Marion Ouma　　　　　　　Laura Mann　　　　　　　April 15th, 2021

On the ground the reality is different: policymakers in Kenyan agriculture should beware limits to platform knowledge

0 comments | 3 shares

Estimated reading time: 6 minutes

Evidence that digital technologies are widely used among Kenya's smallholder farmers is scarce, despite depictions by tech companies. New research exposes the potential danger of relying too much on platforms for understanding the realities of farmers, as their visions of the rural environment remains focussed on specific groups. Policymakers should be sensitive to these biases, asking questions about what data is being captured and how this may impact rural areas.

This is the last of four posts presenting key insights from the research project A Tale of Two Green Valleys at the LSE Firoz Lalji Centre for Africa, which examines data-driven agro-innovation in California's Central Valley and Kenya's Rift Valley.

'Kwa ground vitu ni different' is a Kenyan phrase to depict the disconnect between claims about reality and the actual situation on the ground. The expression took root

during the country's 2017 election campaigns as a way of capturing the bravado of politicians claiming popularity when, in reality, their support base was minimal. Glance at any news or blog piece about digital agriculture in Kenya, and you may fall for the same mistake. You may assume that a radical transformation is occurring in rural areas and that Kenyan smallholder farmers are enthusiastically adopting digital applications and platforms en masse. However, adoption remains slow and unenthusiastic.

During our fieldwork for the Tale of Two Green Valleys research project, we struggled to find much evidence of widespread use of digital technologies among smallholder farmers within the avocado, coffee and potato value chains, particularly among poorer groups. For example, in Nakuru County, only three out of 45 potato farmers we interviewed were using a digital application or platform (and these three users were all in a pilot). To give another example, in a single ward, one developer claimed that over 500 farmers were using his app, but when we asked the local extension officer, he had never heard of it. Despite a decade of consistent media hype and rounds of funding from start-up competitions and venture capitalists, all existing agricultural applications remain in the 'pilot stage', and there is a growing history of start-up failure, with new entrants often attempting to replicate the business models and scale up strategies of their predecessors. The platform with the most potential is Safaricom's Digifarm, due to the company's financial resources, market dominance in data and mobile money and its political capital and support from donors and government officials alike. Yet even this platform is still in the pilot stage. Its commercial success and financial sustainability have yet to be realised.

> *"Kwa ground vitu ni different/On the ground, the reality is different"*

Kenyan phrase

Given this very limited uptake, our research exposes the potential danger of relying too much on platforms for understanding the realities of farmers on the ground. Their vision of the rural environment remains patchy and myopic, and even if their platforms do scale, they tend to skew towards wealthier, younger and more connected groups. Policymakers should be sensitive to these biases, asking questions such as: what are digital systems not capturing? What does it mean to have data-driven science and policymaking if the data does not capture everyone? And how might this partial view affect subsequent policymaking and the impacts that policymaking might have on rural areas?

Potential benefits of digital knowledge systems

Kenyan farmers habitually complain about the lack of public agricultural extension while scientists and policymakers typically attribute poor yields and low profitability to farmers' limited uptake of new varieties and technologies. Clearly, more investment is needed into the knowledge systems surrounding smallholder agriculture, and yet public funding is not forthcoming. Despite agriculture being part of the Kenyan government's Big Four agenda, control over extension spending now sits at the county government following devolution, and support for the sector varies by county.

In this context, private technology firms have stepped forward and are actively trying to market their platforms as alternatives to traditional extension services. In our fieldwork in both Kenya and California, we found evidence of such marketing by digital firms responding to what they perceived as budgetary pressures within the public sector. In addition to these private initiatives, some public sector bodies such as the National Potato Council of Kenya (NPCK) and Kenya Agricultural and Livestock Research Organisation (KALRO) are also developing such apps to develop similar remote extension.

The business model of digital extension promises many advantages over traditional extension. Developers claim their platforms will:

• Lower the need for skilled employees spread across dispersed geographic areas (and thus limiting the need for both training and transport costs and removing a potential wage bargaining relation from the knowledge system).

• Remove middlemen and brokers who might add 'friction' both to the value chain and to the knowledge system itself (i.e. individuals giving farmers the wrong info,

taking advantage of information asymmetries and distorting market signals).

- Make the knowledge system more responsive to the needs of farmers in different situations and locations (i.e. making research more 'demand driven' to the lived realities on the ground and reducing the need for research to be 'translated' from the lab into the field).

- Increase the overall quantification of agriculture so that different researchers (agronomists, economists and bio-informatics experts, etc.) can eventually share data across field sites and disciplines, and better coordinate and cross-fertilise their research agendas.

Accordingly, proponents of digital agricultural platforms promise that their systems can offer both cost reduction opportunities and substantive improvements in the quality of research and extension over traditional extension services.

Potential pitfalls of digital knowledge systems

Beyond the dangers of prioritising private provision, highlighted in the second blogpost in this series on the danger of monopolised knowledge and under-investment in public goods, there are specific risks that reliance on digital extension poses to knowledge and research about policymaking and rural economies. We identify three such risks:

1. A danger of myopia and mistaken understandings

Many studies on the effectiveness of digital extension have relied on data provided by the platforms themselves or on data obtained by independent researchers studying the users of certain platforms. Both approaches tend to over-exaggerate the success of such platforms by focusing on the limited number of farmers currently using them, and not on the large number of farmers who are not. Furthermore, there is a danger that this form of analysis is restricting researchers to what platform operators can 'see' on their platforms. This myopia is problematic because platform operators might not actually know who is using their platforms, and whether the information provided actually reflects the reality on the ground.

For example, in our fieldwork, we became aware that some village brokers were using platform services targeted towards farmers and may get recognised as 'farmers' within the database. An extension officer similarly stated his expectation that brokers

would definitely be drawn to platforms if they perceived there was an opportunity to use them for brokering. Effectively, brokers derive their livelihoods precisely from the social and contextual ignorance of outsiders and therefore have an incentive to mask what is really happening on the ground. While some developers are aware of these dangers and are attempting to validate their users through GPS, for example, a cat and mouse scenario may ultimately ensue as intermediaries anticipate and react to these strategies.

Furthermore, quantified data systems depend on prior forms of standardisation in order to function. For example, one of the main objectives of policy actors within the potato value chain has been the ongoing attempt to standardise 50kg bags to protect farmers against exploitation by traders and to improve transparency over the market as a whole. Yet without some kind of investment into enforcement, no amount of digitisation is going to capture the true volume of potatoes flowing in the value chain. Quantification requires prior standardisation.

While tech developers typically depict brokers as behaving in a predatory fashion, taking advantage of the mutual unintelligibility of smallholders and outsiders, such intermediaries are providing a service that no one else seems currently able to provide. It will not be so easy to bypass them without some active investment into local areas. In the absence of such investment, there is a danger that platforms will simply generate 'garbage in, garbage out', much to the benefit of existing actors who currently make these markets and agricultural value chains work.

2. Biased sampling

It is clear that users of digital platforms tend to skew towards wealthier, younger, better educated and more urban groups. Even beyond the challenges of digital literacy and language barriers, many farmers are ageing and are simply too poor to afford the necessary equipment and data costs. Furthermore, as many digital platforms are profit-driven, many farmers do not offer sufficiently lucrative opportunities for private providers. As a result, the emerging 'digital picture' of the rural economy will skew towards already better resourced groups. Thus, an over-reliance on digital knowledge systems would appear to reinforce some of the same biases that have long plagued traditional research and extension.

Evidently some form of cross subsidisation will be necessary to ensure that digital extension really does become more sensitive to the needs and variation of real-life

farmers in different social and geographic contexts. Without this cross-subsidisation, the resulting vision of agriculture will not reflect the true reality on the ground but the reality that developers and scientists wish to project and create on the ground.

3. Self-fulfilling prophecies

As digital extension typically combines knowledge and advice with behavioural nudges and rewards in the form of credit and debt, there is a danger that these biased knowledge systems will end up self-validating – and essentially colonising – the knowledge environment, offering support to farmers who fit within their models and drowning out and excluding those who 'do not compute'. For example, if the system identifies farmers in one region as being more 'credit-worthy' than those elsewhere, there is a danger that the system will end up widening or creating new forms of inequality based on the biased nature of the knowledge system itself.

This problem may not concern private actors who are simply interested in profitability and, indeed, such processes of self-validation may end up generating the rural differentiation that neo-classical economists have long hoped to see, in which wealthier farmers (or those best understood by the platform) are able to buy up more land and labour and thus drive out poorer farmers (or those least understood or 'unseen'). Some economists and policymakers may view this outcome as desirable as it may lead to larger, more commercially viable farms out-competing smaller, less commercially viable groups, but such an outcome may not appeal to those concerned about social equity, social policy outcomes and rural poverty such as NPCK or KALRO.

There is a final risk of unintended consequences baked into this scenario. For what will happen to those poor farmers who get displaced and are unable to compete? If the system does not actually *see* their struggles and frustrations, there is a danger that the people running and using the platform will not anticipate nor be able to understand the social breakdowns and economic pains that result from their interventions. These people and frustrations may merely be interpreted as 'dysfunctional' within the model.

Thus, while digital extension has the potential to improve research capabilities within rural areas, current business models may be skewing digital knowledge capabilities in ways that may undermine their transformative potential. While digitisation is unlikely to leap-frog or bypass the need for greater tangible rural investment, the current focus

on financial sustainability means that commercial interests take precedent over wider public policy goals. Policymakers should be aware of these biases and the impact that these biases may have on subsequent social and economic knowledge generated through platforms. In this way, we advocate offline and independent research, which can situate these platforms in a wider view of the rural economy. The need for the human and local extension officers may then remain for years to come.

Read the full Tale of Two Valleys blog series.

About the author

Marion Ouma

Marion Ouma completed her doctorate studies in Sociology under the South Africa Chair Initiative (SARChI) in Social Policy at the University of South Africa in 2019. She has previously worked at various national and international non-governmental organisations. Her research interests include sociology, social policy, social protection, policymaking and the political economy of Africa's development. She has published in Critical Social Policy and has a book chapter in The African Political Economy (2020).

Laura Mann

Laura Mann is an Assistant Professor in the Department of International Development and a research affiliate of the Firoz Lalji Centre for Africa. She is a sociologist whose research focusses on the political economy of development, knowledge and information and communication technologies in Africa.

Posted In: A Tale of Two Valleys | Business | Recent | Technology

Leave a Reply