

RESEARCH PAPER BY
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PANEL OVERVIEW

DRIVEN BY NEED: FOOD SECURITY, BUT FOOD FIRST

Agriculture is at the very core of sustainable development. Ten per cent of global consumer spending is spent on food; 40 per cent of global employment is in agriculture, with 70 per cent of the employment in the “bottom billion”. At the same time, the scale of the challenge moving forward is extreme: over 1 billion people suffer from hunger today, and in the next 50 years, the world will need to produce the same amount of food as it did over the last 10,000 years to ensure everyone is fed. The challenges do not stop there. The food price has more than doubled in the past decade, driven by a range of different issues. On the supply side, there are continued water gaps, degradation of soil, land availability, and the effects of climate change. On the demand side, there are massive population growth, a change in the types of calories consumed driven by a rising middle class, and the emergence of competition for land from bio-fuels.

So is there a solution? And how do we get there?

Current situation

“The Green Revolution largely bypassed Africa,” reports the World Bank (*World Bank, 2013*). Food prices have doubled in the past decade, driven by a range of issues from both the supply and the demand side. Agricultural production in Africa has steadily increased over the past 30 years. However, according to the World Bank, Africa’s agriculture yields are lagging compared to other continents (*New Partnership for African Development Agency for the African Union, 2013*). Moreover, out of the major global agricultural producers, Africa’s share of agricultural exports has been declining since the 1990s and it has a mere 2% share of the market (*World Bank, 2013*).

Regional challenges

The World Bank attributes this low share of the market to the lack of irrigated land and modern inputs, and an increasing gap between regional demand and supply. Africa has the “lowest rate of improved seed and fertilizer use of any region, a rate that has remained constant for the last

40 years, in spite of considerable efforts by governments" (Nash, John, World Bank, 2013). A study by The Brookings Institution attributes the low fertilizer use in African crops to high prices, possibly due to additional transportation costs from limited infrastructure.

Although subsidy programs attempt to help farmers purchase costly inputs, unless they are balanced by other government policy measures, only wealthy farmers benefit (Nash, John, World Bank 2013). A combination of sophisticated fertilizers and government intervention propelled Asia's green revolution during the 1970s and 1980s, a phenomenon characterized by dramatically improved yields. Governments contributed to the green revolution by stabilizing producer and consumer prices and subsidizing inputs (McCarthy, John, The Brookings Institution, 2013).

The African Development Agency for the African Union suggests developing regional markets and controlling international integration is the best method for stabilizing prices and securing a domestic market supply for inputs (New Partnership for African Development Agency for the African Union, 2013). This view is echoed by entrepreneurs and policymakers, who argue that these factors could be improved through collaboration between the private and public sector. The private sector could develop better, lower cost seeds and fertilizers and farming equipment. McKinsey forecasts that "if Africa could raise yields on key crops to 80% of the world average (like other areas that experienced green revolutions), the value of its agricultural production would rise by \$235 billion a year over the next two decades" (New Partnership for African Development Agency for the African Union, 2013). Improved infrastructure and irrigation would also help produce higher yields.

Inadequate water supply and under-cultivated land also hinder Africa's agricultural growth. The World Bank reports that climate risk contributes to yield problems by exacerbating the effects of inadequate and irregular water supply and soil degradation. "Despite available water resources, a very small proportion of land is under irrigation. The variability of precipitation in time and space in all areas receiving less than 1,200 mm of rain annually leads to high yield variability" (Nash, John, World Bank, 2013). Africa has millions of hectares of uncultivated land. Despite Africa's vast land resources, inefficient land administration on a continental level leads to unsustainable land use practices.

Recommendations from the World Bank, McKinsey and the Brookings Institution:

- Regional cooperation across African borders could help with water management, land regulation and transportation (Brookings Institution, 2013)
- Cooperative partnerships between NGOs and governments could ensure sharing and availability of international waters, trans-boundary basins in Africa and improve resource management (Nash, John, World Bank 2013)

- Integrated water management for multipurpose dams and agricultural-development corridors, in which facilities for development and processing are concentrated, would help bypass infrastructure and irrigation limitations, as well as allow smaller farmers to participate in otherwise cost-prohibitive markets (McKinsey, 2011)

Issues for further debate

The World Bank recommends that the public and the private sector should invest in education programs to help farmers adapt to climate change through better water management, and market knowledge. Educational extension programs will teach farmers learn proper post-harvesting methodology and management and adapt to climate change induced crop volatility.

New technologies like ICTs can improve information flows and value chains. In the same way, other helpful technologies might revolve around water storage and irrigation as well as technologies to reduce greenhouse gas emissions (*Nash, John, World Bank, 2013*).

Forum Flashback:

NYFA 2014: Frank Braeken, Chief Investment Officer, Amatheon Agri Holding thought that to spark economic transformation, Africa should learn from China's agricultural policy.

Nelson Messone, Gabon's Minister of Forests, Environment and the Protection of Natural Resources felt that informal and formal training was essential for agricultural development.

NYFA 2013: Speakers like Julien Nkogh Bekale and Alexandre Vilgrain stressed that agriculture has to be at the heart of agriculture development. Moussa Seck argued that governments and companies need strong, integrated value chains and that agriculture should be treated as a business. Amine Tazi-Riffi, Director, McKinsey & Company, Morocco thought governments should be the main drivers of this economic transformation.

Further reading:

Nature reports that Africa's indigenous vegetables could make food security more viable.

<http://www.nature.com/news/the-rise-of-africa-s-super-vegetables-1.17712>

The Rockefeller Foundation argues that Africa can learn from India about reducing food loss from distribution. <https://www.rockefellerfoundation.org/blog/from-india-africa-quest-learn-about/>

AllAfrica.com reports that President Buhari advocates different approach for tapping Nigeria's agricultural potential <http://allafrica.com/c/-5ZZ1X>

AllAfrica.com reports on a phone App that will give Kenyan farmers info on best seeds for changing climate conditions http://allafrica.com/c/-5_BNT.

Mail and Guardian reports that four African countries have had highest agriculture growth globally between 2004-2012. <http://bit.ly/1CrCaUc>

Forbes reports "China sees Africa's Agriculture sector as next big opportunity"
<http://onforb.es/1HiWsy5>.

"Bridging climate forecasts with farmer realities: The story of Seck and Ousmane" CCAFS: CGIAR research program on Climate Change, Agriculture and Food Security."
<http://bit.ly/1Ppjt5E>

CNBC reports that investing in Africa's agriculture could maximize Africa's agriculture potential.
<http://bit.ly/1L95Qst>

International Policy Digest: "Africa's Historic Moment: Pan-African Food Security".
<http://bit.ly/1Mo6C3O>

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