Developmental Regimes in Africa
Initiating & sustaining developmental regimes in Africa

A joint initiative between *Africa Power and Politics (APPP)* and *Tracking Development*

Policy Brief
April 2014
06

Agricultural 'pockets of effectiveness'

Kenya, Nigeria, Tanzania and Uganda since 2000

Ton Dietz and André Leliveld[1]

Previous DRA policy briefs have analysed the large differences in long-term development performance between African and comparable Southeast Asian countries.[2] Drawing on research by Tracking Development,[3] they have argued that most of these differences depend on whether or not political leaders implement pro-poor and pro-rural public investment policies. Negative attitudes among African policy-makers about peasants and the prospects for improving small-farm productivity have been singled out as a major problem.

We need, however, to nuance this argument, focusing on recent agricultural performance in Africa. How much progress is occurring in particular sub-sectors of crop and livestock production because of or despite prevailing policy attitudes? This question is addressed in a new stream of research by DRA and the Agro-Food Clusters in Africa (AFCA) Collaborative Research Group of the African Studies Centre, Leiden.

Four recent DRA-AFCA research reports[4] on the four African countries studied by Tracking Development – Kenya, Nigeria, Tanzania and Uganda[5] – suggest that 'pockets of agricultural effectiveness' are emerging. First, they show that Africa's agricultural performance was not entirely gloomy between 1960 and 2000. Second, they show rising agricultural production, improved food security and higher yields for many agricultural products since 2000. The four countries studied seem to be experiencing an 'agricultural revolution', albeit rather more muted than Southeast Asia's 'Green Revolution'.

These 'pockets of effectiveness' suggest the need to look beyond policy, to include urban-rural dynamics and agro-food cluster institutions as drivers of agricultural change. Policy-makers dealing with food security and agricultural development in Africa should pinpoint the most successful agricultural products over the past decade and determine the reasons for their good performance. Engaging with the main stakeholders in 'innovation clusters' around successful agricultural value chains can generate insights about the perceived strengths and weaknesses of these clusters, including government policies and practices at various scales. The performance of local governments in and around major cities also matters, particularly their (encouraging or frustrating) connections to various private and public sector parties in and around agricultural value chains.

Method

The research considered five major datasets:

- data from the Food and Agriculture Organization of the UN (FAO) on (staple) food production between 1961 and 2011
- data linking food production and food consumption in the same period based on so-called 'food balance sheets'
- data on breakthrough crops and livestock products between 2000 and 2010
- data on child undernutrition
- geographic maps of many of these variables.

This policy brief focuses on changes from 2000 to 2010. One caveat concerns the reliability of the FAO data, with doubts expressed about some figures relating to (for example) maize in Uganda and potatoes in Kenya. FAO data are used because there are no other sources in this field with the same scope.

Findings by country[6]

Kenya

Major progress can be seen when comparing Kenya's crop production for 2000 and 2010. Here, 'successful' crops are defined as those where production growth out-paced the 30% growth in population over the decade and yield increased by 20% or more. The most successful crops for Kenya were (in order):

beans, wheat, potatoes, sweet potatoes, bananas and mangoes, which together covered around 23% of Kenya's total harvested area in 2010. As for livestock and livestock products, the most promising are cattle, sheep, chicken, milk and eggs.

Nigeria

The 'most successful crops' in Nigeria were defined as those with: (i) an area of more than 150,000 hectares in 2010; (ii) a growth in production between 2000 (average 1999-2001) and 2010 (average 2009-2011) that exceeded the 28% population growth for the same period; and (iii) a yield increase of 20% or more over the decade. 'Successful livestock' were those whose numbers grew faster than the population. For Nigeria, the most successful crops were maize, cassava, rice, melon seed, potatoes and pineapples. Nigeria did, however, see some crops, namely millet, oil palm, cocoyam and karité nuts, decrease in absolute terms in both yield and production.

Maize is a key example of a successful crop that is now a staple food. From stagnation in the 1960s, through a rollercoaster performance over the next three decades, maize has been a very successful crop since 2000. Cropping areas have kept pace with population growth and steady increases in yields have meant far greater maize availability per capita. Poultry was the most successful agricultural product in the livestock sector, alongside the related production of chicken meat and eggs, and pigs, sheep and goats also proved successful. Milk production and fish more than kept pace with population growth.

Tanzania

For Tanzania, crops were regarded as successful if production out-paced the country's 32% population growth for the decade *and* yields increased by at least 20%. Seven crops, in particular, saw substantial production increases between 2000 and 2010: sweet potatoes, groundnuts, bananas, coconut, cowpeas, pigeon peas and sesame. Sunflower seed, 'other pulses' and tobacco have also seen increases in yields, but these have been lower than population growth. No livestock species experienced a growth in numbers higher than population growth.

Uganda

Uganda made major progress in crop production between 2000 and 2010, with the 'most successful crops' defined here as those where production out-paced the country's 38% population growth over the decade and yields increased by more than 20%. Together, the 'most successful crops' represented 21% of Uganda's harvested crop area in 2010, with maize accounting for about 63% of this. However, these successful crops – cotton, rice, maize,[7] cowpeas and oilseed – are not 'miracle' crops. They tend to be cultivated and/or to be dominant in northern Uganda. They experienced a peace dividend after the 2006 ceasefire, when internally displaced people returned to their land, pushing up national production figures. This also applies to goats, the most affordable form of livestock (and a kind of savings account) in comparison with more expensive cattle.

> ***"pockets of effectiveness suggest the need to look beyond policy.***

Some other livestock species show remarkable growth figures over the last decade: sheep and particularly pigs together accounted for 16% of the total tropical livestock units in Uganda in 2010. Cattle production is growing, as cattle are increasingly kept for their milk, and freshwater fish production has more than doubled in the past decade. Uganda's 'problem crops' are bananas and coffee, with negative production and yield between 2000 and 2010. They accounted for only 2% of the area under harvest in 2010. There were, however, no 'problem livestock species'.

How do the countries compare?

For an effective comparison, we need to look at population dynamics across the four countries. Uganda has seen explosive population growth (38%) over the past decade, and while the other three countries grew less, their growth was still high: Tanzania 32%, Kenya 30% and Nigeria 28%.

Each country's relative potential food security is also important. Our assessment assumes that staple foods provide (on average) 65% of all food requirements and average daily food requirements are 2,200 kilocalories per capita, per day. In estimating 'potential' food sufficiency, we consider only national production figures, and do not count the use of food harvests for seed and feed, food exports, imports, waste or stock movements.

The differences between areas and between wealth and other categories within the four countries are considerable and can explain the hunger and under-five undernutrition in some countries, even during periods when the total figures suggest there has been food sufficiency.

As shown in Table 1, Nigeria, Uganda and Tanzania achieved potential food sufficiency based on national food production in both 2000 and 2010. Kenya's figures show a more problematic situation, although improvements may be noted between 2000 and 2010.

Table 1: Potential food security in Nigeria, Uganda, Tanzania and Kenya, 2000 and 2010 (ordered from most to least progress)

	Food coverage in kcal per capita per day		Potential food sufficiency (%)	
	Year 2000	Year 2010	Year 2000	Year 2010
Nigeria	2846	2720	199	190
Uganda	2782	2328	195	163
Tanzania	1580	2251	110	157
Kenya	974	1255	68	88

Source: Authors' calculations based on FAO data.

Most successful cereal crops and pulses

Maize has become the most important food crop in each of the four countries studied. In Nigeria and to a lesser degree in Uganda, yield increases have been high over the past decade and are now highest in these two countries, but they have dropped alarmingly in Tanzania from a relatively high level, and have not increased much in Kenya. With world averages much higher than the highest recorded yield figures in any of the four countries (close to 2,500 kilograms per hectare in Tanzania in 2000 and currently at this level in Uganda), further improvements seem possible.

Nigeria and Uganda have seen the greatest yield increases for rice, but Kenya still leads on average yield levels, despite a decline. Most of Kenya's rice comes from well-supervised irrigation schemes that may explain its relatively high levels, but the recent performance of these irrigation schemes should be studied to determine why yield levels have been deteriorating.

The very diverse performance of wheat is interesting: only Kenya seems to do well, and yield levels in the other countries have declined.

Among the pulses, one crop that merits further study is cowpeas, as yield levels have improved everywhere, particularly in Uganda and Tanzania. For pigeon peas, dry beans and other pulses, the situation is more diverse and generally less encouraging.

Most successful root crops and tubers

Potatoes may be a particularly interesting crop for further study. Although experts question current FAO figures, potato yield levels are reported as good in Kenya and in Nigeria (although levels are much lower in the latter), but are declining in Uganda and Tanzania. Cassava did well in Nigeria, where it is a very important crop both as a staple food and as animal feed. Sweet potatoes did well in Tanzania and Kenya, where relatively high yield levels were recorded, but did less well in Nigeria.

> ***"public agencies can learn from bottom-up cluster performance assessments.***

Most successful other crops

Mangoes, oil-palm seeds and sunflower seeds have shown steady increases in yield in all four countries and merit further comparative study. Bananas are displaying another trend, with ever-higher yields in Tanzania and especially in Kenya, but declining (and low) yields in Uganda. Yields of pineapples, which are mostly a plantation crop, are increasing in Nigeria but are faltering elsewhere.

Recommendations for future policy-oriented research

Future research could investigate the factors behind the relatively successful agricultural production rates in these four countries over the last decade. Was this because of market expansion, institutional arrangements, such as value-chain and agro-support institutions including business development, and/or state support? It would be useful to compare the circumstances surrounding agricultural production, as it is clear that successful agricultural products are very country-specific. Only a few can be regarded as an overall success story in all four countries at the same time.

Market growth has involved expansion of the internal markets in the four countries. According to FAO data, very little food is exported, although there is a regular and often unrecorded trade in food (crops and livestock) across borders. Countries like Kenya have achieved successful horticultural exports, although these account for a small percentage of the country's total food production.

As everywhere in Africa, urban populations in all four countries are increasing rapidly, even though current levels of urbanisation are still relatively low. The past decade has seen considerable economic growth all four countries, particularly their urban economies, despite some ups and downs, such as Kenya's economic problems between 2007 and 2009 following post-election violence. Urban consumers are demanding more from their hinterlands and cities are becoming markets that require greater agricultural production and innovation.[8] Food insufficiency in nearby countries, like South Sudan and Somalia for Kenya and

Uganda, and Rwanda and Burundi for Tanzania, could well increase demand for agricultural produce from the four countries studied here.

A study is also needed of relevant institutional arrangements for agriculture in general, from input support to training, marketing and logistics, and for the most successful agricultural products in particular. Government-based institutions still matter in all four countries, but the private sector, which tends to be locally owned but with some foreign influence, has also become important.

Four sets of questions could guide systematic follow-up research.

- What does the value chain for a successful agricultural product look like? Which are the main production and consumption areas and how are they linked into the chain? And who are the major stakeholders in the chain itself?
- Which are the main supporting agencies and institutions (government, business and/or others) and how do they assess the performance of successful agricultural products?
- What are the local, national and international elements in the chain of innovation and how are they related?
- What have been the major incentives and disincentives in recent production and yield increases according to farmers and stakeholders in the production-consumption chains?

An understanding of the link between potential food sufficiency, average food security and the nutritional impact of food expansion could be gained by investigating access to these 'most successful commodities' by the poorest quintile of food consumers. Future research might include an analysis of explicit government poverty-alleviation policies and other relevant policy agencies in the four countries in general terms, zooming in on the most successful commodities.

It is important to see how and to where agricultural products produced in these four countries are being exported. Is Africa's food industry part of a new scramble for the continent's resources? And what is the recent history of food imports? Where do they come from and what role do policy and policy formulation and implementation play in imports, exports and investment incentives?

In terms of policy priorities for national and local governments, and for international agencies supporting agricultural innovations, our research suggests the importance of support for innovation clusters that stimulate productive liaisons between farmers, market agencies, credit agencies and national and international knowledge centres. Improvements in food security require prioritising those agricultural products that are important foods for the poorest 40% of people, with a focus on the poorest people in major urban centres and in areas with the highest levels of child undernutrition. Here, public agencies can learn from bottom-up cluster performance assessments for the most successful and most important agricultural products.

References

1. Director and Researcher at the African Studies Centre Leiden (www.ascleiden.nl), assisted by members of the African Studies Centre's AFCA Research Group: Akinyinka Akinyoade, Dick Foeken, Blandina Kilama, Wijnand Klaver, Heleen Smits, Sebastiaan Soeters and Merel van 't Wout.
2. E.g., D. Henley and J.K. van Donge, *Policy for Development in Africa: Learning from Southeast Asia*, DRA Policy Brief 01, 2012.
3. D. Vlasblom, *The Richer Harvest: Economic Development in Africa and South East Asia Compared*, African Studies Centre, 2013.
4. http://www.ascleiden.nl/?q=publications/agricultural-dynamics-and-food-security-trends-nigeria; –uganda; –tanzania and –kenya; and also http://www.institutions-africa.org/publications/pub_type/research-reports.
5. T. Dietz, 'Comparing the Agricultural Performance of Africa and Southeast Asia over the Last Fifty Years' in B. Berendsen, T. Dietz, H. Schulte Nordholt and R. van der Veen (eds), *Asian Tigers, African Lions: Comparing the Development Performance of South East Asia and Africa,* Brill, 2013: 85-130.
6. Agricultural performance tables for all four countries can be found in the related research reports; see footnote 4.
7. Uganda's agricultural success is not particularly evident in figures from other sources, and yield figures for maize can be seriously questioned as there are large discrepancies between FAO and 'local' figures.
8. See https://openaccess.leidenuniv.nl/handle/1887/20017

Africa power and politics

TRACKING DEVELOPMENT

Initiating and sustaining developmental regimes in Africa is funded by the Netherlands Ministry of Foreign Affairs. The views expressed in material published by the Developmental Regimes in Africa project are those of the authors and should not be attributed to its funders.

Developmental Regimes in Africa (DRA)
Overseas Development Institute
203 Blackfriars Road
London SE1 8NJ, UK
T: +44 (0) 20 7922 0300
E: info@institutions-africa.org

www.institutions-africa.org