

WORKING PAPER / 2017.12

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ABSTRACT

How have people's livelihoods evolved recently in the Democratic Republic of the Congo (DRC)? Many observers are not too shy to come up with an answer to this question. All these voices ultimately refer to official data sources on people's livelihoods in the DRC. In this paper we focus more in particular on survey data on the DRC. This paper reviews the available data from 8 national surveys implemented between 1995 and 2015, what caveats exist when analyzing them, and what livelihoods profiles have emerged in the literature so far.

The main claim we make in this review is that survey data cannot be taken at face value. The correct interpretation of survey data depends partly on the quality of the survey itself, partly on the quality and accessibility of related background material (like manuals, questionnaires, sampling designs, price data, etc.) and partly on the public availability and use of the data by the research community. While we propose some technical ways to cope with some obvious weaknesses of the existing datasets, an improvement of our knowledge about evolving livelihoods in the DRC ultimately also requires a further analysis of the political economy of data management.

Key Words: data surveys, poverty, sampling, deflator, Democratic Republic of the Congo

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INTRODUCTION

How have people's livelihoods evolved recently in the Democratic Republic of the Congo (DRC)?

Many observers are not too shy to come up with an answer to this question. Sources close to the Government of the DRC are invariably optimistic, referring to the (indeed quite high) growth rates in per capita GDP since the millennium turn. The IMF too, at the moment of granting debt relief to the DRC, in 2010, referred to a "satisfactory implementation of the country's poverty reduction and growth strategy, maintenance of macroeconomic stability, improvements in public expenditure and debt management, and improved governance and service delivery in key social sectors such as health, education and rural development." (IMF, 2010). In contrast to this, Englebert judges that "Congo's sizzling rate of economic growth has so far not had much of an impact on the welfare of its citizens, particularly the poorest ones" (Englebert, 2014, p. 7).

Who's right?

All these voices ultimately refer to official data sources on people's livelihoods in the DRC. In this paper we focus more in particular on survey data on the DRC. This paper reviews the available data from 8 national surveys implemented between 1995 and 2015, what caveats exist when analyzing them, and what livelihoods profiles have emerged in the literature so far. Given this focus on livelihoods, our paper will primarily look at micro- and meso-level data where most livelihoods occur. Indeed, these types of data obtained at the household or territorial level contain the more direct pieces of information regarding the spatial variation and evolution of people's circumstances, compared to macro-level aggregates like GDP per capita. Moreover, these survey data also allow for a better profiling of poverty and well-being, in order to identify for example winners and losers from the recent economic upsurge. And finally, survey data are also a good starting point to analyze government actions, by tracing the evolution in well-being of different groups of people back to particular types of policies.

The biggest challenge in undertaking this review is the limited number of academic papers building on the available survey data for the DRC. Most of the survey information is reported by papers written for policy makers and academic rigor is not their primary concern. Most of them also rather refer to secondary references citing the primary sources, rather than to the primary sources themselves –which most of the time are not publicly available. But the main claim we make in this review is that survey data cannot be taken at face value.

The paper is structured as follows. In a first section, an overview of the most relevant nation-wide surveys is provided. It is important to signal that interpreting survey data carries its own challenges. First, surveys do not emerge in a political void, they are conducted and financed with specific purposes often defined by government's and/or donors' agendas. This determines the level of their accessibility and validation by independent researchers.

Second, the correct interpretation of survey data ultimately depends on the quality and accessibility of related background material (like manuals, questionnaires, sampling designs, price data, etc.), often referred to as *metadata*, which need to be taken into account at the moment of making information comparable over time and place. Given their crucial and transversal importance, a subsequent section will dwell extensively on the problematic nature of sampling and on how defectively price data has been accounted for in national surveys of the DRC.

The third section discusses the evidence we have on the evolution of poverty, well-being and inequality experienced at the household level during the past decade of macro-

economic growth. It is important to distinguish, at this point, between three broad categories of indicators: (1) income/consumption-based, (2) asset-based and (3) outcome-based. While claims about the evolution of poverty or well-being in the DRC may vary quite importantly depending on the type of indicator used, the complex relationships between these categories are not yet well understood.

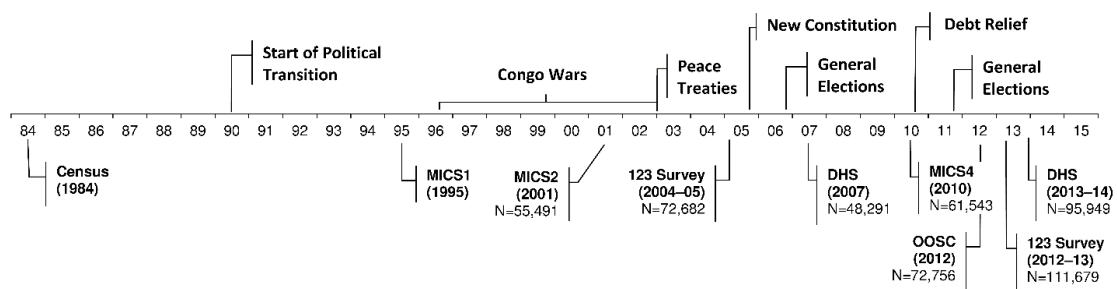
The fourth section looks at the information we have about livelihood profiles, i.e. variables that correlate with particular measures of well-being. Spatial attributes for example, are important (potential) correlates to look at. In a country the size of Western Europe and geographically heterogeneous, spatial attributes play a major role in explaining the reality behind trends in well-being. We also consider gender, the rural/urban divide and the level of education before looking at the data on how socio-professional activities are related to levels of well-being.

The last and fifth section concludes by drawing some lessons from this review in the form of a research agenda for future work in this area.

1. DATA ACCESS AND AVAILABILITY

Research on well-being and livelihoods in the DRC almost always points to poor data availability and to questionable datasets. The DRC is a large country covering almost the size of Western Europe with an estimated 75 million population of which reportedly 62% live below the poverty line (World Bank, 2015). The collection of data throughout the country is obviously impaired by factors such as the inadequate functioning of public infrastructure, resource unavailability, low levels in human development and recurrent episodes of conflicts. The timeline below highlights that data gathering has not been a frequent exercise in the DRC. It also presents the evolution of data collection in the country in light of a historical overview of major political events in the DRC, as well as the number of individuals surveyed.

Figure 1. Overview of major political events and national surveys in the Democratic Republic of the Congo (1984–2015).



Source: Slightly updated from Marivoet and De Herdt (2017a).

The first and so far only census conducted in the DRC dates from 1984. Prior to this event, we note a couple of initiatives towards population numbering with the first being the 1923 attempt for population registry and control during colonial times, and the second being the administrative census of 1970 from which a great deal of demographic data vanished amidst post-independence turmoils, making the implementation of the first nationwide census in 1984 all the more necessary (Marivoet, 2012). The archives of the 1984 census were in turn also partly destroyed, however, during the plundering of the National Statistical Institute (INS²) in 1993.

[1] Further nuance of this figure provided later on.

[2] *Institut National de la Statistique (INS)* as commonly known in French.

The relationship between population data and civil unrest is more complex though, as the period of political instability that started in the nineties also marked the beginning of a series of national-level surveys, starting with UNICEF's MICS data-round in 1995. In total, there have been at least seven representative national household surveys since 2000, which all captured variation of socio-economic and demographic data of over half a million citizens³. Among these surveys, we find two Multiple Indicators Cluster Surveys (MICS2 2001 and MICS4 2010), two standard budget surveys called 123-Survey (2004–05 and 2012–13), two Demographic Health Surveys (DHS 2007 and DHS 2013–14), and a nationwide survey on the number of Out-Of-School Children (OOSC) executed in 2012⁴.

The political events covering the period under which these surveys were respectively carried out are meaningful. More precisely, they pertain to the signing of the peace treaties, the adoption of a new constitution in 2005, the first general and democratic elections held in 2006, the debt relief agreement in 2010, and the second general election in 2011. The signing of debt relief in 2010 highlights a turning point with the World Bank requiring the inclusion of traceable pro-poor budget expenditures, as a mandatory component of the highly indebted poor country (HIPC) initiative to reduce Congo's debt under a dual strategy: the targeting of macro-economic indicators alongside measurable social outcomes. This context marked the execution of MICS4, the OOSC, the second wave of the 123-survey, and the implementation of the 2013-14 national DHS⁵.

[3] Figure 1 also comprises the number of individuals surveyed for each of the seven household surveys since 2000.

[4] The two Comprehensive Food Security and Vulnerability Analyses (CFSVA) of the World Food Program for example are robust surveys conducted in the DRC in 2007-08 and 2011-12, albeit not representative at the country's urban sector.

[5] A quantitative account of surveys implemented from 1984 to 2010 is covered by Marivoet (2012)

Table 1. Characteristics of national household surveys, and use.

Survey (survey year)	Size	Cost⁶ (million USD)	Main actors
			<ul style="list-style-type: none"> · Government agency · Donors · Executing agency
National Census (1984)	31 million individuals	unavailable	<ul style="list-style-type: none"> · Zaire government · UNFPA · INS
MICS1 (1995)	4574 households	0,12	<ul style="list-style-type: none"> · Secretary General of Planning · UNICEF, UNDP, WHO · INS
MICS2 (2001)	8600 households	ca. 1,3	<ul style="list-style-type: none"> · Ministry of Planning · UNICEF/USAID · INS
Survey 1-2-3 (2004/5)	13688 households	2,26	<ul style="list-style-type: none"> · UPPE-SRP · WB, UNDP, Belgium, France, etc. · INS, DIAL, AFRISTAT
CFSVA (2007/8)	3236 households		<ul style="list-style-type: none"> · Ministry of planning · PAM, Citigroup Foundation, ECHO, Belgium · INS
DHS (2007)	8886 households		<ul style="list-style-type: none"> · Ministries of Planning and of Health · USAID, DFID, UNICEF and others · INS, Macro International
MICS4 (2010)	11490 households	2,12	<ul style="list-style-type: none"> · Ministry of Planning · UNICEF, UNFPA, PAM, USAID · INS
CFSVA (2011/12)	24884 households		<ul style="list-style-type: none"> · Ministry of Agriculture (MINAGRI) · PAM · INS, IFPRI
OOSC (2012)	13519 households		<ul style="list-style-type: none"> · Ministry of Education · DFID · HIPS-University of Ouagadougou, UNICEF, UNESCO
Survey 1-2-3 (2012/13)	21454 households	5,9	<ul style="list-style-type: none"> · Ministry of Planning · ADB, WB, EU, Belgian cooperation, PNUD, PNUE, etc. · INS, AFRISTAT, DIAL
DHS (2013/14)	18171 households	ca. 8,5	<ul style="list-style-type: none"> · Ministries of Planning and of Health · USAID, PEPFAR, DFID, WB, IMF, UNICEF, UNFPA,... · Macro International

Source: Authors' compilation

[6] Budget in nominal USD.

Survey implementation and data gathering in the DRC remains a domain largely driven and financed by external donors. Donors do so both to improve the evaluation of the impact of their development policies and to invest in the country's capacity for evidence-based governance. One can make the case that, without external financing and pressures mounting from the donor community, these surveys would certainly not have been conducted. In the case of the DRC, the ultimate consequence of these data partnerships linking the country with donors makes country data available but also brings a twofold challenge:

The first being that the very accountability structures of the INS, the state entity charged with administering most of the above-mentioned surveys, are challenged when, compared to its ordinary budget of 1,9 million USD (budget of 2014)⁷, the cost of a national survey varies between 2-6 million USD (see Table 1). Such "donor pressure" risks to reorient the national statistical service to become a service organization that 'sells' survey services and/or the results of these surveys (Jerven, 2013). This functioning logic stands in tension with the public character of surveying and survey results: as a result of the limited possibility for public scrutiny, the efforts of data collection are not sufficiently exploited for socio-economic analysis informing policy processes. But the role of the research community in criticizing datasets so as to improve the process of data gathering itself is also imperiled.

The second challenge is related to the fact that surveys are evidently envisioned by policy makers and financed by donors with specific objectives in mind. More particularly, donors also rely on survey results to check on the state's performance in order to make judgments on aid policies and loan strategies. This turns surveys into important political instruments, while they are partly under control of the state administration itself. This may have been another source of secrecy around survey results in the DRC, it decreases public access to the the data and hence their use by all actors in the policy arena as well as their availability for public scrutiny for quality control of the data themselves.

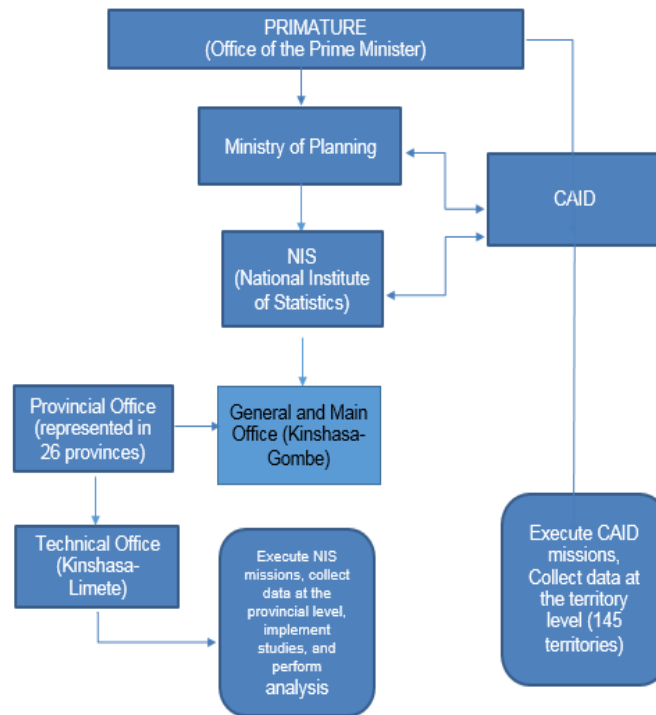
By way of example, despite championing commitment for open data policy and irrespective of contractual agreements citing the 123-survey data as public, even five years after having carried out the latest round, the 123-survey dataset is still not made publicly available, nor is the wave of the 123-survey carried out in 2004-05. International organisations too have been very reluctant to make the data publicly available, for unclear reasons. This situation is exacerbated as different partial versions of the dataset instead have circulated since, further adding to the confusion rather than allowing for a transparent debate about the quality of the data on the integrity of the survey process.

In the meantime, the Primature took the initiative to set up an alternative structure, on its own budget, called CAID or 'Cellule d'Analyse des Indicateurs de Développement', independently from the INS. CAID complements the information from existing datasets with an own internet and mobile phone based data collection unit at the country's territorial level. CAID is also well resourced, with a yearly budget of 4 million USD, about twice as much as the recurrent budget of the INS. The unit was set up through technical support from the International Food Policy Research Institute (IFPRI) and collects data across 145 initial rural territories with the goal to improve on policy decisions in a newly decentralized country. This unit is the only data collection initiative fully initiated and financed by the government of the DRC. This feature doesn't however guarantee more sustainability: initial government funding only covered the first 18 months of operation. Recent ongoing political changes in the country's leadership have created a vacuum in funding and requires CAID to renegotiate its *raison d'être* with the new political leaders. It is part of the ongoing ODI/SLRC project to evaluate the value

[7] Data from the Etats de Suivi Budgetaire (ESB) dataset.

added of the CAID data to triangulate household surveys and to complement existing data libraries with meso-level contextual information.

Figure 2. Illustrative Organizational Chart on the role of the NIS and CAID



Source: Authors' representation.

2. THE IMPORTANCE OF RELIABLE METADATA IN INTERPRETING SURVEY DATA

As previously noted, surveys are not stand-alone documents and must be interpreted with the background and contexts under which they stand. Here, we illustrate a few challenges with sampling and with survey price data compiled in the country by the national institute of statistics (NIS).

2.1. Sampling problems

Researchers are not interested in survey results as such, of course, they want to make claims about the population as a whole. This supposes that the sampling procedure guarantees representativity, so that sample-based observations can be generalized to the population as a whole. However, while comparing the characteristics of the samples used by the different national-level surveys, the study identifies four interrelated problems.

A first problem with demographic estimates in surveys undertaken from 1984 to 2014 concerns the reported population growth rate, where individual surveys refer to having applied the World Bank recommended annual growth rate of 3% to the base year of 1984, which is the latest (and only) year for which census data are available. In reality, however, none of the surveys conformed to the 3% rate, thus producing inconsistent population estimates compared to what could have transpired had this rate been applied. The reasons for these variations are not cited in any of the survey reports. Given the magnitude of the differences, it is also difficult to imagine how such variations might be justified.

Table 2. Demographic estimations from 1984-2014

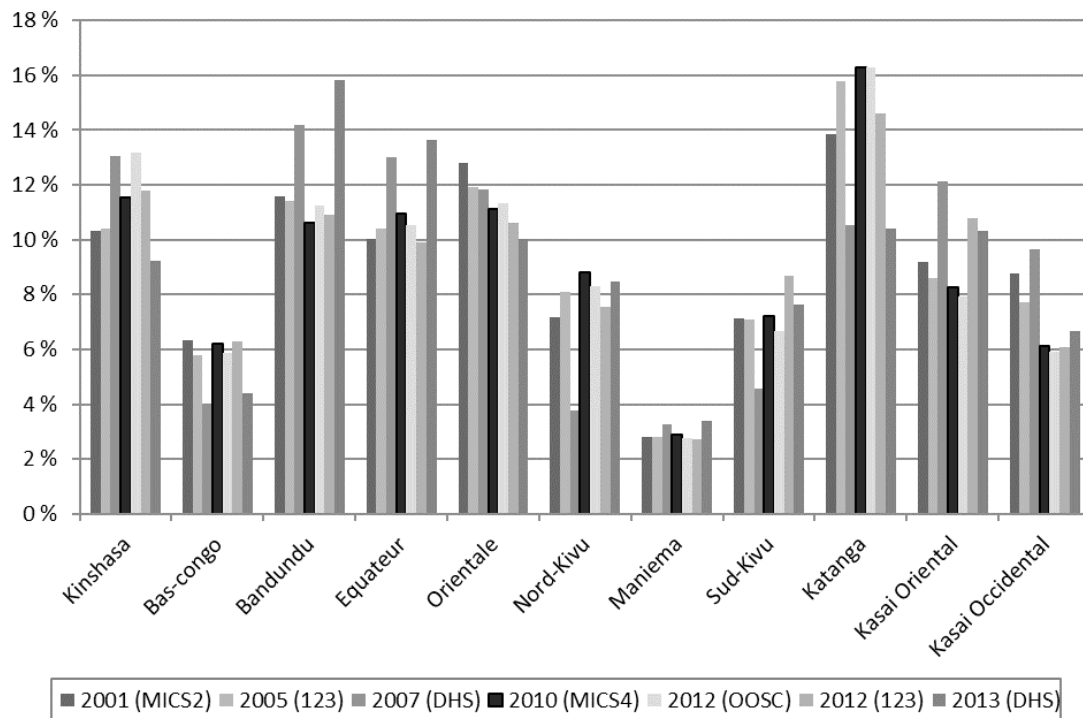
Population (in millions)	CENSUS 1984	MICS2 2001	123 SURVEY 2005	DHS 2007	MICS4 2010	OCS 2012	123 SURVEY 2012	DHS 2013	UNICEF 2014
Kinshasa	2.7	5.4	5.8	8.6	8	9.2	9.4	6.5	8.3
Bas-Congo	2	3.3	3.2	2.6	4.3	4.1	5	3.1	3.6
Bandundu	3.8	6	6.3	9.3	7.3	7.9	8.7	11.1	8.6
Equateur	3.6	5.2	5.8	8.5	7.6	7.4	7.9	9.5	10.5
Orientale	4.3	6.7	6.6	7.8	7.7	8	8.5	7	10.8
North-Kivu	5.4 ⁸	3.7	4.5	2.5	6.1	5.8	6	5.9	7.5
Maniema		1.5	1.5	2.2	2	1.9	2.2	2.4	2.3
South-Kivu		3.7	3.9	3	5	4.7	6.9	5.3	6.2
Katanga	4	7.2	8.7	6.9	11.2	11.4	11.7	7.3	12.9
Kasai Oriental	2.6	4.8	4.8	8	5.7	5.6	8.6	7.2	9.8
Kasai Occidental	2.4	4.6	4.3	6.4	4.2	4.1	4.9	4.7	8.5
Total	30.7	52.1	55.3	65.8	69.1	70.3	79.8	69.9	89
Demographic estimation and growth rate									
3% Starting from 1984	30.7	50.8	57.2	60.6	66.3	70.3	70.3	72.4	74.6
3% After 2014	36.7	60.6	68.2	72.4	79.1	83.9	83.9	86.9	89
Growth 1984-2014	30.7				3.61%				89

Source: De Herdt, Marivoet, & Muhigirwa (2015).

As illustrated by Table 2, taken at face value, the reported population for Kinshasa would have evolved from 8.6 million (DHS 2007) to 8 million (MICS4 2010), then decreased to 6.5 million (DHS 2013) and finally again increased to 8.3 million (UNICEF 2014). Similarly, population estimates in the formerly known province of Bas-Congo were reportedly 3.2 million (NHS 2005), they decreased to 2.6 million two years later (DHS 2007), increased again to 5 million (123-survey 2012), and decreased to 3.1 million a year later (DHS 2013). These demographic variations are too erratic to be taken as approximations of any real trend. They also contradict what one would expect these trends to be. In the case of Kinshasa for example, one would have expected for rural to urban migration movements to have increased the size of the population as opposed to taking away from it. Similarly, for Bas-Congo, where a population drop in millions of individuals in a province not directly impacted by civil war and without any reported natural disaster or health calamity raises questions.

[8] The figure 5.4 million in 1984 refers to the Greater Kivu region, which then covered North-Kivu, South-Kivu and Maniema.

Figure 3. Provincial demographic weight (2001-2013)

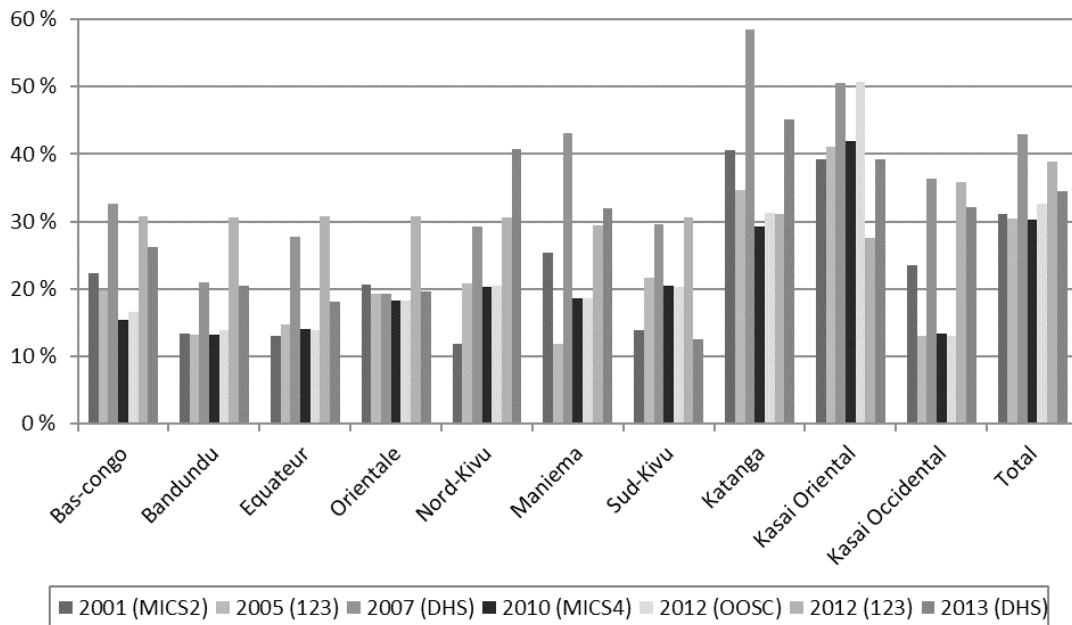


Source: Marivoet and De Herdt (2017a).

A second problem relates to the unexplained drastic variations in demographic weight of each province from one survey to the other. As noted in Figure 3, Maniema maintained a relatively stable population share of 3% while provinces such as North-Kivu, Katanga and Bandundu experienced population fluctuation by 5-6% between different survey years without the provision of sensible explanations (Marivoet & De Herdt, 2017a).

A third problem relates to the varying urbanization rates within each province. Once more, these variations approximately reached 20% in Bas-Congo, Bandundu, Equateur, South-Kivu and both Kasai, further reaching around 30% in the Katanga, Maniema and North-Kivu (Marivoet & De Herdt, 2017a). Consequently, it is hardly possible to accurately know the number of Congolese citizens living in the country, nor to formulate a factual account on the rural/urban distribution trends.

Figure 4. Provincial urbanization rates (2001–2013)



Source: Marivoet and De Herdt (2017a).

A fourth problem is that the survey estimates do not align with recent demographic information. In principle, the 1984 census provides for the “reality check”, but the actualized results of this census do not for example match with population estimates based on the United Nations Children’s funds (UNICEF) vaccination data, nor with government’s own data on school enrolment. There is potentially a possible way forward to deal with the fourth problem: which is the ability to recalculate the survey estimates by making use of population weights which reflect some of these alternative sources of information on the size and distribution of the Congolese population. This type of solution was proposed by Marivoet & De Herdt (2017a), as a method to reduce the effect of erratic sampling designs in cases where no background information is provided to explain these fluctuations. Alternatively, when the National Institute of Statistics has arguments to support the implicitly reported demographic estimates, it might be interesting to conduct qualitative research on the precise methodology adopted as well as on the origin and reliability of the imputed information.

2.2. Deflator problems

Household budget data are initially expressed in nominal terms. To become a meaningful source for welfare and poverty measurement, these data should therefore be complemented with other pieces of information. Indeed, whether a certain amount of *Francs Congolais* allows the household to escape from poverty, ultimately depends on the socio-economic context where this money is spent. In this respect, two sorts of contextual information should be added to the analysis: first, price data to correctly convert nominal budget levels into their purchasing power equivalents; and second, information on the specific needs within any particular setting, to know which commodities are required to avoid poverty. Whereas the second type of information is often not readily available as it necessitates a deliberative social process to identify local needs and corresponding commodities, price data are directly collected by budget surveys and their application does not require any social judgement. Conversely, these price data are typically expressed in local selling units (like *ekolo*, *sakombi*, etc.), which

required for the 123-survey data (2004/5) an additional and (non-publicly available) dataset to allow the conversion into metric prices.

Unfortunately, analysts in the DRC devote little attention to control for price differences, let alone for other differences in context, like needs. This can be illustrated by the poverty analysis conducted within both waves of the government's Poverty Reduction and Strategy Papers (DSCRPs). By relying on the monetary value of only two, urban and rural, poverty bundles, the analysts behind the first-generation DSCRPs⁹ (2006) not only implicitly assumed that the list of commodities needed to escape from poverty in Congolese cities (villages) is the same, but also that urban (rural) prices to obtain these commodities are equal across the country. By pricing a separate poverty bundle for Kinshasa, the latest DSCRPs¹⁰ (2011) at least accounted for the exceptionally high prices observed in the capital compared to other cities in the country.

Simplicity may be of value in itself, but making a distinction between only 2-3 socio-economic contexts within the DRC is however plainly insufficient to embark on a meaningful study of DRC's income distribution, given that the market landscape is substantially fragmented, causing prices to be highly variable across both time and space. Firstly, based on the 123-Survey (2004-5), Marivoet (2016) observed that food prices in Kinshasa are on average two times higher than those observed in Bas-Congo, South-Kivu and both Kasai provinces; and at least three times higher compared to the rest of the country¹¹. There is, besides, quite some variation in prices for individual food items at lower geographical units too. To get a sense of these variations, the CAID bulletins on the m-kengela project, which monitors (in collaboration with the World Food Program, WFP) monthly food prices at the territorial level since Mai 2016, are extremely illustrative. For example, the bulletin of March 2017 highlights the spatial variation in prices for multicolored beans, an important source of proteins, which seems to range from 669 FC (0.50 USD) in the territories of Kungu, Faradje and Kibombo to not less than 3000 FC (2.22 USD) per kg in Mitwaba, Manono and Luiza. In addition to spatial price differences, the price variation is further complicated by different inflation rates for each food item. Whereas the price of the same multicolored beans has increased by 78% in some territories compared to the previous month, other territories recorded a decrease of 64%¹².

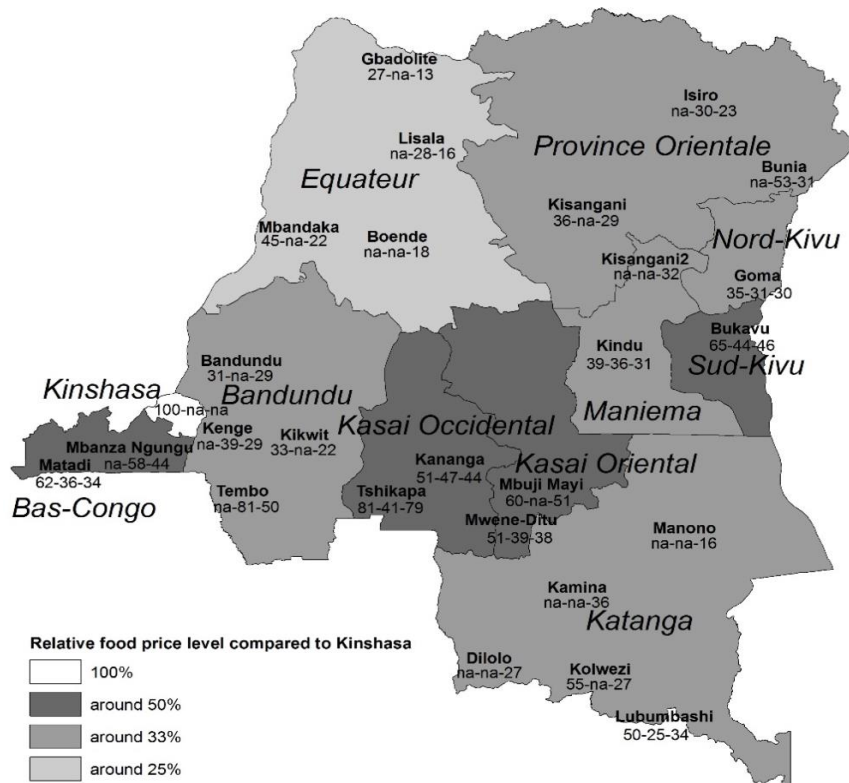
[9] Document Stratégique de Croissance et de Réduction de la pauvreté, Ministère du Plan, 2006, RDC.

[10] Document Stratégique de Croissance et de Réduction de la Pauvreté, Ministère du Plan, 2011, RDC.

[11] As demonstrated by the substantial variation of the EKS Fisher food index observed between 56 price zones. This implies that Congo's domestic food markets are very inefficient.

[12] Results from analyzing CAID food price data on basic commodities in 2017.

Figure 5. EKS Fisher Food Price Index per pool and per sector



Note: The three numbers of each pool consecutively refer to the EKS Fisher food price of big cities, towns, and villages within that pool (reference: Kinshasa=100). na=not available.

Source: Marivoet (2016).

Diversity in needs across time and space is another factor impeding any direct and genuine welfare analysis. This issue can be simply captured by the question “what list of commodities should make up the poverty bundle in any particular setting?”. These commodities might respond to a need imposed by nature (like a mosquito net to cope with an environment affected by malaria) or by culture (like a cellphone to be able to participate in an urban society). Although this approach might seem to jeopardize any consistent comparison of welfare and poverty levels across time and space, one way to deal with this issue is to fix consumption bundles not in terms of goods but in terms of capabilities (Reddy, Visaria, & Asali, 2009). Marivoet and De Herdt (2015) start from this suggestion to define a poverty line in terms of people’s capabilities (as defined by Sen (1999)), which should then, in a second step, be contextually translated into a set of corresponding commodities before being converted into their monetary equivalent using local prices. As such, consistency and specificity (being two core principles of poverty analysis) can be married: consistency is assured through a reliance on a minimal fixed capability bundle; and specificity stems from the bundle’s local translation into its money-metric equivalent.

Of course, while pursuing this strategy, practical short-cuts and second-best accommodations are often inevitable to overcome a variety of problems. An approach of this type has been formally worked out in Marivoet and De Herdt (2015), which departs from an improved version of the Food Energy Intake method to compute a series of 56 regional poverty lines. The ratios of these poverty lines are then used as deflators to spatially correct the nominal budget levels of the 123-survey data (2004/5). A similar methodology has been used to correct for contextual variation between 1975 and 2004 in Kinshasa (De Herdt and Marivoet, 2017b) and

across *both* time and space for eight Congolese cities over the same period (Marivoet, 2015). Given the substantial variation in food prices, it goes without saying that any poverty analysis and profile will be seriously determined by the analyst's willingness and degree to adopt a context-sensitive lens. For the current research on livelihoods, we intend to replicate and apply an updated version of the above methodology to both waves of the 123-survey data (2004/5 and 2012/13).

2.3. Systematic reference to metadata

The two issues discussed above clearly illustrate the importance for stakeholders to be aware of these problems and for analysts to be equipped with the analytical tools to deal with them. Problems pertaining to the interpretation of household data and dataset inaccuracy is a generalized challenge that extends beyond the DRC (see Jerven, 2013 for a review). As a solution, we propose that all essential metadata related to the execution of household surveys in the DRC should be made publicly available, so that survey data could be of real use to inform public policy as expected.

3. WHAT DO WE KNOW ABOUT LIVELIHOODS IN THE DRC?

In answering the question how livelihoods evolved in the DRC, micro-level surveys can fill in the gap left by aggregate indicators by contextualizing livelihoods information and estimates on the DRC. On a methodological level, however, it is important to distinguish between different approaches to the measurement of well-being. More particularly, it is useful to distinguish between income-based, outcome-based and asset-based approaches of well-being. We start with a macro perspective on national income, before we zoom in into the micro-level distribution of household consumption by discussing the interrelated concepts of growth, poverty and inequality. We then briefly discuss outcome-based and asset-based approaches to livelihoods and, especially, the scarcity of such literature on the DRC.

3.1. From GDP and national income to household budgets

For a long time, the income approach to measure well-being and compare welfare levels of countries remained largely unchallenged. Under this framework, we know that the DRC experienced a tremendous economic growth of around 6%, standing above the average growth rate for Sub-Saharan Africa during the period 2005–2012¹³. While the income approach to welfare measurement is best suited to inform on the health of the economy as a whole, it is however not suitable when it comes to informing on the livelihoods and well-being of its citizens. Indeed, we cannot simply assume that such spectacular GDP growth has fully trickled down and translated into an equally strong reduction of poverty at the household level. In this respect, an average growth rate of 6% should not only be corrected for demographic changes (estimated at 3% for the DRC) but must also be contrasted with a measured annual per capita growth rate obtained by comparing household budgets between 2004–5 and 2012–13. This work has been hampered by data access problems, as explained above, but forthcoming work on this (Marivoet et. al., forthcoming) estimates the real annual growth in household budget at -0,2% instead of +3%. Average per adult equivalent calorie consumption would even have slightly *declined* during that period.

A potential answer in understanding why a relatively high per capita GDP growth

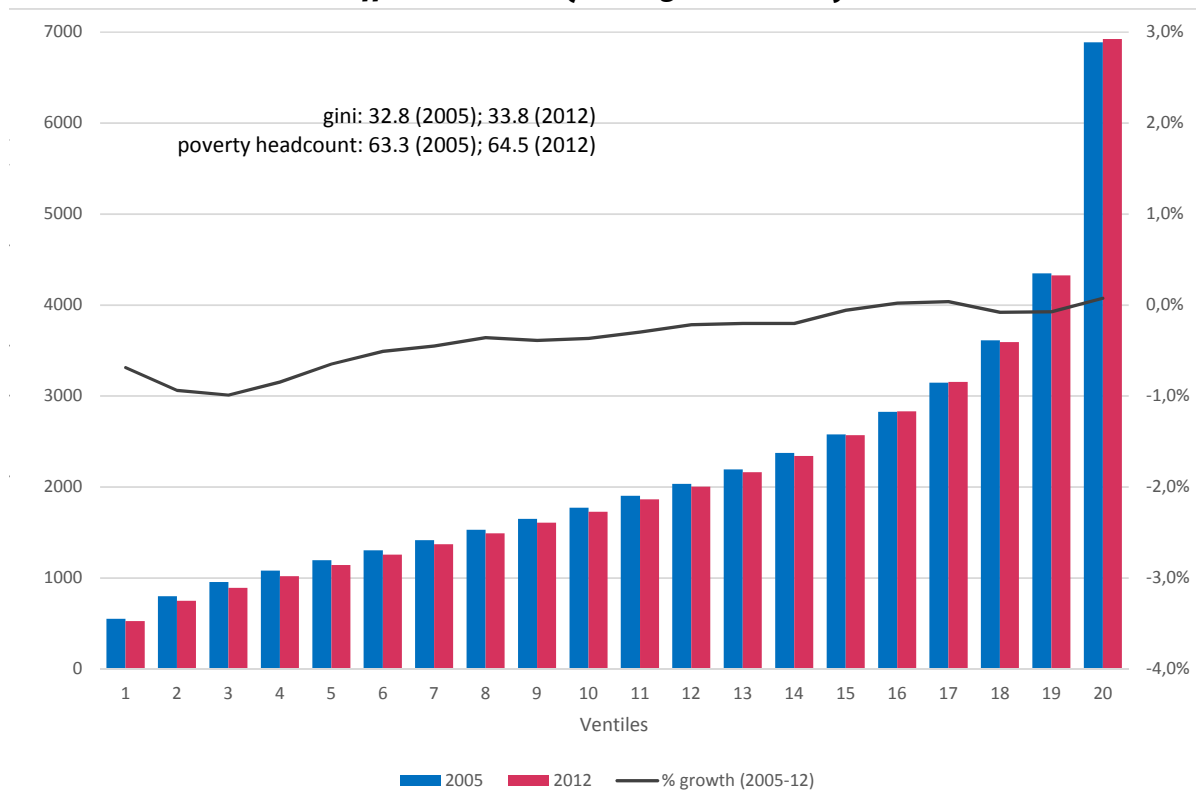
[13] Figures from the World Bank's World Development Indicators database, <https://data.worldbank.org/data-catalog/world-development-indicators>.

rate was not experienced as growth at the household level can be due to the fact that such growth has mostly been driven by the extractive industry which is largely capital intensive, while generating income and employment for a very limited number of people, as suggested by Englebert (2014). But clearly, it remains interesting to check this further and we hope to be able to do so in the course of this research project.

3.2. A focus on inequality and poverty

Further, to enquire into poverty, both growth and distribution have to be taken into account: “Poverty reduction in a given country and at a given point in time is fully determined by the rate of growth of the mean income of the population and the change in the distribution of income” (Bourguignon, 2004, p.2).

Figure 6. Evolution of daily consumption per adult equivalent from 2005 to 2012 for different ventiles (in Congolese Francs)



Source: Marivoet et.al. (forthcoming).

Figure 6 illustrates a consumption approach towards well-being and poverty in the DRC. Based on the 123-Surveys of 2004-5 and 2012-13, budget data were all expressed in purchasing power parity FC for Kinshasa in 2012 by relying on regional price indices obtained for each of the 56, respectively 66 price zones identified in 2004-5 and 2012-13. Further, sampling weights were corrected so as to reflect the demographic distribution observed in the data on vaccination and schooling in 2012 and by applying region-specific growth rates between this assumed 2012 population benchmark and the census data of 1984 (Marivoet and De Herdt, 2017a). The results are also quite sensitive to marginal changes, like the exclusion of some extreme and/

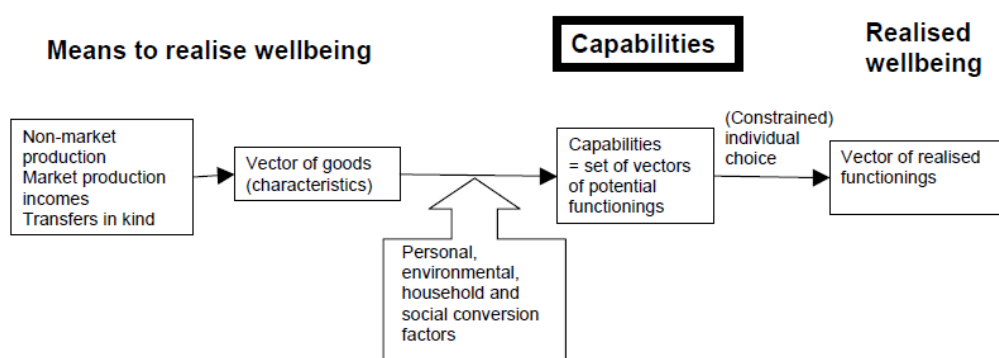
or objectively impossible values¹⁴. If we combine this with the above-mentioned challenges to correct sampling frames and price structures, there is no way around the conclusion that any estimate of growth and inequality will most probably be “precisely wrong” unless we interpret it as an indication of a range of “vaguely right” possibilities.

Anyhow, the figure shows that, between 2005-12, average growth has in all likelihood been negative, inequality also increased: the richest 5% of the population consumed more over time, the opposite happened in general for the rest of the population, with slightly higher proportional reductions for the lower consumption ventiles (except for the poorest 10% of the population). Apart from this analysis based on consumption ventiles, it is also possible to capture the livelihoods dynamics of various socio-economic groups beyond national aggregate averages. Based on the information and data currently available, we do not however know enough to present solid evidence about whose socio-economic performance has improved or worsened during this period of economic growth, and what factors were behind these different livelihood outcomes. A further analysis of the data will enable us to examine the consistency of these trends and to explore the extent to which further disaggregation could lead to diverging results.

3.3- From incomes to outcomes

The income and consumption approaches to welfare measurement are criticized for not being useful enough in locating poverty in a specific time and place and for lacking the ability to guide policy interventions in non-monetary dimensions of well-being. For example comparisons of households’ income under the expenditure framework are made broadly across urban, rural and other sub-national groupings without clear knowledge of the local dynamics that can influence outcomes of households’ well-being (Wietzke, 2015). Put in the context of the DRC, the ultimate question is to know how the household incomes have affected different households’ living circumstances. Household income is just an indicator of the latter and it certainly doesn’t capture all the intricacies of what people have reason to value in life.

Figure 7. Connecting means, freedoms and achievements



Source: Adapted from Robeyns (2005, p.98).

Figure 7 sketches how consumption, or a specific “vector of goods”, links to freedoms and achievements under Sen’s capabilities approach. Sen argues that well-being

[14] More in particular, 807 households were excluded from the sample as their daily calorie intake per adult equivalent unit was either below 250 kcal and above 12,500 kal. Both growth and inequality figures evidently change with more or less stringent cut-off criteria. See Marivoet et.al. (forthcoming) for further details.

has to do with what one is *effectively capable* to do and be. The approach locates well-being in-between ‘disposable means’ and ‘effectively realized functionings’. Given this focus, it follows that in the DRC, the translation of household income into household members’ well-being is a function of several personal, environmental, social, relational or family factors. Thus, there is a relatively complex dynamic between a) one’s ability to realize well-being (access to non-market production, market production, incomes, in kind transfers), to b) having the capabilities for potential functioning, c) the individual choices that one makes, and d) the ability to actually achieve well-being (Robeyns, 2005). Factors such as life expectancy, the quality of life of households, undernourishment, morbidity, education, the health of a community are all (partial) sources of information on well-being beyond income.

The new millennium has championed a focus on non-monetary dimensions of well-being, partly inspired by the expanding literature on human development and capabilities (Anand and Sen, 1992) and by the corresponding creation of new tools and indicators like the Human Development Index (HDI). Well-being here measures how well households are doing on development indicators by focusing on the conditions, opportunities and choices available to them (Sen, 1999). Contrary to the income-based approach, the human development approach is people centered and seeks to expand the richness and quality of life of those living in a particular economy. Under this approach, the DRC reportedly ranked 176th of the 197 countries considered, gaining 11 ranks in the 2015 HDI ranking compared to the previous year.

These results however cannot be taken at face value and warrant further scrutiny. For one thing, the rise in the HDI is probably strongly driven by the significant increase in per capita GDP, which is not necessarily telling much about the increase in household income as such (as already documented above). Furthermore, life expectancy and literacy data are ultimately derived from one of the national-level surveys enlisted in Table 1, and are therefore subject to the critique we made above on the underlying sampling assumptions stated in section 2 of this review.

3-4- A focus on Assets

The asset-based approach (e.g. Carter and Barrett, 2006) is increasingly gaining ground as an additional dimension of welfare analysis, as it focuses not just on what people are actually able to do and be, but also on how vulnerable or sustainable their situation can be. The asset approach to welfare measurement offers the simplicity to visualize assets accumulation of individuals over a given period, thus enabling the tracking of wealth accumulation as well as the transmission or reversal of intergenerational poverty for specific groups over time. In this respect, several studies on poverty measurement rely on assets, as a complement to the income-based approach, to distinguish ‘structural’ from ‘stochastic’ poverty. In the former case, poverty is structural as both consumption and assets fall below their critical threshold; in the latter, consumption falls below the monetary poverty line yet assets remain above the critical threshold.

In the DRC, not much work has been done in this area as data are scarce. A forthcoming paper Marivoet and De Herdt makes use of an asset-based approach to analyze the use of household assets to cope with economic regress between 1975 and 2005 (Marivoet and De Herdt, forthcoming). The paper constructs a dataset of 21,390 urban families using five cross-sectional household surveys. On a general level, the assumption is that the outstretched economic crisis since the mid-1970s would have resulted in a widespread depletion of household assets.

Results emanating from this asset study however failed to confirm such claim. Indeed, apart from minor depletion experienced by specific households in cities in Equateur, South-Kivu, Kasai Occidental and Orientale, no generalized decrease in asset ownership had occurred. To the contrary, asset *growth* occurred, and even segments of the society which appeared to have been impacted during the economic crisis seemed to have recovered swiftly. Further, the analysis identified the social importance of asset ownership and the instrumentalization of consumer durables as powerful dimensions of assets. This dynamic is at the core tradeoff between low nutritional outcomes and asset accumulation in the DRC as it relates to the acquisition of television sets, bicycles and most recently in the ownership of cell phones for families, all being major drivers to the increase in asset ownership observed.

However, findings of this study come with serious methodological limitations. First, the study was confined to *urban families only*, leaving out a larger section of rural households whose change in asset ownership during the economic crisis was simply not captured. Second, the list of household assets common to all surveys was fairly limited, as only three housing characteristics and five consumer durables could be identified. Third, the data did not allow to control for differences in quality or market value. As a result, a second-hand car will receive the same weight as a brand-new model. Fourth, household assets have been mainly recorded with binary variables (0/1), and not counted to be able to control for family size and composition. And fifthly, any change in asset ownership should be read in parallel to changes in debt levels in order to distinguish genuine forms of wealth accumulation from mere buying on credit. Unfortunately, household data on debt and loan structure is generally absent in most nation-wide surveys conducted in the DRC, and if not, they are only weakly reliable.

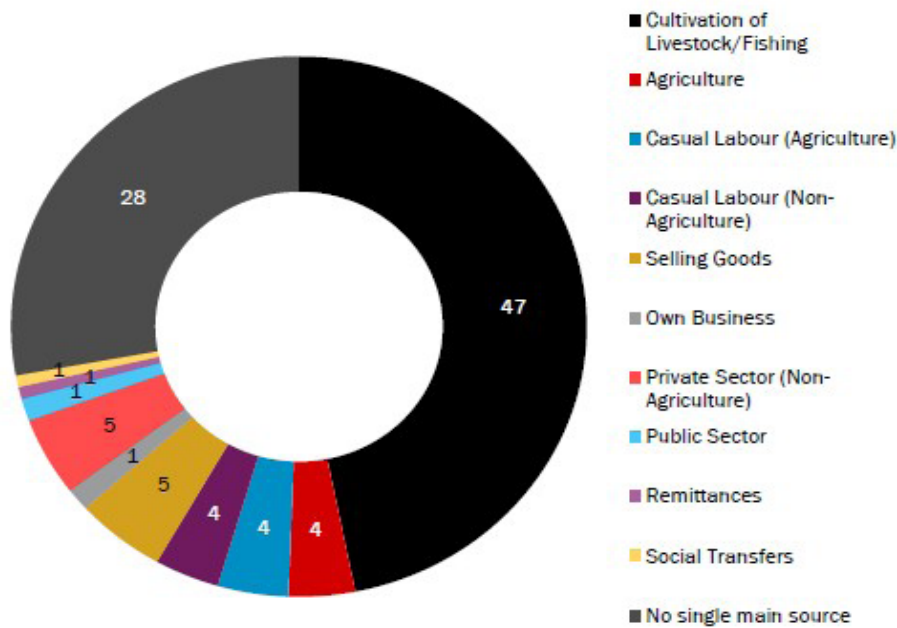
By tracking the accumulation of wealth as well as the value of assets, the asset-based approach is an additional venue to investigate changes in household livelihoods and vulnerability status. However, in the case of the DRC, this exercise would clearly require better and more detailed asset data, accounting both for the rural and urban areas, as well as a more diverse asset components and insights into a family's solvency.

Also, there can be tensions between the asset and outcome approaches precisely in a way that social and economic inequalities may not always yield the expected outcome. For example, the WFP (2014) profile of nutritional vulnerability in the DRC showed that poorer households demonstrated a higher food security status than wealthier ones. Such tension is also highlighted in the SLRC (2016) report tracking change in livelihoods, service delivery and governance in Eastern DRC with results showing that the increase in households' assets, income and diversification of activities was accompanied by a rise in household debts and further food insecurity of displaced households in South-Kivu (Ferf et.al., 2016).

4. LIVELIHOOD PROFILES

Since we know that there are multiple ways to measure poverty and well-being and what it requires for any analysis on the DRC in terms of data and metadata, the question that remains is to know what the determinants of livelihoods are for Congolese citizens. We have chosen three sources informing this question from different methodologies.

Figure 8. Sources of households' income



Source: Milliano et. al. (2015).

The first one is a paper by Milliano et. al. (2015), which traces the trajectories of livelihoods and access to services of citizens located within the conflict affected context of eastern Congo. Under an asset-based approach, poverty here takes into account the multiple attributes that makes one poor in a general sense by generating data on three key dimensions: livelihood activities, household wealth, and levels of food insecurity. This survey covered 8,484 households living in conflict affected zones of South-Kivu and it is representative at the village level. 53% of surveyed households reported having had experienced conflict in the previous three years. In this context, survey results indicated that the maintenance of a single sustainable livelihood activity was not possible for the majority of surveyed households whose income and survival relied heavily on differing streams of activities as per Figure 8.

The report also highlights how the livelihoods experience of households differed according to subsets within the sample of surveyed households. For example, female headed households, households with lower education endowment or households with frequent experiences of conflicts fared worse on asset ownership and food security than their counterparts¹⁵. In the same vein, education was a strong influencing factor of livelihoods in high conflict settings given that households with higher education endowments were economically wealthier and displayed increased levels of asset ownership than less educated households. Gender was also a strong influencing factor of livelihoods as female headed households were

[15] Male headed households, better educated households and household with lower records of displacement and conflicts.

more likely to fare worse in asset ownership than other groups, signaling that households headed by women, coupled with the types of livelihoods activities practiced, were likely to have lower levels of well-being. It is prudent however not to draw causal inferences from findings based on correlations, as unobserved variables may drive both dependent and independent variables.

Additionally, SLRC conducted a panel survey as follow up to the pre-cited livelihoods report by Milliano et.al. (2015). This 2012-2015 panel survey tracked livelihoods by measuring household asset ownership and food insecurity using the Morris Score Index (MSI) and the Coping Strategies Index (CSI) respectively (Ferf et.al., 2016).

The report found no solid evidence on influencing factors of livelihood in the conflict affected areas of South-Kivu. However, it confirmed previous findings regarding gender and displacement as contributing factors towards negative livelihoods outcomes, once again the gender of household heads, the experience of displacements and threats of conflicts, were associated to poorer livelihoods outcomes.

Also, the second wave of the SLRC report observed an increase in households' assets, the diversification of households' economies from 2012 to 2015, which resulted in an increase of the households' income level generated through the ownership of businesses, casual labor and production activities. However, while agriculture remained an important source of activities, food insecurity persisted during this period, the debt levels of households increased with most debts linked to increased consumptions, rising health costs and education needs. Households means of production did not improve during this period of economic diversification and assets increase (Ferf et.al., 2016).

Both studies are limited to the specific conflict affected areas of South-Kivu, and they currently stand as working papers. Nonetheless, they add value by informing us on what potentially may support the livelihoods of citizens located in conflict settings of the DRC, yet they do not provide for a solid account of the actual determinants of livelihoods in the Kivu province or the country as a whole.

The second source informing on the livelihoods of Congolese households comes from the work by the World Food Programme on the situation of food security and the vulnerability of Congolese households in the DRC (WFP, 2014)¹⁶. This report focuses on the rural sector and further informs on well-being by identifying the social, physical and natural capital sustaining the livelihoods of households as well as risk factors associated with households' profiles.

Findings from this report, which is based on a survey conducted at the national level, stand in contrast with previous findings of the SLRC report on a number of points. For example, while the SLRC report in South-Kivu did not find the existence of a main source of livelihood stating that Congolese households relied on a variety of diverse activities to sustain their livelihoods, the WFP report which surveyed households across 10 provinces¹⁷ stated that most households could refer to a single main activity which sustained the larger brunt of their livelihoods and survival¹⁸. Secondly, while the SLRC report found that female headed households were likely to have fared worse on food security and asset ownership, the WFP report could not identify the gender of the household head as a significant correlate of lower food security.

Another key contribution of this report is the caution towards equating income and wealth as precursors for food security by challenging the general assumption that an

[16] <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp266329.pdf>

[17] 10 provinces given that rural Kinshasa was excluded.

[18] Most households had a single activity which sustained 80% of their survival and livelihoods.

economically poor household status will likely translate to lower food security status. Under this national survey, 47% of poor households were food secure where only 45% of wealthier households were food secure, 55% of wealthier households were food insecure (WFP, 2014, p.76).

Both the SLRC and WFP survey agree on land ownership as an indicator for wealth and increased well-being of households. However, the WFP survey brings precision beyond land ownership by stating that variables such as land utilization, levels of inputs, labor and technologies applied, as well as access to markets are by far greater determinants of livelihoods in addition to the possession of land alone. Both surveys also agree on strong correlations of education with food security and nutritional outcomes.

A drawback of both previous surveys is their weak representativity: While the SLRC survey is only representative at the level of a limited number of villages in a conflict area, a comparison of the WFP survey sample with the sample weights of the rural sectors in different provinces reveals the over-representation of both Kivus and Maniema while the provinces of Equateur, Bandundu, Orientale and Katanga are underrepresented.

The last source informing on determinants of livelihoods and well-being in the DRC investigates the evolution of living standards in 8 Congolese cities covering the period after the zairianisation policy to the millennium turn (1975 to 2005). Each of the surveyed 8 cities maintained historical particularities while urban areas were impacted by common traits of informalization, which had proven to be an effective source for households' resilience (Marivoet, 2009; Marivoet and Keje, 2011). During the period under investigation, the evolution in households' asset ownership shows that urban living conditions became resilient to crisis, with some urban cities actually making progress during the crisis period. The study on the evolution of living standards also showed that poverty incidence on a general level barely changed over three decades, while poverty continued to increase in some provinces¹⁹.

In addition, some counter-intuitive results were highlighted in the report. For example, the urbanized province of Kinshasa holding a poverty headcount of 73% was in fact more affected by poverty than the rural province of Equateur (Marivoet, 2009; Marivoet and Keje, 2011). This study also highlighted the link between changes in ownership of (mainly technological) assets and the economic geography of the country.

In summary, the ability to clearly identify determinants of well-being in the DRC context requires for analytical approaches to be sensitive to socio-spatial differences.

[19] In the city of Bukavu for example, poverty increased from 62% in 1975 to 86% in 2005, marking an annual poverty growth rate of 1.2% (Marivoet, 2015).

5. THE WAY FORWARD

We started this review by pointing out that, notwithstanding common use of data and figures derived from one of the many national-level data surveys carried out over the last two decades, these data should be treated with due methodological care. The challenges for survey data analysis and usage both for research and policy making are huge in the DRC context, and the country has little or no tradition in exploiting surveys in this sense. These surveys can inform about the dynamics of development in the country, provided they are treated with due methodological care so as to avoid ‘precisely wrong’ results, but even then, in most cases we will only be able to interpret the research outcomes as ‘vaguely right’.

The methodological overview we made in this paper may first of all be useful for anyone planning to engage in new data surveys in the DRC. The warning signs we flagged should be taken into account when implementing surveys, stakeholders ought to be made aware of these problems in order to avoid their occurrences, and data analysts to be equipped with the tools to adequately deal with them at the level of survey analysis.

Second, it may also be important to continue working, at the qualitative level, on the political economy of data surveys. We pointed to a number of aspects in the paper that require further scrutiny: what is the origin, for example, of the diversity in sampling methods that has informed the different national-level surveys, most of them having been carried out moreover by the same institution? How to improve on the public accessibility, use of and debate around survey data? Donors have been heavily implicated in these exercises, but apparently they are not always well-equipped to guarantee and secure the integrity of survey data processes.

Third, we need to reflect on these challenges also at the moment of engaging in a quantitative analysis of the data themselves. More precisely by making use of correction methods for price data and sampling design suggested for the 123 national level surveys. This is what we plan to do in the near future. To begin with, access to the complete dataset covering the 123-survey of 2012 will enable us to cross check general trends within the data and particularly with indicators of food consumption and assets. Cross checking these indicators will allow for this research to bring more precision to how results can confirm or contrast previous findings on livelihoods in the DRC. The current evidence of livelihoods through a panel study enabled under the SLRC project is limited to specific segments of war affected zones of South-Kivu. The following step would be to conduct a pseudo-panel study to analyze the determinants of well-being by comparing the evolution in consumption of geo- and socio-economic groups over time in the country at large. We plan to accomplish this by tracing back differences in income growth to a typology of different territories, and second by grouping various categories of surveyed citizens under specific socio-professional groups. Regarding the first part, the work done by CAID at the territorial level may serve as a useful source of evidence. As concerns the second part, we can take inspiration either from the typology of socio-professional groups used in previous surveys (e.g. Houyoux 1973, 1976, 1986) or from recent approaches to categorize people in terms of the vulnerability of their income-generating capacity (e.g. Golthorpe, 2013).

Finally, we plan to address key analytical challenges encountered around data interpretation and analysis in the DRC by organizing a DRC based seminar during which stakeholders will engage in discussions on the topic, further stimulating the need for data critique in the academic community as a tool to improve the quality of survey data in the DRC.

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APPENDIX: RECOMMENDATIONS FOR IMPROVING SOCIAL SCIENCE DATASETS IN THE DRC

The following recommendations emanated from a seminar in Kinshasa, held in September 28-29 2017, during which academics and policy actors gathered to discuss the analytical and methodological challenges encountered while working with national household surveys in the DRC. The recommendations pertain to limitations encountered by researchers and their thoughts on potential solutions.

Theme 1: Health

How to improve the quality of health research in the DRC?

- By making data and metadata on national household surveys available to researchers in their most complete format. Processes for accessing data should be clarified and the knowledge of such process must be disseminated to all.
- By ensuring that junior and upcoming researchers are able to adequately learn and become familiar with data analysis tools. This can be done through a mentoring partnership where senior researchers can impart their knowledge and skillset to young ones.
- Provide incentives and opportunities aiming to encourage researchers towards publishing their work.

How to improve on the quality of national household surveys dataset?

- An up to date general population census survey must be conducted as per the international standards of quality. To produce sound results, the said survey must also be implemented by qualified data officers, enumerators and agents.
- To hold and maintain a unified and coordinated statistical capacity for collaboration among various stakeholders. To instill and enable collaboration streams between implementing bodies of data gathering and research institutions.
- To analyze the methodological quality of data collection processes prior to the launch of data collection processes (DHS and NIS).
- The government must take ownership of survey processes by contextualizing national household survey questionnaires according to the population profile and specific targeted needs for the country.

Themes 2 and 3: Economy and Migration

How can we improve the quality of research on poverty, inequalities and well-being in the DRC?

- Compile panel data by collecting data on selected targeted households for a duration of time. This will enable for sound analysis on poverty dynamics to be conducted, allowing also to differentiate vulnerable households from those who have come out of poverty.
- To make access to metadata available to researchers. This refers not only to the dataset itself but also to other survey instruments such as questionnaires, background information on variables, their definitions and intended mode for usability.
- To avoid using single measurement lines of poverty, but instead use measurement benchmarks that take into account regional differences and context appropriate disparities. The ability to use context appropriate poverty lines between provinces can lead to a more accurate and clearer picture of the plight of poverty.

How to improve the quality of the database:

- To adequately deal with missing data which when removed from the dataset, reduces the sample size and undermines the validity of results. It is thus necessary for partner institutions to provide researchers with cleaned up and ready to use database. However, complying with this request is only possible in the case where the implementation of surveys are carried out diligently (More specifically, this pertains to a proper selection of enumerators, survey supervision, mobilization of resources, the recruiting of local enumerators who are fluent in the local languages, etc).
- To collect and populate database with migration information as currently available surveys do not provide key detail information on migration patterns.

Theme 4: Education

How can we improve the quality of research on poverty, inequalities and well-being in the DRC?

- The information we currently have about education, school quality, etc almost entirely excludes children themselves as a source of information. Some information can however only come from them. It may also be important to know what children don't know.
- Ideally we have a dataset that combines data on children, schools and households, as this would enable to disentangle the most important determinants of school performance.

How to improve on the quality of national household surveys dataset?

- The information about education has impoverished in the enquête 123 of 2012 compared to the round of 2005: we now know less about school costs. It is not clear why this happened, given the importance of school costs in household budgets.
- The Enquête 123 gives very little information about the type of school (the type of network it belongs to would be very useful).
- It is now difficult to subtract the number of years repeated from the total number of years studied.
- The PASEC dataset focuses on information about the child, to the neglect of information about the school and about the child's household. It could be much improved in both fields.



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