Food Policy 67 (2017) 1–11

Contents lists available at ScienceDirect

Food Policy

journal homepage: www.elsevier.com/locate/foodpol

Editorial

Agriculture in Africa – Telling myths from facts: A synthesis ☆

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ARTICLE INFO

JEL classification:
O12
O13
O17
O18
O33
O41

Keywords:
Agriculture
Africa
Measurement
Technology
Structural transformation
Market

ABSTRACT

Stylized facts drive research agendas and policy debates. Yet robust stylized facts are hard to come by, and when available, often outdated. The 12 papers in this Special Issue revisit conventional wisdom on African agriculture and its farmers' livelihoods using nationally representative surveys from the Living Standards Measurement Study-Integrated Surveys on Agriculture Initiative in six African countries. At times they simply confirm our common understanding of the topic. But they also throw up a number of surprises, redirecting policy debates while fine-tuning others. Overall, the project calls for more attention to checking and updating our common wisdom. This requires nationally representative data, and sufficient incentives among researchers and policymakers alike. Without well-grounded stylized facts, they can easily be profoundly misguided.

1. Introduction

Stylized facts drive research agendas and policy debates. They provide a sense of importance, help frame the inquiry and are used to galvanize resources. So, the notion that 60–80 percent of work in African agriculture is done by women has often been quoted to motivate a greater gender focus in agricultural research and policy-making. Similarly, the observation that one third of the world's food is lost post-harvest, is used to rally the world around a food waste reduction agenda (Chaboud and Daviron, 2017).

Yet, robust stylized facts, systematically obtained with reliable methodologies and comparable data across countries, and settings within countries, are often hard to come by. Partly this is because some concepts are simply difficult to measure. Not everything important can come packaged as a neat statistic. In the face of pressure to produce statistics irrespectively, wrong-headed numbers may arise. It partly also reflects the lack of regular, representative and reliable data to compile these facts. Finally, preoccupation with causal inference often leaves few incentives to produce a ground-truthed description of reality. With stylized facts often constituting the very starting point of research itself, this is odd at best.

As a result, academic debates and policies rely too often on outdated or poor quality statistics, or just unrepresentative case study evidence. In Jerven's words (2016, p. 343): "*... the numerical basis on which we study African economies is poorer than we would like to think.*" Sometimes numbers have even evolved into zombie statistics, numbers that live a life on their own, with their empirical basis undocumented and their origins unknown, though widely accepted as conventional wisdom, such as the notion that 70 percent of the world's extreme poor are women.[1] Devarajan (2013) calls for urgent action to remedy such "statistical tragedy". After all, research, policies and investments can only be as good and effective as the data and evidence informing them (Beegle et al., 2016; Jerven, 2016).

The topic of quality data and measurement has recently started to receive more attention, in the literature and in policy circles, especially for macroeconomic statistics (Jerven, 2013), literacy (UNESCO, 2015) and poverty (Beegle et al., 2016). But the need to revisit common wisdom applies equally to agriculture, and in particular, African agriculture (Carletto et al., 2015a). The world in which African agriculture operates has been changing dramati-

☆ The findings, interpretations, and conclusions expressed in this paper are entirely the author's. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

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[1] http://www.politifact.com/punditfact/article/2014/jul/03/meet-zombie-stat-just-wont-die/

http://dx.doi.org/10.1016/j.foodpol.2017.02.002
0306-9192/

cally over the past two decades, following robust economic growth, rapid urbanization, and climate change. But the information base on African agriculture has been limited for a long time, often even lacking reliable statistics on basic metrics such as the country's agricultural yields. More generally, translating economic concepts into numbers, such as the notions of productivity, seasonality, commercialization, or a households' net food marketing position (net buyer/seller), remains intrinsically challenging,[2] often requiring special data that are not standardly collected at scale, forcing analysts to rely on outdated or case study evidence or proxy measures instead.

The household survey panel data collected under the Living Standards Measurement Study–Integrated Surveys on Agriculture (LSMS-ISA) Initiative provide a unique opportunity to take up this challenge. Over the period 2008–2020, nationally representative surveys are to be conducted in 8 African countries, representing 45 percent of Sub-Saharan Africa's (SSA) population. In these countries, four or more waves of detailed information are collected on households' economic activities, their income and well-being, with special attention to agriculture. They also include a number of methodological innovations such as data gathering at the individual and plot level, enabling more gender disaggregated analysis. The data are made publicly available one year after their collection.[3]

An international consortium of researchers under the Agriculture in Africa – Telling Myths from Facts project led by the World Bank, with complementary financing from the African Development Bank,[4] exploited the first rounds of these surveys to revisit common wisdom on African agriculture and its farmers' livelihoods in the areas of agricultural technology, market engagement and structural transformation. Studies were each time framed around a cross-country investigation of conventional wisdom in these areas. A total of 12 broad stylized facts and sub-facts on African agriculture and rural livelihoods were thus reviewed, the results of which are brought together in this special issue.

This synthesis summarizes the key findings, including through a number of easily accessible and replicable tables and figures, and reflects on their implications. It seeks to facilitate the policy dialogue and further research efforts including updating as new information from LSMS-ISA or related surveys becomes available. The findings at times confirm conventional knowledge, as one would hope, and put it on more solid empirical footing. More often they fine-tune our understanding. But they also reveal some myths and raise new issues. Overall, the findings underscore the high academic and policy return from investing in regular, nationally representative data collection and continuous examination of conventional wisdoms.

The synthesis proceeds as follows. The next section expands on the underlying data base and the methodological approach taken. This precedes a synoptic overview of the 12 wisdoms revisited and the core findings obtained when submitting them to the data. Section three expands on each of them, including their implications for agricultural and rural development policies. Section four concludes.

2. Myths, materials, and methods

The LSMS-ISA Initiative[5] supports national statistical offices in the collection of at least four rounds of nationally representative household panel survey data in eight African countries during 2008–20. The papers in this study mainly draw on the first rounds collected during 2009–2012 in 6 of these countries (Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda). They cover more than 40 percent of the population in SSA and most of its agro-ecological zones. While this does not make them representative for SSA as such, together they provide a broad picture of the emerging new reality, and also allow for elucidating differences across settings. In these countries, a total of 31,848 households were interviewed, with sample sizes per country varying between 2716 (Uganda) and 12,271 households (Malawi), of which, on average, 76% were rural. Burkina Faso and Mali have joined the Initiative more recently. Their survey findings are not included here.

The LSMS-ISA initiative also presents a number of notable innovations on the World Bank's Living Standards Measurement Study (LSMS) surveys, which for some time provided important information on the lives of Africans, their income, their economic activities, and their wellbeing. Most importantly, it strengthens the coverage of household agricultural activities—the Integrated-Surveys-on-Agriculture part of LSMS-ISA. The surveys are based on household samples and designed from the perspective of the household, not the farm. As a result, medium and large scale farms are only sparsely covered in practice (Jayne et al., 2016), even though technically represented in the sample. Information is gathered at both the household and the plot level, covering every aspect of farmers' life—from the plots they cultivate, the inputs they use, the crops they grow, the time they allocate per plot, the harvest that is achieved, the way they market it, the amount they lose post-harvest, and so on.

Second, in addition to the integrated approach to data collection, data gathering takes place at highly disaggregated levels, at the plot level, but also at the individual level, such as for time allocation and plot management. This enables a more refined, gendered perspective on agriculture and rural livelihoods. Third, the surveys make wide use of ICT-tools. Tablets are used for data collection, improving the quality of data (Caeyers et al., 2012); households are georeferenced using Global Positioning System (GPS) devices, enabling further integration with other data sources, and plot size is measured by GPS as opposed to self-reporting, improving accuracy of land based statistics (Carletto et al., 2015b). Finally, individuals (not just households) are tracked across survey rounds, opening a host of new research areas such as the study of migration.

These four innovative features of the data (integration, individualization, ICT use and intertemporal tracking) not only help obtain a more refined insight in African agriculture and its rural livelihoods, they also help scrutinize conventional views that have so far lacked an adequate information base to do so, such as the gender patterns in agricultural labor allocation or the application of joint input packages in practice, i.e. at the plot level. The nationally representative scope of the data and the great degree of standardization across countries in questionnaire design and survey implementation further facilitate cross-country comparison as well as comparisons across settings within countries.

Given the core objective of establishing solid statistics and distinguishing myths from facts, the studies have been primarily descriptive in orientation, focusing on a careful definition and empirical operationalization of the concepts at hand. Regression analysis is mainly used to complement the findings, to check

[2] See for example Rao (2007, Ch3) on measuring seasonality.

[3] The Initiative is financed by a grant from the Bill and Melinda Gates Foundation, together with other contributors, and managed by the Development Economics Data Group of the World Bank Group. Several other data initiatives are also underway to remedy the agricultural data situation, such as the Global Strategy to Improve Agricultural and Rural Statistics, and the ensuing regional Action Plans.

[4] Other participating institutions included the Alliance for a Green Revolution in Africa, Cornell University, the Food and Agriculture Organization, the London School of Economics, the Maastricht School of Management, the University of Pretoria, the University of Rome Tor Vergata, the University of Trento, and Yale University. For a detailed description of the project and its collaborators, see http://www.worldbank.org/en/programs/africa-myths-and-facts.

[5] For a detailed description and access to the data and their documentation, see http://www.worldbank.org/lsms.