



Statistics versus livelihoods: questioning Rwanda's pathway out of poverty

An Ansoms^a, Esther Marijnen^b, Giuseppe Cioffo^a and Jude Murison^c

^aCentre for Development Studies, Université Catholique de Louvain, Louvain-la-Neuve, Belgium; ^bInstitute for European Studies, Vrije Universiteit Brussel, Brussels, Belgium; ^cResearch Centre for Longitudinal and Life Course Studies, University of Antwerp, Antwerp, Belgium

ABSTRACT

Recent statistics indicate that poverty in Rwanda decreased impressively between 2006 and 2014. This seems to confirm Rwanda's developmental progress. This article however argues for a more cautious interpretation of household survey data. The authors contrast macro-level statistical analysis with in-depth field research on livelihood conditions. Macro-economic numbers provide interesting information, however differentiated evidence is required to understand how poverty 'works' in everyday life. On the basis of the Rwandan case study, the authors conclude that because of the high political stakes of data collection and analysis, and given that relations of power influence the production of knowledge on poverty, cross-checking is crucial.

Les statistiques versus les modes de vie : la diminution de la pauvreté au Rwanda en question

RÉSUMÉ

Les statistiques récentes indiquent que la pauvreté au Rwanda a diminué de façon importante entre 2006 et 2014. Ceci semble confirmer le progrès du Rwanda dans le domaine du développement économique. Cependant, cet article plaide en faveur d'une interprétation plus prudente des données d'enquêtes auprès des ménages. Les auteurs opposent aux analyses statistiques de niveau macro une recherche de terrain de niveau micro, axée sur les conditions d'existences des ménages paysans. Les chiffres macroéconomiques fournissent des informations importantes, mais d'autres témoignages sont nécessaires pour comprendre la nature de la pauvreté dans la vie de tous les jours de ménages rwandais. Sur la base d'une étude de cas, nous concluons que le croisement des données est crucial pour comprendre la façon dans laquelle les relations de pouvoir influencent la production des connaissances sur la pauvreté.

KEYWORDS

Rwanda; poverty; statistics; livelihoods; donor policies; development

MOTS-CLÉS

Rwanda ; pauvreté ; moyens de subsistance ; politiques de donateur ; développement

Introduction

The current debate about the Rwandan economy mainly revolves around two pertinent questions. The first is whether Rwanda's political and economic conditions are conducive to economic growth, and subsequently poverty reduction. The second is whether Rwanda

can move away from its land- and agriculture-based economy, to an economy where the majority of Rwandans work in off-farm activities. Some describe Rwanda as a ‘developmental patrimonial state’ of which the ‘politically inspired economic activism’ might be a model for other African states (Booth and Golooba-Mutebi 2012). Others argue that Rwanda has been successful in achieving economic growth, owing to the promotion of the private sector, and successful party- and military-owned businesses (Crisafulli and Redmond 2012; Behuria 2015; Mann and Berry 2016), with some acknowledging the difficulty these changes have had on the lives of Rwandans (Behuria 2015; Mann and Berry 2015).

Within these debates, authors often refer to available economic data. Yet, over the past decade, controversy has emerged on the reliability of national development statistics. Jerven’s book *Poor numbers* (2013a) highlights that many data on African countries are of poor quality, partial and unreliable. The author warns against the tendency to rely on such data for decisions on where to allocate aid on the basis of ‘evidence-based policy’. At the national level, an important alternative data source is the nationally representative household living conditions survey. Poverty and inequality statistics calculated from household surveys are generally considered more robust, and are used to update the reliability of GDP figures (Jerven 2013b).

In the case of Rwanda, the latest household living conditions survey (EICV4) was conducted in 2013–14 after previous surveys in 2010–11 (EICV3), 2005–06 (EICV2) and 2000–01 (EICV1). The results (see Table 1) are illuminating. High GDP growth rates between 2000–01 and 2005–06 were not accompanied by significant poverty reduction. As a result of a high population growth rate, the absolute number of people living in poverty increased (UNDP 2007). This led to questions about the pro-poor character of economic growth. However, between 2005–06 and 2010–11, continued average GDP per capita growth went together with a spectacular decrease in poverty. In addition, the Gini coefficient, a measure of inequality, decreased. The EICV4 results suggest that these trends have continued up to 2013–14. It is to be noted, however, that the methodology for calculating the 2013–14 poverty line differs profoundly from the method used for

Table 1. Growth, poverty and inequality statistics compared.

	EICV1 2000–01	EICV2 2005–06	EICV3 2010–11	EICV4 2013–14 ^c	2000–01 to 2005–06	2005–06 to 2010–11	2010–11 to 2013–14
GDP (billion RWF* constant 2011 prices)	1745	2503	3706	4532	Annual growth of 7.5%	Annual growth of 8.2%	Annual growth of 6.9%
GDP per capita (RWF constant 2011 prices)	213,343	274,410	355,377	404,229	Annual growth % of 5.2%	Annual growth % of 5.3%	Annual growth % of 4.4%
% Poor ^a	58.9%	56.7%	44.9%	39.1%	2.2% ↓	11.8% ↓	5.8% ↓
% Extreme poor ^b	40.0%	35.8%	24.1%	16.3%	4.2% ↓	11.7% ↓	7.8% ↓
Gini coefficient	0.507	0.522	0.490	0.448			
Ratio of 90th to 10th percentile	7.07	7.10	6.36	6.01			

*RWF = Rwandan francs.

^aThe percentage of poor is based on a poverty line of RWF 64,000 (2001 prices).

^bExtreme poverty is calculated on the basis of a poverty line of RWF 45,000 (2001 prices).

^cThe methodology for calculating the 2013–14 poverty line differs profoundly from the method used for EICV1, 2 and 3 (a fact recognised by NISR 2015). As a result of the changed methodology, it is therefore doubtful that the poverty percentage can legitimately be compared to past poverty rates.

Source: for GDP data – World Bank (2015); for other statistics – NISR (2012, 2012a, 2015).

EICV1, 2 and 3 (a fact recognised by NISR 2015). As a result of the changed methodology, it is doubtful that the poverty percentage is comparable with past poverty rates, although this is being done by the Rwandan government (NISR 2015).

Standardised households surveys are often presented as apolitical and bound by technical procedures. However, their results have political significance, particularly in countries that strongly rely on political and financial support from the international community. Socio-economic progress is important in enhancing the legitimacy of the recipient government, while donors need ‘success stories’ to legitimise their expenditures in development cooperation. Therefore, statistical data and their interpretations should be analysed in light of the political stakes involved. As Scott argues, ‘[T]he builders of the modern nation-state do not merely describe, observe, and map; they strive to shape a people and landscape that will fit their techniques of observation’ (1998, 82). This short citation may point us towards the biases and the agenda that underpin state-led production of large-scale aggregated surveys. In fact, they perform a double function. On the one hand, they engender ‘legibility’ (Scott 1998), insofar as they allow for the ruling classes to create an intelligible representation of reality which is amenable to the exercise of government. On the other hand, they tend to simplify social life in order to reduce it to statistical indicators that may be used for advancing specific ideas of ‘modernity’ and ‘development’, in order to support political claims and, in the case of Rwanda, to facilitate access to aid money. In short, statistical ‘categories used by state agents are not merely means to make their environment legible; they are an authoritative tune to which most of the population must dance’ (*Ibid.*, 83).

In short, relations of power influence the production of knowledge on poverty. Therefore, we argue that solely to rely on large-scale household surveys in order to assess the level of socio-economic progress gives a misleading picture of how poverty ‘works’ in the everyday lives of Rwandans. In fact, while providing comprehensive information on general social trends, large-scale surveys can under-represent or even misrepresent the situation of more marginal groups in society. Moreover, positive outcomes from large-scale surveys may be used in order to endorse and legitimise government policies, thus minimising, or at times bluntly overlooking, the effects of such policies on population groups whose situation is glossed over in statistical data.

In this article, we will confront the statistical results of large-scale household surveys with insights from longitudinal in-depth research. Intensive qualitative data gathering took place in six locations near the same years as the EICV surveys: in 2006–07 (author field notes) and in 2011 (author field notes). At both times, semi-structured focus groups were conducted with village leaders and with diverse socio-economic categories (between 14 and 20 focus groups per setting, each time including four to seven persons). Questions focused on people’s livelihood strategies and on the impact of rural policies. In 2013, we gathered data in two of the six locations (author field notes). These six settings in Southern Province are not representative for the whole of Rwanda, or even for Southern Province. Indeed, our settings were located in districts where – according to the EICV3 – poverty reduction in 2010–11 was limited.¹ However, the settings represent a variety of rural living environments (better-off versus poorer regions, centrally located versus extremely remote, more and less fertile). Despite this variety, our findings were quite similar, and we cross-checked with research in two new locations in Northern Province in 2013 (author field notes).

This article will proceed as follows. First, we analyse how recent statistics in Rwanda have shaped the public attitude and agenda of the Rwandan government as well as that of its international donors. Second, we complement the results of the EICV surveys with our own qualitative research in Rwanda. We mainly focus on the 2005–06 (EICV2) to 2010–11 (EICV3) period as economic development shifted towards being pro-poor according to the statistics. We exploit the explicative power of qualitative data (Olivier de Sardan 2008) in order to highlight the possible gaps and more questionable results of the EICV surveys.

The political importance of statistics

Both the 2005–06 and 2010–11 EICV surveys were undertaken to provide input to the Economic Development and Poverty Reduction Strategies (EDPRS-I and EDPRS-II). The Rwandan government launched these strategies to achieve its Vision 2020 objectives.² As mentioned above, poverty reduction was limited over the 2000–01 to 2005–06 period when the first Poverty Reduction Strategy Paper (PRSP) was implemented. The Rwandan government explained that the first PRSP ‘was elaborated in a post-conflict environment where the main emphasis was on managing a transition from emergency relief to rehabilitation and reconstruction’ (GoR 2012, 2). Donors, however, became increasingly critical of the government’s rather exclusive focus on economic growth, and criticised the deepening of existing gaps.³ In 2007, UNDP published a critical report, ‘Turning Vision 2020 into Reality: From Recovery to Sustainable Human Development’ (UNDP 2007), which was received negatively by the government. The report delved extensively into the problem of inequality, and warned that ‘extreme inequality can weaken political legitimacy and corrode institutions, leading to higher political instability caused by popular movements of discontent in countries with large gaps between the rich and the poor’ (*Ibid.*, 18–21).

As Rwanda was – and continues to be – heavily dependent upon international donors (see Table 2), the increased donor focus on inequality was problematic for the Rwandan government. Rwandan political elites had gained legitimacy within the donor community on the basis of Rwanda’s high technocratic governance standards (Reyntjens 2013). By 2012, it was therefore crucial for the Rwandan government to prove that their development model was working.

When the EICV3 report came out, the announced poverty figures (see Table 1) were close to the targets the Rwandan government had proposed in its 2007 EDPRS-I strategy.⁴ In the foreword of the EICV3 report, the Minister of Finance and Economic Planning stated ‘the[se] milestones are indeed a testament to the guidance and support of the top leadership in the country in the fight against poverty’ (NISR 2012, 3). President Kagame, in his foreword of the EDPRS-II report, lauded the achievements and highlighted that ‘our progress strengthens the belief that our development ambitions towards the Vision 2020 can be achieved with our concerted efforts’ (GoR 2012, viii).

The results of EICV3 were presented in February 2012, but the euphoric news was quickly overshadowed by the creation of the M23 rebel group in eastern Democratic

Table 2. Net official development assistance and aid received by Rwanda.

(Constant 2012)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Million US\$	585	670	679	754	932	961	1069	1235	879	1075

Source: World Bank (2015).

Republic of the Congo (DRC) in April 2012. Rwanda faced severe criticism from the international community for its role. Various donors froze part of their aid, resulting in a decrease in overall aid figures in 2012 (see [Table 2](#)). By November 2013, however, the ‘M23 problem’ was contained. Many donors resumed their aid and quickly remarked again on the impressively improved figures.

Reports from the World Bank and the International Monetary Fund (IMF) that appeared around that time pointed to positive achievements in terms of economic growth, poverty reduction, improvements in business climate, and in public service delivery (IMF [2013a](#), [2013b](#); World Bank [2014](#)). The UK Department for International Development (DFID), in its operational plan 2011–15, referred to the 12-percentage-point poverty decrease as proof of Rwanda being on track to meet the UN Millennium Development Goals (DFID [2012](#)). SIDA, the Swedish Development Agency, compared Rwanda’s achievements – as an exceptional African success story – to those of Thailand, China and Vietnam.⁵ Participant observation of one of the authors within the European External Action Service in 2012 revealed that the positive survey results were used internally in the EU to counter expressions of concerns about the authoritarian nature of the government and military involvement in eastern DRC (author field notes). Overall, the results of the 2010–11 survey were welcomed as the much-needed scientific proof of a successful developmental path and a political justification to allocate aid, while less attention was paid to criticism of Rwanda’s limited space for political freedom.

Recently, the release of the 2013–14 EICV4 results led to controversy about the methodology used for recalculating the poverty line – and thus, on the comparability of the data between EICV3 (2010–11) and EICV4 (2013–14). Whereas the Rwandan government’s official report announced a poverty reduction of 6% (based on a recalculated poverty line), Reyntjens came to an estimate of a 6% poverty increase between 2010–11 and 2013–14 (Reyntjens [2015](#)). The story was picked up by the France 24 news service (Germain [2015](#)). The National Institute of Statistics of Rwanda (NISR) refuted the allegations of manipulating its poverty statistics, claiming that the ‘changes to the ratio of products in the food basket [on the basis of which the poverty line is calculated] are made following a rigorous methodological process’ (NISR [2015](#)). However, they did not respond to the technical aspects of Reyntjens’ arguments in relation to the comparability of the poverty lines. Yet, the Rwandan government was backed up by some of its major donors. A DFID spokesperson said, ‘we believe the revision of the methodology used to estimate poverty levels for the EICV4 poverty survey was justified’ (Germain [2015](#)). The *New Times* cited IMF Mission Chief Redifer as saying, ‘we have no reason to doubt the numbers’ (Agutamba [2015](#)).

Overall, it is clear that the EICV surveys have a major importance both to Rwandan policy makers and to international donors in evaluating and justifying policy implementation and aid effectiveness. And indeed, these large-scale statistical surveys provide interesting information. However, they tend to ignore the diverse accounts of people’s livelihood strategies, and turn a blind eye to life experiences regarding public policies. Although the controversy around the 2013–14 EICV4 dataset is much stronger, we have decided to focus on enriching statistical material from 2005–06 (EICV2) and 2010–11 (EICV3) with in-depth qualitative data gathered around that same period. The comparison helps us to highlight the double function of survey data sketched above: enforcing legibility and promoting one particular type of governance (see Scott 1998).

Confronting macro-economic data with everyday poverty: sampling problems

In a critical analysis of household survey data, Carr-Hill notices that surveys typically under-represent six vulnerable subgroups: (1) the homeless, (2) those in institutions, (3) mobile, nomadic or pastoralist populations, (4) those in fragile disjointed households, (5) slum populations, and (6) areas posing security risks. According to Carr-Hill (2014, 136), ‘those six subgroups constitute a large fraction of the “poorest of the poor”,’ and their omission in the ‘denominator’ is likely to insert substantial biases in poverty assessments. This argument might also be relevant when considering the Rwandan context. It is quite likely that homeless, mobile populations, or those illegitimately living in slums at the borders of Kigali, are under-represented in the overall dataset. However, if this statistical problem is to explain part of the spectacular poverty decrease over the 2005–06 to 2010–11 period, then the denominator problem should be more pronounced for EICV3 than for EICV2.

We have reason to believe that this is the case, as we found a strange anomaly in the distribution of population by age group in EICV3 (2010–11), compared to EICV2 (2006–07). The samples of both EICVs should be representative of the total population. Since this period was not characterised by major societal upheaval, we would not expect significant changes in the age structure of the population, except maybe in the youngest and eldest groups. Furthermore, it would be logical that a particular age group in 2010–11 would contain approximately the same proportion of people as the age group directly below it in 2005–06.

However, when we compare youth age groups on the basis of EICV sample extrapolations (NISR 2012a), we notice some strange anomalies (see shaded area of Table 3). The 20–24 age group in 2010–11 contains almost 15% fewer people than the 15–19 age group in 2005–06. Similarly, the 25–30 age group by 2010–11 contains almost 12% fewer people

Table 3. Distribution of population by age group on basis of EICV sample extrapolations.

EICV2		Change 2005–06 to 2010–11	EICV3	
Age groups 2005–06	People 2005–06		People 2010–11	Age groups 2010–11
Total	9,491,000		10,762,000	Total
0–4	1,561,000	0.70%	1,630,000	0–4
5–9	1,331,000	5.48%	1,404,000	5–9
10–14	1,232,000	–2.19%	1,205,000	10–14
15–19	1,203,000	–14.71%	1,026,000	15–19
20–24	1,002,000	–11.68%	885,000	20–24
25–29	687,000	–5.68%	648,000	25–29
30–34	492,000	2.44%	504,000	30–34
35–39	390,000	6.15%	414,000	35–39
40–44	400,000	–7.75%	369,000	40–44
45–49	342,000	–2.05%	335,000	45–49
50–54	266,000	–6.39%	249,000	50–54
55–59	170,000	–5.88%	160,000	55–59
60–64	123,000		361,000	60–64
65– ...	292,000			65– ...

Source: Compiled from data in NISR (2012a, 30).

Note: the age groups have been presented to show progression from the age group in column 1 (in 2005–06) to the next age group, in column 5 (2010–11), on the same row. The shaded area highlights two groups with significant decreases in numbers of people from the first period to the second.

than the 20–24 age group in 2005–06. In total, we are talking about 294,000 ‘missing youth’ not taken into account in the 2010–11 EICV sample.⁶ It is as if 15.6% of male youth and 11.3% of female youth have disappeared from the 2010–11 sample in comparison to 2005–06. Three questions then arise. First, what could be the poverty profile of these ‘missing youth’? Second, which factors could explain their omission in the survey sample? And third, what impact could this statistical anomaly have upon the reported 2006–11 poverty decrease?

On the first question, according to the household survey data, the 2010–11 poverty rate among youth (age 14–35) of 38.5% is significantly lower than the overall poverty rate of 44.9% (NISR 2012b). Our qualitative research, however, suggests the opposite, indicating increasing problematic living conditions for a majority of Rwandan youth. Land scarcity has hugely reduced rural youth’s chances to generate an income within the agricultural sector. According to the EICV surveys, cultivated land per household decreased from 0.75 hectares in 2005–06 to 0.59 hectares in 2010–11. By 2010–11, over 83% of households had less than one hectare, in comparison to about 75% in 2005–06 (NISR 2012c). Moreover, land is highly unequally distributed between socio-economic categories and age groups. Whereas older farmers still hold on to their historic property, many young farmers are not capable of inheriting or buying enough land to sustain their family’s needs (Musahara and Huggins 2005; author field notes, 2006–07). They have to look for other kinds of jobs on the daily labour market where employment opportunities for young unskilled labour force are limited. We will come back to this point later in the article.

Another important problem for youth relates to the Rwandan government’s villagisation policy. Customarily, people do not live in clearly identifiable villages but live scattered on the hills (De Lame 2005). Traditionally, young men would ask their father for ‘their’ share of the family’s land in order to build their house and cultivate their own plot(s). Owning a house allowed them to make the transition to ‘adulthood’ (Sommers 2012). However, the Rwandan government envisions a modern reconfiguration of rural space. Since 1994, Rwandan policy makers have attempted to resettle households in grouped settlements (for a critique, see Leegwater 2011; Newbury 2011). When in the early 2000s, civil society, scholars and later international donors objected to the negative impact of this policy, it was partially abandoned. However, in the 2010s a ‘mild’ version of the centralisation approach has reappeared: newly established households are obliged to settle at specific sites within centralised communities (Ansoms and Rostagno 2012). In addition to culturally based objections, there are two main economic problems for young households. First, the cost of land in these ‘centres’ is often very high. Second, houses have to be built according to expensive standards (with a separate kitchen, stable and toilet and with proper roofing) (author field notes, 2011). As a result, many young men lack the means to build their own house. They cannot marry, and as a consequence, they cannot start their ‘adult’ life. This phenomenon is closely linked with the increasing incidence of unmarried young mothers, resulting in growing social exclusion and marginalisation (*Ibid.*; Sommers 2012; Ansoms and Murison 2013). A significant portion of these young people, especially those from poorer families, are ‘stuck’ in their status as ‘youth’ because they do not have the necessary means to start their adult lives (Sommers 2012). Hence our qualitative analysis suggests that poverty among youth could be more prevalent than the EICV surveys suggest.

Going to our second question, why would youth – and particularly poor rural youth – have been more under-represented in the 2010–11 survey than in the 2005–06 survey? There are two plausible and complementary explanations. First, interviewed household heads might not have mentioned their (near-to-) adult sons and daughters as part of the household because they had migrated. Migration is a strategy for young people to search for income-generating opportunities, but also a way out to escape from the social stigma of lacking the means to build a house (*Ibid.*). Normally, those absent at the time of the 2010–11 survey should still have been included in the sample, given that the 2002 Household Census was updated for the EICV3 locations. However, from our qualitative research, we noticed that local authorities often do not consider migrants as part of the local community. For example, migrants were very often not included in the participatory mapping exercises that were undertaken as part of the Ubudehe project in all Rwandan villages at several points in time (author field notes, 2006–07, 2011). Young poor migrants might thus have been under-represented in the EICV3 sample. The second possibility is that household heads did not report the presence of their (near-to) adult sons and daughters because they were officially no longer supposed to be part of the parents' households. In our own research, we frequently came across young adults illegitimately 'occupying' a side building of their parents' house, with or without their permission (Ansoms and Murison 2013). Such – generally poor – households could not be officially registered because they had ignored grouped settlement regulations, and were thus not included in the EICV3 sample.

Overall, the problem of 'missing youth' is an important issue when one aims to understand poverty from a qualitative perspective. However, the impact of this anomaly in the Rwandan statistics on poverty reduction estimates is limited. Even if we assume that all 294,000 missing youth were poor – which is highly unlikely – the impact on the 2010–11 poverty rate (46.4% instead of 44.9%) would have been minor. However, the issue of 'missing youth' might reflect more fundamental problems with under-representation of vulnerable subgroups in the 2010–11 survey, but this cannot be verified on the basis of the available information.

Erroneous answers and misreporting

Although the sample anomaly described above had only a minor impact on overall poverty estimates, other factors might have led to an overestimation of poverty reduction. Scholarly research on the effect of non-response⁷ in household surveys (see e.g. Bethlehem, Cobben, and Schouten 2011) is abundant, but research on response effects and strategic answering in household surveys is scarcer. Nevertheless, interviewees' answers may significantly diverge from reality for several reasons.

When considering the cognitive aspects of survey methods, Schwartz (2007) differentiates several steps. Respondents first have to interpret the question. They then have to recall the relevant information with regard to a particular reference period and measurement unit. Non-deliberate distortions at each of these steps may take place. In addition, respondents may edit their answer for reasons of 'social desirability' and 'situational adequacy'. These 'response effects' insert significant bias in the survey data (*Ibid.*).

A well-known phenomenon in nearly every household survey is the discrepancy between consumption and income estimates. Households generally underestimate their

income (Deaton 1997), and sometimes overestimate their consumption – particularly for food items (for more details, see FAO 2008). Under-reporting of income may be the result of fallacious memory, but it may also be a deliberate strategy to avoid taxes (see e.g. Hurst, Li, and Pugsley 2014). Or, it may result from under-representation of higher income groups in household survey samples (see e.g. Wang and Woo 2011), leading to lower average incomes.

Similar distortions occur with regard to other variables. Our own experience in Rwanda suggests that respondents are reluctant to provide answers on questions regarding productive resources (i.e. ownership of land, variable capital, labour productivity and agricultural output) (author field notes, 2006–07, 2013). Such information is sensitive, and moreover the respondent may be suspicious of the researcher's motives (see also Ansoms 2012). However, whereas standardised, large-scale surveys rely on a 'one-time' approach (when all information is collected at one moment in time), qualitative and mixed research is more iterative in nature. This allows for comparisons of respondents' answers over different moments in time, and allows the respondent to re-evaluate and reconsider his or her answers.

The question is now whether such 'response effects' in the case of Rwanda's EICV surveys partly explain the reported 2005–06 to 2010–11 poverty decrease. Did respondents in 2010–11 have reasons to overestimate certain achievements, and more so than in 2005–06? Our micro-level field research suggests that this is the case. Over the last couple of years, Rwanda has been transformed into a target-oriented society. Since 2006, authorities at district level have to commit themselves to a system of 'performance contracts' (*imihigo*). These contracts between the president, line ministries and local authorities bind the district authorities to reaching particular targets set in line with national development priorities (Ingelaere 2010; Versailles 2012; Thomson 2013). The contracts generally leave little room for local authorities to set their own policy objectives (Chemouni 2014; Gaynor 2014). The goals can be multiple: reaching production targets for particular crops, making sure that the local population participates in health insurance schemes, reinforcing particular settlement schemes, imposing decent housing standards etc. (author field notes, 2011).

This target orientation seems to translate into tangible results. Through qualitative data gathered in 2011, Ingelaere (2014) reports on how the population experienced an improvement in the delivery of basic services. Demographic Health Survey data indicate that improved service delivery led to a sharp improvement in health statistics between 2005 and 2010 (NISR 2012e, for a discussion, see McKay and Verpoorten 2016). However, the follow-up of local *imihigo* performance contracts is very strict. Every semester an evaluation team composed of representatives from several line ministries score each district on the basis of targets reached. Repeated under-performance may lead to firing the district mayor (Versailles 2012). Fearing these sanctions, local officials often implement the set targets rigidly and blindly, regardless of the possible negative consequences for the local population (author field notes, 2011, 2013). Ingelaere highlights how in the *imihigo* system, 'the chain of accountability goes upwards towards higher authorities and not downwards towards the population' (Ingelaere 2010, 288). Moreover, over the years, pressure to meet these targets has increased, so that 'local officials often cut corners to meet the development commitments' (Thomson 2013). The

New Times has also reported on local authorities that have manipulated data in order to show to the national government that they achieved incredible levels of progress (Rugira 2014).

This awareness-raising on the importance of reaching targets definitely reached the grass-roots. Our micro-level interviews in 2011 and 2013 showed that local farmers were very aware of authorities' expectations. Households are expected to shift from subsistence to market-led commercially oriented agriculture in line with the Crop Intensification Programme, launched in 2006–07. They are expected to adopt monocropping techniques on consolidated land, and to cultivate particular market-oriented crops such as maize, rice, beans and cassava. And most of all, they are expected to produce more (author field notes 2011, 2013; Huggins 2013, 2014; Cioffo, Ansoms, and Murison 2016). In fact, the 2005 land law gives district authorities the responsibility to ensure that all land is well managed and productively exploited; if not, the farmer may lose access (GoR 2005). Households are even actively inserted into the accountability chain (see Ingelaere 2010). In 2011, we already noted that in certain settings, individual households had been obliged to sign household-level performance contracts (author field notes, 2011). This is part of a broader strategy – officially launched by the Minister of Local Affairs in February 2012 – to involve all households in setting up a performance contract notebook. In these notebooks, which are distributed and monitored by the local authorities, households commit themselves to their own development targets, in line with local and national development priorities.

However, our research material also revealed that authorities' expectations often did not match local realities on the ground. Many of our interviewees strongly resented the imposition of preferential market-oriented crops per region, and attempted to circumvent these obligations by secretly cultivating their preferred crops (author field notes, 2011; see also Huggins 2013; Van Damme, Ansoms, and Baret 2014; Ansoms and Cioffo, *forthcoming*). Farmers from various settings indicated that crop harvest in marshland cooperatives⁸ had been disappointing for several years, and that incomes from crop sales through such cooperatives were often problematically low (author field notes, 2011, 2013; see also Ansoms et al. 2014). Smallholder farmers reported lower food security as a result of a loss of ownership over their productive process. Land use consolidation ties farmers into dynamics of commercial agriculture that regularly result in food security failures for the poorest households (author field notes, 2011, 2013; see also Cioffo 2014). Farmers reported their frustration at having been obliged to sell part of their assets (mostly goats) in order to pay for health insurance (author field notes, 2011).

At the same time, interviews with Rwandan farmers suggest that reticence to discuss issues of inequality with local-level authorities is widespread. Farmers highlighted the political weight of *imihigo* contracts on local authorities, and pointed to the way in which *imihigo* tie the whole population to the development targets. When discussing the forceful sale of household cattle for the payment of health insurance, one focus group participant stated:

it is because of *imihigo*, it is because of these objectives they have to reach ... if people do not have health insurance, they do not respect government plans and, they would not reach their objectives. That's why they push us. (Author focus group notes, September 2013, Southern Province)

The situation appeared equally clearly to another participant:

There are often meetings at the district office, and it is the executive secretary in the sector that goes there. They decide the *imihigo* there: ‘we are going to do this, we will have that many health insurances.’ Then they talk to local authorities and they say: ‘you should have that many health insurances, that much this and that.’ And if we don’t have the money, they will even sell our bean seeds to buy health insurance. And that’s the way it is, like it or not. (*Ibid.*)

Similar accounts were gathered regarding to the need to reach certain production targets in line with regional and national priorities.

It is in such a context that interviewees are confronted with a government-related surveyor who questions the interviewee on the achievements of his or her household. These same interviewees have been subjected to intense education campaigns and pushed by local authorities to reach certain targets. ‘[W]hen people are sensitized’, Purdekova (2012, 16) writes, ‘they are handed “indisputably” positive guidelines; these are not to be discussed.’ Such ‘guidelines’ may concern the obligation to join a marshland cooperative that aims for particular production targets, the importance of growing maize or wheat instead of sorghum for food security or to use industrial fertilisers, often regardless of households’ economic capacity to adopt such guidelines. ‘Ultimately, the attempt is not to make people “believe” all the messages as sensitisation cannot make this possible. Rather, the aim is for people to possess key information and to know what is expected of them’ (*Ibid.*). Education campaign efforts in relation to the central developmental objectives have clearly intensified over the last decade. For this reason, we consider it likely that interviewees’ considerations of social desirability and situational adequacy – leading to an exaggeration of their performance – played a role in their responses to the EICV3 survey.

Strategic interpretation of data

A final problem with EICV3 is the way in which particular data have been interpreted. According to the EICV3 report, the increased agricultural production and the increased commercialisation of agriculture were two out of three factors explaining the spectacular decrease in poverty figures (NISR 2012). Indeed, it is beyond doubt that the agricultural yields in 2010–11 were higher than in 2005–06. However, part of the explanation lies in the fact that agro-climatic conditions were better in 2010–11 (McKay and Verpoorten 2016). The agricultural performance in 2005–06 was severely affected by drought (see e.g. FEWS NET 2005, 2006); whereas 2010–11 was a good agricultural season. However, the EICV3 report does little to explain the importance of this factor in the increase of agricultural output, thus overlooking potentially important nuances (McKay and Verpoorten 2016).

Another factor highlighted in the EICV3 report as an explanation of the poverty reduction is the substantial creation of off-farm jobs. According to the surveys, more than half a million additional jobs were created in the off-farm sector and over 130,000 jobs in the farm sector over the 2005–06 to 2010–11 period (see shaded sections of Table 4). According to EICV3 data, over three-quarters of people employed in the off-farm sector are non-poor, whereas this is only slightly over half in the farm sector (see shaded figures in Table 5). Moreover, off-farm jobs tend to be (almost) full-time employment, whereas farm jobs are

Table 4. Change in farm and non-farm employment between 2001–02 and 2010–11.

	EICV1 2001–02		EICV2 2005–06		EICV3 2010–11	
	people	%	people	%	people	%
Farm employment	3,421,000	88.6	3,417,000	79.5	3,553,000	71.6
• independent farmers	3,278,000	84.9	3,065,000	71.3	3,063,000	61.8
• wage earners from farming	143,000	3.7	352,000	8.2	490,000	9.9
Non-farm employment	442,000	11.4	883,000	20.5	1,406,000	28.4
• independent non-farmers	134,000	3.5	347,000	8.1	479,000	9.7
• wage earners outside farming	284,000	7.4	468,000	10.9	838,000	16.9
• unpaid non-farming	24,000	0.6	68,000	1.6	89,000	1.8
TOTAL EMPLOYMENT	3,863,000	100.0	4,300,000	100.0	4,959,000	100.0

Source: Compiled from data in NISR (2012a, 93).

only part-time employment.⁹ The EICV3 report notes that ‘there has been substantial creation of jobs, predominantly in non-farm activities, over the past five years. This was almost certainly an important factor contributing to poverty reduction’ (NISR 2012, 11).

Where do such relatively attractive off-farm jobs come from? At first sight, one might say that this labour force was absorbed through an increase in formal enterprise registration. Between 2007–08 and 2010–11, the total number of registered enterprises rose by almost 70% (see Table 6; Gökğür 2012). The Rwandan Private Sector Federation has intensely invested in facilitating ‘doing business’ in Rwanda. These efforts are reflected in the improvement of the Rwandan performance in the World Bank’s *Doing business* report, in which Rwanda stands out as top reformer in sub-Saharan Africa. Rwanda performs particularly well in terms of how easy it is to start a business, to register property and to access credit (World Bank 2016).

However, the spectacular increase in the total number of formally registered establishments did not result in a high job increase in the formal sector (only 84,130 additional jobs).¹⁰ By 2010–11, formal off-farm employment represented less than 20% of all off-farm jobs and only 5% of all employment (see also Gökğür 2012). The informal sector, however, employed an impressive 1,146,791 people, either as wage earners or as independents. Did the Rwandan government’s business incentives for the formal sector result, for some reason, in a boost of activity in the informal sector? Whereas the measures for business facilitation impressed international donors, these policies were tailor-made for large-scale, capital-intensive projects in the formal economy. Our micro-level evidence indicates that the climate became much more difficult for small-scale investment on the part of local entrepreneurs in the informal economy (see also Ansoms and Murison 2013). Let us consider a couple of examples.

Table 5. Poverty status by main job in 2010–11.

	Extremely poor %	Poor %	Non-poor %	Total no. of people
Farm employment	25.0	23.0	52.1	3,553,000
• independent farmers	22.9	22.9	54.3	3,063,000
• wage earners from farming	38.1	23.7	38.2	490,000
Non-farm employment	11.3	11.7	77.1	1,406,000
• independent non-farmers	10.4	13.3	76.3	479,000
• wage earners outside farming	11.4	10.9	77.8	838,000
• unpaid non-farming	15.3	10.4	74.3	89,000
TOTAL EMPLOYMENT	21.1	19.8	59.1	4,959,000

Source: Compiled from data in NISR (2012d, 38).

Table 6. Employment generated by establishments/enterprises (2008–11).

(Number of people)	2007–08	2010–11	Change
Number of establishments/enterprises	72,994	123,526	+50,532
Average worker by establishment/enterprise	2.7 persons	2.3 persons	
Number of persons employed in enterprises	197,816	281,946	+84,130
of which agriculture, forestry, fishing	^a	22,737	
of which off-farm	^a	259,209	
Total non-farm employment	1,092,200 ^b	1,406,000 ^b	
formal off-farm employment	^a	259,209	
informal off-farm employment	^a	1,146,791	

Note: The establishment/enterprises include private enterprises, party-statal, cooperatives, non-profit organisations and public sector or mixed enterprises.

Source: Compiled from data provided in *Enterprise Survey 2008 and Establishment Census 2011*, Private Sector Federation, Rwanda; published in Gökğür (2012).

^aThe original data for 2007–08 were no longer available since the Enterprise Survey Report had been taken off the Private Sector Federation's website shortly after the publication of a critical discussion paper (Gökğür 2012).

^bThese data were already presented in the previous table. Total informal off-farm employment is then the result of total non-farm employment (reported in the EICV3 report) minus formal off-farm employment (reported in the 2011 Establishment Census).

One of the sectors in which jobs could have been created is in the manufacturing of rural products into higher-value products. This was one of the objectives of the 2007 EDPRS-I. In recent years, older transformation units have indeed been upgraded (e.g. factories for coffee and tea), while other facilities have been developed. However, the net gains of the creation or rehabilitation of such facilities are often limited. In 2013, we conducted an in-depth study of three such facilities in both Southern and Northern Provinces (a tea factory, a coffee factory and a cassava flour factory). In all three cases, local farmers had been forced into explicit or implicit contract farming schemes, obligatorily selling their production to the factory. This gave the factory's management significant power to reduce the prices paid to local farmers. Moreover, employment opportunities within the processing facilities were limited, and wages paid were relatively low in comparison to other off-farm jobs in the informal sector (author field notes, 2013).

Within the sector of transport and trade, policy initiatives inserted complications for informal businesses. Street vending in Kigali has been prohibited (Sommers 2012). Petty markets have been relocated at a significant distance from the centre. But also in rural areas, petty trade has become highly regulated as a result of policy makers' efforts to formalise the supply chains of local markets. Traders need an official licence to operate on the market. We had several accounts of farmers receiving heavy fines for selling produce informally along the roadside. Farmers are increasingly dependent upon fewer traders operating at a larger scale, and are obliged to accept lower prices because they lack alternative options for bringing their produce to market. Many people previously active in trading goods have been obliged to cease their activities because they lack the necessary means to formalise their enterprise (author field notes, 2011). Another important informal labour-absorbing activity, artisanal brick and tile baking, has been prohibited. Modern ovens are operated by officially registered entrepreneurs or cooperatives, but absorb much less labour and pay lower salaries (Ansoms and Murison 2013).

Altogether, we are left with a confusing puzzle. According to EICV3, there was spectacular job creation in the off-farm sector, and these jobs resulted in higher living standards (given the lower poverty figures of people employed in off-farm jobs). At the same time, we were able to demonstrate that formal job creation was limited (on the basis of the

government's establishment census figures). Moreover, our own in-depth qualitative research suggests that the policy measures have complicated the functioning of the informal sector. Hence, the question of how substantial job creation was realised over the 2005–06 to 2010–11 period, and how this could have been a major factor in poverty reduction, remains unclear.

Conclusion

Jerven has already indicated the inadequacy of national development statistics. Research on national data demonstrated that in some African countries, such as Ghana and Nigeria, GDP has consistently been underestimated owing to miscalculation (Jerven 2013b). However, given that GDP estimates rely upon approximations and assumptions, it is also plausible that GDP rates are overestimated. Wallace for example found evidence of GDP manipulation in the case of China, particularly in politically sensitive times (Wallace 2014). Also for Ethiopia, there are accounts of overestimated GDP figures (IMF 2013b), interpreted by some as deliberate manipulation by the Ethiopian government. However, the debate on the reliability of statistics goes beyond GDP estimates.

Standardised, large-scale surveys have become the norm when evaluating the performance of countries' policy implementation and of development aid allocation. However, when confronting Rwanda's nationally representative statistics with the results from longitudinal in-depth field research, we identified three main problems in the 2005–06 to 2010–11 poverty assessment, of which two are fundamental. First, the mismatch between authorities' pressures to reach performance targets at all costs, and the realities on the ground. Smallholder farmers feel the pressure of authorities' targets through explicit and implicit threats while the public space to call into question certain policies is extremely limited. Interviewees' considerations of 'social desirability' and 'situational adequacy' may have influenced the answers given to a government-related surveyor, which could have resulted in overestimated production figures. The second problem concerns the interpretation of the EICV statistics. The EICV report does not take into account how agro-ecological variations might explain part of the increased agricultural performance in 2010–11. And it does not provide an explanation for statistics indicating massive high-value off-farm job creation, while observations from in-depth longitudinal research indicated a deteriorating climate for small-scale off-farm investment in the informal economy.

The Rwandan case is an interesting example given that McKay and Verpoorten (2016, 16) found that 'subjective measures of well-being do not necessarily align well with objective measures of well-being; and that the mismatch may be considerable in Rwanda as a result of rapid and profound economic and social transformations.' However, the relevance of this discussion extends beyond the Rwandan context. Appleton and Booth (2005) compared participatory and survey-based approaches to poverty monitoring in Uganda. They reach similar conclusions, indicating the discrepancy between the two different approaches; and the influence of methodological choices upon knowledge production relating to poverty in the country. Indeed, quantitative surveys and qualitative assessments seem to measure a different concept of poverty and well-being.

Therefore, it is simplistic to privilege one approach over the other, and to present the process that leads to the production of quantitative surveys as technically bound, apolitical

and objective. This paper has pointed to the fact that a complicated reality exists behind the neutral façade of large-scale samples. Acknowledging the shortcomings of standardised large-scale surveys is not the equivalent of throwing away the baby with the bathwater. Rather, it is an acknowledgement of the complicated nature of social life, and of surveying as a social activity that is influenced by power relations as well as by existing inequalities and biases on the side of both the researchers and the respondents. Because of these reasons, a more complex approach is needed, combining the explanatory power of different research techniques. At the same time, donors and policy makers should move beyond accepting large-scale surveys at face value, as a more critical outlook may benefit both the effectiveness of aid and the interests of those whose voice is often ignored by large-scale statistics. These conclusions seem of crucial value for continued work on the controversy raised in relation to the EICV4 2013–14 results.

Notes

1. McKay and Verpoorten (2016) have calculated changes in poverty between 2005–06 and 2010–11 on the basis of the EICV surveys. They differentiate between five categories from low to very high poverty reduction. Our six settings in Southern Province are located in districts in the lowest three categories (so with low to medium poverty reduction). However, the two locations in Northern Province, in which we cross-checked certain findings in 2013, are located in a district with very high poverty reduction.
2. In the document *Vision 2020* the Republic of Rwanda outlines its vision for the future of Rwanda, see GoR (2002).
3. For an example, see Natalie Hairfield's interview with IMF's mission chief in Rwanda, Kristina Kostial, 'Rwanda's task: manage more aid', July 17, 2007, at <http://www.imf.org/external/pubs/ft/survey/so/2007/INT0718A.htm>.
4. For the EDPRS-I policy, launched in 2007, the aim was to translate continued economic growth into considerable poverty reduction. The policy set targets for reducing overall poverty rates from 57 to 46%, and extreme poverty from 37 to 24% (GoR 2007, 34).
5. See the website of SIDA, <http://www.sida.se/English/where-we-work/Africa/Rwanda/Developments-in-Rwanda> (accessed October 30, 2014).
6. In-depth analysis of district data illustrates that the problem of missing youth appears nationwide except for Kigali's districts. The phenomenon is most prominent in Nyamagabe and Kamonyi Districts in Southern Province, in Rulindo District in Western Province, in Burera District in Northern Province and in Nyagatare District in Eastern Province (own calculations based on GoR 2013).
7. Non-response occurs when persons included in the sample refuse to participate or forget to respond to certain questions.
8. By 2011, the organisation of agricultural activities in marshlands had undergone radical change. Around 2005–07, the national government mandated the local administration to allocate wetland plots to farmers' associations. These associations have recently (2009–11) been urged to group themselves into officially recognised cooperatives. Moreover, cultivation practices have changed. Crop diversification (combination of different crop types on the same plot of land) is no longer permitted; instead cooperatives concentrate on market-oriented 'high-value' crops such as rice, sugar cane, maize etc. Crops are planted in monocropping arrangements, and cooperative members cultivate and harvest together (Ansoms et al. 2014).
9. The average number of hours spent per week in off-farm jobs is 39.7 hours for wage earners outside farming (median 40.0 hours), and 25.8 hours for independent non-farmers (median 18 hours). This is significantly higher than the average number of hours worked by wage earners from farming (18.8 hours; median: 15 hours), and by independent farmers (17.0 hours; median: 15.0 hours) (NISR 2012d, 13).

10. Formal non-farm employment as a share of total non-farm employment increased slightly from 18 to 20% between 2007–08 and 2010–11. The average number of workers per enterprise decreased from 2.7 to 2.3 persons per establishment (see Table 5).

Acknowledgements

The authors would like to acknowledge Marie-Eve Desrosiers (University of Ottawa), Sam Desiere (University of Ghent), Nilgun Gökür (independent development economist), Andy McKay (University of Sussex), Filip Reyntjens (University of Antwerp), Marc Sommers (African Studies Center, Boston University) and Susan Thomson (Colgate University) for their valuable comments. The contents of the paper are the sole responsibility of the authors.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

An Ansoms is Assistant Professor in Development Studies at the Université Catholique de Louvain. She is involved in research on rural development in land-scarce (post-)conflict environments, and particularly focuses on the Great Lakes Region in Africa. She has co-edited two books, *Natural Resources and Local Livelihoods in the Great Lakes Region: A Political Economy Perspective* (Palgrave, 2011) and *Emotional and Ethical Challenges for Field Research in Africa: The Story Behind the Findings* (Palgrave, 2013).

Esther Marijnen is a PhD candidate at the Institute for European Studies, Vrije Universiteit Brussel, since September 2012. She holds an MA in Conflict Studies and Human Rights from the Centre for Conflict Studies at Utrecht University and a BSc in Political Science from the University of Amsterdam.

Giuseppe Cioffo is a PhD student at the Université Catholique de Louvain (Belgium), where he studies processes of agrarian modernisation in Rwanda. He is interested in the social and environmental dynamics linked to Green Revolution models as well as in small family farming and agrarian change in developing countries.

Jude Murison is a graduate of the universities of York and Edinburgh, and holds a doctorate in Politics and International Studies from the University of Warwick. Jude previously taught in Belgium and at the University of Warwick, UK, and has held Visiting Fellowships at Makerere University, Uganda and Sciences Po, Paris. Jude has conducted field research in Rwanda, Uganda, Burundi and the Democratic Republic of Congo. Her research focuses on human rights, transitional justice, forced migration, health, rural development and agricultural production.

References

- Agutamba, K. 2015. "We have no Doubt in Rwanda's Figures – Says IMF Chief." *New Times*, November 5, 2015, [www.newtimes.co.rw/section/article/2015-11\)05/194120](http://www.newtimes.co.rw/section/article/2015-11)05/194120).
- Ansoms, A. 2012. "From 'Disaster Tourist' to 'Transfer Gate': (Self)Perception of the Role of Research in Rural Rwanda." In *Emotional and Ethical Challenges for Field Research in Africa*, edited by S. Thomson, A. Ansoms, and J. Murison, 42–56. Basingstoke, UK: Palgrave.
- Ansoms, A., and G. Cioffo. *Forthcoming*. "The Exemplary Citizen on the Exemplary Hill: The Production of Political Subjects In Contemporary Rural Rwanda", submitted to *Development and Change*.

- Ansoms, A. and J. Murison. 2013. "Formalizing the Informal in Rwanda: From Artisanal to Modern Brick and Tile Ovens." In *Securing Livelihoods: Informal Economy Practices and Institutions*, edited by I. Hillenkamp, F. Lapeyre and A. Lemaître, 235–243. Oxford: Oxford University Press.
- Ansoms, A. and D. Rostagno. 2012. "Rwanda's Vision 2020 Halfway Through: What the Eye Does Not See." *Review of African Political Economy* 39 (133): 427–450.
- Ansoms, A., I. Wagemakers, M. Walker, and J. Murison. 2014. "Land Contestation at the Micro Scale: Struggles for Space in the African Marshes." *World Development* 54: 243–252.
- Appleton, S., and D. Booth. 2005. "Combining Participatory and Survey-based Approaches to Poverty Monitoring and Analysis." Q-Squared Working Paper No. 14, https://www.trentu.ca/ids/documents/Q2_WP14_AppletonandBooth.pdf.
- Behuria, Pritish. 2015. "Between Party Capitalism and Market Reforms – Understanding the Sector Differences in Rwanda." *Journal of Modern African Studies* 53 (3): 415–450.
- Bethlehem, J., F. Cobben, and B. Schouten. 2011. *Handbook of Nonresponse in Household Surveys*. Sussex: Wiley.
- Booth, D., and F. Golooba-Mutebi. 2012. "Developmental Patrimonialism? The Case of Rwanda." *African Affairs* 111 (444): 379–403.
- Carr-Hill, R. 2014. "Measuring Development Progress in Africa: the Denominator Problem." *Canadian Journal of Development Studies* 35 (1): 136–154.
- Chemouni, B. 2014. "Explaining the Design of the Rwandan Decentralization: Elite Vulnerability and the Territorial Repartition of Power." *Journal of East African Studies* 8 (2): 246–262.
- Cioffo, G. D. 2014. "Les petits agriculteurs face à la modernisation rurale dans la Province du Nord du Rwanda : consolidation de l'usage des terres, distribution d'intrants améliorés et sécurité alimentaire." In *L'Afrique des Grands Lacs. Annuaire 2013–2014*, edited by F. Reyntjens, S. Vandeginste and M. Verpoorten, 427–452. Paris: L'Harmattan.
- Cioffo, G. D., A. Ansoms and J. Murison. 2016. "Modernising Agriculture Through A 'New' Green Revolution: The Limits of the Crop Intensification Programme in Rwanda." *Review of African Political Economy* 43 (148): 277–293.
- Crisafulli, P., and A. Redmond. 2012. *Rwanda Inc.: How a Devastated Nation became an Economic Model for the Developing World*. New York: Palgrave Macmillan.
- Deaton, A. 1997. *The Analysis of Household Surveys: A Microeconomic Approach to Development Policy*. Washington, DC: World Bank.
- De Lame, D. 2005. *A Hill among a Thousand: Transformations and Ruptures in Rural Rwanda*. Madison, WI: University of Wisconsin Press and Royal Museum for Central Africa.
- DFID [Department for International Development]. 2012. *Operational Plan DFID Rwanda*. Updated version June 2012, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67358/rwanda-2011.pdf.
- FAO [UN Food and Agriculture Organization]. 2008. *Deriving Food Security Information from National Household Budget Surveys*. Rome: FAO, <http://www.fao.org/3/a-i0430e.pdf>.
- FEWS NET [Famine Early Warning Network]. 2005. "Rwanda Food Security Update – December 2005." <http://www.fews.net/fr/east-africa/rwanda/food-security-outlook-update/may-2005>.
- FEWS NET. 2006. "Rwanda Food Security Update – February 2006." <http://www.fews.net/east-africa/rwanda/food-security-outlook-update/february-2006>.
- Gaynor, N. 2014. "A Nation in A Hurry: the Costs of Local Governance Reforms in Rwanda." *Review of African Political Economy* 41 (1): 49–63.
- Germain, N. 2015. "Rwanda Accused of Manipulating Poverty Statistics." *France24*, 2 November 2015, <http://www.france24.com/en/20151102-rwanda-accused-manipulating-poverty-statistics>.
- Gökgür, N. 2012. "Rwanda's Ruling Party-owned Enterprises: Do They Enhance or Impede Development?" *IOB Discussion Papers* 2012.03. Antwerp: Institute of Development Policy and Management.
- GoR [Government of Rwanda]. 2002. *Rwanda Vision 2020*. Kigali: Government of Rwanda.
- GoR. 2005. *Organic Law N° 08/2005 of 14/07/2005 Determining the Use and Management of Land in Rwanda*. Kigali: Government of Rwanda.
- GoR. 2007. *Economic Development and Poverty Reduction Strategy 2008–2012*. Kigali: Government of Rwanda.

- GoR. 2012. *Economic Development and Poverty Reduction Strategy 2013–2018*. Kigali: Government of Rwanda.
- GoR. 2013. *EICV District Profiles*, online at: <http://www.statistics.gov.rw/survey-period/integrated-household-living-conditions-survey-3-eicv-3>.
- Huggins, C. 2013. “Consolidating Land, Consolidating Control: State-facilitated ‘Agricultural Investment’ through the ‘Green Revolution’ in Rwanda.” *LDPI Working Paper* no. 16. The Hague: Land Deal Politics Initiative.
- Huggins, C. 2014. “Curbs on Land Rights in Rwanda: The ‘Bundle of Rights in Context.’” Brief – Focus on Land in Africa, www.focusonland.com.
- Hurst, E., G. Li, and B. Pugsley. 2014. “Are Household Surveys Like Tax Forms? Evidence From Income Underreporting of the Self-employed.” *Review of Economics and Statistics* 96 (1): 19–33.
- IMF. 2013a. “Statement by the IMF Mission at the Conclusion of its Visit to Rwanda.” Press Release No. 13.379, 1 October 2013, www.imf.org.
- IMF. 2013b. “2013 Article IV Consultation – The Federal Democratic Republic of Ethiopia.” *IMF Country Report No. 13/308*. Washington, DC: IMF.
- Ingelaere, B. 2010. “Peasants, Power and Ethnicity: A Bottom-up Perspective on Rwanda’s Political Transition.” *African Affairs* 109 (435): 273–292.
- Ingelaere, B. 2014. “What’s on A Peasant’s Mind? Experiencing RPF State Reach and Overreach in Post-Genocide Rwanda (2000–10).” *Journal of Eastern African Studies* 8 (2): 214–230.
- Jerven, M. 2013a. *Poor Numbers: How We are Misled by African Development Statistics and What to Do about it*. Cornell: Cornell University Press.
- Jerven, M. 2013b. “For Richer, for Poorer: GDP Revisions and Africa’s Statistical Tragedy.” *African Affairs* 112 (446): 138–147.
- Leegwater, M. 2011. “Sharing Scarcity: Issues of Land Tenure in South-East Rwanda.” In *Natural Resources and Local Livelihoods in the Great Lakes Region: A Political Economy Perspective*, edited by A. Ansoms and S. Marysse, 104–122. London: Palgrave MacMillan.
- Mann, L., and M. Berry. 2015. “Understanding the Political Motivations that Shape Rwanda’s Emergent Developmental State.” *New Political Economy* 21 (1): 119–144.
- Mann, L., and M. Berry. 2016. “Understanding the Political Motivations that Shape Rwanda’s Emergent Developmental State.” *New Political Economy* 21 (1): 119–144.
- McKay, A., and M. Verpoorten. 2016. “Growth, Poverty Reduction and Inequality. In *Growth and Poverty in Sub-Saharan Africa*, edited by C. Arndt, A. McKay and F. Tarp, Chapter 6. doi:10.1093/acprof:oso/9780198744795.001.0001.
- Musahara, H., and C. Huggins. 2005. “Land Reform, Land Scarcity and Post-conflict Reconstruction: A Case Study of Rwanda.” In *From the Ground Up: Land Rights, Conflict and Peace in Sub-Saharan Africa*, edited by C. Huggins and J. Clover, 269–346. Pretoria: Institute of Security Studies.
- NISR [National Institute of Statistics of Rwanda]. 2012. *The Evolution of Poverty in Rwanda from 2000 to 2011: Results from the Household Surveys (EICV)*. Kigali: NISR.
- National Institute of Statistics of Rwanda. 2012a. *The Third Integrated Household Living Conditions Survey (EICV3): Main Indicators Report*. Kigali: NISR.
- NISR. 2012b. *EICV Thematic Report – Youth*. Kigali: NISR.
- NISR. 2012c. *EICV Thematic Report – Agriculture*. Kigali: NISR.
- NISR. 2012d. *EICV Thematic Report – Economic Activity*. Kigali: NISR.
- NISR. 2012e. *Rwanda Demographic and Health Survey: Final Report*. Kigali: NISR.
- NISR. 2015. *Rwanda Poverty Profile Report 2013/2014: Results of Integrated Household Living Conditions Survey*. Kigali: NISR.
- Newbury, C. 2011. “High Modernism and the Ground Level: the Imidugudu Policy in Rwanda.” In *Remaking Rwanda: State Building and Human Rights after Mass Violence*, edited by S. Straus and L. Waldorf, 223–239. Madison, WI: Wisconsin University Press.
- Olivier de Sardan, J.-P. 2008. *La rigueur du qualitatif. Les contraintes empiriques de l’interprétation socio-anthropologique*. Louvain-la-Neuve: Academia-Bruylant.
- Purdekova, A. 2012. “Rendering Rwanda Governable: Order, Containment and Cleansing in the Rationality of Post-Genocide Rule.” In *L’Afrique des Grands Lacs: Annuaire, 2012–2013*, edited by F. Reyntjens, S. Vandeginste and M. Verpoorten, 355–378. Paris: L’Harmattan.

- Reyntjens, F. 2013. *Political Governance in Post-Genocide Rwanda*. Cambridge: Cambridge University Press.
- Reyntjens, F. 2015. "Lies, Damned Lies and Statistics: Poverty Reduction Rwandan-style and How the Aid Community Loves It." Blog of 3 November 2015 posted on www.africanarguments.org.
- Rugira, L. 2014. "When 'Tekiniki' Goes Sour." *New Times*, October 2014, at <http://www.newtimes.co.rw/section/article/2014-10-20/182126/>.
- Schwartz, N. 2007. "Cognitive Aspects of Survey Methodology." *Applied Cognitive Psychology* 21: 277–287.
- Scott, J. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven and London: Yale University Press.
- Sommers, M. 2012. *Stuck: Rwandan Youth and the Struggle for Adulthood*. Athens, GA: University of Georgia Press.
- Thomson, S. 2013. *Whispering Truth to Power: Everyday Resistance to Reconciliation in Postgenocide Rwanda*. Madison, WI: University of Wisconsin Press.
- UNDP [United Nations Development Programme]. 2007. "Turning Vision 2020 into Reality: From Recovery to Sustainable Human Development." *National Human Development Report Rwanda*. Kigali: UNDP Rwanda.
- Van Damme, J., A. Ansoms, and P. Baret. 2014. "Agricultural Innovation From Above and From Below: Confrontation and Integration on Rwanda's Hills." *African Affairs* 113 (450): 108–127.
- Versailles, B. 2012. *Country Learning Notes: Rwanda Performance Contracts (Imihigo)*. London: ODI.
- Wallace, J. 2014. "Juking the Stats? Authoritarian Information Problems in China." *British Journal of Political Sciences* 46 (1): 11–29.
- Wang, X., and W. T. Woo. 2011. "The Size and Distribution of Hidden Household Income in China." *Asian Economic Papers* 10 (1): 1–26.
- World Bank. 2014. *Doing Business 2014: Understanding Regulations for Small and Medium-size Enterprises*. Washington: World Bank.
- World Bank. 2015. *World Bank Development Indicators*. databank.worldbank.org.
- World Bank. 2016. *Doing business 2016: measuring regulatory quality and efficiency*. Washington: World Bank.