18 July 2019

Digitalisation of agriculture in Africa is bound to increase exclusion and inequality

Is digitalisation an opportunity for Africa? Can it boost productivity, profitability, sustainability of food and agriculture in the continent and contribute to an improved living standard of its population? Many experts and policy makers believe so and several private companies are actively promoting it. Is the impact of digitalisation in the food and agriculture sector already being felt in Africa and is this impact in line with expectations?

A report on these important topics by Dalberg Advisors for the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) concludes that "*despite growth, progress towards* [Digitalisation for Agriculture] *has been somewhat slow to serve the smallholders that produce 80% of Africa's agricultural output.*"

Currently a net food importer, with a rapidly growing population, Africa will have to increase tremendously its food production in the coming decades. This growth will have to take place in a unfavourable context characterised by the negative consequences of climate change that can already be felt (i.e. climate variability, droughts, floods, new pests and diseases), by the greed that Africa's natural resources and potential generate among powerful foreign investors and by often inadequate agricultural policies.

As a result, performance of the majority of countries of the region has been below expectations. Some hope that Digitalisation for Agriculture (D4Ag) could help boost results by collecting and analysing an increasing mass of data for use in decision making. They

see it as a new panacea that could solve what they believe is the most important ill of the food and agriculture sector in Africa - namely a growth of output that is too slow.

By questioning and tracking D4Ag enterprises in Africa, interviewing business leaders, experts, investors and policy makers, conducting field visits and research, the CTA study found that:

- D4Ag in Africa is yet a recent and very fast growing sector;
- D4Ag has so far registered over 33 million smallholders (around 13% of the total), mostly young people operating in high value chains, while women and marginalised groups are not really reached;
- Companies in the sector are developing viable business models;
- The potential revenue from existing solutions is estimated to be $2 to 5 billion today, of which around 6% is being actually made by companies involved in various digital services such as advisory services, market linkages, digital financial services and supply chain management;
- Activities are as yet concentrated mostly in East Africa, particularly Kenya, and to a more limited extent in Ghana, Nigeria, Senegal, Rwanda and Côte d'Ivoire;
- Investments in the sector remain small and strongly supported by donors;
- Big global players such as Microsoft, Google, IBM, Bosch, Alibaba, Bayer, Syngenta, Yara, John Deere and UPL are for the moment only exploring the potential market;
- Less than half of the producers involved in D4Ag actually used the solutions for which they registered;
- From a very small sample of examples (around 50), the study found "*average yield improvements … of roughly 20% for advisory services, 70% for market linkages, and 40% for digital financial services, with corresponding income improvements typically ranging between 20% to 40%.*" Data on other potential impacts (climate resilience, employment and women participation) are too limited to be really useful.

The Malabo Montpellier Panel, is "*a group of international agriculture experts* [who wish] *to guide policy choices that accelerate progress towards food and nutritional security in Africa*". Many of them have been associated with the Washington-based IFPRI that facilitates the Panel. Supported by the African Development Bank (AfDB), the German Federal Ministry for Economic Cooperation and Development (BMZ), and UK aid, the Panel is a strong supporter of "modernisation of agriculture" through the use of agrochemical products, mechanisation and irrigation. It sees a high potential in D4Ag.

The Panel recently produced a report, Byte by Byte: Policy Innovation for Transforming Africa's Food System with Digital Technologies, that analyses progress made with digitalisation of the agriculture sector in seven African countries where the process is more advanced (Côte d'Ivoire, Ghana, Kenya, Morocco, Nigeria, Rwanda and Senegal).

This report emphasises benefits from digitalisation, including greater access to information and services including finance, improved linkages between farms and markets, higher productivity and better informed data-driven policies. It acknowledges that digitalisation will also be "*reshaping industries and economies globally by disrupting existing business and operating models*" thus impacting on society by introducing innovation. It however carefully avoids to go in to the detail of the changes expected and does not mention several key issues that would need to be solved for promoting safely D4Ag. While emphasis is given to the question of access to data, there is no discussion worth mentioning about how the actual governance of a digitalised agriculture sector should be organised and about how benefits generated from digitalisation of agriculture should be shared among various

actors of the sector (producers, services providers, data technology providers, data users, etc.).

It is well known that there are various types of benefits generated from the big data produced by digitalisation of the agriculture sector. One is increased production - which is considered in the Panel and CTA reports. Another is the benefit obtained by using data to develop businesses and strengthen business positions in the sector, in particular through vertical integration of value chains, with the view to increase profits [read]. This crucial aspect seems largely overlooked in the regulation that is envisaged in its report by the Panel.

It is hard to believe that this omission is a consequence of ignorance. Even more so as it is quite evident that the capacity to analyse and use masses of data generated by digitalisation will be a determining factor of change of power within the food and agriculture sector. In that context, it is likely that the powerful will be increasingly powerful. Evidence from the CTA report - hardly touched upon by the Panel - shows that farmers operating in traditional agriculture (i.e. not high value chains), people from marginal groups and women tend to be less involved in digitalisation (they do not have the financial means to pay for the services it generates) and that only a portion of those who subscribe actually use the services - while probably delivering their data to the contracted company. These imbalances and exclusions are a cause of concern, particularly regarding the future of the more than 200 million African farmers who, so far, are excluded from this process.

The solution to this issue is not just to get more farmers involved, but also to develop and apply renewed and well adapted anti-trust regulations (particularly regarding vertical integration within value chains), better methods of technology assessment and, last but certainly not least, stronger democratic processes to control data management and ensure a fair sharing of value added generated by digitalisation.

Failing to do this would imply the marginalisation of large numbers of farmers in Africa, with all the deleterious social, economic and may be political consequences that are quite evident to those reading regularly our articles on hungerexplained.org.

_____

To know more:

- Dalberg Advisors and CTA, The digitalisation of African Agriculture Report, CTA, 2019.
- Malabo Montpellier Panel, Byte by Byte: Policy Innovation for Transforming Africa's Food System with Digital Technologies, Dakar, 2019.
- Jouanjean, M-A., Digital Opportunities for Trade in the Agriculture and Food Sectors, OECD Food, Agriculture and Fisheries Papers No. 122, OECD, 2019.
- Soma, K. et al., Research for AGRI Committee – Impacts of the digital economy on the food-chain and the CAP, European Parliament, Policy Department for Structural and Cohesion Policies, 2019.
- Mooney, P., Blocking the chain - Industrial food chain concentration, Big Data platforms and food sovereignty solutions, ETC Group, Glocon, Inkota and the Rosa Luxemburg Stiftung, Berlin and Val David, 2018.

Selection of recent articles on hungerexplained.org related to the topic:

- <u>In the global food system, the "farm-tech revolution" could shift the balance of power to the detriment of the weakest</u>, 2019.
- <u>Is « Big Data » remodeling our food system?</u> 2018.
- <u>A review of two recent publications and of forthcoming studies illustrates EU's thinking on food and agriculture</u>, 2017.