Editorial: The urgent need to transform small-scale subsistence farming in Africa towards sustainable agribusiness value-chains

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Most observers agree that Africa is at a major turning point in its development trajectory, moving rapidly away from a continent full of civil wars, bad leadership, low human development index, poverty and food insecurity, to a new continent of peace, sustainable economic development and improved human well-being. Somewhat similar to the dark period of colonisation, slavery and apartheid, when African people and the natural resources were the subjects of scramble and partition by the industrialised world, there is now a new surge of global interest on the Continent from both developed and rapidly developing economies. After all, Africa’s internal market potential of 1 billion people remains largely under-exploited plus a wide range of both surface and underground natural resources which remain untapped, including minerals and forest products. It is estimated that the Continent holds 60% of the world’s uncultivated land, which provides the potential for yields in Africa to grow by more than three-fold in value from US $280 billion currently to US $880 billion in 2030.

So the potential of agriculture as a formidable instrument for sustainable economic development in African countries is unequivocal. Agriculture accounts for more than 70% of total employment and nearly 65% of that figure is made up of women farmers. Majority of the population remains rural, with increasing trend towards urbanisation and off-farm employment. Given that the majority of people are engaged in agriculture, it is logical that ongoing efforts by governments, development agencies and donors to promote economic development in Africa should target agriculture as the cornerstone of Africa’s economic transformation.

While the importance of agriculture in Africa’s ongoing and future economic development is undeniable, there is, however, an overarching and urgent need to transform the predominantly small-scale subsistent agricultural system into agribusiness value chains if the full potential of an agric-led economic development in Africa is to be realised. After all, this is not the first surge in interest and investment to improve agricultural productivity and welfare of farmers in the continent. Over the past several decades, governments in Africa and international development agencies, including agricultural research organisations, have invested billions of dollars to improve the productivity of small-scale farmers in Africa. The question therefore is: why have these massive efforts failed to significantly enhance agricultural productivity and economic
development while countries in Asia and other developing regions surged ahead with massive yield increases and improvements in agricultural productivity? A recent article on ‘Why African farmers fail’ (http://www.southerntimesafrica.com) bemoaned the lack of progress in transforming agriculture for economic development in Africa. Some of the points enumerated by the author are highlighted below:

- lack of meaningful investment in the agricultural sector, poor infrastructure and failure by African farmers to apply modern farming techniques have been cited as major contributors to poor yields and failure by African countries to feed their citizens
- what has worsened Africa’s food security plight is stagnant agricultural productivity due to limited access to inputs such as high yielding seed varieties as well as fertilisers and water
- an archaic marketing system also took some blame
- food and agricultural experts blame Africa’s failure to attain food self-sustenance on lack of investment in the sector.

This article sparked a flurry of reactions among researchers, academics and development practitioners using the online network of the Forum for Agricultural Research in Africa (FARA). These reactions may be classified into two groups. The first group enumerated the causative factor, such as:

- governments’ failure to allocate a minimum 10% of their national budgets towards the agricultural sector
- reliance by Africa on natural rainfall for agriculture continues to blot the potential of African farmers’ potential
- myriad of problems such as lack of modern technology to harness water, lack of market information amongst the farmers themselves
- the market for agriculture is not functional because of poor infrastructure and farmers in most southern African countries are not well organised
- “the question is on stimulating production, harmonising our seed policies, and it is ironic that right now we import everything from seed, chemicals to grain yet we have the soil to produce”.

The second group of reactions vehemently rejected the notion of blaming the farmer, pointing out that:

- There are so many success stories in Africa.
- It seems most writers are merely stuck with the disaster syndrome. The mental fixation with an Africa where nothing is right and nothing works must give way to an Africa that is replete with outstanding success stories.
- We are tired of such views which focus on blaming the victim. What is newsworthy is how farmers surmount huge challenges.
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• The tendency is to imply that small-scale farming is necessarily primitive. Many historical examples in Africa contradict this theory.

• We must stop blaming African farmers for our own failures as scientists, policy makers, professionals, donors, private sector and so on.

Sentiments aside, these myriad of reactions highlight the huge challenges and opportunities that exist in transforming agriculture for economic development in Africa.

My proposition is that current efforts to achieve this much needed transformation must focus on the Africa of tomorrow, not yesterday or today. For example, take a typical family in Umunam Village, Imo State, Nigeria, where agriculture is the main (and often only) economic activity for the majority of people residing in this rural area. Available agricultural land area has not changed during the past 50 years, but population has more than tripled. During this period, the total agricultural land of a family unit of about seven people has consistently decreased from over 5 ha to less than 1 ha. Half a century ago, nearly all the people lived in the rural area, depending on agriculture and hunting for livelihood, and only one in ten children attended school.

Today, every village in this part of Nigeria has a primary school, chemist shop and a nearby secondary school. At the national level, most high school leavers aspire to get tertiary education, and every state in Nigeria has at least one university. In many villages, only the old and women who are most likely to be uneducated are left to farm, using hand tools for all farm operations, from land clearing to harvesting. Farming implements have not changed significantly since the iron age when hoes and cutlasses were invented. In 2011, these are the same tools that feed nearly 150 million people in Nigeria, with barely any irrigation or improved seeds. Harvested produce are still carried on the head, at least from the point of harvest to the nearby road, which at best is suited for leg transport, bicycle and motor-cycle. When bumper harvests occur, more than 50% may be lost between the farm and period of utilisation due to lack of market chains and related postharvest handling technology. Consequently, trade is often limited to nearby village markets. In countries like Rwanda and Malawi where recent favourable government policies towards access to improved inputs and other support services have resulted in major increases in food production, farmers have complained about the lack of markets and good price for their produce. As Dr. Agnes Matilda Kalibata, the dynamic Rwandan Minister of Agriculture and Animal Resources recently pointed out: “how can I tell the farmers to plant more maize? Unless we sell this, how can we get them to grow more?” “That’s the challenge of creating food security” (http://www.globalfoodforthought.typepad.com/).

Obviously, the lack of markets for agricultural produce threatens the sustainability of current efforts to promote a new agricultural revolution in Africa to eliminate the scourge of food and nutrition insecurity and energise sustainable economic development. When farmers (and indeed anyone) have enough food, they worry more about health, education and future well-being of their children. When improvements in yield and productivity do not translate into sustainable solutions to the farmers’ needs in these equally important socio-economic areas, farmers eventually lose the incentive and motivation to continue to produce. Sooner than later, overall food production and availability decline. Therefore, farmers need markets to sell our produce to earn income to meet our food security and other needs. To access and retain these markets, they need postharvest technologies (knowledge and infrastructure) to reduce losses and meet market standards for quality and safety of produce. And as Honourable Kalibata also rightly observed: “when you talk
about gaining food security without putting these other things into place, it’s wishful thinking”. This observation is equally applicable to agriculture and food security elsewhere in the entire Continent and indeed globally.

A sustainable agricultural development strategy in Africa should also consider what the continent and its inhabitants would look like in 20 years and beyond. This means that in 2030 in the new Africa, a child born today to that family in Umunam Village in Nigeria should likely be nearing graduation from a university or similar tertiary institution. Then, the question arises: together with her/his brothers and sisters, what is the prospect that they would still be living in that same village as their parents, eating the same type of food at least twice per day (mainly ‘gari’ from cassava with ‘ofe’ from assorted vegetable sauce), and depending on small-scale subsistence farming as their main source of livelihood on the same scattered pieces of land? On a continental level in 2030, what would the majority of people in Africa be eating (energy vs. nutrient dense foods), where would they buy their food (own farm vs. local markets vs. supermarkets), where they would be eating most of the time (home vs. away), population and demographic structure (urban vs. rural), income level, etc? We have already seen the rising emergence of global supermarkets chains in major African cities and increasing demand for animal protein sources such as meat and dairy. The rural to urban migration continues unabated and some would argue that, like in other emerging markets as well as developed economies, this trend cannot be halted as people naturally search for better life for themselves and their families.

As we push to transform agriculture in Africa, there is no doubt in my mind about the urgent need for both structural and technological transformation of small-scale agriculture. There is nothing wrong in promoting and supporting small-scale farmers to improve their yield and productivity per unit of resource. The problem though is that the majority of these are subsistence farmers, who are also very old and resource-poor in terms of agricultural land and capital to access improved production inputs and innovative technologies to meet market demands for quantity, quality and safety assurance. Even when help is on hand, what could a farmer (and that family of seven in Umunam Village) do with less than 0.5 ha agricultural land per year, often scattered over several kilometres apart in more than three locations? Obviously, any attempt to help this farming family that does not include a future for the five children will not be sustainable and is somehow designed to fail. In this regard, a distinction needs to be made between emergency reliefs to the family to evade seasonal hunger versus sustained policy and other interventions designed to incorporate the whole family into a value chain that offers opportunities for the five children to be well prepared (through education and skills acquisition) to participate in productive economic activities.

Transforming Africa’s predominantly small-scale farmers into market-oriented value chains that provide goods and services to local, regional and global markets is one of the key challenges of our time. This allows us to widen the debate about food and nutritional security beyond just having food available in the local store to include providing economic opportunities for sustainable livelihood. Value chain analysis shows that less than 15% of the price of many food items is attributed to on-farm production activities. This share in food value decreases even further with more postharvest handling and processing needed to meet the demands of a burgeoning urban population. A comparison between the price of cocoa beans (and farmer’s income) in Ivory Coast with the price of fine chocolate in Belgian shops will illustrate this point. These numbers demonstrate that production must be viewed as only half the battle in securing and assuring successful
agricultural green revolution in Africa. Getting more people out of subsistence farming into other more lucrative value addition activities along the marketing chain is a philosophy that needs to be promoted and supported by all role players in Africa’s quest for sustainable economic development. With the combination of right policies and targeted deployment of sustainable, low-hanging and cost-effective disruptive technologies, it is possible to transform agriculture in Africa in my life time such that more and more people are moved down the chain in postharvest handling, processing and other value-adding activities. Such policy issues include land reform, market development and support, sustained investments in innovation systems including education and research, and provision of extension services to promote technology adoption. Leaving these critical issues in the hands of resource-poor small-scale farmers in the era of an increasingly globalised food (and environmental) system is just unrealistic and unfair, and somewhat amounts to mission impossible. African governments must take the lead in setting, pursuing and achieving these agenda by developing the necessary policy framework such as CAADP (http://www.caadp.net/), backed with the necessary financial support and commitment. It will not just work if Africa continues to largely depend on foreign governments and donors to make these crucial investments for Africa’s green revolution. Africa’s friends can support but cannot and will not lead Africa in its pursuit of sustainable agric-led economic transformation to meet the welfare and well-being aspirations of current and future generations.

In this issue of *IJPTI*, we have assembled a range of research papers highlighting some of the technological innovations in postharvest management which can assist in adding value to agricultural produce along the market chain. These include innovations in fruit packing, non-invasive prediction and monitoring of internal quality, the use of low density polyethylene bags to extend the storage stability of leafy green vegetables, the use of irradiation technology to maintain quality of fruit, palm oil extraction, and development of moisture-sorption isotherms relevant for nut processing. In addition to regular research and review papers, we also welcome articles documenting successful adoption of postharvest technology in the value chain.

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