting and the disaffection of young people. In many countries, there are various powerless groups (including ethnic groups, minorities…) who suffer poverty and social exclusion; there are regions that have been left behind by economic progress; and there are barriers to social mobility. In all countries, full gender equality remains to be achieved.

There is therefore a high degree of political salience. Achieving greater social inclusion is a political imperative, for both governments and international organisations. This imperative has led in turn to the need to *measure* the progress of societies towards the reduction of poverty and social exclusion. There are three main reasons why *indicators* of poverty and social exclusion are necessary:

- to establish in a concrete form the extent of poverty and social exclusion;
- to determine the direction of change over time; and
- as a practical tool to assess the impact of measures undertaken to promote social inclusion.

Statistical measures of poverty and social exclusion are crucial at the national and sub-national levels for countries to be in a position to assess their current performance according to an explicit set of criteria, to determine whether or not they are making progress in fighting poverty and social exclusion, and to compare the impact of different policy measures undertaken to promote social inclusion. Countries need, for instance, to be able to monitor the distributional impact of the current economic recession. They are necessary at the global level. The United Nations (UN), the World Bank, the OECD and other international bodies need them to compare in a (reasonably) harmonised way the extent of poverty and social exclusion across countries, to determine progress made in reducing poverty and social exclusion across countries and in the world as a whole, and, gradually, to improve international comparative analysis and mutual learning between countries through what we would term *contextualised benchmarking* (see below).

The *Human Development Index*, and related indices, published by the UNDP (for example, UNDP 2008) have amply demonstrated the political salience and value of such comparative indices. The need for quantitative social indicators has been highlighted by the adoption of specific international goals, such as the commitments of the World Summit for Social Development and the Millennium Development Goals *(MDGs; see Annex)*. The launching of these goals, and the creation of the necessary consensus, was aided by the evidence of the extent of poverty and social exclusion, such as the number of people living on less than US$1 a day. [4] The monitoring of progress towards the achievement of these goals requires good measures of the change over time.

At both national and international levels, the role of social indicators has been illustrated by the European Union and by the OECD. The formation of the EU has led governments and the European Commission to agree on yardsticks to assess performance. In the social domain, this has translated *inter alia* into a portfolio of EU indicators for social inclusion covering poverty and various dimensions of social exclusion. One of these indicators is the *risk of poverty* criterion of 60% of total household median equivalised net disposable income of the country in which the person lives. The OECD (2008) in its recent study, *Growing Unequal?,* made use of the criterion of 50% of national median income. The EU experience relates to a particular set of (mostly rich) countries, but it is more widely relevant. In particular, the 2004 and 2007

[4] Since 2000, the international poverty line has been set at US$1.08 a day, measured in terms of 1993 purchasing power parity (PPP). The PPP adjustment converts amounts expressed in national currency to an artificial common currency that equalises the purchasing power of different national currencies. At the rate used, US$1 should have the same purchasing power in the domestic economy as US$1 has in the US. The PPP adjustment is based on the results on price relativities of the International Comparison Programme.

enlargements of the EU brought into membership states whose incomes were significantly, in some cases very significantly, below those of existing members. The OECD study covered Korea, Mexico and Turkey. This meant that a number of issues arose in the definition of poverty that apply in a global exercise. These include for instance the measurement of poverty in absolute rather than relative terms, the use of consumption rather than income as the basis for calculating the "financial" indicators, the equivalence scales to be used for taking account of the different size and composition of households (for instance when calculating poverty rates), self-consumption (i.e., the valuing of goods for own consumption), etc. There are also, in our view, lessons to be learned about the way EU countries cooperate together in the social protection and social inclusion areas through the so-called social *Open Method of Coordination* (OMC). We are obviously not suggesting that the OMC approach should be applied worldwide. But we believe that it provides a useful source of inspiration for a more ambitious global benchmarking exercise, as it concretely demonstrates how coordination among 27 countries, together with agreed common objectives and monitoring procedures as well as truly comparative analysis and international benchmarking can play an important role in the field of social policy. [5]

Measurement requires a degree of precision about the underlying concept (see Section 3 below); the translation of broad intentions into measurable attributes of a society is a considerable step. The operationalisation of the attributes means that the available statistical sources and their limitations have to be investigated. Securing comparability is a big challenge. One needs measures that are (reasonably) comparable over time; one needs measures that are (reasonably) comparable across countries.

The difficulties of measurement mean that close links have to be kept between the design of social indicators and the questions that they are intended to answer. Measures have to be seen as designed for use in a particular context, not as all-purpose indicators. To give a simple example, a particular indicator may understate the extent of social exclusion, but by a stable amount each year. It may therefore be rejected as a basis for assessing the degree of social exclusion, but be perfectly adequate for assessing changes over time. Whether or not the imperfect indicator can be used depends on the purpose for which it is to be used. This paper is concerned with the design of measures that are *fit for purpose*. By the same token, different measures may be needed for different purposes and in different contexts. This has been illustrated above by the difference between the Millennium Development poverty goal, framed in terms of an *absolute* $1 a day, and the EU and OECD definitions of the risk of poverty expressed in terms of *relative* incomes.

It should be stressed at the outset that "indicators" are precisely that. Potentially they have great value in pointing to significant social problems and, taken together, a portfolio of indicators allows to draw conclusions about social progress. But indicators cannot be expected to provide a complete representation of the state of society. They are simply an *indication*. The nature of that indication will depend on the choices made

[5] For more information on the EU social indicators as well on the social OMC and the key challenges facing it, see *inter alia* Atkinson *et al*, 2002, Frazer and Marlier (2008), and Marlier *et al*, 2007 and 2009. Very useful OMC-related documents, including the 2009 EU "Joint Report on Social Protection and Social Inclusion" (EU Council of Ministers, 2009), can also be downloaded from the following European Commission website: http://ec.europa.eu/employment_social/spsi/poverty_social_exclusion_en.htm.

with regard to definitions and with regard to data. Different indicators highlight different features of social problems. Indicators can help in our understanding of the phenomenon of poverty and social exclusion, but do not immediately provide explanations.

3. From (income) poverty to social exclusion

The study of social exclusion emerged out of a long-standing concern with the measurement of poverty. For centuries, people have been concerned with those who are destitute, with churches, charities, and later governments making provision for the relief of poverty. Quantitative information about the extent of poverty, or the lack of economic resources, began to be assembled in Britain in the eighteenth century (Sir F M Eden, *The State of the Poor* (1797)), was developed by Booth, and took its modern form in the research in 1899 of Rowntree (1901), who carried out household surveys designed to measure the proportion of the population living in financial poverty. It was this kind of evidence in the United States in the 1960s (Orshansky, 1965) that led to the establishment by President Johnson of the War on Poverty.

Contemporary concerns with well-being have highlighted that economic resources are not the only element in destitution and that we cannot look at resources without considering the social context. To take up first the latter point, we have seen the definition of poverty increasingly be framed in terms of capacity to *participate* in the society in which a person lives. Lack of financial resources is judged in relation to those of people living around. Poverty is in this way directly linked to social inclusion. Indeed, in the UK, Rowntree commented how the rising prosperity had "greatly raised the standard of living among the workers (…) But it did more: it encouraged them to envisage themselves as an integral part of the national life" (1922, page xv). More recently, the notion of participation underlay the approach adopted by Townsend (1979) in his study of poverty in the United Kingdom, and the EU Council of Ministers definition of poverty. In the latter definition, for instance, "the poor" are taken to mean "persons, families and groups of persons whose resources (material, cultural and social) are so limited as to exclude them from the minimum acceptable way of life in the Member State in which they live." (EU Council of Ministers, 1985). As noted above, this definition has been implemented as from 2000 by taking a *risk of poverty* criterion of 60% of median income of the country in which the person lives, and this forms the basis for several social indicators currently employed by the EU.

The achievement of social inclusion goes beyond the elimination of poverty: it requires that the broader issue of social exclusion be addressed. As stressed by the European Commission – but clearly of world-wide validity – we are concerned with "the multidimensional nature of the mechanisms whereby individuals and groups are excluded from taking part in the social exchanges, from the component practices and rights of social integration" (European Commission, 1992, p. 8). Alongside economic resources and employment, we need to take account *inter alia* of health, education, affordable access to –other- public services (justice…), housing, civil rights, security and justice, well-being, information and communications, mobility, social and political participation, leisure and culture. This leads to a portfolio of social indicators that is necessarily multi-dimensional, covering a range of fields.

At a world level, the adoption of a multi-dimensional approach to social inclusion has long underlain developments. The Foreword to the first *Human Development Report* set out the position clearly back in 1990:

> "The purpose of development is to offer people more options. One of their options is access to income – not as an end in itself but as a means to acquiring human well-being. But there are other options as well, including long life, knowledge, political freedom, personal security, community participation and guaranteed human rights. People cannot be reduced to a single dimension as economic creatures." (UNDP, 1990, page iii)

The 2000/2001 *World Development Report* was entitled "Attacking Poverty", but the Foreword to the *Report* referred to "the now established view of poverty as encompassing not only low income and consumption but also low achievement in education, health, nutrition, and other areas of human development" (World Bank, 2001, page v). The Report itself opened by referring to "poverty's many dimensions" and stressed that these go beyond hunger, lack of shelter, ill-health, illiteracy and lack of education, very important though these are. The poor "are often treated badly by the institutions of state and society and excluded from voice and power in those institutions" (page 15).

The approach we adopt here is therefore multi-dimensional, with a broad compass. As explained earlier, we use the term "social exclusion" to designate this broad set of concerns.

4. Key issues of definition

The indicators used are in many cases 'objective' in the sense that the status of individuals or households can be verified by documentary evidence and is not based on a subjective judgment by the respondent. However, some of the broader indicators of social exclusion (such as the lack of political voice of the poor and socially excluded) may contain elements that are inherently ***subjective*** but that may prove very useful for the analysis of certain aspects of social inclusion. Subjective indicators have also a role to play in increasing the legitimacy of the whole measurement and assessment exercise that this paper is advocating. Exclusion is a personal experience, and the views of those suffering poverty and social exclusion should not be disregarded. There are various senses in which social indicators can incorporate subjective elements, which we do not examine here.[6]

As indicated above, the global perspective discussed here does not imply that there should be a single global set of indicators for all countries and all purposes. There

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[6] For references on subjective measures of how people feel about "making ends meet" and/or on subjective measurement of life satisfaction or "happiness", see for example: Clark, Frijters and Shields, 2008; Boarini, Johansson and d'Ercole, 2006; Van Praag and Ferrer-i-Carbonnel, 2004; Frey and Stutzer, 2002; Layard, 2005; Ryan and Deci, 2001; Van den Bosch, 2001; Hagerty *et al*, 2001; Gordon *et al*, 2000; Van Praag and Kaptein, 1994; and Van Praag *et al*, 1982.

And for information on and analysis of the 2003 and 2007 *European Quality of Life Surveys*, see following web-site: http://www.eurofound.europa.eu/areas/qualityoflife/eqls/index.htm. These surveys were conducted in the 27 EU countries, in Croatia and in Turkey. They cover topics such as: work-life balance, social networks, deprivation, life satisfaction, happiness, sense of belonging, participation in civil society…

is a wide diversity of national and also sub-national circumstances across the world. The sources of concern about poverty and social exclusion are varied. Countries identify different fault lines in their societies, and the choice of indicators has to be made according to the country context and the purpose for which the indicators are to be employed. Therefore, when debating poverty and social exclusion indicators, various definition issues need to be addressed. These include:

a. The distinction between 'absolute' and 'relative' measures, which touches on two central and tricky issues of definition: the specification of the *reference society* and the specification of the variable(s) of *ultimate concern*. When considering the impact of the current economic crisis, should our poverty standards be adjusted downwards with falling GDP per capita?
b. The distinction between consumption and income approaches to poverty (it is worth reminding that consumption and expenditure are not the same, nor do they necessarily move together).
c. The distinction between stock and flow indicators. In the case of economic resources, this distinction may be seen as the difference between a stock of assets and a flow of income, which perform different functions: the flow of income typically finances current consumption, whereas the stock of assets (if any) provides security against future risk. With the current financial and economic crisis, these risks to the poor have considerably increased. So that, while income (or consumption) is the main variable which has been considered when measuring poverty, we may want to consider a separate indicator based on the lack of wealth. This may take the form of an index of "vulnerability", measured for example by the absence of liquid funds on which a person could draw in the case of emergency. It may take the form of an index of indebtedness, where the person owes money or is in arrears on payment for utilities or for rent or for mortgage payments.
d. The distinction between static and dynamic indicators. As it is put by Bradbury, Jenkins and Micklewright, a child poverty rate of 10% "could mean that every tenth child is always poor, or that all children are in poverty for one month in ten. Knowing where reality lies between these extremes is vital" (2001, cover). Longitudinal (panel) surveys have an important role to play in monitoring and understanding how the situation of individual persons or households changes over time, as they allow identifying the individual factors, processes and life stages associated with these changes. These advantages have however a price: panel surveys are complex to administer, they are costly and they suffer from attrition.
e. The distinction between individuals, households and groups when designing and analysing indicators. (We briefly come back to this below, in Section 5, when addressing the issue of "territorial indicators".)

Again, these are all very important aspects which we cannot analyse here but which have been covered in detail by Atkinson *et al*, 2002. See also: Deaton, 2005; Duclos and Araar, 2006; Srinivasan, 1977.

When debating poverty and social exclusion indicators, we also have to ask the question of whether our concern for poverty and social exclusion is with ***living standards*** or whether we see this concern as emanating from a ***right*** to a minimum level of resources. Such a minimum rights approach, which can be traced back to theories of justice, gives a rather different perspective. For example, on a standard of living approach, it could be justifiable to give a lower nutritional allowance for women than for men (and this was indeed the case with the first US official poverty line; U.S. Social

Security Administration (2007)). On a minimum rights approach, that would not be justified if rights are equal for all.

When debating poverty and social exclusion indicators, we also need to be *forward-looking*. People are excluded not just because they are currently without a job or income but also because they have few prospects for the future. Social exclusion is not only a matter of *ex post* trajectories but also of *ex ante* expectations. Communities may, for example, feel marginalised because they see themselves as permanently excluded from the mainstream of society. In this case, we are seeking to measure current variables that are predictors of future developments. An indicator such as low school attainment, or truancy, may be important not only in its own right but also because it increases the risk of poverty and social exclusion in later life.

5. Territorial indicators

Indicators may have an important territorial dimension. We are likely to be interested in how poverty rates differ across regions, or whether low education is a feature of some localities but not others. One major distinction is that between rural and urban areas. We want to know how far poverty is "clustered" in particular neighbourhoods.

The degree of clustering takes on particular significance where policy has been targeted geographically. The use of such geographically targeted schemes in Latin America and the Caribbean is surveyed by Baker and Grosh (1994) – see also Barca *et* al (2004) and Dutrey (2007). For example, the school lunch programmes in Chile, Costa Rica and Jamaica were targeted geographically by school, free milk was distributed in Peru and day care in Venezuela by neighbourhood. Area-based anti-exclusion policy is based on a set of hypotheses about the location of exclusion, and this points to the collection of area-based data. But for the same reason, the collection of household-based indicators is necessary to evaluate the hypotheses on which this policy is based.

Geography may be significant in a different way. Whereas poverty or low education are characteristics of individual households, there are other types of indicator which – it may be hypothesised - relate to a population rather than the individual. Disadvantage may be located in a community and not a property of the particular individuals who live there. Life expectancy, for example, may depend – at least in part – on the local environment, so that a person moving to another area could thereby modify his or her life expectancy.

One important reason why territorial indicators need to be considered is that a number of countries such as Brazil, have decentralised significant elements of social policy to regional, provincial or local governments. These devolved and local governments may set their own targets and may adopt their own performance indicators. There may for instance be different poverty lines by region.

6. Gender mainstreaming

Eliminating inequalities and promoting equality between women and men is a prominent part of the UN agenda. A gender perspective should therefore be integrated into every stage of the policy process (design, implementation, targeting and monitoring, and evaluation) with a view to promoting equality between women and men, an approach referred to as "gender mainstreaming" (see Atkinson and Meulders, 2004). As rightly emphasised by the EU *Manual for gender mainstreaming social inclusion and social protection policies*, "gender mainstreaming is *not* a goal in itself but a means to achieving equality"; and "it is *not* concerned only with women, but with the relationship between women and men for the benefit of both" (European Commission, 2008). At a world level, the UNDP constructs and publishes a composite *Gender-related Development Index*, which measures the average achievement in the three basic dimensions captured in the Human Development Index -a long and healthy life, knowledge and a decent standard of living- and which is adjusted to account for inequalities between men and women (see, for instance: UNDP, 2008). (See also: Booth (2002) and Van der Molen and Novikova (2005).)

It is clearly important to capture gender differences in the social indicators already defined. For example, how many of the billion of people living on less than $1 a day are women? It is often assumed that poverty is equally shared, or at least that the calculation comes out this way, given an assumption of equal sharing of resources within the household. But the proportion of women among the poor depends on the gender composition of households. If women are disadvantaged in their access to resources, then households with more female members (such as lone mothers and widows) will be at greater risk of poverty. According to the website of the United Nations Population Fund (UNFPA), "a majority of the world's absolute poor are female". At a micro-level, the village study of Palanpur in India has shown the vulnerability of widows where there is no adult son (Lanjouw and Stern, 1998, page 339). According to the Beijing Platform for Action, "in the past decade the number of women living in poverty has increased disproportionately to the number of men" (para 48). It is clear that all indicators of social inclusion should, where possible and meaningful, be disaggregated by gender.

The issue of gender is important not only in terms of disaggregation but also in the definition of indicators. Choices made with regard to definitions may not be neutral with regard to gender. The first important way in which this happens is by focusing on the household as a unit. An example is provided by the measurement of poverty. In the present state of knowledge we have typically, when considering consumption or income, to treat the household as a sharing unit, but this conceals significant inequalities between women and men in control over resources. In this way, we may seriously understate the extent to which poverty is feminised. Similarly, we cannot consider land titles and land access purely in household terms. We have to examine the implications for wives and daughters, since in many societies there is an important gender dimension to land rights (these issues are discussed with regard to a number of sub-Saharan African and Asian countries in the papers in the volume edited by Razavi, 2003). Where there are multiple claims and joint titles, land rights may not only be hierarchically ordered but also gendered, with women having "weaker" rights of land use. (See also below, Sub-section on "Tools for policy analysis".)

The second important way in which the choice of indicators may fail to be gender neutral is where they concentrate on market activities. While women may engage in

significant market activity, they carry out a disproportionate amount of domestic labour and are more likely to be found in the informal sector. Similarly, in the case of the EU social indicators, the focus on paid employment in defining joblessness, rather than on a wider concept of productive contribution, is not gender-neutral.

Comparison of indicators for men and women is an important route by which evidence can be assembled regarding gender bias in the allocation of resources, access to services, and opportunities. But we must also remember those who do not appear in the statistics. As Amartya Sen has emphasised, "the terrible phenomenon of 'missing women' (resulting from unusually higher age-specific mortality rates of women in some societies …) has to be analysed with demographic, medical and social information, rather than in terms of incomes, which sometimes tell us rather little about the phenomenon of gender inequality" (1999, page 20).

7. Children mainstreaming

Investment in children is a widely shared priority, and this has to some degree been reflected in the construction of indicators of poverty and social exclusion. Thus, the social inclusion indicators incorporated into the EU open method of coordination are broken down by age groups, including children. The high relative poverty rates for children observed in a majority of EU countries have heightened concern about child poverty. In the same way, one can ask how many of the billion living world-wide on less than $1 a day are children?

These concerns have furthermore led to calls for what has been termed as *children mainstreaming* (Marlier *et al*, 2007). Use of this term does not imply that children should necessarily have priority over, say, the elderly; and it is in fact essential that, where possible and meaningful, all social inclusion indicators be provided not only for children but also for other broad age groups (e.g. youth, middle-age and elderly). Rather, as with gender mainstreaming, we are suggesting a different perspective. It gives a different "cut" through the problem of constructing social indicators. The approach is not simply to disaggregate by age but to ask: *"what indicators would best serve the needs of children?"*. There is, for example, a good case for considering measures of child health, child development or, more broadly "child well-being". The Millennium Development Goal 4 is indeed concerned with under-5 mortality. In Australia, Saunders and Naidoo contrast the two approaches:

> "There are two ways in which to identify how social exclusion affects children. The first involves using indicators that are generally applicable and examining their incidence among families with children. The second involves focusing on that sub-set of indicators that relate more specifically to exclusion among children. We have adopted the latter approach here … it is possible (indeed likely) that parents and their children experience different forms of social exclusion" (Saunders and Naidoo, 2008, page 7).

In considering child-focused indicators, it is important to recognise that there may be differences between the interests of children and the interests of the parents who often make choices on their behalf. An obvious example is where the parents require that the children work on the family farm or in the family firm, but the children's interests would be better served by their continuing in school. There may be a trade-off

between the aim of avoiding poverty for the family and the inclusion of the child (and his or her intergenerational mobility). The two sets of considerations have to be decoupled. The choice/interests dichotomy is one reason why we have singled out children for special consideration.

In the European Union, this work has been taken forward by the Task-Force on Child Poverty and Child Well-Being, whose report was published in 2008 (Social Protection Committee, 2008). As noted in the report (page 13): "In 2005, 19 million children lived under the poverty threshold in the EU-27, meaning that 19% of children were at risk of poverty, against 16% for the total population. (…) In most EU countries children are at greater risk of poverty than the rest of the population (…). In almost half of the EU countries, the risk of poverty for children is above 20% (…)". The ambitious recommendations put forward in the report, with a view to better monitoring and assessing child poverty and well-being at EU as well as national and sub-national levels, were all endorsed by the European Commission and the 27 EU Member States.[7] (See also: Frazer and Marlier (2007); Frazer (2006); Guio and Museux (2006); Hoelscher (2004); UNICEF (2005 and 2007); Whiteford and Adema (2007).)

8. How do we measure?

The choice of indicators is a matter of considerable importance. In particular, as explained in Section 2, the design of the indicators depends on the question to be answered. This applies both to the individual indicators and to the structure of a set of indicators.

8.1 A principle-based approach

The design of indicators is crucial because of their political salience. For them to be *fit for purpose*, their design needs to be based on a set of principles, where these principles are of greater generality than the current policy concerns. This approach was proposed by Atkinson, Cantillon, Marlier and Nolan in their independent study on EU indicators for social inclusion commissioned by the 2001 Belgian Presidency of the EU Council of Ministers (see Atkinson *et al*, 2002) and now underlies the social indicators adopted as part of the EU Social OMC. It is the same approach that we advocate here, for the measurement of poverty and social exclusion to meet the aforementioned (sub-)national and international objectives. Five principles concern the single indicators and three the portfolio as a whole. Even though the principles suggested below are close to

[7] In line with a point made above, namely that it is important to be aware of the differences that may exist between the interests of children and those of their parents, one of the Task-Force recommendations reads as follows: "There is increasing realisation of the potential interest of interviewing directly children on their own experience and perceptions of poverty and well-being. However, a number of methodological, legal and ethical issues need to be addressed to ensure that such information can indeed be collected throughout the EU. National know-how and good practices in this area should be gathered on the basis of which Member States could then best explore the possibility of implementing these surveys among children at (sub-)national level."
Giving attention to the views of children themselves is an important element in a children's rights approach but this aspect remains very underdeveloped even in rich countries.

those proposed by Atkinson *et al* (2002), some of them (slightly) differ from these in order to best fit the global context to which they apply.

8.1a) Principles that apply to single indicators

The first principle is that *an indicator should identify the essence of the problem and have a clear and accepted normative interpretation*. Translation of policy goals into quantitative measures inevitably means that we have to focus only on certain aspects of the problem, but this should be done in such a way that it encapsulates the central concern and is not misleading. Moreover, indicators should be selected to have a clear normative interpretation. The indicators underlying the MDGs are used because there is a political commitment to achieving specific goals. There is general agreement that a movement in a particular direction represents an improvement. This would not necessarily apply to all social indicators: for example fertility, where countries may be favourable to either higher levels of fertility or lower levels of fertility, or may also be neutral with regard to this issue.

The second principle is that *an indicator should be robust and statistically validated*. Any indicator will necessarily involve some error but it should not be systematically biased. It must also be statistically reliable over time in the sense that results must not be liable to unpredictable or inexplicable fluctuations. We should avoid measures that are subject to *political manipulation*, such as those that involve arbitrary cut-offs, where a country's score can be artificially improved by focusing policy on those close to the cut-off, or those that are based on an arbitrary defined basket of goods and services.

The third principle is that *an indicator should be interpretable in an international context*. This principle is motivated by considerations of comparability, but reflects the demands that this imposes at a global level. Even among countries at a similar level of development, full comparability is an ideal that cannot be attained, since, even where data are harmonised across countries, variations in institutional and social structure mean that there may be differences in the interpretation of the data. The aim should be to reach an acceptable standard of comparability. When we consider countries at very different levels of development, then different approaches to indicators construction may be justified. For example, the EU 60% of median income standard can co-exist with the $1 a day MDG. Figures for the UK on the former basis and for Nepal on the latter basis cannot be compared, but we can make sense of the two figures (and particularly of changes over time). Two considerations seem particularly important. The first is development at the statistical level. Where needed and possible, countries should be encouraged to develop their statistical information to improve the degree of comparability; and consideration of the quality and design of social indicators should influence the plans for improved or new statistical instruments. The second important consideration concerns the choice of indicators. Some indicators are more sensitive than others to differences across countries in their social structure. For example, an indicator of poverty should be equitable between countries with differing size of rural populations and hence differing degree of production for home consumption. Indicators that are over-sensitive to these structural differences or which raise specific problems of interpretation for particular countries should be avoided. Even for those indicators that satisfactorily meet this third principle, it is essential to always keep in mind the need for what we have termed above *contextualised benchmarking*. Indeed, specific policies and their impacts measured through indicators

can only be properly understood in the context of the broad institutional setting in which they operate. For example, measures of labour market participation or unemployment may have different meaning in different labour markets depending *inter alia* on the (sub-)national labour market regulation and collective bargaining arrangements. A *system-wide analysis* is required for proper international benchmarking. (On the importance of "contextualising" the analysis, see for instance: Sakellaropoulos and Berghman, 2004 and Vandenbroucke, 2002.)

The fourth principle is that *an indicator should reflect the direction of change and be susceptible to revision as improved methods become available*. In many cases, the *level* of social indicators serves to highlight the importance of the problem, but in terms of policy it is *changes over time* that are crucial. In the case of the MDGs, the $1 a day benchmark set the scale of the challenge, but it is changes over time that are being closely monitored – see for example the *Global Monitoring Report* (World Bank, 2008). In the field of poverty and social exclusion, the changes we are seeking may take a decade or longer (the MDG horizon for poverty reduction is from 1990 to 2015). Revision not only of data but also of the underlying concepts is equally important where advances are made in understanding and where there are changes in policy concerns. Ideally it should be possible to chain the indicators before and after revision. A good example of the need for revision is provided by the new estimates of purchasing power parity (PPP; see above) adjustments being produced by the International Comparison Programme. As is noted by the United Nations, "these new measures of the relative cost of living among countries will require a revision to the international poverty line and may change our understanding of the extent and distribution of global poverty" (United Nations, 2007, page 7).

Finally, the fifth principle that applies to single indicators is that *the measurement of an indicator should not impose too large a burden on countries, on enterprises, nor on citizens*. The design of social indicators should, wherever possible, make use of information already available. Where new information is needed, then it should as far as feasible be obtained using existing instruments, for example by adding questions to existing surveys or by making use of administrative and registers' data. We return below to the question of statistical capacity.

8.1b) Principles applied to whole portfolio of indicators

We turn now to the three principles to be applied to the composition of the whole portfolio of indicators. By a "portfolio" we mean a set of indicators. It should be stressed that we are concerned here with principles; the actual portfolio may be seriously constrained by data availability.

The first principle is that *the portfolio of indicators should be balanced across the different dimensions*. No set of indicators can be exhaustive, and there are costs in terms of lost transparency from having too extensive a range of indicators. From the standpoint of international comparisons, or the measurement of progress over time, too large a set of indicators risks losing credibility, if countries can simply pick and choose. A selection has therefore to be made. This selection should ensure that all main areas of concern are covered and should take account of differences across countries in the importance they attach to different areas. Some may be particularly concerned about precariousness in the labour market; other countries may have attached national importance to the reduction of child poverty. It is important that the portfolio of indicators should command

general support as a balanced representation of concerns about poverty and social exclusion.

The second principle is that *the indicators should be mutually consistent and that the weight of single indicators in the portfolio should be proportionate*. Mutual consistency is an evident requirement. The term 'proportionate' refers to the fact that the interpretation of the set of indicators is greatly eased where the individual components have degrees of importance that, while not necessarily exactly equal, are not grossly different. It would be hard to make sense of a set of indicators that lumped together measures of central importance, such as national poverty rates, with indicators which would generally be regarded to be of a more specialised or more local interest.

The final principle is that *the portfolio of indicators should be as transparent and accessible as possible to citizens.* It is important that indicators should be easy to read and understand. This applies to the individual indicators and to the set as a whole. We have also to be aware of the temptation to aggregate indicators. Journalists writing about trends will tend to count plus and minuses. These considerations may well affect the range of indicators and the total number included. Too large a number of indicators would mean that the exercise lost both transparency and credibility. Dissemination of the results of indicators, and of accurate information about their methods of construction and possible limitations (*metadata*), is therefore an important task. In this process a key role is to be played by non-governmental organisations and by the scientific community.

The above list of principles is of course open to debate, but we believe that making them explicit will aid the development of social indicators. The next challenge is to implement them in practice.

8.2 Data for social indicators construction

The construction of social indicators is necessarily a compromise between the theoretical definition and the empirically possible. Data may simply not be available, or may not be of adequate quality, or the available data may not be sufficiently comparable across countries (or even within countries) or across time. The collection of data may be too expensive, too burdensome on persons or enterprises, or may face constraints in terms of public acceptability.

In many respects, the availability of data is much better today than in the past. As is brought out by Deaton (1997, Chapter 1) this is a world-wide development. The first household surveys may have been conducted in Europe, but one of the first large-scale scientific surveys was carried out by Mahalanobis (1946) to estimate the size of the jute crop in Bengal in 1941. Since then there has been a great improvement in the coverage of sample surveys, thanks very much to the efforts of the UN and other international agencies. In its 2000/1 World Development Report, the World Bank noted that "85 percent of the developing world's population lives in countries with at least two household income or expenditure surveys" (2001, page 20). Without such surveys, it would be impossible, for example, to make any estimate of the number of people living on less than $1 a day. In the health field, the World Health Organisation (2007) publish statistics on health inequities showing the variation by place of residence and wealth level of under-5 mortality and stunting covering a large number of developing countries.

At the same time, we have to recognise the considerable distance that has yet to be travelled. A Roundtable on "Measuring for Development Results" took place at Marrakech in February 2004, where agreement was reached on a global plan for statistics (the *Marrakech Action Plan for Statistics*). The actions envisaged included the preparation of national strategies for the development of statistics, an international household survey network, and increased financing for statistical capacity building. Two years later, a forum on African statistics development reviewed progress, and concluded that significant data gaps remain (see Box 1).[8]

Box 1: An accelerated data programme required for Africa, which builds on the "Marrakech Action Plan for Statistics"

In a report summarising the outcome of a forum on African statistics development, the World Bank emphasised that: "only 62 per cent of the population of low income countries in Africa resides in a country that has conducted a nation-wide poverty survey between 2000 and 2004. [Only 53 per cent] live in a country that has conducted a census since 1995, compared with 99 per cent of European residents" (2006, page 1).

The report draws attention to the cost of data collection, estimated at $1 per person for a population census and $950,000 for a living standards measurement survey.

Availability is one issue; a second issue is that of quality of data sources. In considering this, it is important, first, to underline that we are concerned with the entire population. This should be emphasised, since a number of statistical sources leave out important groups. Surveys are often limited to the household population. This leaves out those living in institutions, such as students and the military, and those living in hostels or shelters or reception centres. It leaves out the elderly living in residential accommodation and children taken into care by public authorities. It leaves out those living on the streets. Surveys may also exclude by their design other groups, such as non-nationals, or those living on boats or in caravans. Whatever the limits imposed by data collection, it is imperative when considering poverty and social exclusion not to lose sight of these groups, which may require specific data collection tools and techniques.

Secondly, we have to consider the sample survey methods. The design of the fieldwork, the expertise and supervision of the interviewers, the length and adequacy of the questionnaire, and the processing of the data can all affect the quality of the measurement or the representativeness of the sample. Results of different surveys may diverge simply because of sample fluctuations. Sampling merely allows one to draw conclusions about a characteristic of the population with a certain degree of (un)reliability. This must be taken into account and it is always advisable to provide sampling errors for key estimates from sample surveys. The accuracy and reliability of sample-based estimates depends primarily on the sample size and efficient design. There are, moreover, elements in the conduct of surveys which especially affect the measurement of poverty and social exclusion.

[8] The *Marrakech Action Plan for Statistics* is part of the *Managing for Development Results (MfDR)* strategy, which "focuses on using performance information to improve decision-making. MfDR involves using practical tools for strategic planning, risk management, progress monitoring, and outcome evaluation." (http://www.mfdr.org/)
The Marrakech Action Plan for Statistics can be downloaded from:
http://www.mfdr.org/documents/MarrakechActionPlanforStatistics.pdf.

These elements include the degree of the overall non-response, especially if it is selective (i.e. that its occurrence within a specific category is more than proportional), as it will then provide biased estimates of the scale of the problem. (For instance, in the case of India Deaton (2005) argues that the lower response of rich households causes survey-based estimates of poverty to be over-stated, and presents evidence suggesting that the response rate now declines more rapidly with income.) Even though we cannot discuss these here, we should mention that these elements also include the item non-response (which again can be selective and may cause biased income and poverty figures, for example if is it is systematically larger within specific population segments) and the outliers (see for example Van Kerm, 2007)… Small differences in the indicators between countries, or over time in one country, should thus not be given too much emphasis. In this context, it is worth re-emphasising the importance of collecting and publishing quality documentation (*metadata*), which can greatly help with the correct interpretation of survey results.

In considering the data for social indicators construction, we need to be sure that the data sources allow to distinguish the sub-groups of the population relevant to policy analysis. A recurrent item on the agenda of policy-makers is the poverty and social exclusion of specific groups, such as the disabled, the elderly, youth, migrants and ethnic minorities. We need, for instance, to know whether certain ethnic groups are at greater risk of poverty, and what fraction they constitute of the total population at risk of poverty. For example, the Asian Development Bank reports that between 1993 and 2004 "households belonging to scheduled castes and scheduled tribes have seen their per capita expenditures grow more slowly than those of other households" (2007, Section 5). (Scheduled castes are the bottom rung in the Hindu caste system; scheduled tribes are outside the caste system.) In order to make such comparisons, the sample sizes have to be sufficiently large.

9. Making it happen

Considerable progress has been made in developing the principles underlying social indicators, in refining the individual measures, and in establishing the data requirements. But how can these be made a reality? How do we make it happen? Putting into effect indicators of poverty and social exclusion is a challenge.

9.1 Mobilising all the key actors through a participatory approach

Support and advocacy for building more socially inclusive societies must reach beyond public authorities. In order to generate this support, countries/ communities should consider building *partnerships* involving all the key actors, in accordance with national/ community arrangements and traditions. Such partnerships should promote complementary strategies for change, addressing the broad range of policies concerned – economic, social (including education, housing, health…) and environmental. These strategies should be reflected in clear national/ community policies and objectives and should be taken into account by public authorities.

A participatory approach, at the sub-national, national and international levels can significantly contribute to disseminating knowledge and to ensuring greater

transparency and awareness of the social inclusion objectives; it is a necessary condition for making the process credible and meaningful, both politically and popularly (see, for example, Bennett and Roche (2000)). It is therefore crucial that *all* aspects of the (national/sub-national and international) work on social inclusion are as open as possible to the active participation of the regional and local public authorities, the different non-governmental actors and bodies involved in the fight against poverty and social exclusion, including social partners, non-governmental and grass roots organisations (at international, national and sub-national levels), and the poor and socially excluded people themselves. Structuring and supporting such participation has to be a key component of national/ community strategies. At the same time, this is not easy to achieve. In its report for the 2000 Social Summit, the UN Research Institute for Social Development (UNRISD) noted that

> "although most donors and multilateral agencies now stress the importance of working with and through civil society organisations, political and institutional constraints at international, national and local levels often limit the effectiveness of civil society both in advocacy and in service delivery. International development and financial institutions have not fundamentally changed their governance structures to permit greater participation by civil society" (UNRISD, 2000, page ii).

It is important that a participatory approach be also adopted for the construction of performance indicators. Overall, the indicators must have intuitive validity and produce results that seem 'reasonable' to citizens. As emphasised earlier, an important dimension of social exclusion is concerned with the lack of voice, power and representation. It would be ironic if the adoption of social indicators of poverty and social exclusion were to add to the sense of powerlessness. In this respect, social inclusion policy can build on the experience in other fields (see Box 2). At the same time, experience with participatory approaches, has also highlighted how difficult it is to change the balance of power.

Box 2: Participatory approach – Learning from the experience in other fields

The subject of forest management may seem far removed, but there are lessons to be learned about the role of community involvement, as for example in Mexico (see Bray *et al*, 2003). Closer to social inclusion are the experiences in community participation in China in rural development projects (see Plummer and Taylor, 2004). Similarly in China there has been a reconsideration of the role of the local community as a unit in urban governance (Shin, 2008).

The management of health programmes is another area. In Uganda, for instance, the Health Sector Strategic Plan is concerned with "mobilising community empowerment, participation in the management and monitoring of health facilities" (Atieno and Shem, 2007, page 188).

Careful thought has therefore to be given as to how participation can be made effective. For example, policymakers can consult on the determination of the poverty line and its interpretation. In New Zealand, for instance, there has been such consultation with the Maori and Pacific Island peoples (Waldegrave and Stephens, 2000). Taking a particular poverty threshold to be applied in an international study, one can ask what this implies in terms of the actual standard of living achievable in each country. So, in the case of the EU risk of poverty criterion, the question to be answered would be: What can a family on 60% of the median income, adjusted for its household size, in each country actually consume? Contextual quantitative information on

household budget expenditures could be provided to help understand the living standard achievable at the at-risk-of-poverty threshold in each Member State. Moreover, this could valuably be supplemented by qualitative information on how people "at risk" actually live. A good example is provided by the study *This is How We Live*, prepared by the International Movement ATD Fourth World (ATD, 1995), which describes the lives of the Hirt family in Germany, Doña Matilda in Guatemala, the Jones-Robinson family in the US, the Santituk family in Bangkok and street children in Burkina Faso. Such an approach would make more meaningful the otherwise arcane statistical procedures on which the risk-of-poverty indicator is based. It would be a good means by which governments could engage those experiencing poverty and social exclusion. (In the case of the EU, see, for instance, the *European Round Table on Poverty and Social Exclusion* and the *European Meetings of People Experiencing Poverty* organised annually in the context of the social EU Social OMC.)

9.2 Creating trust

Social indicators can play an important political role. They can influence the allocation of funds, or be perceived as having an influence. It is therefore important that there be a high level of confidence in their validity, and that they should not be seen as subject to political manipulation (see above, Sub-section 8.1a, second principle). In many countries, there have been long histories of mistrust in official statistics. Controversy has surrounded, for example, the construction of consumer price indices or unemployment figures. When designing social indicators, care must be taken to ensure that the results are trusted by the public and civil society.

In part, this is a question of the institutional structure. The independence of the statistical agencies – just like that of the judiciary - is an important element in the functioning of democratic societies. Ensuring independence is not straightforward, as the agencies depend on the government for resources, and there has to be accountability. A role can be played by international agencies in supporting central statistical offices and in providing external criteria by which their work can be validated. But much depends on civil society.

In part, this is also a question of the design of the indicators. In defining components of the social indicators, consideration must be given to the perceived reliability of the underlying data. Moreover, confidence in quantitative indicators may be enhanced if they are accompanied by qualitative evidence. Qualitative evidence helps interpret the numbers, provides some reassurance that they correspond to reality on the ground. And quantitative indicators can be designed to react more closely to the concerns of individuals. A good example is provided by the gap that appears to exist between macro-economic measures of income growth and the changes in living standards perceived by households. In the case of India, for example, in the 1990s growth in per capita household expenditure recorded in the National Sample Survey was much lower than the growth in per capita GDP recorded in the national accounts (Asian Development Bank, 2007, Box 5.1). In this context, the use of survey questions about subjective perceptions can add to our understanding, and, possibly, help raise confidence in the accounting measures. For objective indicators too, the broadening beyond purely financial poverty serves to bring the social indicators closer to everyday

experience. People may relate more directly to indicators of poor housing or poor sanitation than to measures of total income.

9.3 Clear social inclusion objectives, with related quantitative targets and strategies

Countries should adopt an *objective-driven* approach to the fight against poverty and social exclusion: clear social inclusion policy objectives, with related quantitative objectives (i.e., "targets") and strategies. They should concentrate on a carefully selected *shortlist* of key national policy objectives (with a timeframe for their realisation), expressed in terms of *social outcomes* and - if appropriate - framed according to the relevant common objectives agreed internationally.[9] It is essential that these objectives be the result of an in-depth *diagnosis* of the causes of poverty and social exclusion in the country concerned, based on a thorough multi-dimensional analysis of the national situation with regard to poverty and social exclusion across all important areas. Integrated social inclusion strategies then need to be put in place to realise the short-listed national priorities. These strategies need to follow a multi-dimensional approach, cutting across and integrating a range of policy domains, calling for *joined-up government* (at and among the different policy levels) as well as the *active participation* of all the relevant actors (see above). In this highly focused framework, the selection of policy measures to back the strategies should be based on *ex ante* impact assessments. Academic research can play an important role in the diagnosis of the causes of poverty and social exclusion and in the analysis of the impact of policies on social outcomes

This *objective-driven* approach clearly constitutes a major challenge for countries, which need to develop their own social inclusion monitoring framework. Each country's framework should adequately respond to the national (and possible sub-national) specificities, including targets and indicators. It should also allow clear links with the overall worldwide framework (along the lines suggested in Figure 1; see below, Section 10), so as to improve international comparative analysis and mutual learning between countries through *contextualised benchmarking*. Making this work requires the building of statistical *and* analytical capacity (see Section 10 below).

Diagnosis, policy evaluation, definition of outcome indicators and outcome targets are essential tools for social inclusion policies but they are not enough. Given the multidimensional nature of poverty and social exclusion, social inclusion goals have to be anchored in all the relevant policies at all levels of governance – local, regional, national and (when relevant and possible) international. In order to go beyond words and achieve a real interaction between these various policy areas, *mainstreaming of social inclusion* in policy making has to be implemented through establishing a scheme of systematic policy assessments (both *ex ante* and *ex post* assessment). The impact on social inclusion of all relevant specific policies (social as well as employment, economic, fiscal, budgetary, health, cultural, education and training, environmental, agricultural, urban planning…) should be monitored, so as to identify possible ways of adjusting the policies to strengthen their contribution to promoting social inclusion. In short, social inclusion objectives should be better integrated with general policy design,

[9] Internationally agreed objectives can be for instance the MDGs or, in the case of the EU, the common objectives adopted for the EU Social OMC.

implementation and budgetary decision-making. Instruments such as poverty proofing and social impact assessment have a major role to play in this context. [10]

10. Capacity building

10.1 Developing statistical capacity

In considering the development of measures of poverty and social exclusion, consideration has to be given not only to the data themselves but to statistical capacity building more generally. The construction of social indicators, and their maintenance on a regular basis, depends on there being a highly qualified staff of statisticians and computer specialists in each country. Past experience has shown that data weaknesses arise when there are problems of communication between data producers and data users. Apparent differences in results can often be traced to differences in procedures and definitions, and attainment of a high level of comparability depends on close cooperation, which in turn depends on the available manpower in (sub-) national statistical agencies and other government departments in charge. Equally there is a need for adequate resources, human and material, to be made available to the central body assembling the data. To this, we would add the need for wider diffusion of quantitative skills in the research community (academic, private research institutions, enterprises). In short, we stress that the building of statistical capacity is an essential investment.

In our discussion of data sources, we have emphasised the role of sample surveys, but the statistics needed for calculating social indicators may be generated from different sources, including population and housing censuses, register and administrative records, employer records, etc. They can also be generated from the combination of different sources. We may wish to relate the person's situation to the employment context, linking data on households and employers. Such linking is becoming increasingly possible as new techniques are developed for handling very large datasets. Reference should be made here to national registers systems. In a number of countries, especially the Nordic ones, there are national registers where a great deal of information can be assembled from the administration of income taxation, social security records, employment services, local government, etc. Register sources have the advantages of relatively low cost and of reduced burden on respondents. In the present context, a further important advantage of register data is that of speed. The need for timeliness is one of the major constraints on the choice of social indicators. The use of such sources may encounter major legal problems as well as difficulties in terms of public acceptability, but they offer a potential way forward. And it should be remembered that new technology offers the possibility of new safeguards as well as new data linkages. At the same time, we should note that even for those countries using extensively register information, household surveys will be required in order to obtain qualitative information.

This implies that there is a need for a statistical system that draws together, analyses and validates these different statistical sources. Often there has to be important work of reconciliation. Here national statistical offices play a central role, in

[10] On the issue of mainstreaming social inclusion, see Combat Poverty Agency (2006) and O'Kelly, K (2007).

conjunction with international agencies. There is often the need to engage different government departments, including from local and regional governments.

Directly linked to the issue of statistical (and analytical) capacity building is the one of *data access arrangements*. The process of data being widely used by researchers, which requires, in particular, reasonable pricing conditions as well as appropriate documentation on survey and data processing, is an important route by which data are assessed and problems identified. Such use serves to raise the visibility and public acceptance of the data source. In this way, the data are embedded in the scientific community. Data access and data quality improvements are closely linked to each other.

10.2 Using indicators

The way social indicators can be usefully employed in the process of policy formation may be best understood by the aid of the schema set out in Figure 1, which starts from national objectives, although we should recognise from the start that there may be different levels of government within the nation state. Different regions may have different priorities. The objectives of national governments are likely to overlap to a considerable extent, even where there is no formal concertation. Where there are groupings of states, as in regional trade blocs, these may have explicit common goals. And there are world objectives such as the MDGs.

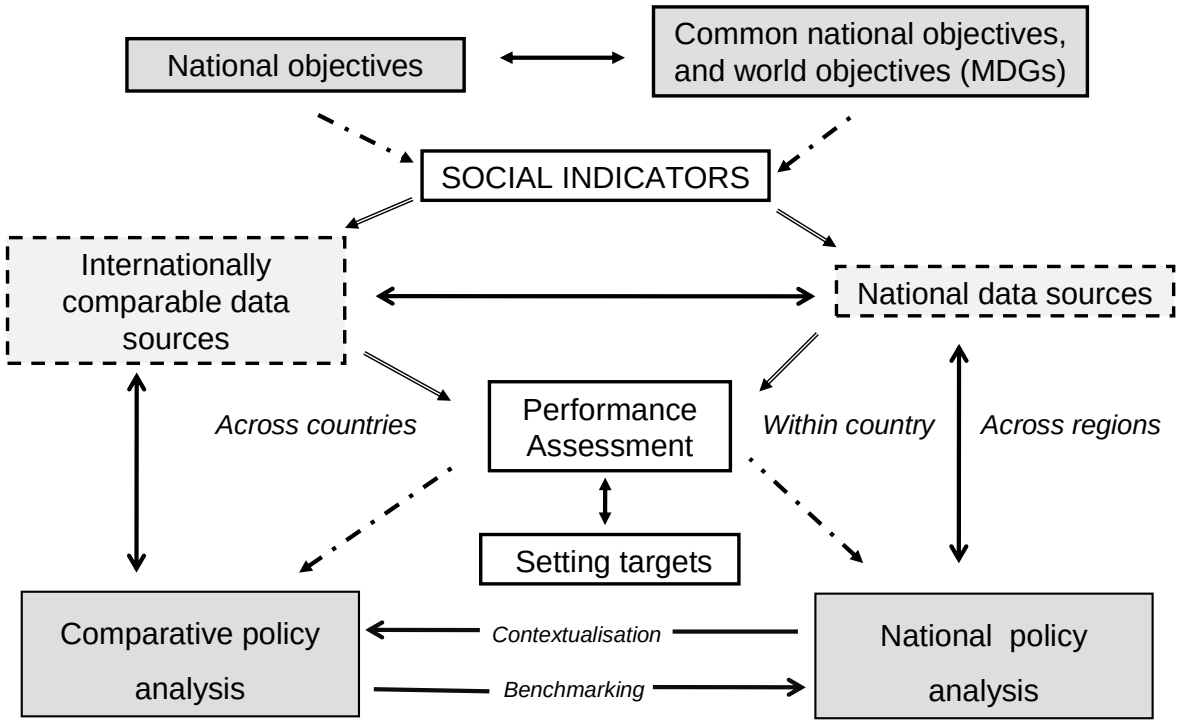

Figure 1 : THE SOCIAL INCLUSION MONITORING FRAMEWORK

The definition of the social indicators follows from the objectives, but how can they be used in the development of policy to achieve these objectives? We can identify four respects:

a) The first use of the indicators is forensic. Applying the indicators to internationally comparable data (left hand part of Figure 1), we can learn about the differential performance of different countries. There are of course dangers in reading too much into "league tables", as we discuss below, but they provide an initial point of inquiry. If a country, or a group of countries, has systematically had greater success in raising school attendance, then this pattern should be investigated. The UN, the World Bank or the OECD can learn from the differing experience of different countries. To go further, and to draw conclusions about the policies applied, we need of course to carry out a comparative policy analysis, discussed in the next Sub-section.

b) To go further, and to draw conclusions about the policies applied, a proper comparative international policy analysis of performance is needed. The results of such an analysis provide a valuable cross-reference for *national* assessments of performance, which is a second role for indicators. The establishment of commonly agreed indicators may lead countries to initiate the measurement of their national performance, possibly using national data sources, in which case there may be issues of reconciling the results reached from different sources. If indicators produced by the UNDP or other agencies show poverty as rising in a country when national statistics show a fall, there will undoubtedly be political problems. The experience of the EU shows that these problems are real, and lead to debate about the choice of definitions, but that they can be resolved.

c) Social indicators may also be used by regional and lower-level governments. This too may lead to political conflict, particularly where resource allocation (e.g., sharing to tax revenues) is affected by the measurements. But it may also lead to an increased degree of *joined up government*. Policies to combat poverty and social exclusion are often the responsibility of multiple levels of government, and there may not be a clear line of sight between those who set national objectives and those who deliver the policy on the ground. This a third role for social indicators which may contribute to coordinating policy - among and across the different levels of governments.

d) The final application of indicators is to the explicit setting of targets. In some cases, as with the MDGs, the targets come first. The same can be true also at a national level, as with national anti-poverty strategies. But in other cases, governments have moved more cautiously, beginning with indicators.

10.3 Strengthening policy analysis

The indicators of poverty and social exclusion described above are in general outcome indicators aiming to measure the extent of progress towards the common objectives of promoting social inclusion. It has to be recognised that the outcomes measured by the indicators depend partially on exogenous developments, such as demographics, social tensions and violence. But they are also influenced by the policies adopted by governments, at all levels, and by international agencies. To bring

about a substantial improvement in the reported indicators requires long-term and structural policy efforts. The indicators need therefore to be integrated into the development of a policy strategy; we need to link policy and outcomes. Among other advantages, such a linkage will help countries to learn from each other's experience: to see what "works". It will facilitate policy learning.

In considering the link between policy and outcomes, there are several types of question that can be asked: (1) mapping the relation between country policies and the indicators of poverty and social exclusion, (2) projecting for countries the future impact of existing and announced policies, taking account of changing economic circumstances such as the current economic crisis, and (3) examining the impact of global policies. In so doing, it is important to examine the totality of policies that impact on individuals, families and communities. There are inevitably policy variables that cannot readily be incorporated, but the aim is to be as comprehensive as possible.

In examining the impact of policy, we need first to establish a *baseline*, i.e. the benchmark against which policy change is to be assessed. The next difficulty concerns the *counterfactual* for the outcomes as to what would have happened in the absence of the policy. And finally, it is evidently important to look at the total range of policies that impact on the problems of poverty and social exclusion. A full coverage is necessary because of the inter-relatedness of different policies noted above. Measures to improve access to jobs for single parents, for example, may raise their employment rate, but the impact on their income depends on the interaction with social transfers, housing benefits, educational grants, etc. The income of the family will depend on other government policies, such as those with regard to the minimum wage, housing benefit, and the availability of child care.

Where the policy analysis is carried out on a comparative basis, this can be a vehicle for mutual learning. In the EU, the *peer review* process is designed to encourage just such learning as part of the Social OMC. We appreciate that national specificities, and indeed differences within countries, with regard to policy institutions mean that it is difficult to apply one country's policies directly to another. One cannot simply "lift" a particular policy structure or intervention from one country and apply it in another, since the broader institutional context in which it is set may be critical to understanding why it is effective (see above what we have termed *contextualised benchmarking*). At the same time, countries can learn from each other. To begin with, one would expect them to identify the dimensions of poverty and social exclusion on which their performance is relatively less satisfactory, and to concentrate on these. One can then ask why performance is relatively less good. In part, the reasons can be found within the country, particularly where there are identifiable geographic differences within the country. But in part they may be identified by looking outside.

Finally, we should note that we have focused on the question as to how policies affect outcomes:

Policies ⟶ Indicators ?

But it is also important to reverse the process and ask what changes in policy are necessary to achieve a specified reduction in different social indicators?

? Policies ⟵ Indicators

10.4 Tools for policy analysis

Faced with the challenge – what policies do we need to achieve our goals? – how can we, as policy analysts, respond? In this Sub-section, we describe two types of analysis widely used at a country level to examine the impact of policy on financial circumstances: model families analysis and micro-simulation models. They are presented separately, but they are best seen as complementary and the way forward may best be through an integrated modelling framework (Sutherland, 2005).

An individual, when presented with a policy proposal, is likely to examine how he or she, and their immediate family, are affected. Suppose that the government proposes an employment subsidy for workers with children, and earning less than a specified amount, with a tapered withdrawal for a range of earnings above this amount. The person will ask – Am I eligible? If so, how much will I get? If I am eligible, how will this affect my decisions about choice of job? For example, the new proposal may affect whether or not I go to work in the city. If I am not eligible, then can I change my behaviour to qualify? The same questions, writ large, concern the policy analyst. The government Minister will no doubt want to know the impact of the proposal on "model" individuals, chosen to be representative of the population. Suppose that we consider the impact on child poverty. The Minister will want to see calculations for representative families with children who are currently below the poverty line. How much will they benefit? Will the proposal be sufficiently generous to lift them above the poverty threshold? These concerns are not limited to Ministers. All those involved in policy debate are interested in "what if" analysis. Ensuring wider accessibility of policy analysis is an important objective. In this context, we should draw attention to the project launched by the World Institute for Development Economics Research of the UN University (UNU-WIDER) on "Designing Africa's Poverty Strategies: Creating the Capacity for Policy Simulation". This project provides user-friendly access to micro-simulation models (the second type of approach considered in this Sub-section; see below) at present covering five African countries; see Box 3.

Box 3: Ensuring wide and user-friendly accessibility of policy analysis tools - The UNU-WIDER project on "Designing Africa's Poverty Strategies: Creating the Capacity for Policy Simulation"

The UNU-WIDER project on "Designing Africa's Poverty Strategies: Creating the Capacity for Policy Simulation" provides user-friendly access to national micro-simulation models. The objective of this project is "to use economic modelling techniques to design pro-poor policies". At present, it has been implemented in five African countries: Botswana, Cameroon, Nigeria, South Africa and Uganda. (http://models.wider.unu.edu/africa_web/index.php?lang=en)

For example, the web-site devoted to the Botswana's model indicates: "Government's direct and indirect tax policies along with its welfare programmes are important means to help gradually realise above objectives, especially to reduce income inequality and poverty. This site provides access to a micro-simulation model of Botswana households. It has been developed to enable researchers and policymakers to design counterfactual reforms of VAT and welfare policies in Botswana and to quantitatively assess their budgetary, distributional, and poverty impacts. Additional policy modules that can help design effective anti poverty policies will be added to the site in future." (http://models.wider.unu.edu/africa_web/bw_intro.php)

The *model families approach* basically involves calculating the financial consequences of fiscal and social policies for a set of hypothetical families or households. The calculations allow one to see the effect of policy variations; they allow

one to examine the effects of changes in household circumstances, such as an increase in gross income (and hence calculate marginal tax rates). This technique starts with defining specific family types, making assumptions about the number of persons in the household, their age, their marital status, their status on the labour market, their gross earnings, their housing situation, etc. For these family types the amount of taxes and social insurance contributions is computed, as well as the amount of fiscal and social benefits, given existing welfare state arrangements. This way the net disposable income for each family type can be determined. The same analysis can be applied to considering the impact of economic changes, such as a rise in unemployment. Model families results thus reveal the level of social protection provided to households in various situations. The usefulness of model families for comparative research on social policy is evident from the frequent use of this technique (e.g. Bradshaw *et al*, 1993). The OECD has been using the method for many years for several purposes such as calculating tax burdens (OECD, 2003), replacement rates for the short-term and the long-term unemployed (OECD, 2004), and support for families (OECD, 2005). As OECD colleagues say, "the results from the tax benefit models allow policy makers to see in detail how their policies might affect one family. This can be a powerful tool, in that aggregation can sometimes erase details important to the individual." (Communication to the authors from OECD). By calculating net disposable incomes and by comparing them to income poverty lines, minimum and average wages, model families results can give a clear indication of the level of (minimum) income protection, and also the financial incentive to take up work associated with a package of fiscal and social measures (see Harding *et al*, 2005). Therefore, they are related to the main objectives of social protection: minimum income protection, maintenance of the acquired standard of living and promoting social participation, in particular labour market participation.

One strength of this approach is that model families calculations can bring together different elements of government policy. The calculations of net disposable incomes take into account gross benefits and wages, income taxes, social contributions and local taxes as well as child benefits and housing benefits. So, family models compute the financial consequences of a *package* of social protection measures, taking into account the interaction between various fiscal and social protection measures. Taking a broad view of policy instruments is especially important in comparative analysis, because what households have to pay for out of their after-tax income varies markedly across countries. There are significant cross-country differences in the cost for housing, health care, childcare, etc.

In making these calculations, a number of key assumptions have to be made, and these need to be borne in mind when considering the results. Firstly, the *eligibility rules* can exclude certain categories from income protection. Working-age people refusing a job or training, for example, sometimes receive a reduced benefit or are suspended. Secondly, family models assume that all families claim and receive the benefits for which they are eligible. In other words, family models do not take into account the *administrative operation* of social protection measures and related *non-take-up rates*. Experience with means-tested benefits has shown that a significant proportion of those entitled to these benefits may not claim their entitlement. "The evidence reviewed in this paper suggests that low take-up of welfare benefits occurs across both countries and programmes. Estimates typically span a range of between 40% and 80% in the case of social assistance and housing programmes, and between 60% and 80% for unemployment compensation" (Hernanz *et al*, 2004, page 4). Non-

claiming can reflect lack of information; it may reflect the compliance costs, notably time; in some situations receipt of means tested benefits may be perceived as stigmatising. Thirdly, in several countries, benefit levels are not set by the national government but differ across the regions or even municipalities. There are several options to deal with cross-regional variations in social assistance benefits and/or housing benefits. Benefit levels can be based on (a) the national average, (b) a representative case or (c) not be simulated. Finally, there are important benefits, notably those from collective services, which are typically omitted altogether (and which may also be expected to vary geographically).

These considerations underline the twin problems of this approach: the selection of hypothetical family types and their aggregation to reach overall conclusions. Model families studies do not always make explicit their criteria for choosing family types. This can generate concern that they are tailored to the policy interventions under investigation, with the attendant risk that the analysis will neglect other vulnerable groups. In a comparison across countries, there is the possibility that the choice of hypothetical family types will be biased inadvertently in the direction of families that are more represented in one country than in another. Countries differ, for instance, in the share of families with 1, 2 and 3 children and the share of lone parents. So far two main ways have been used to synthesise the results of model families simulations into a few numbers. The first is to weight equally: for example, Kuivalainen (2003) and Nelson (2003) calculated the average benefit level for all model family types. There seems little rationale for equal weights *per se,* and it seems preferable to use survey or administrative data to weight the different types. This then raises the issue of the choice of basis. The ranking of countries in terms of the school meal programmes, for example, may change significantly when weights for (say) South Africa, rather than weights derived from (say) Brazilian data, are used. If the model families findings were highly correlated across types of household, then this would not be so much of a problem. But this is not the case. Even within a single branch, such as social assistance, countries occupy substantially different positions, depending on the type of household.

These qualifications should be borne firmly in mind when using model families analysis. Nevertheless, this approach is clearly illuminating. Moreover, one major reason why the model families approach is frequently used in comparative research on social policy is that these models are relatively *easy to develop and to maintain*. Such models only consist of some carefully chosen fiscal and social regulations for a limited set of family types. The model families approach requires a minimum of empirical data (e.g. average earnings or average rent). Therefore it is fairly simple to keep model families results up-to-date and to construct time series. This is of particular significance when one considers their use by campaigning groups, often short of resources, and journalists. This last advantage is not shared by the second approach considered in this Section: micro-simulation modelling.

We now consider the potential contribution of *tax-benefit micro-simulation models* designed to investigate the impact of changes in taxes and benefits on disposable household income for a representative sample of the population. In contrast to the model families approach, the model starts from information about actual households: actual earnings, investment income, and private transfers. Obtaining this information is not necessarily straightforward, and micro-simulation is much more resource-heavy than the model families approach. Starting from the observed situation,

micro-simulation models the effect of changes in policy. From knowledge of the policies, and administrative practice, it can calculate how the disposable income of a given household would be changed by a policy proposal. Take for example an employment subsidy, as described above. The micro-simulation model allows to identify the families eligible for this benefit and calculate the amount of benefit to which they would be entitled. As with the model families analysis, the calculations can take account of the interactions between different elements of the tax and transfer systems. Not only can such a model calculate the level of fiscal and social costs and benefits for each individual, it can also provide information on the *coverage* of a certain measure. These models have come to be very widely used internationally. For further discussion of this type of micro-simulation models, see *inter alia*: Atkinson and Sutherland, 1988; Bourguignon and Spadaro, 2006; Harding, 1996; and Harding and Gupta, 2007; Immervoll *et al,* 2005; Legendre *et al,* 2003 and Verbist, 2005.

As a micro-simulation model operates on a representative sample of the population, it is not necessary to make all of the *assumptions* required to define model families. The number of household members, their demographic and socio-economic characteristics etc. are provided by the source data. No assumptions have to be made regarding regional and local variations, provided the respondent's place of residence is available from the data. Actual benefit receipt provides some evidence about take-up. At the aggregate level, the source includes the weights for the different persons and households, so that we do not have to confront the weighting issue described above. Moreover, the use of actual survey or administrative data forces the analyst to confront the diversity of household circumstances, which may be missed if we start by enumerating model families in abstract. An important example is that of multi-family households. There may be people living in the household, other than the family for whom the model calculation is made.

Tax-benefit models have typically been built up for developed countries, but the techniques are now being applied to developing countries. This is the case for instance of the aforementioned series of models that have been built for five African countries with the support of UNU-WIDER (see Box 3). Further examples of tax-benefit models being implemented in less developed countries are provided by the SAMOD and LATINMOD projects. Both started from the framework provided by the EU model "EUROMOD", developed by Sutherland and colleagues[11]; the former in South Africa and the latter in Latin America (see Box 4). As this brings out, tax benefit simulations will become increasingly important as anti-poverty programmes come increasingly to be funded by domestic fiscal sources.

The extent to which micro-simulation models enjoy an advantage over model families analysis depends, of course, crucially on the quality and timeliness of the underlying data. The representativeness of the findings from micro-simulation may be open to question if there is not a sufficiently large sample, or if there is serious differential non-response. We may be able to get more accurate aggregate figures from model families weighted by results from administrative records than from a micro-simulation based on a highly unrepresentative sample survey. The accuracy of the calculations for individual households depends on there being adequate information about the relevant socio-economic characteristics. For example, the geographical information may not be sufficiently detailed to pinpoint the precise administrative

[11] See http://www.iser.essex.ac.uk/msu/emod/.

authority. In some cases, due to the limitations of the input data, it is not possible to model particular transfers, such as survivor pensions and disability benefits. Policy initiatives may have attached conditions that cannot be verified with the available data or the policy may be restricted to groups of the population that cannot be identified. This means that there are certain classes of policy change that cannot be simulated.

Box 4: Micro-simulation Models in South Africa and in Latin America building on the EU model "EUROMOD"

South Africa: SAMOD is a project aimed at developing a static micro-simulation model of the South African tax-benefit system, which started from the framework provided by the EU tax-benefit model EUROMOD. It takes data on individuals and calculates the entitlements of individuals and households to social benefits and also the household's tax liability. By aggregating these data to form a representative picture of the whole population, it allows modelling the effect that different policy reforms would have both on national revenue and expenditure and on individual household budgets, and thus the impact on poverty and inequality. A first working model of SAMOD has successfully been developed using the EUROMOD platform and the South African Income and Expenditure Survey for 2000. The model is now being refined and options for updating it are being explored, e.g. the 2006 Income and Expenditure Survey and the 2008 National Income Dynamics Survey (both forthcoming).

The Centre for the Analysis of South African Social Policy (CASASP, University of Oxford: Michael Noble, Kate Wilkinson and Gemma Wright) is undertaking this project for the South African National Government Department of Social Development (DSD). SAMOD is funded by the Southern Africa branch of the UK Department for International Development as part of their 'SACED' Programme (Strengthening Analytical Capacity for Evidence-Based Decision-Making). It is being developed by CASASP in collaboration with DSD so that existing and possible future policy options for the social security system in South Africa can be explored. Following on from the Taylor Commission in 2000, the South African Government is currently reassessing ways in which the social security system could be made more comprehensive (e.g. there are currently no benefits for healthy, unemployed people of working age who have not contributed to the Unemployment Insurance Fund). It is intended that this model will be used to explore different policy options and to inform policy decisions within Government. Members of the DSD team will be fully trained so that they can update the model themselves beyond the life of the project, to incorporate new or speculative policies and as new survey data becomes available.

Latin America: LATINMOD is a UNDP funded project that aims, in the long-run, to make tax-benefit micro-simulation techniques as widespread as possible across Latin America. Building on the framework of the EU model EUROMOD, the viability of such objective will be evaluated by constructing models for a selection of countries: Brazil, Chile, Guatemala, Mexico and Uruguay. These countries have been selected on the basis that they represent different examples of social, economic and demographic circumstances as well as of tax and benefit systems. The policies to be simulated will comprise personal taxes and cash benefits identified as suitable for this exercise by country experts involved in the project. Once built, the model will allow conducting quantitative analysis of tax-benefit policies, including *ex-ante* assessment of fiscal reforms. In order to promote and disseminate its use, training courses will be provided in each of the participating countries. The project is coordinated by Horacio Levy and Carlos Urzúa.

The tools of analysis described above are, in our view, extremely valuable. At the same time, we should not lose sight of the fact that they embody a set of assumptions about our values and objectives. A good example of such an assumption is that about income-sharing within the household, which is very relevant to the gender dimension of poverty and social exclusion. In spite of the importance of eliminating inequalities and promoting equality between women and men (see above), much policy analysis still does not take into account the gender dimension. Analyses based on

survey data typically treat the household as a unit, assuming an equal sharing of financial resources within households. There are two important aspects here. The first is empirical: the actual distribution of resources within the household. The assumption of equal sharing does not necessarily reflect reality. The second issue is one of judgment: should individuals be dependent on the sharing of resources within the household? The answer to this second question may depend on whether we are concerned with *standards of living* or with *rights* (see above). Sharing may ensure that women have a comparable standard of living, and the observed differences in money income may be the result of a mutual agreement, but it remains the case that people do not have the same entitlement as where the income comes to them directly. We may therefore, on a rights basis, be concerned with the share of income that they receive as of right.

11. Development of social inclusion indicators to be used in a world-wide context

11.1 Structure of international portfolio

The diversity of country concerns, and the differences in levels of development on a world scale, mean that an international portfolio of social inclusion indicators has to be designed flexibly. The portfolio has to combine the principles set out earlier with recognition of the diversity of needs and priorities. One way in which this could be achieved is via a three-tier structure:

- *Level 1* would consist of a restricted number (no more than ten) of lead indicators for the main fields relevant to all countries, including income poverty, material deprivation, lack of education, lack of productive role, poor health and poor housing. The lead indicators have to reflect the various key dimensions of social inclusion. This is important not only because this would concretely recognise and emphasise the multi-dimensionality of poverty and social exclusion, but also for countries' governments. Indeed there will undoubtedly be advantages in the fact that rankings will differ across the various fields, so that one may expect greater willingness on the part of governments to diffuse the results and actively participate in the *contextualised benchmarking* advocated throughout this paper.
- *Level 2* would contain supporting indicators, providing greater detail and describing other dimensions of the problem, and covering dimensions of social inclusion not (yet) included in the Level 1 list. It would also contain useful contextual information, both quantitative *and* qualitative. There would be no limit on the number of Level 2 indicators and on the contextual information provided, but one should avoid unnecessary proliferation, since each additional indicator increases the statistical and other resources required. Topics covered could include, for instance: access to justice, social and political participation, civil rights, security and justice, well-being, information and communications, mobility, leisure and culture,
- *Level 3* would consist of indicators and contextual information that individual countries themselves decide to include, in order to highlight specificities in particular areas and to help interpret the Level 1 and 2 indicators; no doubt these national indicators will provide a source of ideas and experience about new

indicators which may be adopted at Level 1 or 2, in time replacing those initially proposed.

Both Level 1 and Level 2 indicators would be commonly agreed.

The three-tier structure has a number of advantages. The most important one is definitely that it allows the principle of balance across different dimensions to be satisfied without restricting the scope for the development of individual fields. Certain areas are more developed, methodologically and empirically, than others. Financial poverty, for example, may be measured in a number of ways (poverty count, poverty gap, etc). The three-tier structure allows there to be several indicators of poverty at Level 2 without their coming to have disproportionate weight in the overall assessment at Level 1. By appropriate choice of the lead indicators, it will be possible to satisfy the requirement that the significance of the components be 'proportionate': i.e., that the individual fields have degrees of importance which, while not necessarily exactly equal, are not grossly different. Countries may differ in the relative weight that they attach to the different fields but there is likely to be broad agreement that each of them is relevant..

11.2 Presentation of indicators

There are clearly dangers in misusing the commonly agreed indicators to draw up "league tables". The aim of policy (social policy as well as other policies relevant to the social field) should be to improve overall performance and, ideally, bring all countries to a high level of social inclusion. If such a high level is obtained more or less uniformly, then the rankings will have little meaning. Likewise, all countries may be performing equally badly, and a ranking would then give no indication of the need for action. In a situation where countries are improving their performance, but with no changes in ranking, then no change would be recorded. At the same time, comparable indicators are designed to provide benchmarks and rankings can be valuable aids to policymaking if they are properly contextualised and if error measurements are duly taken into account (see above). In seeking to understand which policies "work", it may be a helpful first step to identify those countries which are better performing, based on several indicators.

In the presentation of the indicators it is indeed important to convey as clearly as possible the uncertainty that surrounds the numerical magnitudes. Earlier we have described how the statistical sources are subject to a variety of errors. More generally the variables employed as indicators may only be imperfect measures of our underlying concerns, and this uncertainty needs to be made explicit. The user will ask whether a reduction of 1 percentage point in the rate of illiteracy is larger than the margin of error. This is not, however, an easy question to answer. Intervals can be supplied that take account of sampling variability, such as standard errors for the proportion of the population living below an income cut-off. But other forms of error are less easily formalised. Ultimately, a judgment has to be made as to the reliability of specific indicators for the purpose in question.

11.3 Disaggregation of indicators

It is envisaged that the indicators would be disaggregated by a number of key variables, subject to the data constraints. We have already made clear the importance of disaggregation by gender and by age (where possible and meaningful). In determining the degree of other disaggregations, it will be necessary to carry out a detailed consideration of each of the dimensions along which disaggregation should take place. We do not attempt here to provide such a discussion, but refer to some general issues and then consider the specific dimension of region.

There are at least three senses in which indicators can be disaggregated. The first – and perhaps the most natural interpretation – is to consider *values of the indicator for specified sub-groups* of the population. We are, for instance, interested in the differences between rural and urban households. For this purpose, the sub-groups need not be exhaustive. We may look at the poverty rate among children (i.e. the proportion of children living in households below the poverty line) and the poverty rate among the older persons, without considering the intermediate age range. Secondly, we may consider the *variation of the indicator across sub-groups* of the population. This may involve for example looking at the ratio of the poverty rates of children and older persons. It may mean looking at the standard deviation of regional employment rates. The third disaggregation involves the *decomposition* of the identified population by exclusive (i.e. non-overlapping) sub-groups. We may, for instance, be interested in the composition by age of the long-term unemployed.

In considering what disaggregations are possible, the first issues are statistical. The statistical reliability of the results depends on the sample sizes, and they can easily become too small if the population is divided into several groups, generating standard errors so large that no distinctions can be drawn between the sub-groups covered. Sampling errors may also limit the conclusions that can be drawn about changes over time. Against this, where the values of the indicator are sufficiently different, the differences may still be significant. This may apply, for example, to the poverty rates for one-parent families, where the proportion of the population is relatively small but the differences in poverty rates is large. A further statistical problem is that the data sources in some countries may not contain the variable required for the disaggregation, or the coverage may be different (for example, including or excluding non-nationals). Indeed in some states there may be legal or constitutional prohibitions on collecting certain information – for example that on ethnicity – in statistical inquiries. Or the information may be deemed too sensitive to be collected without adversely affecting response rates.

A second issue concerns the definition of sub-groups, and their comparability across countries. For example, we may want to classify people according to their activity status: employed, self-employed, unemployed, retired, and otherwise inactive. These activity states have to be defined consistently. As far as household composition is concerned, we may distinguish between classifications based on household composition and those that seek to take account of the relations between different household members. For example, a household may consist of two adults and a child. This may be sufficient to classify the household in terms of its potential economic activity, but is consistent with several different familial relationships: the two adults may be a married or cohabiting couple, they may be mother and grand-mother, they may be mother and adult child, etc. It may be difficult to secure comparability in the definitions across countries. For a number of policy purposes, we may wish to have indicators for those with disabilities,

but there are serious measurement problems related to cross-national differences in definitions.

11.4 Composite indicators

There is considerable appeal to the idea of adding up indicators for different fields to arrive at a total score. Such a composite score would attract the attention not only of newspaper headline writers but also of policy-makers and the general public. The popularity of such an approach has been demonstrated by the most widely-known measure of this kind in current use: the UNDP Human Development Index (HDI). The rationale given for this procedure in 1990, when it was published for the first time, was that "too many indicators could produce a perplexing picture – perhaps distracting policymakers from the main overall trends" (UNDP, 1990, page 11). The combination of separate indices for GDP, life expectancy and educational attainment has served to broaden the focus from looking only at GDP, and the HDI has therefore been an important step forward. Other examples of such combinations abound in the social indicators literature, and a recent example is the child well-being index produced by Bradshaw *et al* (2007).

The reduction of a multi-dimensional phenomenon to a single number does however raise a number of issues. To begin with, it is important to distinguish two different forms of aggregation. The first aggregation combines different characteristics at the individual level (e.g. persons or households), which are then summed over individuals to form an aggregate index. The focus is then on multiple deprivation at the individual level, which requires micro-datasets containing information covering the different relevant domains; an example of one such indicator would be the proportion of people who are poor *and* who are living in a household with no one in paid work. Instead of first aggregating across fields for an individual and then across individuals, the second approach aggregates first across people and then across fields. This second approach is thus a combination of aggregate indicators, as with the HDI.

We now concentrate on this second approach - which we refer here as "composite" indicators. It is clear that the design of any such indicator requires us to make social judgments, and these are not easy to make. The problem is illustrated in poverty risk/illiteracy space in Figure 2 for seven hypothetical countries, ranging from A with low illiteracy but high poverty risk to G with low poverty risk and high illiteracy. Summation, as in the HDI, adds the two scores, and country C is ranked the highest. Even with summation, however, there is no reason why the variables should be weighted equally. If we were to attach a greater weight to the risk of poverty than to illiteracy, then country E could take over the lead. Moreover, why should we simply add? Alternatives to simple addition are considered, in the context of poverty indices, by Anand and Sen (1997). One limiting case is that of "Rawlsian" social judgements, where we rank countries according to the dimension on which they perform least well. The space is then divided into two. Above the 45° line, poverty risk has priority; below the 45° line, literacy has priority.

One problem with the choice of weights is that these may not conform with those embodied in national policy objectives. This has led Cherchye, Moesen, and Van Puyenbroeck (2003) to argue that the weights should vary across countries according to their own national priorities, as revealed in their performance. If a country regards

risk of poverty as more important than illiteracy, then we should weight poverty more highly when constructing the synthetic indicator for that country. In essence, the approach suggested by Cherchye, Moesen and Van Puyenbroeck involves asking how close countries are to the "efficiency frontier", illustrated in Figure 2 by the frontier ACEG. All four of these countries score 100%, since none is dominated by another country. There is, for example, always a dimension on which Country E scores better than any other country (it beats G on literacy and all the others on risk of poverty). They then devise a measure of the distance by which "non-frontier" countries fall short of the frontier, obtaining the weights by solving a linear programming problem. In effect, this is based on the "revealed preferences" of countries.

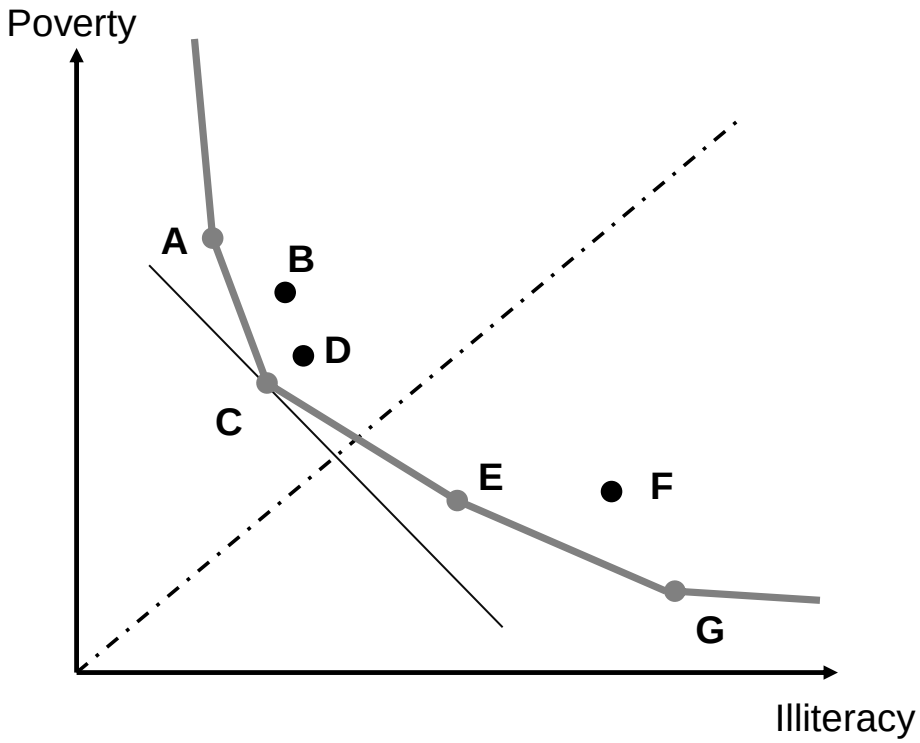

Figure 2 : AGGREGATING INDICATORS

Whether policy makers would find the solution of a linear programming problem less perplexing than consideration of a number of separate indicators is open to question. This approach suggests an inventive scientific resolution of what is in fact at heart a political problem, and it tends to overlook the advice that "weighing together different welfare components should be avoided to the very last so as not to conceal dissensions in a 'scientific' model" (Erikson, 1974, page 279). We could drop the linear programming element, and simply rank each country on the dimension on which they perform best, measuring the distance from the best performance. But this would convey the message to (sub-)national governments that they did not need to make efforts to improve their performance on the other dimensions. One feature of the objective functions described above is that, in certain situations, the pay-off to improving performance for a particular country can be concentrated on one of the two dimensions. A country judged according to its better performing indicator can only

improve its position by doing even better on that indicator: it invests in success. If the social welfare function is Rawlsian, it can only improve its position by doing better on the dimension where its performance is less satisfactory. In both cases, there is a risk that countries will pursue “bang bang” policies, concentrating on a single objective, rather than a balanced approach to different dimensions of deprivation.

So, if combining different indicators into a single number is certainly appealing at first sight, this approach raises serious technical and political issues. The technical and political issues become even trickier if such indicators are to be used for international comparisons and for measuring changes over time. For these reasons, even though composite indicators, like the Human Development Index, undoubtedly can play a valuable role in certain contexts, and while they undoubtedly appeal to policy-makers, we do not feel that they can play a useful monitoring role as part of the Social OMC or in other international policy frameworks. It was, after all, the first *Human Development Report* that stated that “people cannot be reduced to a single dimension” (UNDP, 1990, page iii).

12. Conclusions

This paper may be seen as providing a *checklist*. In the course of the different sections, we have tried to identify the key issues that arise in analysing and measuring social inclusion, seen here as the process by which societies combat poverty and social exclusion. In designing a set of social indicators, there are a series of questions to be asked. In a particular country, and in a particular policy environment, the best responses to these questions may well be different. There are good reasons why the Millennium Development Goals are framed in terms of an absolute $1 a day, whereas the European Union defines risk of poverty in terms of relative incomes. At the same time, the framework provided here should allow the indicators to be seen and interpreted in a global context.

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Annex: Revised official monitoring framework for the Millennium Development Goals (goals, targets and indicators – framework effective since 15 January 2008)

Millennium Development Goals (MDGs)	
Goals and Targets (from the Millennium Declaration)	**Indicators for monitoring progress**[i]
Goal 1: Eradicate extreme poverty and hunger	
Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1.1 Proportion of population below $1 (PPP) per day[ii] 1.2 Poverty gap ratio 1.3 Share of poorest quintile in national consumption
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people	1.4 Growth rate of GDP per person employed 1.5 Employment-to-population ratio 1.6 Proportion of employed people living below $1 (PPP) per day 1.7 Proportion of own-account and contributing family workers in total employment
Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1.8 Prevalence of underweight children under-five years of age 1.9 Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education	
Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	2.1 Net enrolment ratio in primary education 2.2 Proportion of pupils starting grade 1 who reach last grade of primary 2.3 Literacy rate of 15-24 year-olds, women and men
Goal 3: Promote gender equality and empower women	
Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015	3.1 Ratios of girls to boys in primary, secondary and tertiary education 3.2 Share of women in wage employment in the non-agricultural sector 3.3 Proportion of seats held by women in national parliament
Goal 4: Reduce child mortality	
Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	4.1 Under-five mortality rate 4.2 Infant mortality rate 4.3 Proportion of 1 year-old children immunised against measles
Goal 5: Improve maternal health	
Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	5.1 Maternal mortality ratio 5.2 Proportion of births attended by skilled health personnel
Target 5.B: Achieve, by 2015, universal access to reproductive health	5.3 Contraceptive prevalence rate 5.4 Adolescent birth rate 5.5 Antenatal care coverage (at least one visit and at least four visits) 5.6 Unmet need for family planning
Goal 6: Combat HIV/AIDS, malaria and other diseases	
Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS	6.1 HIV prevalence among population aged 15-24 years 6.2 Condom use at last high-risk sex 6.3 Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS 6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years
Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it	6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs
Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	6.6 Incidence and death rates associated with malaria 6.7 Proportion of children under 5 sleeping under insecticide-treated bednets 6.8 Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs 6.9 Incidence, prevalence and death rates associated with tuberculosis 6.10 Proportion of tuberculosis cases detected and cured under directly observed treatment short course

Goal 7: Ensure environmental sustainability	
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.1 Proportion of land area covered by forest 7.2 CO2 emissions, total, per capita and per $1 GDP (PPP) 7.3 Consumption of ozone-depleting substances 7.4 Proportion of fish stocks within safe biological limits 7.5 Proportion of total water resources used 7.6 Proportion of terrestrial and marine areas protected 7.7 Proportion of species threatened with extinction
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8 Proportion of population using an improved drinking water source 7.9 Proportion of population using an improved sanitation facility
Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	7.10 Proportion of urban population living in slums[iii]
Goal 8: Develop a global partnership for development	
Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system Includes a commitment to good governance, development and poverty reduction – both nationally and internationally Target 8.B: Address the special needs of the least developed countries Includes: tariff and quota free access for the least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction Target 8.C: Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly) Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	*Some of the indicators listed below are monitored separately for the least developed countries (LDCs), Africa, landlocked developing countries and small island developing States.* <u>Official development assistance (ODA)</u> 8.1 Net ODA, total and to the least developed countries, as percentage of OECD/DAC donors' gross national income 8.2 Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation) 8.3 Proportion of bilateral official development assistance of OECD/DAC donors that is untied 8.4 ODA received in landlocked developing countries as a proportion of their gross national incomes 8.5 ODA received in small island developing States as a proportion of their gross national incomes <u>Market access</u> 8.6 Proportion of total developed country imports (by value and excluding arms) from developing countries and least developed countries, admitted free of duty 8.7 Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries 8.8 Agricultural support estimate for OECD countries as a percentage of their gross domestic product 8.9 Proportion of ODA provided to help build trade capacity <u>Debt sustainability</u> 8.10 Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative) 8.11 Debt relief committed under HIPC and MDRI Initiatives 8.12 Debt service as a percentage of exports of goods and services
Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	8.13 Proportion of population with access to affordable essential drugs on a sustainable basis
Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications	8.14 Telephone lines per 100 population 8.15 Cellular subscribers per 100 population 8.16 Internet users per 100 population

The Millennium Development Goals and targets come from the Millennium Declaration, signed by 189 countries, including 147 heads of State and Government, in September 2000 (http://www.un.org/millennium/declaration/ares552e.htm) and from further agreement by member states at the 2005 World Summit (Resolution adopted by the General Assembly - A/RES/60/1, http://www.un.org/Docs/journal/asp/ws.asp?m=A/RES/60/1). The goals and targets are interrelated and should be seen as a whole. They represent a partnership between the developed countries and the developing countries "to create an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty".

[i] All indicators should be disaggregated by sex and urban/rural as far as possible.

[ii] For monitoring country poverty trends, indicators based on national poverty lines should be used, where available.

[iii] The actual proportion of people living in slums is measured by a proxy, represented by the urban population living in households with at least one of the four characteristics: (a) lack of access to improved water supply; (b) lack of access to improved sanitation; (c) overcrowding (3 or more persons per room); and (d) dwellings made of non-durable material.