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ABSTRACT

Agriculture is the mainstay of the Kenyan economy with 70.1 per cent of the population residing in the rural areas. The sector contributes about a quarter of the Gross Domestic Product, and is a major source of export earnings and rural employment. However, the quantity and quality of agricultural statistics in Kenya has deteriorated over time due to a multitude of factors. To address these challenges, the Kenya National Bureau of Statistics (KNBS) with support from the African Development Bank (AfDB) and in conjunction with stakeholders in the Agricultural Sector has developed a seven year Strategic Plan for Agriculture and Rural Statistics (SPARS) spanning the period 2015/16 to 2021/22. The Kenyan SPARS is the first of its kind in Anglophone Sub-Saharan Africa and is in tandem with the recommendations of the Global Strategy for the development of agriculture statistics and the African Action Plan for 2011-2017. The SPARS for Kenya is expected to form a major input into the yet to be finalized National Strategy for the Development of Statistics (NSDS) in Kenya.

The Global Strategy in one of its key pillars proposes the development of a minimum core set of indicators to address the dearth in availability of quality agricultural statistics. While the set of plausible and measurable agricultural indicators is clear, the same may not be the case with rural indicators. The probable set of rural indicators for Kenya provides a particularly interesting scenario due to the rapid progress in ICT that has taken place in recent times affecting many sectors of the economy across the country. This paper proposes a critical set of indicators that are relevant and key to the development of the rural areas in particular. The proposed indicators are expected to be Specific, Measurable, Achievable, Realistic and Time-bound (SMART) and easy for development practitioners among other users to utilize to monitor and evaluate progress or lack of it in rural areas. In Kenya, a set of statistical activities have been proposed in the SPARS_KEN that will make the generation of these indicators plausible when you factor in the requisite technical support from the KNBS.

Keywords: Rural indicators, Global Strategy

PAPER

1. Introduction

The Kenyan economy is dependent on agriculture with the sector accounting for about a quarter of the Gross Domestic Product. The sector is a major source of foreign exchange and rural employment (GOK 2015). The leading sub-sectors and major export earners include tea and horticulture. In 2015, the two commodities earned the country a combined KSh 208.8 billion equivalent to over US\$ 2 billion (GOK 2016a). About 70.1 per cent of the population is resident in the rural areas. This is also where the bulk of agricultural production continues to take place through smallholder crop and livestock production. This is typical of several African countries as documented by Wiggins (2009) and Salami, et al, (2010). Despite this impressive performance, the quantity and quality of agricultural statistics in Kenya has deteriorated over time due to a multitude of factors. Key among them being limited funding for the requisite surveys and censuses (GOK 2016c).

However, in the recent past, financing of Statistical activities has risen in tandem with the rise in the profile and visibility of official Statistics. This has been amplified by renaming of the former Ministry of Devolution and Planning to the Ministry of Planning and Statistics (MPS). In addition, the current Principal Secretary in the MPS is a former Director of the Kenya National Bureau of Statistics. The promulgation of the 2010 Kenya constitution brought with it the county system of government as well as devolution of resources and services to the rural areas. However, the new system of government increased demand for data and statistics for county level planning, monitoring and evaluation. The Bureau is in the process of developing annual County Statistical Abstracts (CSAs) using data that is currently available in the counties as well as data from ongoing household surveys.

1.2 Global Strategy for Agriculture

The Global Strategy proposes a multidimensional approach to address the deteriorating situation of

agriculture statistics especially in developing countries. First through a core set of Agriculture and Rural Indicators coupled with the development of a master sampling frame for agriculture surveys (United Nations, 2011a). Africa is the first region to implement the Global Strategy through the development of the Action Plan for Africa. In this plan, while taking into account the comparative advantage of institutions, the African Development Bank (AfDB) was assigned the responsibility of providing to African countries technical assistance and governance; the United Nations Economic Commission for Africa (UNECA) was assigned the responsibility of providing training; while the Food and Agriculture Organization of the United Nations (FAO) was assigned the responsibility of conducting research (United Nations, 2011(b) and GOK 2016c).

1.3 Strategic Plan for Agriculture and Rural Statistics for Kenya

To address these challenges, the Kenya National Bureau of Statistics (KNBS) with support from the AfDB and in conjunction with stakeholders in the Agricultural Sector developed in 2014/15 a seven year Strategic Plan for Agriculture and Rural Statistics (SPARS_KEN) spanning the period 2015 to 2022. The Kenyan SPARS is the first of its kind in Anglophone Sub-Saharan Africa and is in tandem with the recommendations of the Global Strategy for the development of agriculture statistics and the African Action Plan for 2011-2017. The SPARS for Kenya is expected to form a major input into the yet to be finalized National Strategy for the Development of Statistics (NSDS) in Kenya.

1.4 Rural versus Urban areas

Rural areas are characterized by scattered population and tend to lack most if not all the facilities/amenities found in the urban areas such as proper sanitation, road infrastructure among others. Urban areas tend to have higher population density and are more endowed in terms of facilities. Peri-urban areas are somewhat to urban area but to a lesser extent. In these areas, only some of the facilities found in urban areas exist and the population concentration is moderate (GOK 2010). Rural statistics refer to broad range of statistics (economic, social, demographic, agricultural, etc.) covering the rural areas of a country. In this case rural statistics refer to those statistics that are agriculture related (GOK 2016b).

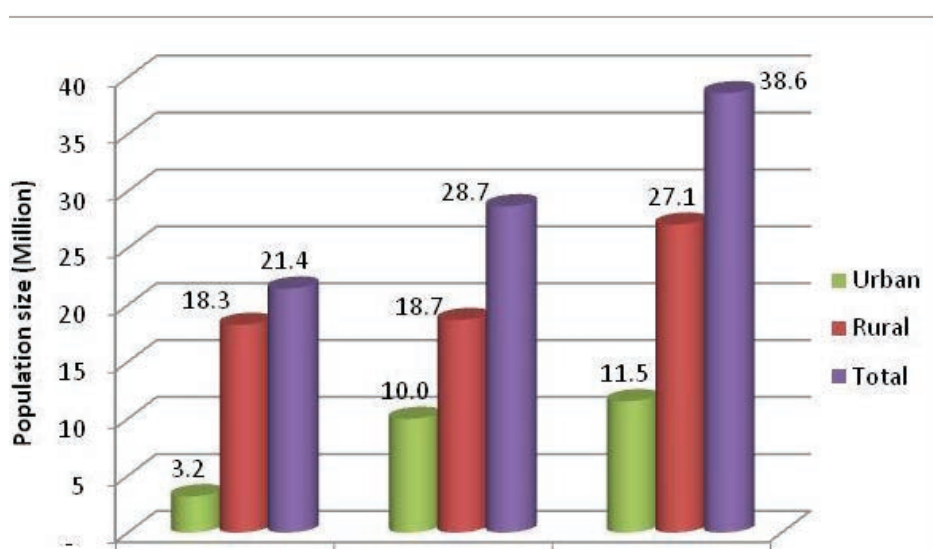
1.5

Generation of rural statistics though important is not sufficient without the urban component, if only for comparison sake. Available population statistics indicate that Kenya has been urbanizing very rapidly. Areas that were previously rural have changed to urban areas with time as population rose and in-migration took place. Indeed, some of the former agricultural farms near Nairobi have changed use to real estate. The desire to produce own food and hence ensure own food security in urban areas has resulted in urban and peri-urban agriculture. This needs to be considered in agriculture production as well as part of consumption. The Figure 1 below shows trends in population growth in urban and rural Kenya over the last three census years.

1.6 The Policy Environment

The long term development planning in Kenya is guided by the Vision 2030 through the Medium Term Plans (MTPs). The Vision has three pillars namely economic, social and political and envisions a prosperous and globally competitive country by year 2030. The policy recognizes Agriculture, Livestock

Figure 1 - Trends in Kenya's Population by Rural and Urban areas, 1989, 1999, 2009



Source: Kenya National Bureau of Statistics

and Fishries as well as the Information Communication and Technology (ICT) sectors as a key enabler of this vision (GOK, 2007). Towards this end, the National Information Communication and technology (ICT) Authority developed the national ICT policy and subsequently the 2014-2017 National Master Plan with the aim of facilitating the realization of Vision 2030 (GOK 2006 and GOK 2014). The implementation of the ICT masterplan has some of the outcomes expected by 2017 as the creation of 180,000 direct jobs, recognition of Kenya as a regional ICT hub and increased public value of e-Government services with 50 per cent of adults accessing atleast one e-Government service (GOK, 2014). This has been backed up by several positive developments in several areas such as the deployment of five under sea fibre optic cables, Electricity connection to more households and most of the public primary school as well as all government institutions both at the national and county levels as well as high schools and other institutions of learning have operational websites. Provision of laptops/tablets for every child joining standard one in all public primary schools in Kenya is currently underway and it is supposed to facilitate e-Learning in public primary schools. The Government has institutionalized e-Government where services are shared through Huduma centres. This is also the case with e-Procurement and e-Recruitment where procurement and application for Government jobs is done online. The KNBS is gradually shifting from paper based questionnaires in survey administration to Computer Assisted Personal Interviews (CAPI) using tablets and smart phones in data collection.

1.7 The ICT Context

Annan *et al* (2015) in one of the articles observes that Africa has gone digital with investments in fibre optic technology, increased access to mobile broadband and use of low cost smart phones and smart phones. Analogously, the number of mobile-cellular telephone subscriptions by population aged three years and above in Kenya rose from 82.5 per 100 inhabitants in 2013 to 86.2 per 100 inhabitants in 2014 as reflected in Table 1. The figures are based on. The access to mobile-cellular telephone has cut across both rural and urban areas. Mobile phones have multiple uses which include calling, Short Messaging Service (SMS), internet connectivity as well as mobile money transactions. In Kenya, mobile money transactions have been used very extensively and include transfers, payments, loans (i.e M-Shwari), mobile banking among others. Table 1 further shows that the total funds transfers through mobile telephony rose from KSh 1,902 billion in 2013 to KSh 2,372 billion in 2014. This has resulted in significant financial inclusivity especially in rural areas. According to GOK (2016b), financial exclusion of the rural populations reduced from 40.7 per cent in 2006 to 22.0 per cent in 2016. Similarly, financial exclusion of the urban populations reduced from 42.8 per cent in 2006 to 9.5 per cent in 2016.

The use of mobile telephony has resulted in Kenyan youth joining social media (facebook, whatsapp, instagram, twitter, you tube etc). This has facilitated learning and information exchange among the youth and farmers in general. Some examples of relevant information exchange groups include: a) Kilimo Biashara; b) Onion and water melon farming gurus; c) Mukulima smart d) Mkulima bora e) Mkulima ni ujuzi f) Smart farm g) Shamba shape up Closely allied to this innovative extension approach is the agribusiness oriented farming where smallholder irrigation of horticultural produce under green houses is gradually taking root in Kenya. The farmers produce French beans, tomatoes, onions among others for local and export market, The benefits of this information exchange coupled with green house irrigation are bound to positively transform productivity at the farm level resulting in a shift from subsistence small holder rural agriculture to commercial market oriented, profit driven farming in Kenya.

Table 1: Selected Internet and Mobile telephony indicators, 2010-2014

Indicator	2010	2011	2012	2013	2014*
Internet subscribers per 100 inhabitants (Both wireless & fixed)	8.0	15.6	20.9	31.6	38.3
Mobile-cellular telephone subscriptions per 100 inhabitants	71.5	75.1	82.4	82.5	86.2
Wireless internet subscribers per 100 inhabitants	8.9	17.1	-23.0	-34.7	-42.2
Broad band subscriptions per 100 inhabitants (wireless)	0.5	0.6	5.0	6.4	10.7
Mobile money Transfer Agents	32,949	42,313	49,079	93,689	121,924
Mobile money Transfer Service Subscribers ('000)	10,615	17,396	19,319	26,016	26,023
Total transfers (KSh billion)	732	1,169	1,544	1,902	2,372

Source: Economic Survey, 2015

* Provisional

1.8 Local on-line platforms

Kenyans have developed several online platforms such as „iprocare which prescreens its vendors to provide reliable local procurement services connecting agricultural businesses and institutional buyers. „Sentry provides a platform that connects customers with motor cycle couriers to offer delivery services payable with mobile money. „Ushahindi , and „Uchaguzi are crowd sourced applications that report and map election violence in Kenya. „NairobiBits a youth organization in Kenya exposes underprivileged young people from informal settlements to web design and other ICT skills

while „Akirachix reaches out to „geek girls among others (United Nations, 2016).

1.9 Indicators of Rural Development

Indicators are very useful in monitoring, and evaluation. Good quality indicators are Specific, Measurable, Achievable, Realistic and Time-bound (SMART) and easy for development practitioners among other users to utilize to monitor and evaluate progress or lack of it in rural areas. At the international level, indicators that had been developed to monitor the Millennium Development Goals are examples of SMART indicators. The Wye Group has in the recent past compiled a set of indicators for monitoring rural livelihoods as shown in United Nations (2007). More recently, Bryden J. (2011) did compile rural development indicators in the European Union. The Global strategy proposes on a minimum set of core indicators that countries should focus on in an effort to improve the quality and quantity of agriculture statistics. This paper does not dwell on the core indicators which very clear but focuses on the less clear rural development indicators using the Kenyan context as the basis. Table 2 below shows selected indicators for monitoring various aspects of rural development in Kenya.

Table 2 Selected Indicators for Measuring Rural Development in Kenya

Issue	Indicator	Sub-Populations	Source
Agriculture	Green house irrigation	Number, Area, Crop types	Economic Survey
Demography	Population Density	Rural, Urban	Population and Housing Census
	% population aged 64 years and above	Sex	Population and Housing Census
	Infant Mortality rate	Sex	Demographic and Health Survey, Population and Housing Census
	Under 5 Mortality Rate	Sex	Demographic and Health Survey, Population and Housing Census
Employment	% of the population that is self employed	Rural, Urban	Economic Survey
Health	Life Expectancy at Birth	Sex	Population and Housing Census
ICT	Internet access	Rural, Urban	ICT survey, Population and Housing Census
Malnutrition	Proportion of children under five who are underweight	Sex, Rural, Urban	Demographic and Health Survey
	Proportion of children under five who are stunted	Sex, Rural, Urban	Demographic and Health Survey
	Proportion of children under five who are wasted	Sex, Rural, Urban	Demographic and Health Survey
Poverty	Food Poverty	Rural, Urban	Kenya Integrated Household Budget Survey
	Absolute poverty	Rural, Urban	Kenya Integrated Household Budget Survey
	Hard core poverty	Rural, Urban	Kenya Integrated Household Budget Survey
Sanitation	Population with access to clean water	Increased specialisation	Demographic and Health Survey, Population and Housing Census
Water	Population with access to clean water	Rural, Urban	Demographic and Health Survey, Population and Housing Census

1.10 Conclusion

While agriculture continues to be the mainstay of the Kenyan economy the state of agricultural statistics has not been very good. In response to this state of affairs, the Global Strategy for the improvement of agricultural statistics provided the necessary impetus which culminated in the development of SPARS_KEN. The Kenya government has provided an enabling environment for the proliferation of various forms of ICT. Through Public Private Partnerships (PPP), the government has partnered with a leading telecommunication firm in Kenya so as to facilitate provision of affordable fertilizer to smallholder farmers through a fertilizer e-Subsidy programme. A crop insurance initiative is being piloted in selected counties by the government along a similar PPP approach. In Kenya, technology adoption especially around mobile telephony has been very vibrant and has had a major positive impact in the development of the rural areas in Kenya. The introduction of laptops and tablets in public primary schools is expected to lead to consumption of less paper. This will over time earn environmental dividends over time leading to reduced deforestation, less pollution and hence a cleaner rural environment. The KNBS is gradually shifting from paper based questionnaires in survey administration to Computer Assisted Personal Interviews (CAPI) using tablets and smart phones in

data collection. This is similarly expected to result in similar benefits. The focus of this paper was on indicators of rural development within the foregoing Kenya context. The paper acknowledges that there are an infinite number of indicators that can possibly be generated but as Table 2 below shows, only a few very crucial rural indicators have been selected bearing in mind the unique Kenyan context.

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