Small Data for Sustainable Development Goals
Community level action and indicators monitoring

Small Data connects people with relevant and actionable insights from data through adopting an approach of analysing data at the same unit at which it is sampled (Best, 2015). These insights not only enable and support individual and community level development action, but also allow for a nuanced understanding of the complex human development phenomenon. The bottom-up, micro-level, citizen-generated, locally-relevant data stands to augment and complement the largely top-down, macro-level human development metrics data. Only through a synergistic interaction between the small data approaches and the traditional social indicators approaches within mature data ecosystems, can the full value and utility of data for development be achieved and delivered.

INTRODUCTION

Social indicators monitoring, which traditionally has custodianship within the National Statistics Offices (NSOs), serves to inform the public and policymakers by providing statistics regarding social wellbeing phenomena. The failure of social indicators to have an impact on developmental imperatives has been attributed to (Cobb & Rixford, 1998; Innes & Brusegard, 1989): having a descriptive approach that isn't situated within a clear developmental theory or conceptual framework, confining social indicators monitoring to the production of statistics without a larger plan of action that links to policy and action impacts, and not having a democratic indicators program with a good public participation process. Further, Green notes that the scoping of the social indicators, both at the macro level and from the obligation perspective[1], precludes their direct application to individual's development (Green, 2001).

    Social indicators have been used globally, with varying success, to inform development policy and action. The UN report on Millennium Development Goals notes not only the successes and failures experienced within that program, but also the opportunities for revolutionizing the post-2015 development monitoring effort (United Nations, 2015). This research is framed to leverage these opportunities in terms of: exploring and expounding on the role of data (esp. social indicators) towards individuals development and wellbeing; supporting and catalyzing community-level action towards the Sustainable Development Goals (SDGs) targets; democratizing social indicators monitoring by highlighting and demonstrating the role of the bottom-up, micro-level, citizen-generated data to complement the official social indicators

SDGS AND SOCIAL INDICATORS MONITORING

The adoption of the UN Resolution 70/1, the agenda for sustainable development, by the United Nations General Assembly has set the global development agenda for 2030 (United Nations, 2016). The strategies and action towards the SDGs are informed and to a large extent depend on the capacity of national data ecosystems to provide relevant indicators data and metrics for progress monitoring. The focus of human development monitoring has traditionally been for informing strategy and action for governments, with minimal focus on enabling and supporting local community-level action. This invariably means that the lenses of data analysis and reporting are typically skewed towards identifying macro phenomenon as opposed to the individual 'interesting' points in the data. This posturing represents an overall risk to the SDGs indicators monitoring effort. It is a risk that directly affects the very principle of 'leave no one behind', which is core and foundational in the articulation of the SDGs.

    The UN Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDG) has classified the SDG indicators into three tiers based

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[1] Indicators as means of determining the extent to which governments are complying with their obligations under human rights law, as opposed the extent to which individuals are enjoying the benefits of development.

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on the level of methodological development and data availability. Tier 1 are the indicators with clear methodologies and standards and for which data is regularly produced, Tier 2 represents indicators with clear methodologies but for which data is not regularly produced, and lastly Tier 3 are indicators for which no clear methodologies exist and therefore for which no data is being produced. There are approximately 82 (34%) indicators that are categorized in Tier 3, and globally, NSOs and development agencies are investigating new and alternative sources of data, as well as proxy indicators to fill this current gap within the SDGs indicators framework (Figure 1).
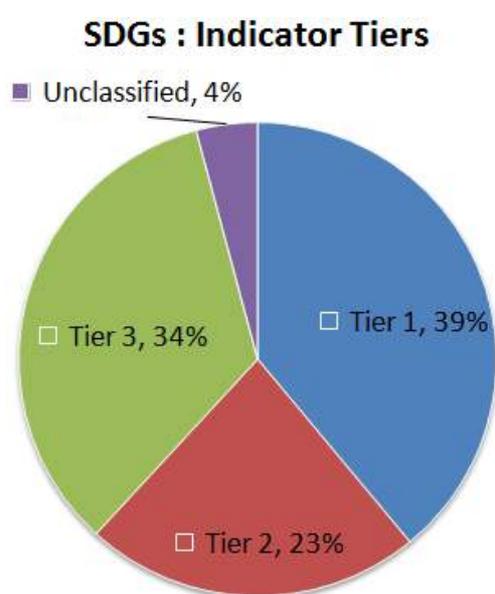

Figure 3: SDG indicator tiers

The Resolution 70/1 also makes a call for the involvement of all sectors of society to participate in the implementation of the SDG targets. However, no clear articulation of the role of the civil society and community level action as explicit means of implementation is made in the resolution, nor are individuals duly recognized as the primary agents of their own development.

THEORETICAL FRAMING

The opulence-focused and utilitarian articulation of wellbeing and development has long been superseded by an understanding that an individual's quality of life and their wellbeing relates closest to the set of capabilities they enjoy and their everyday functionings

(M. C. Nussbaum, 2011; M. Nussbaum & Sen, 1993; Stiglitz, Sen, Fitoussi, & others, 2010). The level of sophistication that has been achieved in understanding human development far exceeds the extent to which those insights have been incorporated into the social indicators monitoring instruments.

A commonly expressed maxim is that social indicators are important because "as a society we care about what we measure, we use what we measure, and what we measure drives policies and society in a particular direction" (Braun, 2009). While the information value chain can be used to understand how data translates to having a developmental impact (Figure 2), it is important to recognize the naivety of assuming that social indicators data automatically informs policy (Cobb & Rixford, 1998), and that the availability of the data leads to individuals' and communities' development. A more nuanced articulation of the role of data in development, and as such the framing of this research, can be articulated through Sen's Capabilities Approach (CA) (Sen, 1999) wherein the data is available as a resource that individuals can critically and reflectively (Freire, 2014; Ulrich, 2000) utilize towards their development and wellbeing (Figure 2).
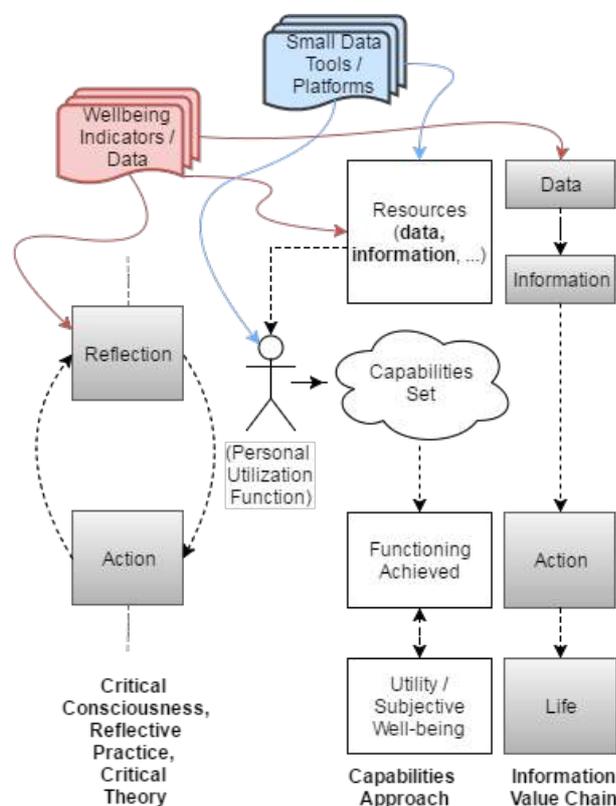

Figure 4: From social indicators data to development

DATA ECOSYSTEM CAPACITY AND MATURITY

The Independent Expert Advisory Group on a Data Revolution for Sustainable Development called for international organizations to work with other stakeholders to make efforts to support countries in empowering their statistical systems to be able to quickly adapt to the new world of data to collect, process, disseminate and use high-quality, open, disaggregated and geo-coded data, both quantitative and qualitative (*A World that Counts: Mobilising the Data Revolution for Sustainable Development*, 2014).

In this research, recognition is given to the fact that the potential for the data revolution for development can only be fully realized within an optimally functioning and mature data ecosystem, characterized by equally mature stakeholders, processes, and interactions. Maturity models are used as an evaluative and comparative basis for improvement and in order to derive an informed approach for increasing the capability of a specific area, traditionally within an organization (Bruin, Rosemann, Freeze, & Kulkarni, 2005). Capability Maturity Models, applied to national data systems (initial articulation in Figure 3), would not only allow for an assessment of, but also suggest evolutionary pathways towards the increased maturity of these systems. We believe that such a model will contribute to the adoption of best practices for improving the quality of the information produced and, therefore, better monitoring of SDGs indicators.

Figure 5: Capability Maturity Evolution (initial articulation)

PROJECT OBJECTIVES AND METHODOLOGIES

The following are the key research objectives and the associated methodologies:

f) Identify, through Appreciative Inquiry (AI) and ethnographic engagement with specific communities, locally relevant human wellbeing data sources and proxy metrics.

g) Develop, through Participatory Action Research and co-design, innovative Small Data solutions to support community level actors and individuals (as well as national and multilateral human development data consumers).

h) Undertake capacity building activities on the use of technology solutions for community wellbeing monitoring and action.

i) Investigate quality assurance frameworks and procedures to streamline the adoption of crowd-sourced Small Data into official statistics.

j) Develop a capability maturity model to support the evaluation of the effectiveness of national data ecosystems for the production of official social indicators data.

CONTRIBUTIONS, IMPACT AND DELIVERABLES

This project supports components of the SDGs agenda which are: the monitoring (Target 17.18) of progress towards the achievement of targets, as well as the development of suitable technology tools and platforms (Target 17.8) to support the activities of the different stakeholders. This research project also contributes to supporting community-level stakeholders (e.g. NGOs) with actionable insights on the community wellbeing targets, as well as country-level and multilateral entities (e.g. NSOs, UNSD) with new locally relevant data sources and proxy metrics. The small data approach to data analysis and visualization adopted in this project should improve the effectiveness of not only the SDGs indicators monitoring effort, but also the implementation action towards the SDGs targets.

This research intends to highlight not only the effectiveness of small data approaches to data analysis (especially in the context of SDGs) but also the necessity and complementary role that small data plays in overall data ecosystems. Publications that will emanate from this research will make a contribution to the body of knowledge and policy on the use of data (in particular social indicators data) for development, to the benefit of researchers and practitioners in the field.

RESEARCH APPROACH AND ACTIVITIES

This project will be undertaken through a series of engagements with the following key stakeholders:

a) Non-Government Organizations and Community partners.

    a. The initial interaction with these stakeholders will be an exploratory research formulated around the Appreciative Inquiry (AI) methodology to discover the current use of social indicators data by these stakeholders. This phase will also make use of AI interviews, focus groups, as well as embedded observations to identify novel, locally-relevant data sources.

    b. The development of small data software artefacts will ensue through co-design and participatory approaches to enhance and augment the current use of social indicators data by the NGOs and community level partners

b) National Statistics Offices (NSOs) and Development Agencies

    a. Evaluation research that addresses the suitability of alternative data sources for adoption into official statistics will be undertaken in conjunction with partnering NSOs. A scientific-experimental model of evaluation focusing on data quality will be utilized.

    b. Subsequent engagement with the NSOs will ensue towards the development of a Capability Maturity Model through Design Science approaches.

The research will also undertake desktop development of small data tools and systems that contribute to the mainstreaming of small data analysis and visualization techniques.

PROJECT INDICATORS

- New locally relevant data sources or proxy indicators
- Partnerships with community-level NGOs on supporting SDGs indicators monitoring in communities
- Partnership with an NSO towards quality assurance frameworks and development of the capability maturity model
- Level of adoption of developed small data software artifacts and tools, by communities and NGOs
- Capacity building workshops and activities

TEAM

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LABS

This project is part of the Small Data Lab.

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