DECEMBER 2016
POLICY BRIEF No.2

CCGA
Changing Course in Global Agriculture

Scaling up Sustainable Agricultural Training of Kenyan Farmers

GOOD PRACTICE EXAMPLES AND POLICY RECOMMENDATIONS

SUMMARY OF POLICY RECOMMENDATIONS

1. **Research & Extension:** Increase funding for National Agriculture Research Centers and strengthen locally adapted research and development on agroecology while linking national research to country-wide extension services.
2. **Information & Communication:** Increase access to information on agroecology for farmers through the use of technology and new media using targeted communication messages based on community needs.
3. **Lessons learned:** Support existing soil management initiatives in Kenya and make use of the experiences made for the development of further sustainable agriculture training interventions.
4. **Private Sector Involvement:** Support initiatives that engage corporates such as the as Incentives for Ecosystem Services (IES) and PPP (public-private partnership) models to demonstrate sustainable fertilizer use while lifting environmental standards.
5. **Human Resources and Institutional Skills Enhancement:** Increasingly empower and enable extension service providers and academic institutions in developing and disseminating knowledge on sustainable agriculture practices.

INTRODUCTION

Computer simulations described in CCGA Policy Brief No. 1, "Impacts of Fertilizer Subsidies and Alternative Policies on Small Scale Agriculture in Kenya: Integrated Assessment and Policy Recommendations" demonstrate that small-holder agriculture based on low external input, agro-ecological practices can out-perform agriculture based on chemical fertilizers in terms of yield, crop production, agricultural employment, nutrient pollution and human nourishment (CCGA Policy Brief No. 1, 2016).

This policy brief outlines interventions or enabling policies designed to foster widespread adoption of sustainable agro-ecological farming by small-holders in Kenya. The principles, however, apply to small-holder farmers in any developing country.

PROPOSED MEASURES TO IMPLEMENT RECOMMENDATIONS

1. Research and Extension

The following interventions are proposed for scaling-up research and extension on sustainable and agro-ecological practices:

- Increase funding for both National Agriculture Research Centres (NARCs, e.g. KALRO) as well as for county-wide extension services with a focus on agroecology to strengthen locally adapted research and development of agro ecological methods, technologies and approaches.

- Link national research closely to extension services for targeted outreach of research evidence.

- Strengthen channels of communication on research findings for soil fertility and develop adequate feedback mechanisms to inform researchers about soil conditions on local levels.

- Foster research on participatory approaches for extension services including farmer to farmer approaches.

- Further enhance collaboration between national and county governments to foster quality and harmonized agricultural extension through a multi-sectoral approach where research is coupled with integrated extension platforms and county extension teams.

- Enhance research on development of market ready innovations that embrace a consumer viewpoint.

Good practice examples

McKnight Foundation's Collaborative Crop Research Program (CCRP) that funds organizations like KARLO to undertake participatory, collaborative research on agro-ecological intensification (AEI); and the work by ICIPE that serves as basis for institutional research and learning on agro–ecology. (http://ccrp.org/projects/agroecological-intensification-drylands)

Kenya Agricultural Productivity and Agribusiness Project (KAPAP) phase II; a 12 year Adaptable Program Loan (APL) supported by the World Bank whose program design emphasizes an integrated approach that synchronizes research, extension and farmer empowerment and other stakeholders initiatives. (https://www.devex.com/funding/programs/kenya-agricultural-productivity-and-agribusiness-project-kapap-apl-ii/2986)

The Farmer Field School approach promoted by FAO (http://www.fao.org/agriculture/ippm/programme/ffs-approach/en/) and the Fertilizer Extension Project by Kenya Agriculture research and Livestock Organisation (FEP) provide the most appropriate fertilizer use recommendations according to agro-ecological zones. The program aims at ensuring efficient fertilizer resource utilization in combination with organic manure accessible at farm level.

ASDSP (Agriculture Sector Development Support Program); enhances collaboration between national and county government. However, such programs need to further include aspects of sustainable training for national flagship programs like the fertiliser subsidy program. (http://www.asdsp.co.ke/)

2. Information and Communication

There is considerable need for systems that increase access of farmers to information about agroecology. This would entail **the use of technology and new media and well targeted communication messages** based on identified needs in communities. The following interventions would contribute to scale-up information and communication systems for sustainable agriculture training:

- **Create and re-alignment with community based resource centres for promotion and coordination of sustainable farming initiatives**. Resource centres could also host demonstration farms where farmers learn by observation and courses on sustainable agriculture.

- **Promote the use of ICT for information dissemination to farmers** including brochures and leaflets, radio, video and SMS platforms. The government of Kenya would capitalize on farmer communication programs in carrying out sustainable training for the fertilizer subsidy program.

- **Showcase innovations using farmer field days, demonstrations and knowledge hubs for capacity building and sensitization**. Showcase various types of practices to the community as alternative options (e.g. organic versus chemical fertilizer or the integration of the two options).

- **Sustain the important role the county government is now playing in communicating agriculture information**. For example Kitui County has set up a radio program to reach farmers, record innovations and disseminate to the rest of the community. (https://www.facebook.com/903-County-FM-354974457966435/).

- Coordinate county governments, research and academia, civil society and the mainstream media in dissemination of key lessons.

Good practice examples

Information dissemination by ALIN Kenya that innovatively uses community-based ICT facilities known as Maarifa centers. The Maarifa centers that serve as community resource centers have already been piloted in 7 remote areas of Kenya where ALIN has creatively used various platforms that include use of Short Messaging Service (SMS), blogs, iPods, videos and internet to reach out to most remote and marginalized communities in Kenya. (http://www.commi-nit.com/africa/content/maarifa-community-knowledge-centres)

The Biovision Farmer Communication Programme (FCP) implemented by Biovision Africa Trust in close cooperation with ICIPE of Nairobi Kenya. The program uses various communication pathways to reach farmers including print media (The Organic Farmer and Mkulima Mbunifu magazines), broadcast (TOF) and electronic media (web-based knowledge database, mobile phone and computer applications). (http://www.biovision.ch/en/projects/switzerland-and-interna-tional/fcp-farmer-communication-programme/)

The work by the Ministry of Agriculture that uses farmer field days in disseminating appropriate innovations especially those that help to hedge against climate impacts.

Print media and radio programs like the smart farmer, Shamba shapeup and the seeds of gold by Egerton University that disseminate well-researched innovations by farmers on sustainable agriculture.

3. Drawing Lessons from Existing Soil Management Initiatives in Kenya

Considering the existing soil management initiatives in Kenya, we draw a number of lessons that need to be considered in development of sustainable agriculture training interventions:

- Need to **learn from initiatives that support soil testing and analysis** as a basis for all fertilizer recommendations and applications.

- Exploration of **low cost initiatives on soil management at community level**; this implies that farmers use inputs that require minimum financial investment, like using readily available materials within the farms e.g. composting or the use technologies that require an once-off investment like the use of fertilizer shrubs.

- Development of **financing models that are easily accessible to farmers** and those that can easily promote aspects of sustainable agriculture and soil management.

Good practice examples

Soil testing: The work by Soil Care that carries out mobile soil testing with farmers (and the Crop Nutrition Laboratory Services Ltd that aims at strengthening the human and institutional capacity required for quality soil fertility analysis. (Soil cares: http://www.soilcares.com/en/our-story/, http://www.soilcares.com/en/community-hubs/africa/, Crop nutrition services: http://www.cropnuts.com/)

Balanced ISFM that integrates different aspects: Another key initiative is the Soil Health Program by AGRA's that aims to regenerate 6.3 million hectares of degraded farmland over the next 10 years, through a balanced ISFM (Integrated Soil Fertility management) technology that combines the use of organic and inorganic sources of nutrients. (http://africasoilhealth.cabi.org/events/4-8-june-2012-nairobi-kenya/; http://archive.agra.org/what-we-do/policy/)

Low cost initiatives: The conservation agriculture program by Deutsche Welthungerhife GIZ (Western and Eastern Kenya), Organic Agriculture program (Countrywide), Evergreen Agriculture-ICRAF (Machakos, Embu & Siaya counties), Sustainable Agriculture (Larger Western Kenya) and the land Reclamation and rehabilitation (ASAL Kenya) (http://www.worldagroforestry.org/itaacc/projects/evergreen-agriculture).

Financing models: The IFAD/GOK project where they work closely with KARLO (Kenya Agriculture Research and Livestock Organisation) to promote technologies to farmers while assisting them through linkages with financial institutions for credit access and insurance product access Financing through natural resources management aspects: Another key program is the Government of Kenya Program funded by IFAD/GOK that supports farmers to develop economic potential while improving the natural resources base, the program reaches out to over 100,000 farmers. (https://operations.ifad.org/web/ifad/operations/country/project/tags/kenya/1651/project_overview, https://operations.ifad.org/web/ifad/operations/country/home/tags/kenya)

4. Private Sector Inclusion

The private sector is a key player for agricultural development in Kenya. Harnessing the role of the private sector in creating awareness on sustainable farming is an opportunity where the fertilizer subsidy program could be anchored in.

- **The IES approach (Incentives for Ecosystem Services) is a good approach to collaborate with the private sector and to foster learning activities on sustainable agriculture. This can be extended to collaboration with**

e.g. seed companies and agro dealers to demonstrate organic fertiliser.

- **The IES approach further supports commercialization projects to include environmental standards and quality compliance aspects**.

- **There is need to further explore whether Public–Private Sector Partnership models could support dissemination of sustainable agriculture interventions**.

Good practice examples

Capacity building program for commercialization and management of environmental services by Kenya Flower Council promoting water conservation and management of water towers.

The Kenya Agro-dealer Strengthening Program by CNFA and AGMARK (Agriculture Marketing Trust) and GOK that has strengthened Kenyan agro-dealers by mobilizing over 5000 agro-dealers and providing training in productive farming methods to agro-dealers. Such programs could be key in mobilizing agro-input dealers to demonstrate aspects of sustainable fertilizer use. (https://www.cnfa.org/program/kenya-agrodealer-strengthening-program/)

Project by One Acre Fund promotes public-private partnership models by working closely with farmers and private sector partners through promotion of agro-forestry technologies and the integrated Technology Management plus Support System.

Other initiatives that link private sector work to sustainable agriculture training include integration of organic farming aspects through promotion of Pyrethrum by smallholder farmers rather than synthetic insecticides, and the promotion of Biogas technologies among smallholder farmers by KENAFF for purposes of diversification and restoration of soil carbon.

5. Enhancement of Human Resource and Institutional Skills

The need to increasingly empower and enable extension service providers in disseminating knowledge on sustainable agriculture is an important ingredient to enhanced uptake of sustainable soil management practices.

- Integration of sustainable farming capacity development in other service delivery interventions.

- Government extension officers need to have improved access to knowledge and skills related to ecological farming to give advice on questions related to organic/ ecological farming.

- Universities and other higher academic institutions need to continuously train manpower on aspects of sustainable agriculture.

- Development of nationally endorsed training materials on sustainable agro-ecological production systems could be embraced with an emphasis on the HOW of agro-ecological production.

Good practice examples

Successful programs that include integrated sustainable training and livelihood interventions:

The Smallholder Commercialization Program (2007-2016), funded by GOK/IFAD, promotes capacity building, input transfer and the formation of dairy associations.

The Soil and Water Management program by GOK and SIDA in the Kabiti catchment area include capacity building of community, staff trainings and access to inputs in form of tree seedlings.

The National Agriculture and Livestock Extension Program (NALEP) funded by SIDA/GOK and ASDSP program that include human resource development in partnership with the private sector (http://www.sida.se/globalassets/publications/import/pdf/sv/0631-the-national-agriculture-and-livestock-extension-programme-nalep-phase-i-impact-assessment_2038.pdf).

Good initiatives by learning institutions are: University of Nairobi project that aims at strengthening the human and institutional capacity required to develop appropriate integrated soil fertility management technologies; at Kenyatta University a program that aims to produce well trained manpower equipped with a broad range of theoretical and practical skills in Integrated Soil Fertility Management for sustainable productivity and development in East and southern Africa.

SUPPORT FOR CAPACITY BUILDING BY STAKEHOLDERS

Capacity building should be fostered by the national government at both national and county level. This includes the provision of supporting resources, of capacity building hard- and software, and supportive policies and regulations. Further the government should include fast tracking of key policies (e.g. national soil management policy); increase funding for implementation of sustainable agriculture policies and coordination of other stakeholders to harmonize activities and provide incentives for the use of nonconventional fertilizer. Finally there would also be need to entail the government to carry out regular review of the implementation of sustainable agriculture policies.

Private sector and civil society organizations could complement capacity building activities by documenting and sharing good practices, partnering with the government for implementation efforts, strengthening the financial and insurance services for farmers and coordinating farmers for collective actions. Furthermore the private sector could further channel investment in potential areas for sustainable development, support policy and legislation frameworks and strengthen the financial and insurance services for farmers. Furthermore these actors could foster extension and education services and boost technology transfer aspects.

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