**Uganda Country Profile 2015**

**Produced by the ASHC delivery team**

**supported by Paul Kibwika, PICO-Uganda**

**OVERVIEW**

Although Uganda has substantial natural resources, including fertile soils and regular rain, the growth rate in agricultural productivity is declining and failing to keep pace with population growth: Uganda has the world’s fourth fastest population growth rate and the second-youngest population. Fertilizer use in Uganda is amongst the lowest in the world.

The current National Agricultural Policy puts emphasis on a private sector-led approach; however, moves are being considered to bring about a subsidy to reduce the price of fertilizer to try to stimulate use.

Five BMGF priority crops appear amongst the top 10 agricultural commodities by value: plantains, cassava, maize, beans and sweet potatoes.

There are, therefore, opportunities to work with private sector partners and youth; increasing fertilizer use rates is a particular need.

The ISFM investment profile in Uganda gives ASHC a unique opportunity to develop an approach based on a continuum of soil improvement options. By bringing together the work to promote rhizobia inoculation with the fertilizer optimisation approaches of OFRA and factoring in ISFM principles, ASHC can offer options for soil improvement at any level of investment.This is a significant development from the work in phase 1. Whilst the challenges of spelling out the range of options in simple farmer-friendly language should not be underestimated, this approach offers the potential for replication across the 12 other OFRA countries and beyond.

Population, total (million people)[[1]](#footnote-1)*(2014)* 35.9

Population Density (people per km2) [[2]](#footnote-2)*(2013)* 188.1

Annual Population Growth (%)1*(2014)* 3.2

Rural Population (%) [[3]](#footnote-3)*(2014)* 83.2

GDP (USD per capita)1*(2013)* 1,500

Agriculture GDP (% of total GDP)1*(2013)* 23.1

Agricultural land (thousand ha)1*(2011)* 14,062

Agricultural land (%)1*(2011)* 70.4

Fertilizer consumption (kg/ha arable land) (%)2*(2012)* 1.8

Average rural family size[[4]](#footnote-4) (2011) 5.1

Number of farming families in country [calculated][[5]](#footnote-5) 5.86 million

Number of extension staff in country (2013) 1,268

Extension staff: farming families 1:4,620

**BACKGROUND**

**The role of agriculture in national economy**

Uganda is widely recognised as having substantial natural resources, including fertile soils, regular rainfall, sizeable mineral deposits of copper and cobalt, and largely untapped reserves of both crude oil and natural gas.

Agriculture accounts for 23% of the gross domestic product and employs 82% of the labour force. Coffee is Uganda’s main export crop followed by fish, although the recent discovery of oil could change this in the future1.

According to a 2006 estimate, 58% of Ugandan farms are 1 hectare or less and a further 38% are 1-5 hectares[[6]](#footnote-6).

Average fertilizer use at just 1.8 kg per hectare arable land is amongst the lowest in the world[[7]](#footnote-7).

Amongst other factors that constrain small-scale farmers are the high cost and limited availability of improved farm inputs, including hybrid seeds and post-harvest technology, over-stretched extension services, poor transport networks, a lack of market information, inadequate production and post-harvest facilities, and weak value chain linkages[[8]](#footnote-8).

In addition to crops, livestock are an important element of the livelihoods of many Ugandan households. Numbers of cattle, sheep, goats, pigs and poultry have increased over recent years but productivity has declined due to cattle rustling, disease outbreaks and lack of pasture; the dairy sector has also been hampered by low prices for milk, high costs for veterinary drugs and transportation problems8. There is therefore potential to use animal manure as a source of organic matter.

Real growth in agricultural productivity has declined recently, from 7.9% in 2000–2001 to 0.7% in 2007–2008. This rate falls far short of the annual rise in average GDP (6.5%), population (3.4%) and the 6% target set by African governments under the Comprehensive Africa Agriculture Development programme[[9]](#footnote-9).

The current National Agriculture Policy was launched in September 2014. It has six objectives: ensuring food security; increasing incomes of farming households; promoting specialization in strategic, profitable and viable enterprises and value addition through agro-zoning; ensuring sustainable use and management of agricultural resources; promoting domestic, regional and international trade in agricultural products; as well as developing human resources for agricultural development.

Commenting on the new policy, Lawrence Bategeka, a fellow at the Economic Policy Research Centre, a policy think tank, argued that the policy, couched within the framework of private sector-led and market economy, is why agriculture has failed to optimise its potential. Since only a small portion of private farmers can afford farm inputs, he suggested the government should provide incentives and make lending to farmers easy. The policy suggests that primary investment to the agricultural sector will be led by the private sector[[10]](#footnote-10).

**The importance of BMGF priority crops**

Of the top 10 agricultural commodities by value, five are B&MGF priority crops: plantains (C Witt, personal communication 2014), cassava, maize, beans and sweet potatoes (BMGF 2011)[[11]](#footnote-11) (Table 1).

**Table 1: Top 10 agricultural commodities by value, Uganda, 2012[[12]](#footnote-12)**

|  |  |  |
| --- | --- | --- |
| **Rank** | **Crop** | **International $ millions** |
| **1** | **Plantains** | 1425 |
| **2** | **Cassava** | 514 |
| **3** | Meat indigenous, cattle | 513 |
| **4** | Milk, whole fresh cow | 377 |
| **5** | **Maize** | 344 |
| **6** | **Beans, dry** | 224 |
| **7** | **Sweet potatoes** | 200 |
| **8** | Coffee, green | 200 |
| **9** | Meat indigenous, pig | 177 |
| **10** | Vegetables, fresh not elsewhere specified | 170 |

B&MGF priority crops in **bold.**

**ISFM relevant policies**

The existing policy does not allow subsidies of any kind: the input market is completely liberalized and left to the private sector and subjected to the economic principles of demand and supply. Fertilizer farm-gate prices are considered to be beyond the reach of most farmers.[[13]](#footnote-13) The result is the very low rate of fertilizer use in Uganda – amongst the lowest in the world.

A draft National Fertilizer Policy is in the process of approval by MAAIF top policy management and cabinet. The draft policy and the proposed National Fertilizer sub-sector Development Strategy 2014/15 – 2018/19 proposes mechanisms for reduction of the fertilizer costs (some form of subsidy) but this is yet to be endorsed by government. The proposed policy also provides for release of legume inoculants and new fertilizers.

The Uganda government has approved for commercial sale MAKBiofix, the inoculant produced by Makerere University to enhance biological nitrogen fixation. Other inoculant products have been submitted to the regulators and approval is anticipated during the lifetime of ASHC 2.

**The importance of private sector**

Since 1992 the Uganda National Farmers’ Federation (UNFFE) brings together smallholder farmers country-wide. Interest-based farmer associations register with UNFFE on a voluntary basis. Currently about 96 interest-based associations are affiliated to UNFFE. The backbone of UNFFE are the 73 district based farmers’ associations offices.

Uganda Cooperative Alliance (UCA), an umbrella organization for all cooperatives, mobilizes and facilitates formation of farmer cooperatives as independent and business oriented entities. UCA was first initiated in 1961 and has a long experience in farmer cooperative societies.

The number of agro-dealers in Uganda has increased rapidly since 2002, rising from 100 to around 2500 by 2012[[14]](#footnote-14): 800 are registered with the Ministry of Agriculture, Animal Industry and Fisheries. The other unregistered agro-dealers operate in different capacities and sometimes they may also deal with a variety of commodities other than agro-inputs.

The National Agricultural Advisory Services (NAADS) program was implemented in 2001 and was envisaged as a 25-year program. A key strategy was a move away from the top-down approach, which is publicly funded, with services provided by public agents, to a demand-driven approach, which is largely publicly funded, with services provided by the private sector.

By the end of 2006/07, 1622 contracts with private-sector service providers had been signed: these service providers operated in addition to the government’s regular extension workers. Although NAADS was controversial in some respects, an independent study found that farmers rated the NAADS service providers very highly for their methods and performance[[15]](#footnote-15).

The Uganda National Agro-Input Dealers Association (UNADA) describes itself as ‘an apex body for agro-input dealers in Uganda.’ Member services include courses in marketing, new product knowledge, material handing. UNADA helps its members to develop their market through farmer mobilization, on-farm demonstrations for new products, radio and print advertising, trade fairs and other publicity events. Through market linkages members can access products at competitive prices. The Association helps qualifying members to negotiate for suppliers' credit by providing both group and individual credit guarantees. It also keeps members informed of regulatory and policy developments that affect them and to represent their interests in the national policy arena[[16]](#footnote-16).

CropLife Africa Middle East, a member of CropLife International, is a regional federation representing the plant science industry and a network of national associations in 30 countries in Africa and the Middle East. CropLife Uganda represents 17 of the 27 input importers active in the country.The main activities of CropLife are described as promoting public/private sector partnerships, improving the impact outreach programs on safe use, communicating stewardship activities and encouraging and promote fair play in the industry[[17]](#footnote-17).

In addition the Makerere University, Department of Agricultural Production provides some training to the agro-dealers and provides training for the certificate, which is a requirement for licensing the agro-dealers.

**Fertilizer**

There are 27 importers of agro-inputs. The importers also serve as wholesalers/ distributers and sometimes even retailers. Manufacturer mainly takes place in India and China, and in a few cases Turkey.

Currently, there is no manufacturer of inorganic fertilizers in Uganda. Kinyara Sugar Limited was authorized and licensed in 2012 to manufacture bio-fertilizers but these are not yet commonly used (this appears to be part of the company’s integrated pest management program for sugar production, rather than to develop products for the market).

Two agents import large quantities of inorganic fertilizers and repack: General Allied and Bukoola Chemical Industries Limited.

The government does not import fertilizers. The market is completely liberalized and government is not involved in the import business.

Commonly available fertilizers:

* NPK
* Urea
* Diammonium phosphate (DAP)
* Triple super phosphate (TSP) commonly used in rice

On average, the fertilizers cost UGX 3000 (US $ 1) per kg in Kampala and range between UGX 3300-3500 (US $ 1.15 - 1.22) in up-country distribution points. Prices are higher in the rural areas due to transportation costs.

**KNOWLEDGE SHARING ECOSYSTEMS**

**The structure of national extension services**

In Uganda, recent reforms have resulted in decentralization; transfer of powers, functions and responsibilities for planning and implementation of agricultural extension services from the Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF) to district local governments. MAAIF’s role is planning and policy formulation, regulatory functions, technical backstopping and training, setting standards for and monitoring performance of the agricultural sector, and managing funds of selected projects. Extension workers at the district level fall under the direction of the local district governments.

Prior to decentralisation, MAAIF had a staff of 4,300 extension officers comprised of subject matter specialists, county extension coordinators, field extension workers and extension staff at the district institutes to implement its agricultural extension program. After decentralization, this number was reduced to 2,000, raising concerns about the government’s ability to extend services to a larger number of farmers. In 2012, one estimate put the number of extension workers at 1600 to serve 4 million farming households[[18]](#footnote-18). The latest figures available, for 2013, showed that at district and sub-county level there was a total of 1268 extension workers at all levels, covering agriculture, livestock and fisheries.

Since 2013 the numbers will have declined further as as there has not been any recent recruitment of extension officers at district level (see Tables 2 and 3, below).

Following the agricultural policy reforms, the government has been implementing the Plan for the Modernization of Agriculture (PMA). One component of the plan has been the National Agricultural Advisory Services (NAADS) program, the goal of which was to increase market-oriented production through empowering farmers to demand and control extension services. NAADS was an innovative public-private extension approach operating across the country supporting extension officers at county and sub-county level. However, NAADS staff at both sub-county and district levels are being phased out in the on-going restructuring. The NAADS secretariat has been thinned down and all District NAADS staff including Agricultural Advisory Service Providers have been laid off as well as some Zonal NAADS Coordinators. The government now plans to streamline Uganda extension services into a single spine extension system under which a Directorate of Extension will be established under the Ministry of Agriculture, Animal Industry and Fisheries to guide local governments on delivery of extension services. Extension services will then be delivered soley by District Local Governments.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 2: Extension staff at district level**   |  |  |  |  | | --- | --- | --- | --- | | **Post** | **Target** | **Number, 2013** | **Gap** | | District production & marketing officer | 112 | 40 | 72 | | Principal veterinary officer | 112 | 10 | 102 | | Principal agriculture officer | 112 | 17 | 95 | | Principal fisheries officer | 112 | 04 | 108 | | Principal entomologist | 112 | 02 | 110 | | Senior veterinary officer | 112 | 57 | 55 | | Senior agriculture officer | 112 | 71 | 41 | | Senior agriculture engineer | 112 | 04 | 108 | | Senior fisheries officer | 112 | 42 | 70 | | Senior entomologist | 112 | 21 | 91 | | **Totals** | **1120** | **268** | **852** |   **Table 3: Extension staff at sub county level**   |  |  |  |  | | --- | --- | --- | --- | | **Post** | **Target** | **Number, 2013** | **Gap** | | Veterinary officer | 1364 | 143 | 1221 | | Agriculture officer | 1364 | 179 | 1185 | | Fisheries officer | - | 67 | - | | Entomologist | - | 12 | - | | Assistant agriculture officer | 1364 | 194 | 1170 | | Assistant animal husbandry officer | 1364 | 207 | 1157 | | Assistant fisheries development officer | - | 119 | - | | Entomology assistant | - | 79 | - | | **Totals** | **5456** | **1000** | **4733** | |

**Media penetration**

**Telephone:** In Uganda there are 44 mobile phone subscriptions per 100 people (World Bank 2013)[[19]](#footnote-19).

**Broadcast media:**

**Radio:** In 2009 there were 192 radio stations and 35 television stations on air in Uganda (ITU 2009)[[20]](#footnote-20).

An hour-long radio program called *Kungula* [Harvest] is aired on Fridays at10:00am on Bukedde FM radio; on the Central Broadcasting Service (CBS**)** it is on Tuesdays at 10:00am and on Mama FM at 1:00pm. The programs is organized by Harambe Rural Urban Training Centre and sponsored by the Private Sector Foundation and Centenary Bank.

CBS also airs an agricultural programme, ‘*Ssaagalagalamid*de’, sponsored by the [Buganda Cultural and Development Foundation (BUCADEF)](http://www.buganda.or.ug/index.php/bucadef).

**Television:** Uganda Broadcasting Cooperation (UBC) broadcasts an agricultural television programme sponsored by SG2000 every Tuesdays between 7:00-9:00pm. NTV airs a 10-minute television program about agriculture and environment called *Eco Talk* at 9:15 pm on Thursdays. NTV also produces *Onthe farm;* film clips are available on the website http://www.ntv.co.ug/news-features/farm

**Internet users:**In 2014 there were 6.5 million internet users in Uganda, 16% of the population. It is ranked 55th in the world[[21]](#footnote-21).

**Newspapers and magazines (selected):** The Daily Monitor newspaper, part of the Kenya-based Nation Newspaper group, was relaunched in June 2005[[22]](#footnote-22). It has a pullout entitled *Seeds of Gold* every Wednesday. The New Vision newspaper has a booklet entitled *Harvest Money* every Monday of the week.

**Farmers’ Voice** is a weekly magazine (every Thursday) produced by Uganda National Farmers Federation (UNFFE).

**Literacy and media usage key figures:**

Literacy rates (% of population)[[23]](#footnote-23) (2010)

Literacy Rate 73.2

Male Adult 82.6

Female Adult 64.6

Male Youth (15-24 years) 89.6

Female Youth (15-24 years) 85

Mobile phone subscription (per 100 people) [[24]](#footnote-24) 44

Internet users (per 100 people) [[25]](#footnote-25) (2013) 16.2

Households with a radio (%) [[26]](#footnote-26) (2011-2012) 77

Households with a TV (%) 30 (2011-2012) 13

**Youth initiative**

Over 69% of the Ugandan population is 24 years of age or under: the median age is 15.5.Uganda has the world’s fourth fastest population growth rate of 3.23% and is the world’s second-youngest country1.

A contribution to the FAO’s Global Forum on Food Security and Nutrition suggested that Uganda’s agriculture remains largely traditional, dominated by smallholder subsistence farmers, whose level of investment is insufficient to make meaningful contributions in the livelihood of farmers. Importantly, this makes it unattractive to young people. Little or no margins from subsistence farming system has encouraged or exacerbated the migration of the youths to towns in order to quench their thirst for making quick money. This leaves agriculture to the ageing farmers (average age of Ugandan farmer is 54 years[[27]](#footnote-27)), which contributes to continued use of tradition methods leading to low productivity and thus food insecurity.

Reasons of non- involvement by young people were suggested to include:

* Agriculture taken to be manual punishment: agriculture related activities are used by schools and prisons (recollection centers) to punish undisciplined individuals.
* Public image: agriculture, in particular farming, possesses a negative image among the public and most especially the youth. It is portrayed as a sector for the less educated, low-income and one of high-risk taking.
* Farmers, especially the old, dress in rags, youth find this demeaning.
* Nature of education system: there is a serious disconnect between agriculture education and the market place. The Ugandan agriculture curriculum trains most youths for white collar jobs which do not reflect the economic and social context for which they are being trained.
* Neglect by government and society: youth are aloof to agriculture because they are neglected a lot by the government line institutions and society that promote the sector. In society, youth do not own land, cannot easily access credit and are often taken to be volatile.
* Decision making: youth are normally excluded in policy discussions relating to access to agriculture and rural market development.
* Ownership of land: youth and women often do not own land titles. Often it is such items that are used as premium in access to credit thus they are often left out in acquiring credit too.

Youth can play a significant role in acting as a catalyst for change to agriculture development given their propensity and willingness to adapt new ideas, concepts and have the energy to carry them through the transformation.But the underlying goal of attraction and retention of us the youth in the agriculture sector is transforming the sector from purely subsistence to commercial farming where farmers undertake agriculture as a business which can help them earn enough income to prosper.

Suggested interventions were:

* Role models and mentorship
* Change the curriculum
* Access the credit
* Mechanization
* Farmer organizations
* Agri-business incubators

The contribution to the forum concludes that the challenge is to build capacities of the youth and equip them to address the emerging requirements of an attractive agriculture that is capable of offering prospects for viable income and good quality of life[[28]](#footnote-28).

The purpose of the Youth Leadership for Agriculture in Uganda, a USAID funded project, is to increase economic opportunities for hundreds of thousands of Ugandan female and male youth aged 10 to 35 in agriculture-related fields in order to increase their incomes and build entrepreneurship, leadership, and workforce readiness. The capacity of selected workforce institutions and value chain actors will be strengthened to ensure sustainability of youth outcomes[[29]](#footnote-29).

The CGIAR Collaborative Research Programme (CRP) on Humid Tropics, led by IITA in Uganda, also has a specific focus on youth. The intention is to motivate the youth to engage in agricultural related activities through competitions and targeted support for youth clubs.

Opportunities worthy of further development exist. In school this includes the Junior Farmer Field and Life Schools initiative. Outside of school a number of networks can act as a vehicle for ensuring young people receive messagesincluding the Uganda Young Farmers Association and the Young Farmers Network. In addition social media networks, such as Mkulima Young[[30]](#footnote-30), are also emerging.

The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is setting up a Mindset Change Centre, which has a desk for youth.

Other NGOs are working on apprentice style models: the German initiative *Together Hilfefür Uganda e.V.*, for example, plans to make 150 hectares of cultivable land availableto 270 young farmers. They will also equip and train the young people in agricultural production[[31]](#footnote-31). It will be interesting to see if this has a catalytic effect on neighbouring communities.

The Volunteer Efforts for Development Concerns (VEDCO), in collaboration with Iowa State University, supports schools in Kamuli District (Eastern Uganda) to promote school gardening and school feeding programme. The pupils also have agricultural clubs.

The National Farmers’ Federation (UNFFE) is a NGO that operates and coordinates youth programs. It has up to 500 youth groups consisting of 30 members each distributed in seven districts. UNFFE trains the youth groups in agribusiness and entrepreneurship skills.Membership is usually 50% young women, with minor variation from group to group, mostly 20-25 years of age. Successful youth groups include Nyakabungo Youth Arise and Shine (NYAS) group (Rukungiri District, Buyanja sub-County). The group has over 200 beehives. Nsuka Youth Group (NYG) in Kangulumila, Kayunga District is engaged in agro-processing and wine making.

**Youth key figures:**

Population aged between 15-24 years (%)(2014) 1 21.2

Median age of population (years) (2014) 1 15.5

Also see literacy in section above.

**PARTNERS**

**Potential development partners**

These are agencies with project funding or access to other sources of investment that have been identified in the scoping study as being strong candidates for inclusion in the Uganda campaign.

**Africa 2000 Network**

**Funder of program:** Through COMPROII – B&MGF

**Crop/ technology:** Promotion of rhizobial inoculation for legume crops

**Project duration:** To December 2016 (COMPROII)

Africa 2000 Network Uganda (A2N) is an NGO specializing in rural development in Uganda. A2N has been operating in Northern, Southern, Western, Eastern and Central Uganda since 2000. A key thrust for A2N is to assist farming households to transformation from subsistence to market oriented production.

A2N operates under four strategic components namely, food and nutrition security, agribusiness development, policy advocacy, and knowledge sharing and institutional development.

A2N outreach includes 75 sub counties in over 36 districts with a target farmer outreach of 150,000 in the next five years. A2N works with a cadre of extension staff known as community based facilitators (CBFs) that undertake the front-line and last-mile delivery. A2N is actively involved in technology transfer to facilitate dissemination of proven technologies across cropping systems including maize (promotion of striga-resistant maize) and use of inoculant. Crops promoted by A2N include soybean, climbing bean, groundnut, sweet potato, banana and cassava (mostly B&MGF priority crops).

It has 35 extension agents and 8 (23%) are female. They have reached out to 110,000 farmers. Their ratio of extension agents to farmers is 1:3000.

A2N works on various initiatives with a variety of partners including N2Africa, African Agricultural Technology Foundation, AGRA and IFDC:

* **Food and nutrition security** through promoting the production and utilization of diverse foods to improve nutrition. It is involved in transfer of proven technologies from the researchers to the farmers through demonstrations as the main approach to influence farmer behavioral change.
* **Agribusiness development** through encouraging farmers to form groups/associations to be able to access profitable markets for their produce. Training is provided to farmers on a variety of aspects including negotiation skills
* **Policy advocacy and knowledge sharing** for the farmers and other actors to understand and engage in policy dialogues and also to exchange knowledge and experiences.
* **Institutional development** to mobilize and support farmers to form sustainable farmer organizations and groups.

A2N-Uganda provides inputs such as seed/planting materials and improved animal breeds to farmers for demonstrations. While the seed is provided free, the improved animal breeds are provided at a subsidized price (cost-sharing basis).

ASHC phase 1 worked with A2N in Uganda to produce a manual on rhizobium inoculation for legume crops under the aegis of the COMPROII project. The manual and a suite of extension support materials have been developed for use with CBFs in the dissemination campaign, especially for soybean producing areas.

**Plantwise (CABI)**

**Funder of program:** Department for International Development (DFID), UK, Swiss Agency for Development and Cooperation (SDC), Australian Centre for International Agricultural Research (ACIAR), Ministry of Foreign Affairs for the Netherlands (DGIS), Irish Aid, the DG DEVCO-EuropeAid, and the Ministry of Agriculture, People’s Republic of China.

**Crop technology:** Diagnosis and suggestions for appropriate responses to farmers’ plant health problems including abiotic problems.

**Project duration:** On-going

Since its launch in 2010, Plantwise has provided an innovative approach to national agricultural development, working with countries to better manage plant health and support farmers in the fight against pests.

Plantwise works with national governments to set up plant clinics, like those for human health, where trained plant doctors provide farmers with practical, science-based diagnosis and advice to prevent and manage crop loss.

Supporting this network of clinics, the Plantwise knowledge bank ensures an online and offline gateway to diagnostic services, pest tracking, and best-practice farmer recommendations specific to every country.

Plantwise and ASHC have already been working together in development of pest management materials, aligning formats to allow both projects to capitalize on content from the other. In the future,Plantwise plans to invest more in catalyzing complementary extension activities to broaden the reach of clinics in mass extension campaigns related to problems emerging at the clinics. Although Plantwise focuses on crop pests and diseases, plant doctors are trained to distinguish between biotic and abiotic problems and to advise on both. Diagnosis of nutrient deficiencies and recommendations related to managing soil are included in the mandate of plant doctors.

In Uganda, Plantwise built on earlier work on plant clinics dating back to 2005. Currently there are 145 plant clinics in 70 districts.

Highlights of the Plantwise program in Uganda to date include:

* Plant doctors have been trained in how to diagnose pests and diseases, running a plant clinic and giving advice on plant healthcare.
* Factsheets on common pests and diseases have been produced by trained experts, to support farmers and plant doctors.
* A team of national Plantwise trainers is being formed to foster the next generation of plant doctors, and its training materials have been integrated into the syllabus at Makerere University.
* A national directory of diagnostic services has been produced to help plant doctors who need to send samples to labs for identification.
* A number of mobile plant clinics are running in addition to the permanent clinics, to reach more farmers – particularly those in remote rural communities.

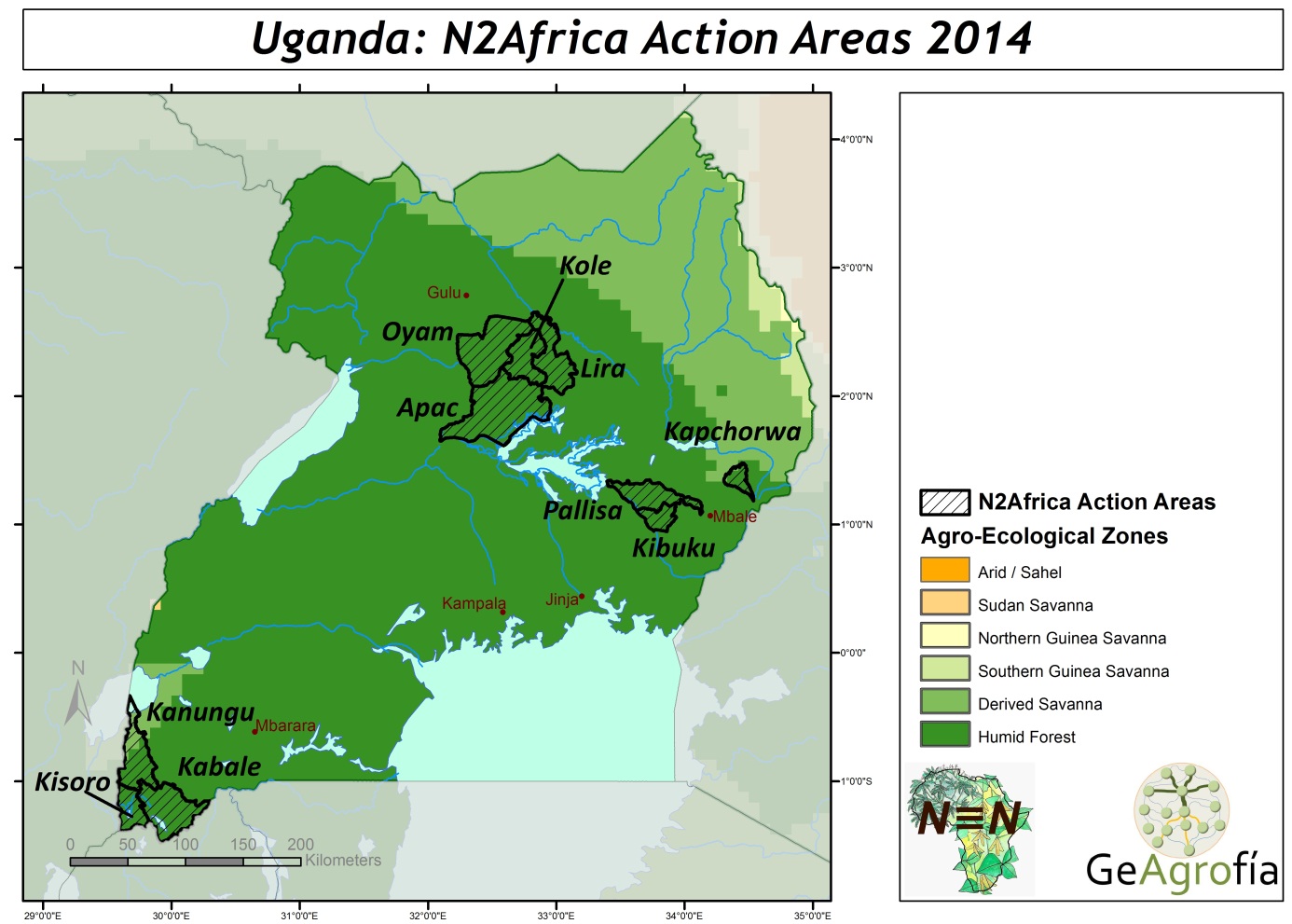
Plantwise, therefore, offers ASHC a useful entry point in Uganda through this established and award-winning initiative[[32]](#footnote-32). Negotiations will be held to explore the potential of Plantwise supporting a mass extension campaign related to soil health integrated with one of the scale-up campaigns in ASHC.

**N2Africa**

**Funder of program:** B&GMF

**Crop/ technology:** Promotion of legume productivity improvement with soil fertility management principles – including soybean, maize, groundnuts and common bean

**Project duration:** to 2018



N2Africa is a large-scale, science-based research-in-development project focused on putting nitrogen fixation to work for smallholder farmers growing legume crops in Africa.

N2Africa’s vision is to build sustainable, long-term partnerships to enable African smallholder farmers to benefit from symbiotic N2-fixation by grain legumes through effective production technologies, including inoculants and fertilizers. The project focuses on integration of organic manure from locally available materials such as cow dung and crop residues, phosphate and potassium fertilizers with inoculants to act as nitrogen suppliers.

N2Africa and ASHC share five priority countries. N2Africa is also active in DR Congo, Rwanda, Kenya, Mozambique, Malawi and Zimbabwe. Key implementing partners in the project include Wageningen University, International Institute of Tropical Agriculture ([IITA](http://www.iita.org/)) and International Livestock Research Institute ([ILRI](http://www.ilri.org/)).

Partners of N2Africa in Uganda include:

|  |  |  |  |
| --- | --- | --- | --- |
| **Private sector - investment** | | |  |
| Export Trading Group (ETG) | | |  |
| Naseco seeds companies | |  |  |
| Nile Agro |  |  |  |
| **Projects or development organisations- uptake** | | | |
| VECO |  |  |  |
| Africa 2000 Network | |  |  |
| World Vision | |  |  |
| ZOA |  |  |  |
| **Government policy and research** | | |  |
| Department of Crop Protection | | |  |
| Makerere University | |  |  |
| National Agricultural Research Organization (NARO) | | | |

In Uganda, N2Africa works in a number of locations promoting legume production technologies including: soybean and groundnut in mid northern Uganda (working with Makerere University and IITA); climbing bean and groundnut in eastern Uganda (working with World Vision, Vredeseilanden Coopibo (VECO), Semiarid Agricultural and Animal Research Institute (NaSAARI) and Makerere University). In south-western Uganda, work continues on climbing bean (working with Africa 2000 Network, National Crops Resources Research Institute (NaCCRI), IITA and Makerere University): in the last season of 2014, seven demonstrations of N2Africa technologies were conducted. The demonstrations included climbing beans’ response to nutrient inputs and staking methods in Kapchorowa District (Mt Elgon highlands) and soybean responses to fertilizer and inoculation and groundnut response to P fertilizer in eastern and northern Uganda by World Vision Uganda.

Dissemination is through field demonstrations conducted on farmers’ fields and field days complemented by radio talk shows at local FM radio stations in those areas.

ASHC phase 1 worked with N2Africa on a range of communications materials on climbing beans, soybean and groundnut covering Ethiopia, Tanzania and Rwanda. The knowledge products are intended for wider dissemination as part of the scale up campaign for adoption of the technologies in the target countries.

**Optimising Fertilizer Recommendations in Africa (OFRA)**

**Funder of program:** AGRA

**Crop/ technology**: Fertilizer optimization recommendations in maize, sorghum, finger millet, rain-fed rice, beans, soybean and cowpea.

**Project duration:** to 2016

OFRA aims to maximize returns from the use of fertilizers in an ISFM framework. It is implemented in 13 countries, including all five ASHC phase 2 priority countries.

Uganda provided the inspiration for OFRA. Working with the Grameen Foundation and others, OFRA in Uganda will be able to:

* Develop fit-for-purpose communication materials for promoting fertilizer recommendations
* Develop, test and adopt an app for use on mobile phones
* Develop materials and use them to train extension workers

These models, developed in Uganda, are eagerly anticipated in the other 12 OFRA countries.

ASHC phase 1 had the responsibility of implementing objective 3 of the OFRA project namely, “To improve access to information and communication materials for extension”. The outputs include:

* An ISFM framework developed through stakeholder input describing field conditions influencing ISFM within specific countries to inform trial design, modeling and fertilizer recommendation development within ISFM framework
* Gathering stakeholder input available on diverse information and communication needs.
* Building stakeholders aware of and able to use communication tools
* Fertilizer optimisation tool(s) tested and refined and appropriate delivery platforms identified
* Addition research into finger millet fertilizer response functions

**USAID programs in Uganda**

Uganda is a focus of the U.S. Government’s global hunger and food security initiative, Feed the Future[[33]](#footnote-33). Through Feed the Future, USAID investments focus on the three value chains—maize, coffee and beans—with the greatest market potential, nutritional benefits and income potential for farming households. Coffee is the country’s most important export crop, maize will contribute to greater food security and beans complement the maize to improve nutrition.

USAID aims to transform subsistence farms into more commercial operations. USAID also works to increase farmers’ skills in improved production, post-harvest handling and storage technologies. Agricultural programs include researching and promoting biotechnology products aimed at improving the productivity and disease resistance of key food and cash crops.

USAID programs focus on creating trade linkages and on making Ugandan products more competitive in national, regional and international markets. USAID training for farmers and agriculture dealers develop their business skills and technical capacity to increase their participation in national and regional trade. They also provide expertise to expand agricultural production, extension services to farmer associations, bulk marketing techniques, and nutrition counselling to communities[[34]](#footnote-34). ASHC needs to do further research in this area.

**Farmer decision making strategies in soil fertility improvement in maize-bean cropping system**

**Funder of program:**USAID

**Crop/ technology:** maize-bean

Farmer decision making strategies in soil fertility improvement in maize-bean cropping system are delivered through a partnership between Makerere University, Iowa State University and the National Agricultural Research Organisation (NARO). The project sites are Masaka and Rakai districts. It deals with innovative farmers who integrate both organic and inorganic fertilizers.

The farmers compare yields when using organic manure only, inorganic manure only and both organic and inorganic fertilizers in combination. It works with approximately 30 farmers and the fertilizers used are farmyard manure, NPK, urea and DAP,with lime additions where acidic soils are an issue.Dissemination is achieved mainly through demonstrations and group discussions.

**Potential knowledge partners**

These are partners that do not necessary have access to funds for the dissemination of materials to smallholder farmers, but that have access to valuable intelligence that will support the decision-making processes in planning and delivering a campaign.

The **National Agricultural Research Organisation** (NARO) guides and coordinates all public agricultural research activities in Uganda. The work of NARO is guided by the Plan for Modernisation of Agriculture (PMA). The stated goal for NARO is“to enhance the contribution of agricultural research to sustainable agricultural productivity, economic growth, food security and poverty eradication through generation and dissemination of appropriate technologies, knowledge and information”. NARO is a delivery partner in OFRA.

**Other NGOs and initiatives active in Uganda in related areas**

**The Volunteer Efforts for Development Concerns (VEDCO)**

The Volunteer Efforts for Development Concerns (VEDCO) operates in more than 25 (out of 112) districts. They have reached out to 30,000 farmers of whom 18,500 (62%) are women. VEDCO has 30 extension agents and 6 of these are women. Their ratio of extension agents to farmers is 1:1000.

VEDCO provides some inputs to farmers; for example 5-10 kg of seed, goats, chickens and piglets for purposes of demonstration of recommended practices and enterprises. Sometimes the organization is engaged in projects involving purchase of farm implements like ox-ploughs and oxen for farmers. These are owned by farmer groups and not individually. They provide some grants and some equipment to associations/groups engaged in marketing or some kind of processing.

VEDCO activities focus on four themes. Under its Food and Nutrition theme it establishes on farm crop and livestock demonstrations, supporting school gardening and feeding, and conducting farmer field days and exhibitions.

In collaboration with other advocacy agencies, through their farmer-led advocacy they sensitize farmers and other stakeholders on relevant agricultural and related policies. They organize farmers’ platforms/forums to discuss/dialogue on agricultural related matters and supporting them to develop decision-making capabilities.

They assist agricultural trade by organizing farmers into cooperatives, entrepreneurship skills training, linking farmers to markets, promoting good post-harvest practices and value addition, promote enhanced access to market information through ICT. For sustainability, VEDCO links the farmer groups/cooperatives with district local government structures and Ugandan Cooperative alliance.

Through use of demonstrations, they train farmers on soil and water conservation and energy saving technologies. They facilitate farmers’ participation in natural resource management campaigns and they promote water-harvesting technologies for agricultural production.

VEDCO is also involved in sensitization programs on climate adaptation and also disseminate information on weather changes and patterns.

**Sasakawa Global 2000**

Sasakawa Africa Association and its Sasakawa Global 2000 (SG2000) country programs work in close collaboration with national agricultural extension services across sub-Saharan Africa, improving their operational activities and strengthening the abilities of their front-line staff. SAA’s sister organization – the Sasakawa Africa Fund for Extension Education (SAFE) – specializes in building the talents and skills of national extension service staff. SAA is an international agricultural development NGO registered in Geneva, Switzerland. It was co-founded in 1986 by Nobel Laureate Dr. Norman Borlaug, Japanese philanthropist Ryoichi Sasakawa (Nippon Foundation) and former US President Jimmy Carter. SAA has worked with the Carter Center’s Global 2000 Program to establish SG 2000 agricultural programs in 14 sub-Saharan countries. They are currently active in four countries (Ethiopia, Uganda, Tanzania and Mali) and have concluded its work in 10 other countries.

SG2000 started operations in Uganda in 1997. Currently, it operates in 54 (out of 112) districts. SG2000 provide inputs (seed, agro-processing equipment, fertilizers, herbicides, etc.) to farmers primarily for demonstration purposes. Some of the extension agents also sell agricultural inputs as their private businesses in the community.

Priority crops include NERICA rice, pigeonpea, groundnuts; other crops included in demonstrations include common beans, cassava and millet.

Between 2011and 2013 December they reached 60,847 farmers of whom 45,635 (75%) were women. They also reached 200 extension agents, 34 (16%) of whom were women.

SG2000 has three areas of intervention. In production and productivity enhancement and post harvest handling and agro processing they use demonstrations to promote productivity enhancement technologies including improved varieties and use of fertilizers and other agro-inputs. Farmer learning platforms (FLP) and post-harvest extension learning platforms (PELP) are used to enhance farmer exchange and sharing of experiences and knowledge. In post-harvest the organization has constructed 77 storage facilities, 95 drying floors, 144 drying cribs and 148 improved granaries. Two new 100-ton marketing centers with drying and storage structures and 21 drying cribs have been constructed. Approximately 1,400 farmers were supplied tarpaulins for drying to improve grain quality and 1,500 farmers received training in post-harvest handling methods. Some of this happened in collaboration with the World Food Programme’s Purchase for Progress (P4P).

SG2000 also encourages public private partnerships, mainly to link farmers to input and output markets. They mobilize farmers into associations using the community association traders and trainers model (CATS). Farmers are encouraged to bulk their produce for collective marketing.Seven high-level farmer’s associations have been developed bringing together 314 groups and around 10,000 farmers.

The organization has on-going collaboration with private seed companies, such as NASECO, Pearl Seeds, Victoria Seeds, FICA, Grow More Seed, East African Seed Company and Mount Elgon Seeds, to encourage the availability and use of improved seeds. With Uganda National Agrodealer Association they establish an agro-dealer extension-training programme.

With Makarere University’s SAFE program they have developed instructional materials for a distance learning version of the regular mid-career program. This approach, in part, seeks to increase the proportion of women extension agents taking the course – reducing the cost and the need to travel. The distance education BSc in extension was approved by the University Senate in 2010, and has been sent to the National Council for Higher Education for accreditation.

There is a monitoring, evaluation, learning and sharing priority within the organisation. This entails the development of data collection tools, training of enumerators, pretesting of questionnaires, data collection, entry and analysis that can be employed when necessary. They facilitate and provide training on monitoring and reporting in relation to SG2000 interventions as part of end of season training for extension agents and community-based facilitators.

Their ratio of extension agents to famers is 1:350.

**Indicative scale-up campaign**

**Fertilizer optimization - combining inorganic fertilizer and ISFM**

The work of OFRA in Uganda will result in improved fertilizer use guidelines. ASHC will explore how to present a range of soil health improvement investment options tailored different resource available to different segments of smallholder farming families.

Low cost options will include legumes in intercrop or rotation, the use of rhizobia with COMPROII, N2Africas and Makerere University and recycling organic materials and good agricultural practice in a few priority cropping systems (to be decided). Government extension and A2Ns network of community based advisors will be critical to help reach smallholder farming families.

For higher levels of smallholder investment such as inorganic fertilizer ASHC will work with private sector in line with its engagement policy. For inputs suppliers we would work at both manufacture/ distributer and retailer level to improve information available to farmers.

Opportunities exist in Uganda for both curriculum/school based youth programs and some initiatives for apprentice farmers. Outside of schools/ collages and radio, no youth communication channel has yet been identified – but this situation will be monitored.

1. CIA.gov, (2015). The World Factbook. [online] Available at: <https://www.cia.gov/library/publications/the-world-factbook/> [Accessed13 Jan. 2015]. [↑](#footnote-ref-1)
2. Databank.worldbank.org, (2014). The World Bank DataBank. [online] Available at: <http://Databank.worldbank.org> [Accessed 13 Jan. 2015]. [↑](#footnote-ref-2)
3. FAO, FAO Statistical Yearbook 2014. [Online] Available at: <http://www.fao.org/economic/ess/ess-publications/ess-yearbook/en/> [Accessed 13 Jan 2015] [↑](#footnote-ref-3)
4. ICF International. 2008-2013.Demographic and Health Surveys (various) [Datasets]. Calverton, Maryland: ICF International. 2015 [↑](#footnote-ref-4)
5. No. of smallholder households = (population \* %rural) / Average rural family size [↑](#footnote-ref-5)
6. The World Bank (2011). Inclusive Growth Policy Note: Agriculture for Inclusive Growth in Uganda. Available: http://siteresources.worldbank.org/INTDEBTDEPT/Resources/468980-1316457581843/CaseStudy\_Uganda\_01.pdf [↑](#footnote-ref-6)
7. http://data.worldbank.org/indicator/AG.CON.FERT.ZS/countries

   World Bank. (2015). World Development Indicators - Fertilizer consumption (kilograms per hectare of arable land) [Online].The World Bank. Available: http://data.worldbank.org/indicator/AG.CON.FERT.ZS/countries. [↑](#footnote-ref-7)
8. New Agriculturist. (2015). Country profile - Uganda [Online]. New Agriculturist. Available: http://www.new-ag.info/en/country/profile.php?a=2414 [Accessed 16 Jan 2015]. [↑](#footnote-ref-8)
9. Rwakakamba, M. (2012). Transforming agriculture in Uganda: nine points for action. Available: <http://pubs.iied.org/pdfs/G03363.pdf> [↑](#footnote-ref-9)
10. Kakaire, S. (2014). Will the new policy fix Uganda’s agriculture? The Observer. Available: http://observer.ug/index.php?option=com\_content&view=article&id=33814:-will-the-new-policy-fix-ugandas-agriculture&catid=57:feature&Itemid=69 [↑](#footnote-ref-10)
11. Bill & Melinda Gates Foundation (2011). Agricultural Development: Strategy Overview. Available: <https://docs.gatesfoundation.org/Documents/agricultural-development-strategy-overview.pdf> [↑](#footnote-ref-11)
12. FAOSTAT, FAO of the UN, Accessed on February 7, 2014. <http://faostat.fao.org/site/612/default.aspx#ancor> [↑](#footnote-ref-12)
13. Bayite-Kasule, S. (2010). Inorganic fertilizer in Uganda—Knowledge gaps, profitability, subsidy, and implications of a national policy,[Online] International Food Policy Research Institute (IFPRI) Available: http://www.ifpri.org/sites/default/files/publications/ussppb08.pdf [Accessed: 15 Jan 2015] [↑](#footnote-ref-13)
14. Tetra Tech (2015). Uganda: Feed the Future Ag Inputs. Available: http://www.tetratechintdev.com/index.php?option=com\_k2&view=item&id=546%3Auganda-feed-the-future-ag-inputs&Itemid=59&lang=us [↑](#footnote-ref-14)
15. Benin, S., Nkonya, E., Okecho, G., Randriamamonjy, J., Kato, E., Lubadde, G., Kyotalimye, M. &Byekwaso, F. (2011).Impact of Uganda’s National Agricultural Advisory Services Program. Available; <http://www.ifpri.org/sites/default/files/publications/rr175.pdf> [↑](#footnote-ref-15)
16. unada.org [↑](#footnote-ref-16)
17. Croplife (2015 ) Available: http://www.croplifeafrica.org/?module=pages&method=view&conf%5Bpage%5D=website\_countries\_display&conf%5Bid%5D=62 [↑](#footnote-ref-17)
18. Rwakakamba, M. (2012). Fixing Uganda's Extension System. Global Forum on Food Security and Nutrition.Available: <http://www.fao.org/fsnforum/forum/have-your-say/fixing-ugandas-extension-system> [↑](#footnote-ref-18)
19. World Bank. (2015).World Development Indicators - Mobile cellular subscriptions (per 100 people) [Online]. The World Bank. Available: http://data.worldbank.org/indicator/IT.CEL.SETS.P2. [↑](#footnote-ref-19)
20. ITU News (2009). Communications in Uganda: A look at one of Africa’s fastest growing markets. Available : http://www.itu.int/net/itunews/issues/2009/06/31.aspx [↑](#footnote-ref-20)
21. Internet Live Stats. (2014). Internet Users by Country (2014) [Online].Internet Live Stats. Available: http://www.internetlivestats.com/internet-users-by-country/ [Accessed 15 Jan 2015]. [↑](#footnote-ref-21)
22. http://en.wikipedia.org/wiki/Daily\_Monitor [↑](#footnote-ref-22)
23. cCIA.gov, (2015). The World Factbook. [online] Available at: <https://www.cia.gov/library/publications/the-world-factbook/> [Accessed 13 Jan. 2015]. [↑](#footnote-ref-23)
24. Databank.worldbank.org, (2014). The World Bank DataBank. [online] Available at: <http://Databank.worldbank.org> [Accessed 13 Jan. 2015]. [↑](#footnote-ref-24)
25. Databank.worldbank.org, (2014). The World Bank DataBank. [online] Available at: http://Databank.worldbank.org [Accessed 13 Jan. 2015] [↑](#footnote-ref-25)
26. Calandro, E., Stork, C. &Gillwald, A. (2012) Internet Going Mobile: Internet access and usage in eleven African countries. [Online] Available at <http://www.researchictafrica.net/presentations/Presentations/2012%20Calandro%20Stork%20Gillwald%20-%20Internet%20Going%20Mobile-%20Internet%20access%20and%20usage%20in%20eleven%20African%20countries%20.pdf> [Accessed 13 Jan 2015] [↑](#footnote-ref-26)
27. Heart For Uganda (2014). Where are the Young Farmers? Available: http://www.heartforuganda.com/farmers/ [↑](#footnote-ref-27)
28. Kabiito, D. &Kasanaensis, C. (2015). Investing in the future of farming :Youth and Agriculture- Ugandan experience. Available: <http://www.fao.org/fsnforum/sites/default/files/resources/Investing%20in%20the%20future%20of%20farming.pdf> [↑](#footnote-ref-28)
29. CNFA (2015). Job Description: Private Sector Partnerships Specialist - Youth Leadership for Agriculture in Uganda.Available: <https://www.devex.com/jobs/private-sector-partnerships-specialist-youth-leadership-for-agriculture-in-uganda-387315> [↑](#footnote-ref-29)
30. Mkulima Young. (2015). Mkulima Young - Young Farmers Helping Young Farmers [Online]. Available: http://www.mkulimayoung.co.ke/ [Accessed 16 Jan 2015] [↑](#footnote-ref-30)
31. TOHIFU (2015). Together - Hilfefür Uganda e.V. - Leitbild. Available: <http://www.tohifu.de/> [↑](#footnote-ref-31)
32. Plantwise [Online]. CABI. Available: http://www.plantwise.org/about-plantwise/ [Accessed 16 Jan 2015]. [↑](#footnote-ref-32)
33. Feed the Future. (2015). Uganda [Online]. Feed the Future. [Accessed 16 Jan 2015]. Available: http://www.feedthefuture.gov/country/uganda [↑](#footnote-ref-33)
34. USAID (2014).Uganda - Agriculture and Food Security. Available: <http://www.usaid.gov/uganda/agriculture-and-food-security> [↑](#footnote-ref-34)