Keeping Track of Sustainable Development

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Abstract: - We are deploying much innovation and entrepreneurship in search of sustainable development. However, it will only be future generations who realise whether or not our development was sustainable. There is a proliferation of measures and indicators aimed at planning sustainable development and tracking progress. We are less clear about how to use these in practice to build public policy. We also need to hold conversations about how we make commercial, social and personal decisions, informed by these measures and indicators. In this paper we look at the challenges faced in designing and using sustainable development indicators. We look for lessons from the field of poverty reduction and social protection across Europe, where the effort in compiling indicators has not been rewarded with progress towards meeting poverty and social exclusion goals.

Key-Words: - Indicators, Targets, Beyond GDP, National Statistical Systems, Statistics Users, Quality Statistics

1 Introduction

A good place to start might be to ask what we mean by development, because on even the briefest of reflections this will turn out to mean different things to different people. The idea of making progress through life seems almost inevitably to include the ambition of doing better in one or more ways. Having more and new experiences, doing things faster, getting more qualifications, accumulating more wealth are all aspects of modern life for many people and these may indeed be driven by deeply embedded human characteristics.

Many people are not just self-centred but also strive for a good society, including for their children and grandchildren. Celebrating the 75th anniversary of the creation of the welfare state in the UK is a timely reminder that, even during the middle of the Second World War, there were people planning for a society that would be better than that lived in the 1930s, as well as removing the hardships of war time. As Milburn recently noted, "The twentieth century expectation [was] that each generation would be better off than the preceding one", before observing that, at least in the UK, this expectation is no longer being met [1].

Human and societal development turn out to be multi-faceted, defined in many different ways, and contested. So, it might seem worthwhile to bring in the Enlightenment ideal of having some facts that we can all agree on, where such facts are "*both* observed particulars *and* evidence of some theory" [2]. Can we identify the parameters of our good society, and are these measurable?

A next step is to invoke the production and dissemination of official statistics as a key way of providing trustworthy and trusted data on which we can all build our arguments, even if we want to argue with another about our interpretation of the facts and what to do in light of them. This was neatly captured by Prime Minister Winston Churchill who, during the Second World War, founded the British Central Statistical Office. He did this so that government ministers should not be arguing about the figures but about what should be done on the basis of a shared understanding of the state of the nation [3].

By the end of the twentieth century, almost every country had some form of official statistics system, many recognising a set of fundamental principles maintained by the United Nations. These principles envisage, and are aimed to deliver, "an indispensable element in the information system of a democratic society, serving the government, the economy and the public with data about the economic, demographic, social and environmental situation" [4]. The role of official statistics in measuring progress and development was highlighted in the 2007 Istanbul Declaration. National statistical authorities are envisioned as "key providers of relevant, reliable, timely and comparable data and the indicators required for national and international reporting" [5].

One sub-set of official statistics, the system of national accounts, was initially used during the Second World War to help plan industrial production and the war effort. GDP – gross domestic product, the key headline measure in the national accounts – has emerged as the dominant measure for assessing the progress of a country. GDP higher this quarter than last quarter is taken as a good thing, while if GDP reduces over at least two quarters than the country is doing badly and is in recession.

From the introduction of national accounts there have been warnings of the limitations of GDP as a measure of wellbeing and progress. There have been many calls and proposals to go beyond GDP, but so far with little effect. Fioramonti notes that "Our entire development model rests on the way in which we measure prosperity, development and ultimately success". While the global order remains based on GDP growth, Fioramonti sees this as driving "a suicidal race to the cliff, which imposes stressful lifestyles, generates irrational desires and threatens to tear the world apart, while undermining the very social and natural foundations that make life possible" [6].

2 Sustainable Development

2.1 What is Sustainable Development?

It is tempting to think that *sustainable* development is simply *sustained* development. We might be seeking to continue – or perhaps boost - our current rate of economic growth, or at least maintain an overall amount of economic activity sufficient to sustain the population next year to the same extent as in this year.

However, the real essence of sustainable development was captured in the Brundtland Report of 1987, commissioned by the United Nations. This characterised sustainable development as development that contributes to the welfare and wellbeing of the current generation, without compromising the potential of future generations for a better quality of life [7]. This says something about us here today, but also asks us to commit to the quality of life of future generations.

We are deploying much innovation and entrepreneurship in search of sustainable development. If innovators and entrepreneurs are signed up to sustainable development then they will each presumably be considering the impact of what they are doing not only on current population but also future. However, that assumes that the idea of sustainable development is widely understood and acknowledged.

We will see that sustainable development is part of the political lexicon these days, notably with the establishment by the United Nations in 2015 of Sustainable Development Goals for 2030 [8]. However, sometimes it appears that politicians prefer not to speak of sustainable development, even while keeping the core idea of improving wellbeing for current and for future generations. For example, it is a "well-being of future generations" act that requires public bodies in Wales to "do what they do in a sustainable way" [9]. Similarly, UK Prime Minister Theresa May recently wrote that "Clean growth is not an option, but a duty we owe to the next generation, and economic growth has to go hand-in-hand with greater protection for our forests and beaches, clean air and places of outstanding natural beauty" [10]. Such language presumably resonates better with the voting public and with the media than does the phrase sustainable development.

As well as the longer-term perspective of sustainable development, there is another fundamental objective, that of a better integration of the economic dimension into the social and environmental dimension of development [11]. This gives rise to the description of social development being based on three pillars: economic progress (given as essential), social progress and the state of the environment. The third pillar draws on the stock of natural resources as well as the environmental impact of human activity, especially linked to the emission of greenhouse gases and the take-up of renewable energy sources. However, "better integration" is a vague phrase, allowing for example for considerable latitude in the weighting given to each pillar in the overall assessment of the sustainability of development.

2.2 Sustainable Development Indicators

Writing in 1998, Custance and Hillier observed that "Governments have for many years used the key economic indicators to develop and monitor their economic policies. The new challenge for statisticians is to develop a package of meaningful national indicators to monitor and report on our progress towards the broader concept of sustainable development, and to highlight the key issues and objectives" [12]. They also reported that "Much work has been done at local, national and international levels on sustainable development and related indicators".

Official statistics play an important role in business and in society but this is often a behind-the-scenes role. There are increasing amounts of relevant statistical data and information. Official

statistics are only one source and they may hit the headlines as they are released, or perhaps if they are rebadged and added to by other organisations [13].

In the case of sustainable development indicators (SDIs) there is a further, significant challenge in designing and delivering useful indicators. This is that the forward-looking dimension of sustainable development involves predicting the future – "determining whether we can hope to see the current level of well-being at least maintained for future periods or future generations, or whether the most likely scenario is that it will decline" [14]. Opschoor and Reijnders characterised this as a need to indicate the condition of the environment in terms of its capacity to sustain future economic activity, drawing only on currently available data. They also warned that if SDIs are to help assess performance, "a desirable condition or goal" needs to be specified [15]. Stiglitz at al made a number of recommendations on how to do this, including to require a "well-identified dashboard of indicators … interpretable as variations of some underlying 'stocks' … need for a clear indicator of our proximity to dangerous levels of environmental damage" [16].

These requirements are proving difficult to operationalise. Stocks are always more difficult than flows to measure. Official statistics are seldom about predictions. Those that are produced are invariably limited to projecting forwards existing data, say on the population or the economy, in line with specified assumptions. The position on SDIs today is that, despite over two decades of design work, they are not routinely or widely available. Where SDIs are published they are given scant attention, beyond perhaps when some new figures are deemed newsworthy somewhere in the current affairs media.

2.3 Sustainable Development as a Global Agenda

In 2000 the United Nations set Millennium Development Goals (MDGs) as a way of improving living conditions and prosperity in the less developed countries around the world, over the first 15 years of the new millennium. The next 15year plan that was adopted by the UN, in September 2015, was even more ambitious and saw the governments of all countries signing up to "a plan of action for people, planet, prosperity, peace and partnership", especially to "eradicate poverty of every kind" [17]. The plan recognizes that continued economic development is needed, in order to provide sufficient resources to fight poverty, but that this development needs to be sustainable. There are 17 Sustainable Development Goals (SDGs) and 169 targets.

The text of the plan records that "Indicators are being developed to assist this work", along with a commitment "to developing broader measures of progress to complement gross domestic product (GDP)". How the indicators are to be used in not addressed in any detail, other than to measure the progress of governments in taking forward the agenda and in meeting the SDGs. At the last count, 242 indicators have been defined. The task of publishing indicators on a regular basis for every country is seen as "a tremendous challenge to all countries" [18].

There seems to be a strongly held view among statisticians working in international development that targets and indicators can have profound effects [19]. However, it is not clear that these effects go beyond raising awareness, important though that is, and actually help improve people's lives. It is the case that there has been an extensive and inclusive process to develop the indicators to support the SDGs, primarily through an inter-agency expert group. But that group only started meeting in 2015 [20], just ahead of the launch of the UN Agenda, and statisticians were unable to influence the choice of the targets and goals. Rather, all the effort is in finding methods, new sources and resources to define the indicators and publish the figures.

3 Official Statistics and Poverty Reduction

Although social progress is a dimension of sustainable development, there is also a long tradition of publishing robust social statistics and social monitors. That work should provide pointers to help reflect on the development and use of SDIs. This is particularly because considerable effort in compiling social indicators across Europe has not been rewarded with progress towards meeting poverty and social exclusion goals. New aspects of poverty, such as an increase in rough sleeping, are reported in the media (and are apparent on walking though many towns and cities).

The picture is complicated because of the intervention of the financial crisis, but Cantillon has nevertheless concluded that little if any progress has been made in combating relative financial poverty and social exclusion, despite "remarkable improvements in European output governance, including measurement, goal setting, and monitoring" [21].

The strength of the European Statistical System, as demonstrated by the social indicator movement, has been "to understand and monitor social progress, put the indicators into perspective, and present innovative ways for their improvement and enrichment" [22], Indicators and the surveys providing data have been more sophisticated and more accurate. Indicators are available from more sources and the technical requirements of indicators have become better known and more firmly based.

However, it appears difficult to move from using indicators to monitor the situation, and to assess the performance of policy measures in tackling poverty, to using indicators and data actually to make a difference. It could be that one role of indicators is simply to be indicative, to stimulate further analysis of the relationship of the relationship between affluence and poverty and other aspects of social progress. Interestingly, Cantillon sees scholars as undertaking these further analyses, including some "complicated and time consuming micro-simulation modelling" [23], so there would still be work to be done to take the results of these analyses into policy and delivery on the ground.

Cantillon also draws attention to a weakness, in that social indicators have been focused on outcomes. This has meant that the link between goals, as measured by the suite of indicators, and policies "has remained vague and unarticulated while difficult trade-offs (e.g. between work and poverty reduction) have not been made explicit" [24].

We draw from this that the development of any system of indicators needs to start from a full understanding of how the indicators can and should be used. As part of this, more emphasis needs to be placed on targets and on reporting the gap between the measured value and the target. Of course, necessary statistical capacity needs to be in place, but that is not sufficient. There should also be extensive and on-going interaction between statistical producers and potential users. Analytical skills among users need to be assessed, perhaps enhanced, and statistical outputs designed to meet a range of needs and capabilities. Allin and Hand have set out how this might work in terms of new measures of progress and development, proposing that "the *system* of national *accounts* should evolve into a *process* of national wellbeing *accounting*" [25].

4 Using Statistics for Sustainable Development

Assuming that the 242 indicators for sustainable development are calculated for each country and published regularly, will that lead to sustainable development? Or is this about meeting the SDGs, rather than establishing developments that are sustainable, in the Brundtland sense? The approach to using indicators that appears to be envisaged is primarily one of assessing progress towards the goals. If progress is judged to be on track then presumably the decision would be that no change of course is necessary. If it appears that the goal will not be hit then decisions would have to be taken with the aim of changing direction. This implies some kind of feedback mechanism, including levers for policy makers to pull.

The problem with this would seem to be that considerable resources would be used in compiling an indicator system that is divorced from the complex realities of everyday life. This is always a risk, with any kind of indicator system or statistical model: such systems and models have to be useful in relating to the real world. But decision makers receiving the reports from the indicator system may focus only on things that might make a change to the indicator numbers next time they are measured, rather than deliver sustainable development in the real world. O'Neill has drawn attention to the distortions of reality that can be produced by what she calls "the new culture of accountability and audit" [26].

That may be too pessimistic. Over the years, lessons have been learned about the use of performance indicators [27]. For example, the indicators designed to support the Welsh sustainable development legislation "must be applied for the purpose of measuring progress towards the achievement of the well-being goals". Although this is a reporting and monitoring role, it does not rule out the wider use of these indicators by others, especially to assess the performance of government. The government envisages that the indicators "will enable us to understand the contribution made by all" [28] - though that statement needs a lot of unpicking, to identify the various actors and their roles in helping support the wellbeing of future generations.

There should be no doubt over the need to use indicators, once we have recognized the strengths and weaknesses of any indicator system. As Seers noted, "We cannot, with our own eyes and ears, perceive more than a minute sample of human affairs, even in our own country - and a very unrandom sample at that. So we rely on statistics in order to build and maintain our own model of the

world. The data that are available mould our perceptions" [29].

This brings us to the importance of defining the quality of indicators in a way that emphasizes fitness for purpose as well as technical accuracy. Statisticians appear to have a tendency to concentrate just on technical quality. Custance and Hillier, for example, picked out as the criteria for choosing good indicators of sustainable development that "they should be scientifically sound, understandable, sensitive to be change that they are intended to measure, measurable and capable of being updated regularly" [30]. This rather ignores the call for "practical utility" in the UN's fundamental principles for official statistics [31] and the dimensions such as relevance, coherence, accessibility and clarity, as defined in the quality assurance framework of the European Statistical System [32].

Fioramonti has sketched out how an indicator system for sustainable development could be anchored in the real world. He specifically sees indicators as having the potential to connect the top-down activities of the UN and national governments with bottom-up activities of businesses and households in aiming for sustainable development [33].

4.1 Public policy creating the framework

It generally seems easier to come up with new measures than to apply these. As Mayer noted, measurement "does not in itself automatically translate into policy" [34]. Public policy is invariably the starting point for addressing issues that affect us all. This may be triggered by the production of indicators, especially when accompanied by calls "to move on from the measurement issue to deciding what governments should do" and even to propose specific policy areas for further consideration [35].

The policy process adopted in the UK government is commonly summarized as ROAMEF – Rationale, Objectives, Appraisal of options, Monitoring of implementation, Evaluation and Feedback [36]. Evidence, including statistics and indicators, can, and indeed should, inform the policy making process in each of these six stages. This means that requirements for indicators need to be drawn from throughout the policy cycle. While some requirements will be specific to particular stages, there is an opportunity here to create a common framework for sustainable development indicators across policy areas as well as around the policy cycle.

The outputs of policy processes range from regulation and requirements, through strategies to softer ways of influencing behavior. The outputs may be targeted at businesses, households, local government or other national governments (for example through alliances). Governments raise funds by taxes and levies, which can be targeted towards policy aims, and distribute public funds to provide services and advice. This is the top-down arena identified by Fioramonti as one audience for SDIs. However, top-down initiatives seldom directly deliver the outcomes that are wanted. Top-down needs to meet with bottom-up willingness to address the same issues, informed by the same understanding and description of sustainable development.

4.2 Delivering sustainable development: the real audience for SDIs?

The policy process described in Section 4.1 surrounds, but does not include, the implementation of the policy in the real world. In the case of sustainable development, while an increasing number of people and organizations are signed up, a broader recognition of the need to change the underlying economic model is taking some time. We now have sustainable development goals and specifications for the SDIs. But many people see that sustainable development will only come as a result of change in human behavior. Nicolas Sarkozy has written that "We will not change our behaviour unless we change the ways we measure our economic performance" [37]. The challenge is, now that the measures themselves are changing, how will behavior change follow?

SDIs, and official statistics more generally, are not just for use within government. National statistics offices should be engaging with government at all its levels, business, civil society and citizens. The regular publication of SDIs, even the development work to build SDIs, provides opportunities to raise the profile of sustainable development and to boost the conversations about it. It is also a role of official statistics to enable the public to assess the performance of their government, in this case the extent to which sustainable development overall, or specific concerns such as air pollution, are being tackled.

Businesses, whether large or small, are clearly important. They are the drivers of the economy, employers and providers of many benefits to society. There are also wider costs arising from many commercial activities. Entrepreneurs and business owners generally see government as enabling business to thrive. The challenge is that

thriving is invariably seen as maximizing shareholder value (or private wealth) in the short term, rather than supporting sustainable development. Things are already changing, with some companies embracing a wider set of corporate social responsibilities and reporting openly in these terms. SDIs should raise the profile of sustainable development and could provide an over-arching framework against which businesses can tailor the measurement of their own contribution to sustainable development. Initiatives such as A4S – Accounting for Sustainability [38] – also show how peer group pressure can be rallied and built on.

4.3 The role of media

Traditional news media and, increasingly, social media are all around us. It may still be the case, as Lester reckons, that "it is the crucial role of the press in a modern participatory democracy to act as a public watchdog alerting and informing the public about matters of public interest" [39]. There is a wider sense in which traditional media, especially national broadcasters, provide a space for public discussion based on shared values and cultural identity and in which, crucially, facts and other reliable information are freely circulated.

However, much activity in the media today appears more like a rush to fill content, in which official statistics are used not only in analysis and commentary but also as education, entertainment and trivia. All of these are part of modern life and, like it or not, official statisticians should engage with all of this, providing trusted and trustworthy statistics. The quality of official statistics, especially the relevance and accessibility of the SDIs, will be vital in ensuring that the media play their role in communicating the ideal and the value of sustainable development to businesses, households and governments.

To make this work effectively, though, more needs to be done to make those exposed to all this information more curious. Where has it come from? How good is it? These are useful questions to ask, as well as having confidence to seek out information that is needed to help make decisions or assess positions.

4.4 Can data science help here?

The UN 2030 Agenda for Sustainable Development was drawn up against a background in which new technologies are changing the way data are collected and disseminated. There was a call for a data revolution for sustainable development. A global partnership on development data has been formed, seeking contributions from a diverse range of stakeholders - not only national statistics offices but also international organisations, civil society organisations, foundations and businesses. [40].

Fioramonti sees new technologies as the enabler of his top-down meets bottom-up approach [41]. Harkness has reported examples of where individuals gather data on themselves and "try to take more control of their own lives". But rather than just use data in that way, she asks if we can use the abundance of information that big data offers to rebuild democracy on new foundations [42].

It is no longer just about turning to big data sources, such as administrative or transactional records, but about engaging with the new discipline of data science that is taking hold. The process of compiling the new SDIs should offer opportunities for research, innovation and involvement for methods and for data sources. There is great potential here, but also many challenges, including the need to preserve the confidentiality and privacy of data subjects, as Hand [43] has discussed. These are all reasons for being clear about how data are to be used, before bringing the new techniques and sources of data science into the design, production and delivery of SDIs.

5 Conclusion

The vision and the real intention of the UN agenda is not just to keep track of sustainable development, through the collection and publication of sustainable development indicators (SDIs), but to keep us on the track of sustainable development around the world: a development path that supports the current population and those in future generations. Behaviour change may be required; indeed, some commentators are calling for a new economic paradigm, one that would significantly alter the way we live our lives and do business.

As in may areas of politics, sustainable development is long term, difficult to measure, and subject to powerful vested interests, whose voices can drown out others. Official statistics, and SDIs in particular, can and should play a role in meeting all of these challenges. They should be published consistently over the long time. They should be freely and widely available. They should result in people debating what to do in light of the indicators, not arguing about the indicators themselves.

This is not easy. As *New Scientist* magazine noted in a recent leading article, "Warnings from experts often fall on deaf ears, or worse are counterproductive. In these febrile, populist times they are easily dismissed as the sanctimonious

preaching of an out-of-touch elite. The world appears to be in no mood to listen". Clearly there are well documented and deteriorating problems, with new threats to sustainable development also emerging. However, *New Scientis*t goes on to conclude that scientists are steadily optimistic that "that their message is getting through. Progress has been made on the ozone layer, on deforestation and on renewable energy. The Paris Agreement is far from perfect but is more ambitious than anyone could have hoped for 25 years ago … None of this would have been achieved without the drumbeat of evidence-based warnings coming from the world of science" [44].

The SDIs are a vitally important contribution to the evidence base. We must have good and trusted measures, widely available. But while measurement is necessary it will not be sufficient. We are only just starting to consider how SDIs are to be used in politics, in policy, in business and in everyday life. This is not the time for national statistics offices simply to focus on their traditional task of building reliable indicators. They also need to reach out to the wider community, take part in conversations about sustainable development and, as it quite likely to be the case, take on a leadership role in initiating those conversations that have yet to start. Keeping track of sustainable development is part of the task: making sure that the world is on the track of sustainable development is the real goal.

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