

# **Ecosystem-based Adaptation for Food Security in Africa**

**Re-imagining food security through  
harnessing ecosystem-based  
approaches to climate change  
adaptation, now and into the future**

## **Policy Brief**

**EbA South, 2016**



**ECOSYSTEM-BASED ADAPTATION  
THROUGH SOUTH-SOUTH COOPERATION**

Enhancing Capacity, Knowledge and Technology Support  
to Build Climate Resilience of Vulnerable Developing Countries

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This policy brief is based on the results of the Ecosystem Based Adaptation for Food Security Conference (EBAFOSC) held in Nairobi, Kenya, from 30 to 31 July 2015. It was developed by the African Centre for Technology Studies (ACTS) and edited by the EbA South project team.

For more information about EbA South, please visit: [www.ebasouth.org](http://www.ebasouth.org)

The views expressed in this publication are solely those of the authors, and do not represent the views of the donors, implementing and executing agencies, or other partners of the EbA South project.

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## 1. Introduction

Agenda 2063<sup>1</sup>, the African Union's (AU) continental development blueprint, recognizes agriculture as a means to achieve inclusive sustainable development on the continent. The AU 2003 Maputo Declaration on Agriculture and Food Security<sup>2</sup>, and the AU 2014 Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods<sup>3</sup>, capture a commitment by the AU Heads of State and Government to end hunger by 2025 and reduce post-harvest losses by 50%. The implementation strategy and road map<sup>4</sup> for delivering the 2025 Vision on Comprehensive Africa Agriculture Development Programme recognizes Ecosystem-based Adaptation (EbA)-driven agriculture as a priority mechanism for enhancing agro-productivity under the changing climate. These are among the key high-level continental policy declarations on the issue of optimizing Africa's agro-value chains for food security, poverty reduction and climate resilience. The Cairo Declaration from the 15<sup>th</sup> Session of African Ministerial Conference on the Environment (AMCEN) in March 2015 emphasizes the important role Africa's ecosystems play in underpinning economic growth and ensuring climate resilience, hence the urgent priority to safeguard them.

The 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development provide a post-2015 framework towards sustainable, climate-resilient and inclusive growth in Africa and across the globe. Cumulatively, healthy ecosystems and EbA are premised in these high-level goals as foundational to food and livelihood security in Africa. To be effective, the SDGs need to translate into implementable local, national and regional policies that aim to achieve food and livelihood security under the changing climate.

While approximately 240 million people<sup>5</sup> in Africa go to bed hungry and the continent imports food worth ~US\$35 billion annually<sup>6</sup>, it simultaneously loses up to 6.6 million tonnes of potential grain harvest annually because of degraded ecosystems<sup>7</sup>. This is enough food to feed about 30 million people. The continent also loses, on average, food

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<sup>1</sup>African Union Commission (2015). *Agenda 2063: The Africa We Want*. See: [http://agenda2063.au.int/en/sites/default/files/03\\_Agenda2063\\_popular\\_version\\_ENG%2021SEP15-3.pdf](http://agenda2063.au.int/en/sites/default/files/03_Agenda2063_popular_version_ENG%2021SEP15-3.pdf)

<sup>2</sup>New Partnership for Africa's Development (2003). *Comprehensive Africa Agriculture Development Programme*. See: [www.nepad.org/download/file/fid/3971](http://www.nepad.org/download/file/fid/3971)

<sup>3</sup>African Union Commission (2014). *Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods*. Assembly of the Union Twenty-Third Ordinary Session 26-27 June 2014 Malabo, Equatorial Guinea. See: [http://pages.au.int/sites/default/files/Malabo%20Declaration%202014\\_11%202026-.pdf](http://pages.au.int/sites/default/files/Malabo%20Declaration%202014_11%202026-.pdf)

<sup>4</sup>African Union Commission (n.d.). *Implementation Strategy and Road Map to Achieve the 2025 Vision on CAADP: Operationalizing the 2014 Malabo Declaration on Accelerated African Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihood*. See: [www.nepad.org/download/file/fid/4282](http://www.nepad.org/download/file/fid/4282)

<sup>5</sup>Food and Agriculture Organization of the United Nations (2010). *The State of Food Insecurity in the World: Addressing food insecurity in protracted crises*. See: <http://www.fao.org/docrep/013/i1683e/i1683e.pdf>

<sup>6</sup>Food and Agriculture Organization of the United Nations (2010). *FAO/World Bank workshop on reducing post-harvest losses in grain supply chains in Africa: Lessons learned and practical guidelines*. FAO Headquarters Rome, Italy 18-19 March 2010. See: [http://www.fao.org/fileadmin/user\\_upload/ags/publications/FAO\\_WB\\_ph\\_web.pdf](http://www.fao.org/fileadmin/user_upload/ags/publications/FAO_WB_ph_web.pdf)

<sup>7</sup>See: <http://www.un.org/africarenewal/magazine/august-2016/how-smart-policies-can-lesser-effects-climate-change>

worth ~US\$4 billion annually<sup>8</sup> as post-harvest losses. This would be enough to feed approximately 48 million people. In 2010, Africa's post-harvest losses were at a record of ~US\$48 billion<sup>9</sup>. Recovering these would essentially eliminate the need for imports and instead pump back about US\$35 billion into the economy and enhance economic growth. Holistically optimizing Africa's agro-value chains to eliminate these losses is therefore imperative. EbA approaches have been proven to enhance yields by up to 128%<sup>10</sup> with accompanying farm-level income increases at lower environmental costs, while the linkage to commercial value chains can create as many as 17 million jobs and catalyze a US\$1 trillion dollar agro-industry in Africa by 2030<sup>11</sup>.

The World Bank<sup>12</sup> reports that in Africa, a 10% increase in crop yields translates to approximately 7% reduction in poverty. Growth in agriculture is 2-4 times<sup>13</sup> more effective in reducing poverty than in any other sector.

Consequently, optimizing agro-value chains using EbA will simultaneously ensure food security, reduce poverty, combat climate change and enhance ecosystems productivity.

The **Ecosystem Based Adaptation for Food Security Conference (EBAFOSC)** held in Nairobi, Kenya, from 30 to 31 July 2015 aimed at deliberating on and adopting approaches and instruments toward implementing a transformative strategy for upscaling EbA-driven agriculture and its value chains across the entire continent. This was aimed at ensuring an optimized agro-sector guaranteeing not only food security, but also economic and environmental benefits toward solving Africa's nexus challenges of: i) food insecurity; ii) poverty & youth unemployment; iii) environmental / ecosystem degradation; and iv) climate change.

The expected conference outcomes included:

- i. the promotion of investments and policy support for enhancing EbA-driven agricultural productivity and job creation in Africa;
- ii. exploring scalable innovative financing and inclusive business models for EbA-driven agriculture; and

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<sup>8</sup>Food and Agriculture Organization of the United Nations (2013). *Food Wastage Footprints*.  
See: [http://www.fao.org/fileadmin/templates/nr/sustainability\\_pathways/docs/Factsheet\\_FOOD-WASTAGE.pdf](http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Factsheet_FOOD-WASTAGE.pdf)

<sup>9</sup>Food and Agriculture Organization of the United Nations (2010). *FAO/World Bank workshop on reducing post-harvest losses in grain supply chains in Africa: Lessons learned and practical guidelines*. FAO Headquarters Rome, Italy 18–19 March 2010. See: [http://www.fao.org/fileadmin/user\\_upload/ags/publications/FAO\\_WB\\_ph\\_web.pdf](http://www.fao.org/fileadmin/user_upload/ags/publications/FAO_WB_ph_web.pdf)

<sup>10</sup>See: [http://www.vumelana.org.za/news\\_centre/address-global-food-crisis-address-power-big-agribusiness/](http://www.vumelana.org.za/news_centre/address-global-food-crisis-address-power-big-agribusiness/)

<sup>11</sup>See: <http://intpolicydigest.org/2015/12/16/the-implications-of-cop21-for-africa/>

<sup>12</sup>World Bank (2007). *World Development Report 2008: Agriculture for Development*.  
See: <http://web.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTWDRS/0,,contentMDK:23062293~pagePK:478093~piPK:477627~theSitePK:477624,00.html>

<sup>13</sup>Calestous Juma (2011). *The New Harvest: Agricultural Innovation in Africa*.  
See: <http://belfercenter.ksg.harvard.edu/files/TheNewHarvest-rev.pdf?webSyncID=5d7735de-05a6-a77e-062e-e846db86ea0e&sessionGUID=a377cb71-e520-6936-ad5d-ceb69c7559d9>

- iii. the identification of key opportunities, actions and instruments for successful rollout of EbA-driven agriculture across the entire continent.

At the end of the conference, the Nairobi Action Agenda and Ecosystem Based Adaptation for Food Security Assembly (EBAFOSA) constitution were adopted by the over 1,200 delegates. EBAFOSA is a platform bringing together African countries and stakeholders and others across the globe to foster partnerships towards policy and action-oriented solutions based on EbA to ensure food and nutritional security under a changing climate. The Assembly will aim at optimizing Africa's agro-productivity through upscaling into policy and practice. It will also aim at EbA-driven agriculture approaches to food production and its linkage to commercial value chains and value addition through enhanced access to clean energy to catalyze the rural agro-industry. Additionally, it will enhance access to affordable agro-value chain financing, promoting technology use to enhance efficient and effective access to both supply and demand markets and developing regional monitoring and evaluation instruments on EbA. This policy brief summarizes key messages from EBAFOSA.

## **2. Key policy messages**

The overarching message from the conference was that there is a need for a more comprehensive, integrated and holistic approach to food security that ensures optimization of Africa's agricultural value chains, and elimination of losses both at on-farm production and post-harvest. This will entail targeting several sectors in order to build climate resilience, strengthen the foundation of productivity through ecosystem services (such as water) and provide affordable agro-finance. Enhancing energy access to catalyze value addition and agro-industry to facilitate elimination of post-harvest losses and increase income generation opportunities is also crucial, along with infrastructure and technology improvement in order to expand access to both supply and demand.

In an evaluation exercise, conference delegates identified the following **key messages** towards optimizing Africa's agro-value chains:

1. It is possible for Africa to mobilize its own finances and human resources to achieve food security.
2. Ecosystem-based approaches have potential to enhance food security in Africa and also increase communities' resilience in the advent of climate change.
3. The role of women and youth is pivotal for food security and optimizing Africa's agro-value chains. EbA-driven agriculture provides employment opportunities for youth, women and communities
4. Africa must change from 'business-as-usual' in order to ensure food security in a changing climate.
5. ICTs (e.g. mobile applications) can play a critical role in optimizing Africa's agro-value chains and need to be leveraged.

6. Lack of affordable financing constitutes a major inefficiency towards optimizing Africa's agriculture. The high risk associated with agriculture, driven in part by climate change-induced crop failure, is a major contributor to the underdevelopment in agro-financing. EbA can reduce such risk.
7. There is a need and opportunity for proactive stakeholder engagement in monitoring EbA implementation, mobilizing the public to get involved and influencing policy formulation.
8. Collaboration with all stakeholders concerned with EbA (government institutions, private sector, civil society, local NGOs, women, youth etc.) to promote inclusivity and build capacity is important.
9. Ecosystem-driven agriculture and its linkage to commercial value chains is a potential strategy to optimize productivity of Africa's agriculture, including eliminating losses. Because of its similarity to traditional approaches, EbA is very compatible and easily accessible to smallholder farmers.
10. South-South cooperation is essential in technology transfer, capacity building, peer learning, as well as market consolidation, all of which are critical to optimizing Africa's agriculture through EbA and its linkage to commercial value chains.

### **3. Five core issues**

This section summarizes selected core issues discussed at EBAFOSC and further elaborates the key messages listed above.

#### **A) Unlocking the potential of youth and women in EbA-driven agriculture**

Africa has a youth unemployment rate of ~60%. An optimized agro-sector can create as many as 17 million jobs along the entire agro-value chain. Empowering youth through education and skills development, access to capital and other factors of production can ensure their effective participation towards optimizing Africa's agro-value chain and job creation. Women on the other hand produce up to 80%<sup>14</sup> of food consumed in Africa. Empowering women by eliminating barriers such as access to land and other factors of production will enable them to optimize their productivity hence productivity of Africa's agriculture given their significant involvement.

Policies discussed to enhance the potential of youth and women are:

- a) Affirmative action: empower women and youth participation in EbA through affirmative action policies. Relevant policies should be revisited to directly target youth and women with: i) favorable market access (e.g. in government tenders for agribusinesses); ii) access to land; iii) access to education and extension services; and iv) access to affordable financing. As a starting point, the AU

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<sup>14</sup>See: <http://intpolicydigest.org/2015/11/08/optimizing-african-food-systems/>

Agenda 2063<sup>15</sup> provides that 30% of all financing in agriculture should be targeted at women.

- b) Education: change youth perception about agriculture by incorporating EbA in the curriculum right from primary school level. In addition, education should focus on entrepreneurship.
- c) Training & facilitation: reintroduce vocational training institutions in agriculture, and accessible technologies in EbA practices (e.g. Zaï), as well as training on practical business skills.
- d) Involve youth and women in policy making processes so their perspective is taken into consideration.

## **B) Innovative financing models for EbA-driven agriculture**

Lack of affordable financing is a major bottleneck in upscaling and optimizing EbA agro-value chains in Africa. Climate-induced crop failure is a major factor behind the unsustainably high cost of agricultural credit, and this has made agricultural financing relatively underdeveloped. However, this can change if governments enact policies targeted at de-risking agricultural financing. By leveraging the reserve capacity of central banks, coupled with the climate-risk reducing features of EbA approaches, countries can institute policies creating risk sharing facilities dedicated to lowering the cost of agro-value chain financing. The risk sharing facility pioneered in Nigeria, the Nigeria Risk Sharing Systems for Agricultural Lending<sup>16</sup> (NIRSAL), presented at the conference, can be further enriched by adding an EbA component to lower the climate-induced crop-failure risk, and thus further enhance the effectiveness of the financing model.

## **C) Technology for value addition to minimize post-harvest losses**

Linking on-farm EbA-driven agriculture to post-farm gate commercial value chains is crucial to eliminating post-harvest losses. Technology is an enabler to this end, and countries should prioritize policies that facilitate:

- a) expansion of clean energy access in rural areas to catalyze development of rural agro-processing industries for value addition and processing at source and facilities such as storage, preservation (e.g. access to refrigeration services, solar dryers etc.), and reduce food loss because of spoilage; and
- b) upscaling of ICT innovations that connect farmers to commercial supply/demand markets (e.g. access to inputs, access to finance, access to real-time market information about products, pricing, competition etc.).

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<sup>15</sup>African Union Commission (2015). *Agenda 2063: The Africa We Want*.

[http://agenda2063.au.int/en/sites/default/files/03\\_Agenda2063\\_popular\\_version\\_ENG%2021SEP15-3.pdf](http://agenda2063.au.int/en/sites/default/files/03_Agenda2063_popular_version_ENG%2021SEP15-3.pdf)

<sup>16</sup>See: <http://nirsal.com/>



## **D) The role of South-South cooperation in harnessing EbA for food security**

In enhancing collaboration among countries of the South, the conference had key presentations from speakers representing not only Africa, but also the Asia-Pacific Region. The speakers noted that South-South cooperation at both regional and inter-regional levels can be leveraged for several benefits to Africa, including knowledge-sharing, capacity building, technology transfer, and facilitation of bigger consolidated markets. These benefits are key to optimizing EbA-driven agriculture and its linkage to commercial value chains. However, for this potential to be unlocked, relevant policies and interventions should be prioritized that can:

- a) enable South-to-South transfer of appropriate technology and innovations to create a rich mix of integrated solutions important for food security;
- b) enhance both supply and demand for sustainably harvested agroforestry products. Facilitate the creation of harmonized markets;
- c) review the implications of the existing development framework in agriculture with a view to embed EbA and South-South cooperation elements. This includes the Comprehensive Africa Agriculture Development Programme; Africa Agriculture Transformation Agenda; and the Africa Development Research Programme, among others;
- d) launch joint research initiatives among national and regional institutions of the global South;
- e) promote harmonization of policies at national and regional levels to regulate overlaps, eliminate duplication and divergent sectoral approaches, which undermine progress. This can be achieved through multi-sectoral engagements and consultations to integrate policies addressing food security, climate change, rural development, energy and finance to ensure complementarities;
- f) foster greater cooperation on EbA for food security to address relevant concerns and issues in transboundary ecosystems; and
- g) establish platforms for sharing lessons and good practice, with a focus on traditional knowledge.

## **E) Incentivize private-sector involvement in EbA-driven agriculture**

Commercialization is vital to upscaling EbA-driven agriculture and its value chains. To this end, the private sector needs to be incentivized to play a greater role. Therefore, related policies should aim to:

- a) improve performance of financial markets for countries to further implement fiscal policies to loosen liquidity, lower interest rates and enhance accessibility to affordable financing / capital;
- b) facilitate and promote more transparent Public Private Partnership (PPPs) models that reduce risks to both the private investors and the public;

- c) establish and strengthen incentives that seek to enhance the overall business environment in a country, such as better transport, energy and telecommunication infrastructure, effective legal and regulatory measures and favorable market economy policies; and
- d) set up fiscal incentives for EbA-driven agriculture.

#### **4. Partnerships for policy upscaling and implementation: EBAFOSA**

In Africa, the real problem is not in generating ideas but in implementing them. Partnerships are needed to bridge gaps between policy and implementation. These partnerships are referred to in the SDG17 on partnerships for implementation. These gaps include financing, policy processes, technology, techniques, innovation and commercialization, among others.

At EBAFOSC, over 1,200 delegates – representing governments and policy making institutions; academic and research institutes; intergovernmental organizations; international organizations; private sector; civil society; women, youth, non-governmental organizations; and communities –sought to resolve this by adopting the Nairobi Action Agenda and the Constitution of the EbA for Food Security Assembly that established the Ecosystems Based Adaptation for Food Security Assembly<sup>17</sup> (EBAFOSA). EBAFOSA is a pan-African policy and implementation platform founded under the auspices of UNEP and the AU at this conference. EBAFOSA is a solutions space that leverages partnerships between stakeholders and solution providers across the divide to ensure EbA approaches are effectively up-scaled into policy and implementation across the continent through country-driven processes.

EBAFOSA also seeks to support countries in domesticating the global and continental climate and development policy and strategic positions, primarily the Paris Agreement, the SDGs and the AU Agenda 2063.

Through the lens of optimizing the agro-value chain holistically, EBAFOSA targets renewable energy investments to expand rural electrification and spur rural agro-industry as well as affordable agro-value chain financing. It also seeks to leverage ICTs to facilitate easier access to supply and demand markets. This is aimed at catalyzing rural agro-industries and value addition powered by clean energy and enhanced commercialization of Africa's agriculture.

The EBAFOSA platform provides the opportunity to realize these opportunities by convening key cross-cutting stakeholders for capacity building, policy processes, financing and commercialization, among others.

EBAFOSA can strengthen South-South cooperation at global, regional and national levels by leveraging its core strength of convening and building mutual partnerships.

EBAFOSA can facilitate public-private partnerships between stakeholders from different countries of the South, that are geared towards targeted investment in key enablers of

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<sup>17</sup>See: <http://www.ebafosa.org/>

optimized agriculture, for example, expanded access to clean electricity in rural areas. Asia Pacific countries that are ahead of Africa in clean energy technology can share their experiences.

EBAFOSA will encourage peer-to-peer learning, exchange of best-practice, and co-development of new approaches among member countries. A good example is Zai, an indigenous EbA technology widely used by countries in the Sahel to enhance soil structure, water retention capacity and organic content, thus reversing degradation and enhancing yields by up to 500%. Through peer-to-peer learning among EBAFOSA member countries, this technology could be distributed and successfully applied to other countries and regions on the continent with similar conditions.

Within governments themselves, EBAFOSA will help bridge policy gaps by breaking inter-ministerial silos to involve various ministries – such as environment, agriculture, industry and energy – for enabling policies towards a sustainable agro-industry.

## **5. Conclusion**

EBAFOSA provided much needed momentum for EbA for food security policies and initiatives across Africa. Speakers and delegates emphasized the need for continued cooperation across Africa and beyond to address food insecurity, highlighting the fact that EbA and climate-resilient agriculture are key strategies in achieving Africa's Agenda 2063 and the SDGs. Collaboration between scientific institutions, governments, private sector, NGOs, communities and other stakeholders is key to providing solutions.

Africa cannot continue with 'business as usual' scenarios if transformative change and development in the continent's food security, ecological and socio-economic future are to be realized. The establishment of EBAFOSA is an important milestone towards the achievement of these goals.

Ecosystem-based Adaptation through South-South Cooperation (EbA South) is a Global Environment Facility (GEF)-funded project implemented by UN Environment and executed by the National Development and Reform Commission of China (NDRC) through the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR, CAS).

For more information, please visit: [www.ebasouth.org](http://www.ebasouth.org)

EbA South develops global and regional framework information briefs and policy recommendations on ecosystem-based approaches to climate change adaptation.

