



UGANDA: family farmers building resilience for adaptation to climate change

Lead Author: Boaventura Monjane*

Edited by: La Via Campesina Southern and Eastern Africa

Introduction and overview

The Republic of Uganda is part of the African Great Lakes region and includes a substantial portion of Lake Victoria, shared with Kenya and Tanzania. More than two-thirds of the country is a plateau with more than 75% (over 18 million hectares) available for both cultivation and pasture. The majority of the 37.5 million Ugandans (81.6%) live in rural areas and growing at a fast rate above 3% per year. This means the country's population is getting younger (56% are under the age of 18 years and 31.4% between 10 - 24 years)¹.

Although Uganda achieved the Millennium Development Goal related to income poverty² by reducing the later by two thirds, surpassing the 50% reduction target five years ahead of schedule, vulnerability to falling back into

poverty is very high: for every three Ugandans who get out of poverty, two fall back in and 43.3% of Ugandans still live in vulnerable households³. There are large and increasing regional and rural/urban variations in poverty with most impoverished households concentrated in the north and the east. Moreover, gender inequality persists and women face systematic discrimination in access to economic opportunities and ownership of assets - for instance, although 70% of women are engaged in agriculture, less than 20% control the outputs and proceeds from their efforts⁴.

In the past five years till 2016, Uganda's economy faced headwinds, including adverse weather, the civil unrest in South Sudan, global economic uncertainties, and private sector credit constraints. As a result the country grew at a slower pace at an average annual

* We would like to thank **Haidee-Laure Giles**, for her valuable contributions to the desk research, proofreading and comments.

¹ FAO, 2015

² MDG 1

³ World Bank, 2016

⁴ idem

growth of 4.5%, compared to 7% in the years before⁵. The country has largely untapped reserves of both crude oil and natural gas. Large public sector infrastructure projects continue to be the main driver of economic activity, partly on account of the accelerated development and construction of oil-related infrastructure. Main country's export income includes the following merchandise: coffee, gold, fish, oil re-exports, and sugar⁶.

Uganda's economy is highly dependent on climate-sensitive natural resources, which are already negatively impacted on by the adverse effects of climate change, and the FAO estimates that extreme events, such as droughts, have caused losses to agriculture in the recent past in the range of 1-7% of GDP⁷. For instance, during the implementation period of the MDGs (1993-2013), up to 79% of the poverty reduction enjoyed by agricultural households were attributed to good weather and favourable prices in the international and regional markets⁸. As the effects of climate change worsen, the same households impoverish again, demonstrating the fragile gains. Climate change is therefore a major challenge to food and agricultural development in Uganda⁹.

This research looks at how small-scale and family farmers, the most affected by climate change in the countryside, respond to the effects of climate change in Uganda. The field study was conducted in Mubende and Mukono districts where farmers are implementing innovative practices to "adapt" to the changes that have been affecting their farming activities and livelihoods. By commissioning this research, La Via Campesina Southern and East Africa (LVC-SEA), Africa Contact (AC)

and the East and Southern Africa Farmers Forum (ESAFF-Uganda) seek to highlight that – although they are not responsible for causing climate change – small-scale and family farmers have not remained passive victims. Despite having limited access to resources, knowledge and support from government, they are gradually taking practical steps towards building climate justice within their communities. The report also discusses some contradictions in the "adaptation" process and suggests some recommendations for improvements.

Ugandan Agriculture Sector

The agriculture sector accounts for 22.2% of total GDP and over 50% of the value of total exports, whilst the livestock and fisheries subsectors contribute respectively to around 3% and 2% of GDP¹⁰. Small-scale farmers who produce most of the crops and livestock on a subsistence basis dominate it. The sector employs about 72% of the total labour force (formal and informal), 77% of which are women, and 63% are youth, mostly residing in rural areas¹¹.

The main food crops are bananas, cassava, Irish potatoes, sweet potatoes, maize, millet, rice, sorghum, beans, and groundnuts, while the main cash/export commodities are coffee, cotton, tea, tobacco, and sugar. According to the FAO, only one-third of the country's arable land is under cultivation, and the Government has placed emphasis on increasing the production and productivity of maize, coffee, beans, tea, bananas, cassava, and rice as strategic crop commodities¹². Key challenges for the agricultural sector include low yield, weather variability, and pests and diseases.

⁵ idem

⁶ Bank of Uganda, 2016

⁷ FAO, 2016

⁸ World Bank, 2016

⁹ FAO, 2015

¹⁰ idem

¹¹ NECOC, 2017

¹² FAO, 2015

Other challenges include low value addition to agricultural produce and limited market access, weak implementation of agricultural laws and policies, and weak public agricultural institutions.

In line with the country's commitments to the Comprehensive Africa Agriculture Development Programme (CAADP), Uganda aims to "transform" the agriculture sector from peasant to so-called "modern" sector in order to make it "profitable, competitive and sustainable and provide food and income security to the people of Uganda" within 30 years¹³.

The focus is to achieve this through mechanization, introduction of modern irrigation systems, continued investment in technology improvement through research for so-called improved seeds, breeds and stocking materials, and investment in the development of fertilizer and agro-based industry. Others are reform of the extension system, improving access to information, and strengthening the legal, regulatory and institutional frameworks.

The National Development Plan (NDP II, 2015/16 – 2019/20) operationalizes the Vision 2040 over a five-year period, while the Agriculture Sector Strategic Plan (ASSP, 2015/16-2019/20) follows on from the Agriculture Sector Development Strategy and Investment Plan (DSIP, 2010/11 – 2014/15) in articulating the agriculture component of national development. The ASSP's mission is: "Transforming the sector from subsistence farming to commercial agriculture". A key priority within this vision of agriculture is "to increase productivity by 50% for 12 priority commodities and transform subsistence farmers (growing for consumption) into enterprise farmers (growing for consumption and

responding to market needs) and transforming smallholders farmers into commercial farmers"¹⁴. It is therefore clear that for the government, one of the main barriers to agricultural productivity growth at the smallholder level is seen as a limited use of intermediate inputs, such as so-called improved seeds and fertilizers¹⁵. The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) thereby plans to strengthen farmer organisations, as well as increase its partnerships with private actors to promote the integration of smallholder farmers into larger value chains to achieve alleged agricultural transformation.

According to the FAO, Uganda enjoys a favourable climate and relatively good soils, and the country is endowed with significant amounts of surface water. Temperatures typically vary only a few degrees above or below 23°C, and most areas receive adequate rains to allow for two cropping seasons a year. However, in recent years, repeated dry spells characterised the seasons, and extended lean periods lowered crop and livestock productivity. This has led to the erosion of livelihoods as households sold some of their productive assets to acquire food. With the continuing reality of climate change, the food and nutrition security situation is likely to worsen.

Climate Change

Average annual temperature has increased by 1.3°C since 1960 and there will be a projected increase between 1.0°C and 3.1°C and increases in annual rainfall by the 2060s¹⁶. Changing temperature patterns in Uganda have been linked to more frequent and longer lasting droughts and, consequently, the increased death of cattle. Negative impacts have been felt in other areas too, including hydroelectricity production and crop produc-

¹³ Uganda Vision 2040

¹⁴ MAAIF, 2015

¹⁵ idem.

¹⁶ McSweeney et al., 2010

tion. Evidence available also indicates that climate change in Uganda creates conditions which favour the spread of human, crop and livestock pests and diseases, including areas where they were originally non-existent¹⁷. The high population growth rate further put pressure on the land, resulting in the country's increased difficulty to cope with the exacerbating impact of climate change on food insecurity and poverty.

As a result, the government has established various projects and programmes including design of policies, plans and interventions to combat climate change in Uganda. As an LDC with low emissions and high vulnerability to climate impacts, **Uganda's priority is adaptation**. The country works on reducing vulnerability and addressing adaptation in agriculture and livestock, forestry, infrastructure (with an emphasis on human settlements, social infrastructure and transport), water, energy, health, and disaster risk management. Sustainable Land Management (SLM) and Climate Smart Agriculture (CSA) are to be scaled up to increase resilience at the grassroots level¹⁸.

National Strategy and Policies related to Climate Change

In 2007, Uganda issued its National Adaptation Programme of Action (NAPA), based on its commitment to address climate change impacts as a signatory to the United Nations Framework Convention on Climate Change (UNFCCC). NAPA is regarded as the first climate change policy in Uganda¹⁹ and provided a working framework for adaptation, directly addressing the challenges posed by climate change and setting priorities for supporting adaptation efforts. The Programme identified nine adaptation priority areas with project

activities focusing on agriculture, energy and water. These included community tree growing; land degradation management; strengthening meteorological services; community water and sanitation; water for production; drought adaptation; vectors, pests and disease control; indigenous knowledge and natural resource management and climate change and development planning.

Although the implementation of the initiative led by the Ministry of Water and Environment (MWE) did not last more than a year due to funding availability, the NAPA set the content and issues for other sector interventions. For example, Orindi (2013) highlights that NAPA has achieved its objectives by default as many sectors including agriculture have more or less addressed what is outlined in the NAPA without knowing that they were actually contributing to NAPA implementation.

In 2012 was formulated the National Climate Change Policy (NCCP). The process of formulating a new National Climate Change Policy was driven by the then newly established Climate Change Unit (CCU) located within MWE and financially supported by international development agencies, including the EU, DFID, DANIDA, the World Bank, and the World Food Program (WFP). Since, the CCU has been upgraded to a departmental level under the MWE, and a National Meteorological Authority established also at department level²⁰. The policy recognises the need to act upon a number of sector-specific priorities to increase the resilience of the country's development path to the impacts of climate change and to contribute to the reduction of atmospheric greenhouse gas emissions. A significant innovation of the policy is its adoption of a sector approach: it emphasises the importance of adaptation, particularly in those sectors considered vulnerable to climate change

¹⁷ Environmental Alert, 2010

¹⁸ Irish Aid, 2016

¹⁹ Friis-Hansen et al., 2013

²⁰ Kabesiime et al., 2015

including Agriculture and Livestock, Water, Fisheries and Aquaculture, Transport and Works, Wetlands, Health, Energy, Tourism and Wildlife, Human Settlements and Infrastructure, Disaster Risk Reduction and Forestry²¹.

When climate change events are declared “disasters”, such as floods, droughts, epidemics and earthquakes, the 2010 National Disaster Preparedness and Management Policy (NDPMP) dictates the response of the government, namely the Ministry of Disaster Preparedness, under the Office of the Prime Minister. The overall goal of the policy is to reduce vulnerability levels, risk mitigation, disaster prevention, preparedness, effective response and recovery in a manner that integrates disaster risk management with development planning and programming²². The policy aims at creating an integrated and multi-sectorial approach to planning, preparedness and management of disasters. Like the NCCP, the NDPMP policy also provides an implementation structure from the national to the village level. Most of the structures have been established in some parts of the country, especially those most prone to disasters. These structures are expected to function at all times, but they do not reportedly, due to funding constraints. However, they are usually re-activated in times of disasters²³.

Other existing policies that directly or indirectly address climate change include the National Environment Management Policy, Forestry Policy, and National Policy for the Conservation and Management of Wetland Resources among others, with the main objective of achieving poverty reduction through environmentally sustainable development as enshrined in the country Vision for 2040. Climate change has also been integrated into

agricultural planning frameworks²⁴. Agricultural policies have incorporated adaptation measures such as control of flooding, control of water logging, control of water scarcity for animals, soil and water conservation practices, and preservation of fish species and use of local indigenous knowledge among others. The recent ASSAP recognises the effects of climate change, characterised by erratic weather patterns, on agricultural production and productivity, and advocates for mainstreaming adaptation of agricultural technologies and practices to climate change in all sector programmes²⁶.

To accelerate productivity, the government argues for the “use of ecologically sound agricultural research and climate change resilient technologies and practices across [...] identified priority and strategic commodities”. Working hand-in-hand with the National Agricultural Research System (NARS), smallholder farmers are to undertake so-called climate smart adaptation actions with particular attention to “climate smart nutrient enriched breeds; improved high yielding crop varieties and livestock breeds; nutrient fortified and transgenic crops (for bananas, maize, Irish potatoes); [...] disease, pest and drought resistant varieties”, alongside of mention of water harvesting; conservation agriculture; agro-forestry; and integrated soil fertility management. Furthermore, the MAAIF is committed to developing and facilitating a policy and regulatory framework for development and uptake of biotechnology in agriculture.

Analysis of policies

Policies are formulated through top-down approaches: Social movements, NGOs and local governments are minimally involved while

²¹ idem.

²² NDPMP, 2010

²³ Kabesiime et al., 2015

²⁴ Hepworth, 2010

²⁵ Ampaire et al., 2015

²⁶ MAAIF, 2015



local communities are largely excluded²⁷. Climate change policies tend to be mainly implemented through central ministries and NGOs using project-based parallel structures²⁸. This contravenes the comprehensive decentralisation reform that Uganda undertook in 1993 and a second wave of reforms in 2000 aiming at deepening democracy and creating new local institutions better linking end-users to government services. Linkages between government ministries, departments and other actors seems to also suffer from a lack of harmonisation and coordination, resulting in duplication of roles and further limiting the resources available for implementation²⁹. Local government bodies in Uganda would therefore be well-placed political institutions capable of examining and discussing climate change hazards and creating an enabling environment that allows rural citizens to adapt³⁰. Instead, the de facto approach taken by the central government translates in a lack of financial resources allocated to local government's budgets. While the NCCP embraced the local government system as the key implementation modality, a closer look reveals that the implementation plan does not include a mechanism for the transfer of funds for local government climate change activities. As a consequence local government politicians have by and large remained inactive in fully implementing the NCCP. Furthermore, the content of the policies appear to be widely dictated by outside donors and often the outcome of a top-down global agenda, rather than the results of a participatory planning process and political struggles within district councils³¹. This leads to limited discussion of the content of and driving forces behind climate change adaptation in national policies³².

Such an implementation strategy, where central ministries create projects and control finance, while districts are reduced to becoming implementing partners, is not likely to provide a cost-effective environment for rural climate change adaptation. Analysis from IIED further highlights the absence of climate change monitoring and evaluation frameworks, systems and indicators, which curtails Uganda's ability to track progress on addressing climate change³³.

Central government tend to be upwardly accountable, i.e. to external donors, and to respond to large-scale natural disasters, in particular when they are widely exposed in the media. However it is not adequately equipped to understand and respond to 'everyday' climate change hazards that have significant impacts on the rural population. In this context, it is not surprising that the emphasis has been put on so-called advanced climate smart agriculture solutions pushed by global powerful players to the detriment of peasant farmers and rural communities.

Detrimental and inadequate climate change solutions proposed

National policy has failed to take into account both the indigenous knowledge of local population to adapt to shocks and stresses, and the socio-economic disparities which determine to which extent different segments of the population, in particularly women, are affected by climate change. Instead, the government is ever more determined to transform agriculture into a commercial venture and facilitate the implementation of so-called climate smart agriculture solutions, reliant on bio-technologies divorced from the

²⁷ Ampaire et al., 2015

²⁸ Friis-Hansen et al., 2013

²⁹ Ampaire et al., 2015

³⁰ Friis-Hansen et al., 2015

³¹ Idem

³² Friis-Hansen et al. 2013

³³ Kabesiime et al. 2015



realities of the country's family farmers and pastoralists, as well as viable strategies to fight climate change. With this view, MAAIF and MWE are currently developing a Climate Smart Agriculture Programme for 2015-2025 to achieve the objectives stated in the recent ASSP, though it seems to have so far remained at the level of draft. This responds to a global trend, which sees agriculture as an industry with the sole purpose of increasing profits through maximum productivity to the detriment of both the population and the environment.

Yet studies by farmer's organisations such as ESAFF-Uganda, have highlighted how rural population are already coping with the effects of climate change. These indigenous practices, inherited over generation, are often adopted without a comprehensive understanding of what climate change is, but to respond to its effects. Women, as the main producers of food for the family, are often the custodians of that knowledge. These methods include, but are not limited to (examples have been taken from studies in the Soroti and Mubende districts, as well as organizational data from (PLEASE ADD OTHER districts)): mulching; mixed farming; intercropping; crop diversification; digging trenches; conserving crops; cultivation of wet lands for growing greens fetching water for animals; crop rotation; afforestation; use of stocked dried grass to feed animals; compost manure/using animal droppings; planting crops more tolerant to drought; changing the timing of planting; planting early maturing varieties of crops; changing diets to cope with climate variability³⁴. However financial constraints or loss of knowledge are affecting their ability to use such practices.

Some of the practices used can indeed be very costly to farmers that survive on meagre resources - for example, mulching requires

transportation of the materials to be used from one point to another, inducing potentially prohibitive transportation costs. In some areas, indigenous knowledge is disappearing because of lack of orientation on their use and there is no documentation that they can read to understand their practicability. Farmers and pastoralists could also benefit from access to sub-county or district specific seasonal or rainfall results - for instance the Uganda Meteorology Department only predicts the likely rainfall and weather patterns at regional level which results are shared in the media but do not generate district specific results.

Findings

There is a fierce debate in the literature "about the relative importance for different societies of mitigation, which addresses the drivers of climate change, versus adaptation, which considers the measures necessary to accommodate such changes³⁵". While acknowledging the relevance of that debate, which addresses the issue of responsibility – the 'polluter pays' principle – it is not the aim of this report to engage with or review such a debate. There is, however, the recognition that significant attention has been focused on actions to mitigate and less on adaptation to climate change.

The starting point and assumption is that, in many countries and regions in Africa, small-scale food producers living in rural areas – the peasantry - can no longer wait for the debate to conclude to find practical responses to the changing climate, which evidence shows is drastically affecting their farming practices and subsistence. In order to maintain their livelihoods, farmers have had no other alternatives but to respond, adapt, and achieve a certain level of resilience, since their technical knowledge and economic conditions (and

³⁴ ESAFF Uganda, 2015

³⁵ Muller, 2007

responsibility) too often limit their ability to completely mitigate climate change.

Susanne C. Moser and Julia A. Ekstrom propose a definition of adaptation that involves changes to socio-ecological systems in response to actual and expected impact of climate change. According to the authors, strategy and actions to adapt can range from short-term coping to longer-term, deeper transformations, aiming at addressing more than climate change goals alone, and may or may not succeed in moderating harm or exploiting beneficial opportunities³⁶.

Study areas, the climate and rainfall patterns

The field research of this study was carried out in Mubende and Mukono districts in the Central Region of Uganda. These districts were suggested by ESAFF Uganda, considering that, on one hand, the districts were severely affected by climate change, and on the other, farmers²⁷ allied to the East and Southern Africa Farmers Forum (ESAFF-Uganda) are making visible progress in implementing sustainable techniques to minimize the severe effects of CC³⁸.

In the last few years ESAFF has been training its member associations in both districts on environment conservation, climate change adaptation and mitigation, including on the use of new farming techniques, water harvesting and conservation, as well as on enhancing indigenous practices.

Mukono and Mubende are situated in what is known as the "V climate zone"³⁹, which is characterised by rainfall averaging about 1125 mm per annum with precipitation distributed between 90 to 130 days. In this zone rainfall peaks are evident from April to May, and September to November, and dry seasons occur in June and July (with a less severe dry period between December and February)⁴⁰. According to farmers in those districts, in the past the rainfall season used to be in January.

Almost all farmers interviewed in the two districts revealed that they have been observing changes in relation to rainfalls, soils erosion and reduction of crop yields. A total of around 30 participants were interviewed in both districts, including two-group/collective discussion (around 60% of participants were men).

A local government official in Mubende revealed that the district was experiencing shorter rain periods and extreme events such as floods, hailstorm and emergence of new pests. He went on to say that 'old' pests are becoming harder to treat, which causes reductions in productivity for major crops such as maize, and livestock⁴¹.

Cultivated crops

Mukono district lies within two agroecological zones, namely the intensive banana-coffee system and the banana-millet-cotton system⁴². Mubende district is considered to be one of the major producers of maize, groundnuts and cassava⁴³. Other common farming

³⁶ Moser and Ekstrom (2010: 22027).

³⁷ In this report - particularly for the case of Mubende - I am using "farmer" instead of peasant. In a group discussion in Bagezza sub-county, participants (a mixture of small and middle-scale producers) stated that they preferred to be treated/referred to as farmers since the use of peasant, *omunaku* in their local language, is related to someone who "doesn't care", "doesn't have anything", "landless" or "has (access to) land but does want to use it", "doesn't want to work".

³⁸ Interview, ESAFF secretariat (2017).

³⁹ Five zones based on climate, productivity of the land and human population have been identified in the country (NEMA, 1996).

⁴⁰ Kamanyire, 2000.

⁴¹ Interview, Mubende district, Agricultural officer, 2017.

⁴² Kamanyire, idem

⁴³ ESAFF, 2015.



crops found in Mubende are various varieties of beans, banana, coffee, sweet potatoes, Irish potatoes, and millet in small quantities. At least four of these crops can be seen in every family garden. In Mukono further variety of vegetables, such as cowpeas, tomatoes, and pumpkins, can be found, but it is probably the production of vanilla that differentiates it most from Mubende.

Most farmers grow perennial crops like coffee, banana, cocoa, citrus, mostly for income generation, and a variety of different food crops (banana, yams, sweet potatoes, beans, maize) for self-consumption and for exchange at local markets, nearby cities or through middlemen. Some local hotels and restaurants also directly purchase some of their produce.

Vanilla, mostly grown in Mukono, is considered a highly value cash crop.

Visited farmers in both districts raise livestock, such as pigs and other small animals. Mubende lies in the cattle corridor characterized by water scarcity and dry spell, and animal and diseases outbreaks⁴⁴. The changing of seasons, as well as the variations in crops yields, are attributed to climate change.

Understanding of Climate Change among farmers

Farmers generally understand climate change (CC) as the changes in rain season and the outbreak of pest and animal diseases: “rain no longer comes when we expect and the sunshine [dry season] periods are longer”; “now the rain comes when it wants” or “plants are attacked by pests and animals die”. In one case, a farmer in Kazo sub-county of Mubende district, defined it as “a different weather changing patterns at different times, either caused by human activities or by nat-

ural hazards⁴⁵”. Another farmer leader from Mukono district was able to touch upon some of the complexities that explain the causes of climate change, such as the use of fossil fuels, modes of consumption and over exploitation of natural resources.

Nevertheless, during field work for this study, we could observe that there is a differentiated understanding of the concept of climate change and its broader causes and components. This can be explained different education levels of participants of this study, their level of engagement with the issue of climate change itself (as technical discussions are mainly limited to specific training programs).

Social Effects of Climate Change

In Mubende farmers narrated that climate change and environmental degradation, like the scarcity of trees, have caused youth migration to cities, since they can no longer build houses due to a lack of easy income from farming, limited access to land and lack of trees to make charcoal for income generation. Since the “adaptation” strategy has begun relatively recently, it may take some time for the youth to realize that income can ultimately be earned through agro-ecological practice, even in the midst of adverse climatic conditions.

Climate Change and gender

Although climate change is undoubtedly adverse to both men and women indiscriminately, women endure the effects of it more harshly, since they are “the ones who have to walk long distances to get water for domestic use, walk miles to fetch firewood that is nowhere available in the surroundings as well as making sure that food is secured in the households⁴⁶”. In cases of scarcity of land and

⁴⁴ ESAFF (2015: 6).

⁴⁵ Tumwebaze Julius, 41.

⁴⁶ Group discussion, woman farmer, Mubende, 2017.

other resources women tend to be less privileged to the benefit of men.

According to Acosta et al⁴⁷, the way in which gender issues are dealt with in agriculture-related policies and strategies in Uganda lacks coherence. The authors suggest that climate change related policies have been mostly designed to address practical gender needs thereby failing to address the structural constraints that hinder women's access to resources. For the authors, if policies are to tackle the root causes of gender inequalities, greater attention should be paid to gender structural constraints.

Farmers' Techniques and innovation to "adapt" to climate change

Generally, farmers in Mubende and Mukono apply similar techniques to cope with current climate conditions and secure their livelihood. The techniques and practices range from the use of manure, intercropping, grass mulching to keep soil moisture, improve fertility and health of the soil, and reduce weed growth, use of "improved" seeds, use of ashes to combat pests instead of pesticides, water harvesting or opening of ditches for water drainage.

In both districts, farmers talked about their attempt to reduce their dependence on purchased inputs, such as commercial seeds and fertilisers. Currently, in both districts there is still a need to buy seeds from shops, mainly for some of the cash crops and vegetables.

For some farmers in Mukono the use of manure in soil conservation is more elaborate, the capacity of water harvest is higher, the intercropping strategy is more efficient, and gardens are bigger.

One of the strategies to "adapt" is the "non-farm livelihoods diversification", which con-

sists of activities or enterprise that do not have similar characteristics. For example, a farmer in Mubende explained: "if I have maize, the model of diversification cannot be growing beans, because they are all affected by drought at the same time and the same effects and outcomes. So, if you are growing crops, you should try rearing livestock or birds, because they are controllable, they are moveable. If a certain environment is bad they can move to a different one which would be favourable and when the original environment gets back to normal, they can be moved back to where they were before⁴⁸".

Due to a drought in 2016, a group of women who had their gardens destroyed in Mubende got together and started a mushroom garden using a system that does not require much land and takes shorter time to harvest. They supply seedlings to the members of the group and sell the produce to other villagers and at local markets at times when traditional crops are failing due to lack of rainfall. They claim that to date there are 1000 women farmers growing mushrooms in the village and other neighbouring villages.

Another practice that was incorporated was the planting of trees for fruits, shade, and firewood. They believe that those trees are also helpful to attract rainfalls.

In Mubende town, a group of 45 women produce cooking briskets, using maize combs and bean leftovers and cassava flour, and sell the briskets at local markets. They see this as a sustainable way to produce domestic energy and fuel without extracting wood or cutting tree. This is also seen as a transition from traditional charcoal to more climate-friendly practices.

⁴⁷ Acosta et al (2015).

⁴⁸ Tumwikyirize Aloysius, a "Climate Change Champion"

Farmer to farmer exchange

In each visited village can be found group-level exchanges and demonstration plots to learn new techniques collectively. They are then replicated in individual/family gardens. Mostly in Mukono, but also in Mubende, farmers promote bilateral learning visits. They believe that if these exchanges were to be spread among a wider range of farmers, the multiplicity of techniques and practices among farmers would be accelerated. As farmers they practice what they see, since they rely strongly on the “peasant pedagogy⁴⁹”. In various occasions farmers have also highlighted the need for permanent training on issues related to climate change and agroecology.

Government intervention

In Uganda, most of climate change policies are still far from being implemented. Due to acknowledged limitations by national and local governments, very few farmers are “assisted” by local government in Mubende and Mokono to “adapt” to climate change. In Mubende, government intervention was to supply farmers with inputs, including seedlings and, in some cases, pieces of land through the Operation Wealth Creation (OWC)⁵⁰, as well as offering some basic and limited extension services to the farmers. The government distributes hybrid seeds, generally called “improved seeds”.

During those interventions, farmers said that climate change adaptation and mitigation explanations were generally reduced by government and extension officials to “not cutting down of trees”⁵¹.

Most farmers lack knowledge of government laws and public policies on land, environment, agriculture, climate change, and forestry. There is a common belief that those policies do not work “because of corruption within government⁵²”. ESAFF Uganda considers both agriculture and climate change policies as: “very good policies but they are all on paper. When it comes to translating them to the lowest person then that’s where the hitch is”⁵³.

According to the District Agriculture Officer in Mubende, the government sees Genetically Modified Organisms (GMOs) seeds and chemical fertilisers, which allegedly provide readily available nutrients and foster very fast plant intake, as the future. He recognises that local varieties may have the ability to adapt to any environment, but the quality of the yields will be low. In fact, during our field research the Ugandan Parliament was discussing a bill to legalize the use of GMOs in Ugandan agriculture. Social movements and NGOs working on agriculture and climate change issues were mobilising farmers to sign a petition to halt the adoption of the bill. On October 4, the Ugandan parliament voted for the adoption of GMOs⁵⁴ and the bill is now awaiting the President’s signature to become law⁵⁵.

Differentiated farmers and interest

ESAFF-Uganda’s constituencies are a diverse and differentiated peasantry. It ranges from very small, quasi-landless peasants, to more established and relatively big-scale farmers. As mentioned above, in Mukono, most of the farmers visited during this study have relatively large plots of land (up to 20 acres) and their produce is mostly for the markets.

⁴⁹ Rosset et al, 2011.

⁵⁰ The OWC has an ambitious goal, the 2020 vision, aiming to generate 20 millions shillings per farmers, by 2020. The Operation is led by the Uganda Peoples Armed Forces...

⁵¹ Interview, farmer Bagezza, 2017.

⁵² Farmer’s intervention, Group discussion, Mubende, 2017.

⁵³ Interview, ESAFF-Uganda secretariat, 2017.

⁵⁴ <https://allianceforscience.cornell.edu/blog/uganda-parliament-adopts-gmo-law-monumental-victory-science-allies>

⁵⁵ https://www.newvision.co.ug/new_vision/news/1463108/parliament-finally-passes-gmo



In Mubende, most of the farmers visited have smaller plots (1 to 5 acres). In a group discussion in Mubende, while debating over the sustainability of farming under climate change, some revealed that they would like the government to increase their farmland to “at least” 10 acres to attain sustainability, while other said they would be satisfied with 2 acres.

Almost all farmers in both districts mentioned hiring (casual) labour, mainly the small-scale and quasi-landless farmers, for diverse farming-related activities, and highlighted that cash crops, such as maize, required more labour than food crops. Larger farmers – mostly cultivating larger quantities of cash crops - hire proportionally more casual labour.

Analysis and conclusions

The objective of this report was to provide an overview of climate change and climate justice issues in Uganda, highlighting realities of climate change, and policy responses of the Ugandan Government in relation to this most pressing issue. The also attempts to show some of the ways in which Uganda’s rural communities have developed towards building alternatives, by “adapting” to climate change. As discussed above, the reality shows that, although enormous efforts have been made in Mubende and Mukono to respond to the effects of a changing climate, there are also a number of challenges and limitations. Even if they do not allow us to reach “easy” conclusions on one hand, on the other, represent a starting point for different stakeholders working with and on behalf of small-scale producers to design better interventions.

A strong proposal from grassroots and global, peasant social movements such as La Via Campesina, which ESAFF-Uganda is a mem-

ber of, is agroecology for Food Sovereignty. According to La Via Campesina, agroecology is the only sustainable solution to climate change.

Although not in all cases, the use of agroecology as a technique was generally mentioned by farmers interviewed. Some of them, particularly in Mubende, reported engaging with fellow farmers in spreading agroecological techniques since they have seen its “productive benefits”. Some interviewees confirmed having “converted” some neighbours to adhering to agroecological practices. However, it seems that the practices understood as agroecology, as well as the climate change coping mechanisms of farmers, are seen as a mere technicism. Observation and engagement with farmers in the field suggested that the range of those “innovative” practices, although sometimes called agroecology, were still depoliticised. It is relevant to note that there was an apparent lack of comprehensive political consciousness among the farmers interviewed, that is, there was a limited understanding of the broader political dimension of agroecology as an alternative paradigm to oppose mainstream food production and system.

The International Forum for Agroecology, held in Nyéléni, Mali, in 2015 considered agroecology as a way of life, with social, cultural, political, and economic transformation potential. It does not represent, therefore, a mere set of technologies or production practices⁵⁶. According to ESAFF Uganda, we need to invest in building the capacity of small scale farmers to increase their voice and decision making power on issues that affect them. There is a great responsibility for small scale farmer organisations of ensuring that they provide a structure of engagement for the grassroots people. This needs to be done consistently and continuously so as to build a movement of farmers.

⁵⁶ Declaration of the International Forum for Agroecology, 2015.

Mere response, adaptation or mitigation?

It seems that there is a lack of clarity among the farmers on the difference between adaptation and mitigation, both in theoretical terms and in practical terms. Some of the narratives on “adaptation” strategies are business-driven, such as the installation of nursery (production of seedlings for coffee, banana, and aquaculture) in a “community climate change adaptation centre” in Kazo sub-county, to sell to the government, members of the group, and other interested buyers. Although such initiatives can play an important role in increasing the resilience (to CC) of the groups involved, the link between the initiative and its aim to “enhance adaptation” may be blurred at times. One farmer, leader of the centre, considers himself to be a “climate change champion”. The farmer explained: “we are positioning ourselves to act as a point of reference in climate change by providing multiple choices - facing a challenge is an opportunity [to earn money]. In this case, when farmers are aware that the government is investing in, for example, mitigation through tree planting, they position themselves by increasing production of tree seedlings, which they will sell to other farmers or distributors. The nature of “choices” offered, as well as some of the business practices, would be determinant in its worth as a CC adaptation strategy.

A deeper and long-term research and conceptual analysis would need to be carried out in order to determine whether what the peasantry in Uganda – including the communities visited – is actually implementing amount to real adaptation and mitigation actions or they are simply reacting and responding to the immediate climate adversities affecting them. For the purpose of this report, we take the assumption that their strategies, techniques and actions are part of an endeavour to respond to the changing climate, as communities cling to whatever opportunity is available for them to improve their livelihoods.

In some cases, industrial hybrid seeds, generally presented to farmers as “improved” seeds, are accepted and used uncritically by farmers. While farmer organisations like ES-AFF-Uganda provided several trainings across the country around the pitfalls the use of such hybridized seeds presents for the future of local varieties and seeds sovereignty, raising awareness and consciousness of producers on this remains a challenge. The upliftment of peasant and indigenous seeds is further constrained by the long history of hybridization of indigenous seeds in Uganda, which means indigenous local varieties are rare to find and identify.

Gender perspective analysis

An analysis that incorporates a gender perspective and the agency of women is needed since most processes in the agrarian (and climate change) political economy are deeply gender-based. Studies should focus closely on how climate change and its effects influence and affect issues like gender and sexual division of labour, access to land and other productive resources for men and women, domestic economies and broadly their social reproduction.

Although the government aims at mainstreaming gender into all agriculture sector programmes, national policy on climate change has failed to adopt a coherent gender approach, which acknowledges and caters for the disproportionate impact of climate change on women and tackle the root causes of gender inequalities. Consideration of men’s capacity to adapt and vulnerability to climate change and a comparison with that of women is widely overlooked. This includes the extra burden placed on women to find solution to cope with food scarcity or disease outbreaks, as they remain in rural areas whilst men adapt by migrating to other areas, or they are married off early to obtain a dowry for their family to survive the poverty induced by the effects of climate change⁵⁷. Similarly, the

impact on women of policies advocating for an industrialised agricultural model and so-called modern climate smart technologies is ignored or neglected.

Gender is often reduced to 'women's issues', revealing a lack of comprehensive understanding of the gendered power dynamics that exist at different levels - intra-household, customary laws and traditions, community, sub-county, district - and how to address the structural constraints that underpin women's vulnerability to climate change (e.g. poor decision-making power, low literacy rates, heavy labour burden, weak ownership and control over resources)⁵⁸. Considering that women represent the vast majority of peasant farmers, it is startling that the particular hardship they endure should not be addressed to effectively and meaningfully address climate challenges.

In-depth explanation of concepts

Farmers will need in-depth explanations on key concepts (climate change, agroecology, adaptation, mitigation, Food Sovereignty, etc...), as well as seed sovereignty. The current proliferation of hybrid seeds and chemical fertilisers and pesticides as well as the entry of GMOs into the country – pushed by government and private sector - will further blur farmer's future. There is an urgent need for popular education to provide clarification and orientation for the peasantry.

Policies disconnected from reality

A deeper analysis shows that public policies in Uganda are the result of a top-down approach, where decision-making power and finance resources remain centralised, whilst the administrative capacity to address climate challenges are located at the local government level. This create an alarming discon-

nect between the solutions proposed and the reality of peasant farmers and rural communities, in particular that of women, disproportionately affected by climate change due to ingrained gender inequalities.

Agroecological practices in national policy

Incorporating indigenous knowledge and practices in national policy would therefore imply a need for the government to consult rural communities, i.e. the majority of farmers and livestock keepers, when planning adaptation techniques for peasant farmers to take into account the specific type of support needed. This could include the creation of awareness around climate change and its impacts among the rural population, and the use of community radios to spread information on the weather and expected rainfall as they are easily accessible to small-scale farmers. Incorporating indigenous knowledge into climate change adaptation programmes will lead to the development of effective adaptation strategies that are used friendly and sustainable, making them cost-effective and relevant to both peasant farmers and pastoralists.

Concluding remarks

There is a need to de/mystify the success of hybrid seeds and chemical fertilisers, putting emphasis on the price, short/lived yield increase, and corporate control over packages and produce sell. Here the concept of food (and seeds) sovereignty is crucial. The use of radio as a mean of communication to reach farmers has been proved efficient in various places in the continent. Another strategy to improve communication, sharing of information and education is to identify a champion farmer in each area. Messaging about agroecology, food sovereignty, and climate change should be clear and simple and adapted to the situation in Uganda.

⁵⁷ EACO, 2012

⁵⁸ Acosta et al., 2015

References

- Acosta, Mariola; Ampaire, Edidah; Okolo, Wendy; Twyman, Jennifer (2015). Gender and Climate Change in Uganda: Effects of Policy and Institutional Frameworks: Findings from a desk review and two exploratory studies in Rakai and Nwoya Districts. CGIAR.
- Ampaire E.L., et al. (2015). The role of policy in facilitating adoption of climate-smart agriculture in Uganda. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark (available online at: www.ccafs.cgiar.org).
- Bank of Uganda (2016). 2016 Statistical Abstract – Table 3.2a: Exports of Goods (Flows) (US\$ million) - CY. The Research and Policy Directorate, Bank of Uganda, available at: https://www.bou.or.ug/bou/bou-downloads/publications/Statistical_Abstract/2016/All/2016-Bank-of-Uganda-Statistical-Abstract.pdf
- BBC News (2017). Uganda country profile. Last update: 9 May 2017. Available at: <http://www.bbc.com/news/world-africa-14107906>.
- Bird N, et al., (2016). Public spending on climate change in Africa: Experiences from Ethiopia, Ghana, Tanzania and Uganda. ODI Report, London, May 2016, <https://www.odi.org/publications/10419-public-spending-climate-change-africa-experiences-ethiopia-ghana-tanzania-and-uganda>.
- EACO - Empower and Care Organisation (2012). Statement on Women and Climate Change in Mukono, Uganda. Uganda News, 14 June 2012. (available at: <https://www.asafeworldforwomen.org/global-news/africa/uganda/2638-climate-change-eaco.html>).
- Environment Alert (2010). Climate Change in Uganda: Insights for Long-term Adaptation and Building Community Resilience. Issues Paper, July 2010. Available at: <http://envalert.org/wp-content/uploads/2016/06/Climate-Change-Issues-paper.pdf>).
- ESAFF Uganda (2015). Enhancing indigenous practices in climate change adaptation among small scale farmers, Soroti and Mubende district. Study Report (available from: <http://www.esaffuganda.org/publication.html>).
- FAO and Government of the Republic of Uganda (2015). Country Programming Framework 2015 - 2019. February 2015. Available at: ftp://ftp.fao.org/OSD/CPF/Countries/Uganda/CPF_Uganda_2015-2019.pdf.
- Friis-Hansen E. et al. (2015). Local government engagement with climate change adaptation in Uganda. DIIS Report, 2015:19, Copenhagen 2015 (available at: http://pure.diis.dk/ws/files/382683/DIIS_Report_19_Climate_Uganda_FINAL.pdf).
- Friis-Hansen E et al (2013). Decentralisation and implementation of climate change policy in Uganda. DIIS Working Paper No. 27. (available from <http://en.diis.dk>).
- Government of Uganda (2007). Vision 2040. (available from: <http://gov.ug/content/uganda-vision-2040>).

Government of Uganda (2010). National Disaster Preparedness and Management Policy. Prime Minister Office.

Hepworth N.D. (2010). Climate change vulnerability and adaptation preparedness in Uganda. Heinrich Böll Foundation, Nairobi, Kenya (available from <http://www.ke.boell.org>).

Irish Aid (2015). Uganda Climate Action Report for 2015. Resilience Policy Team, November 2015. Kabesiime, E et al. (2015) Monitoring and evaluating climate change adaptation and disaster risk reduction in Uganda: TAMD appraisal study. IIED country report. (available at: <http://pubs.iied.org/pdfs/10116IIED.pdf>).

Kamanyire, Marilyn (2000), Natural Resource Management and Policy in Uganda: Overview Paper, Economic Policy Research Centre, Working Paper

MAAIF (2015). Agriculture Sector Strategic Plan (ASSP, 2015/16-2019/20). (available at: <http://npa.ug/wp-content/uploads/2016/08/ASSP-Final-Draft.pdf>).

MWE (2012). Uganda National Climate Change Policy, 18 July 2012, http://ric-uganda.com/rc/files/1.10_Uganda_National_Climate_Change_Policy.pdf.

McSweeney C et al., (2010). The UNDP Climate Change Country Profiles: improving the accessibility of observed and projected climate information for studies of climate change in developing countries. Bulletin of the American Meteorological Society, 91, 157–166, <https://ora.ox.ac.uk/objects/uuid:73f9204b-37db-4cf1-b204-e264a8d60f0c>.

Moser, Susanne C.; Ekstrom, Julia A. (2010), A framework to diagnose barriers to climate change adaptation, PNAS, 107,51.

Muller, Mike (2007), Adapting to climate change: water management for urban resilience, Environment & Urbanization - International Institute for Environment and Development, 19(1): 99–113.

NECOC (2017). National FoodSecurity Assessment Report. Uganda Disaster Risk Information Centre, Department of Disaster Preparedness and Management National Emergency Coordination and Operations Centre January 2017 (available at: <http://www.necoc-opm.go.ug/assessments/1.%20National%20Food%20Security%20Assesment%20Report%20January%202017.pdf>).

Orindi VA. (2013). Evaluation of the status of NAPA/NAP in Ethiopia, Tanzania, Uganda and Kenya. CCAFS Report.

Pautrizel L. (2014). Agricultural and Food Security Policies and Small-Scale Farmers in the East African Community – 6 – Uganda. Paris, Gret – ESAFF, October 2014 (available from: <http://www.esaffuganda.org/publication.html>).

Rosset, P.M., Machín Sosa, B. Roque Jaime, A.M. & Ávila Lozano, D.R. 2011. The Campesino-to-Campesino agroecology movement of ANAP in Cuba: social process methodology in the construction of sustainable peasant agriculture and food sovereignty. *Journal of Peasant Studies*, 38(1): 161-191

Transparency International (2017). Corruption Perceptions Index 2016. Report, 25 January 2017, https://www.transparency.org/whatwedo/publication/corruption_perceptions_index_2016.

World Bank (2016). Country Partnership Framework for the Republic of Uganda for the Period FY16-21. Report No. 101173-UG. Available at: <http://documents.worldbank.org/curated/en/170721468179663842/pdf/101173-CAS-P155948-OUO-9-IDA-R2016-0049-2-Box394874B.pdf>.

