



AfricaAdapt Discussion Group

Agriculture and Climate Change

*Testimonies on the Observed Impacts and
Policy Recommendations for Action*

This document echoes the voices from grassroots community groups on the adverse impacts of climate change on small-scale farming and suggests policy recommendations for action. The content of this document is the output of a discussion group between AfricaAdapt members¹.

**TESTIMONIES OF THE IMPACTS OF CLIMATE CHANGE ON SMALLHOLDER FARMING:
THE VOICES OF LOCAL COMMUNITIES - “What are the impacts of climate change on
small holder farming and how are farmers coping or adapting to these impacts”**

Moumini SAVADOGO from Burkina Faso provided with a very insightful document (in French) highlighting a diverse range of local technologies for adaptation to climate change in Burkina Faso. (<http://www.africa-adapt.net/themes/4/resources/757/theme/>)

MARTIAL GERVAIS and EWOULE LOBE Estelle from Cameroon

“Climate change is a threat to food security in developing countries, including Cameroon, through its impact on water resources, biodiversity, ecosystem (especially land), and rainfall variability. Therefore, populations migrate massively in search of better farmland. The objective of the authorities now is to succeed in settling rural populations in their localities while facing climate change and developing the agricultural sector and protecting the environment.

Adaptation strategies in Cameroon primarily pass by:

- Raising awareness on climate change and natural resource management (environmental protection).
- The promotion of a crop rotation system that includes a land management to meet the requirements of water sustainability;
- The promotion of an early warning system;
- The intensification of reforestation to promote the restoration of soil and constitute a carbon sink;
- The fight against erosion;
- The promotion of fair sharing of the land so that a policy of land conservation is not seen as a dispossession;
- The practice of drainage”

LAMBERT MOUNDZEO from the Republic of the Congo

“The most striking effect is the decrease of yields. The farmers who practice mainly rain-fed agriculture rely on individual experience and local know-how to deal with this problem. Thus,

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the physical and biological indicators are often used for the preparation and implementation of a particular culture during a crop year. Also, local ecotypes greatly appreciated by the agricultural population of a given environment are also adopted by other surrounding environments. Agricultural populations are forced to travel long distances to find fertile land. Thus the primary forests especially are very much demanded”

SIBIRO PHILIPPE JUNIOR from Central Africa Republic

“The impact of climate change on small-scale farming is mostly variability of the seasons (dry and rainy). Farmers have no choice but to adapt”

BONIFACE BOTNA from Cameroon

“Rural communities, who suffer the impact of climate change, have no alternative to raise their voices. This is the case of the Mbororo people in North Cameroon, a marginal ethnic group (about 50 000 people), who is in a state of deprivation and isolation today, resulting in the non - inclusion of this group in local or national decisions. For this recognition to occur, the inevitable process of settlement of these people started should be continued, and they will form an organized and visible group, whose voice carries far. Currently, with the opening to the outside world, the Mbororo environment has changed, allowing them to benefit from some development activities. However, these actions are carried out sporadically, thus their effects on the Mbororo daily life and existence, are less noticeable”

LECLERE DIFFO from Cameroon

“In our villages, people have no climate education given their passive attitude to these phenomena. Our farmers must adapt crops depending on the weather, with the support of civil society and development actors. For a responsible adaptation, we must strengthen and expand local practices by scientific knowledge from research, by creating a platform bringing together researchers, CSOs, NGOs, development partners, trade unions and peasant groups to better support the farmers and work in harmony”

JOSE DESIRE ZEBAZE from Cameroon

“The impacts of climate change on family farming are numerous. In case of drought, production is reduced due to insufficient water to irrigate the plants naturally. It is important to select species that require less water, and proceed to the reforestation with bio- fertilizers. In the event of excessive rainfall or flooding, crops are also affected and lowlands that allow off-season crops become unusable. Therefore, dykes and drains techniques should be utilized”

NOE EMMANUEL MBEMBA from the Republic of Congo

“In Congo, the peasant families, especially women change the cassava processing techniques. They practice retting in the sheets with rainwater, as water sources are becoming more distant in the gallery forests. Production undergoes a remarkable decline, and we have emerging diseases such as goiter because this technique does not eliminate enough starch”

KOFFI APEDJAGBO from Togo

“To contribute to strengthening the resilience of small farmers in rural areas, the JVE NGO in Togo promotes community-based adaptation approach that takes into account local knowledge and scientists’ knowledge to address the climate change phenomenon with particular emphasis on gender. Any policy CC adaptation must take into account the gender aspect.

In the Vo locality, the NGO promotes AVE&C system, that is to assist farm groups women to develop an improved system of microcredit that allows these women to finance their small business and to support the lean period.

Beyond this system JVE promotes farming practices to keep the moisture in the soil, for instance the cultivation of legumes such as MOUCOUNA the windbreak, the ridges, online culture, the selection of heat-resistant species, crops association, effective management and storage of crops, livestock association on agriculture and so on”

ZIHALIRWA KAVALI from the Democratic Republic of Congo

“The profound impact of climate change on smallholder farming in the Lurhala group in DR Congo is worsening food insecurity due to the sharp decline in agricultural productivity.

Agricultural calendars are disrupted by an increasingly unpredictable climate, causing erosion of soil and sometimes destroying the plantations.

To adapt:

- Farmers are abandoning farm work to become small traders of imported manufactured goods, or to migrate.
- The areas of food crops decrease in favor of traditional brick and eucalyptus planting.
- The local cassava varieties are giving way to those resistant to cassava mosaic disease, which affects the taste and quality of cassava.

Despite the awareness of the development actors on the new agricultural techniques, farmers are skeptical about the profitability and sustainability of these new techniques”

CLAUDE ILUTA ENGAMBI from DRC contributed with a detailed document on the impacts of climate change on the agriculture sector in the district of Kisantu - <http://bit.ly/unEbFz>

TODEMAN ASSAN from Benin

“The impacts of climate change on small-scale farming are perceived in terms of seasonal disturbances, resulting in: loss of production, flooding crops, drought and social tensions, hence the need to inform and educate people about the importance of taking into account these seasonal disturbances”

MAMADOU COULIBALY from Mali contributed with the experience of a project in Mali aiming at fighting against soil infertility to promote food security - <http://www.africa-adapt.net/projects/197/>.

Amadou Ba from Mauritania

“The effects of climate change on smallholder farmers in Africa are considerable; unfortunately these producers have no niche to bring their voices to policy makers. The role of spokesman

returns to civil society, and we believe that more adaptation funds are needed, and these funds must be intended primarily for small producers, given their role in food security of our countries”

Bewket Belay from Ethiopia

“Climate change is happening and already impacting small holder farmer’s adversely. The biophysical and socioeconomic effects of climate related hazards such as erratic rainfall, flood, drought, and pest and disease prevalence have increased in the course of time. Farmers prioritized erratic rainfall, drought, and flood as major production constraints. Most farmers are migrating in search of employment, and or engaged in other none- farm activities to feed their families because the environment is no longer suitable and predictable to stay in the livelihood. This implies that we will have a lot of climate refugees not in a distance feature if some adaptation interventions are not done now. Many coping mechanisms to climate variability and change exist, but how effective are they and which ones are good enough for scaling up? Further research is therefore recommended in this area.”

JANUARY MVULA from Malawi

“Water table in the area we are operating has gone low and existing boreholes are no more giving enough water as a result of erratic as well as insufficient rains. Women could not also produce enough fruit, maize, cassava etc for selling and save money. Because of this they could not go out of poverty”.

Noah Samba form Zambia

“Small holder farmers in Zambia are now not certain when the rains will come or terminate. It has made their food and crop production in general uncertain and constrained by on side drought awhile on the other floods. November is normally a rainy month but generally Zambia remains dry as late as mid November. Undoubtedly smallholder farmers need to adapt to use of supplementary irrigation if farming will remain a viable option.

He has seen the already resource limited communities exposed to additional extremes of weather making them indeed extremely vulnerable to vagaries of life. No wonder it will be a shame if Durban failed to deliver hope in the midst of growing manifestation of climate vagaries”.

Gladson Mmakowa from Malawi

“Smallholder farmers practice rain-fed agriculture and they experience frequent dry spells and drought in almost every rainy season. Farmers are experiencing these more frequently now than ever before. In some areas crops like maize are drying up before fully maturing. More and more farmers are adapting to climate variability and change by using some water harvesting technologies”.

Jane Muthee from Kenya is an advocate of food security at the household level and her organization is advocating for alternative sustainable agricultural farming instead of being rain dependent. She noted Kenya’s suffering of frequent hunger during the last few years because of unreliable rain patterns resulting from climate change. She also noted that traditional

methods of farming are not able to cope with observed trends of climate change and emphasize the need for farmers to be given capacity building and alternative farming.

Farirai Mageza from Zimbabwe

“Unpredictable rainfall patterns, extreme temperatures, shifting onsets of the rainy season, short growing seasons, droughts and floods are some of climate related problems experienced by to the farming communities he is working with. Some of the coping mechanisms practiced by farmers include changing planting dates, conservation farming and cultivating close to stream banks where there is water, which could lead to maladaptation. He recommended capacitating the small scale farmers to develop strategies that are adapted to climate change, through knowledge exchange and advocacy for policy reform”.

OLALEKAN TOBE from Nigeria shared testimonies of farmers from the Northern Guinea Savannah of Nigeria, as captured in the statements below:

1. Dry Spell - "we now experience longer dry spells than we use to, this year, the dry spell lasted three weeks and many of us (Farmers) lost our crops and had to restart"
2. Rainy Season- "the rainy season is now so unpredictable, sometimes it starts too early and last longer than expected and this effects planting and harvest. In 2009, the rainy season stopped normally in October, but suddenly it restarted in November spoiling our Sorghum and Soybean"
3. Flooding- “Sometimes rainfall come in torrents (2010), and cause flooding especially along the season river bank causing destruction to our crops- now farmers are more careful to cultivate lands along the river banks for fear of flooding”
4. Dry Season farming- “The area cultivated in the dry season to crops such as tomatoes has reduced because, the rate of recession of water in the seasonal river Bambami is no longer predictable and the risk of crop failure due to insufficient water for irrigation is now higher”

New technologies to cope with the effects of climate change have been introduced and these technologies include:

- Drip irrigation technology.
- Extra early maturing crop varieties of Maize and Cowpea.
- Soil conservation methods etc.

Philippe Junior SIBIRO from Central Africa Republic

“Farmers need to adapt by adapting plants to seasonal variability”

Agoro Olayiwola from Nigeria “Farming communities in Iseyin, Oyo State of Nigeria have realized that their recent low yield and the inability to produce optimally even when all the cultural operations were done is due to climate change rather than the anger of their gods. The

farmers have now started using improved and early maturing varieties. Also there are clamor for irrigation because of the fact that rain-fed agriculture which they had relied on over the years are not coming as at when due. Also, the farmers in the community are lobbying the government institutes to help them with tissue cultured plant varieties because they are disease free”

Tony Hill from the UK shared a number of testimonies from poor smallholder farmers experiencing climate change first hand in the dry lands of Africa:

“Aiguera Zagre, Séguénéga, Burkina Faso “I’ve definitely noticed that soil is much drier, much less fertile. Deforestation is advancing more and more. And, the rains are not as abundant as they once were and of course this affects our harvests. Above all, deforestation is the most evident – all the forests that I saw when I was a child are no more”

Naaba Salifu Alenyarum, Bongo, Ghana “When I was a child there was still water in this river up to March or even April. The river valley used to be much deeper. When my friends and I were herding goats this was where we brought them to drink... now the river bed has filled up with sand and there is no water”

Giorgis Kebede, Angollela, Ethiopia “My father used to tell me that our village was fully covered with plenty of indigenous trees. At that time, if you throw a stone it never falls on the ground”

Yobi Korgo, Kogyendé, Burkina Faso “Our region is facing desertification. It seems that scientists have discovered that droughts in our region will worsen. Our crops refuse to give any food in times of severe drought”

TREE AID is working with smallholder farmers in the Sahel region of Africa, for whom the impacts of climate change are clear and very real. The Sahara desert grows by the size of New Zealand every year, engulfing what was once fertile agricultural land. For the poor rural communities who live in this region, daily life is increasingly precarious.”

Pacôme Tomètissi from Benin

“Farmers have experienced increased drought and reduced production. With the help of civil society and community organizations farmers are exploring adaptation options including biological agriculture. He has written a radio drama on biological agriculture on Farm radio international”

POLICY RECOMMENDATIONS TO SUPPORT AFRICAN SMALLHOLDER FARMERS TO ADAPT

Conveying the voices of the valiant smallholder farmers in Africa

- **What recommendations and expectations of small-scale farmers to the attention of African and international policy makers?**
- **What political arrangements at local, national and international levels, to promote smallholder farming in the context of climate variability and change?**

Martial Gervais ODEN BELLA from Cameroon

- 1 - The implementation of all international instruments ratified by the governments
- 2 - Establishing a capacity building program for small producers on climate adaptation
- 3 - The provision for small producers of a fund to support adaptation initiatives to climate change.

Claude Iluta from the Democratic Republic of Congo

- Firstly, it must be good governance of public affairs at local, national level. This can only be achieved through democracy with traceability. The budget allocated to agriculture and the environment must be consistent. Governments work with NGOs that focus on environmental protection and agriculture, with the participation of local communities to ensure a national economic boom.
- On the other hand following international conferences and meetings, the international community must comply strictly with all conclusions and recommendations. Today, there is already discussion about a green economy, green jobs, green fund, while they are unable to implement what was agreed years back.
- It will also implement technology transfer, capacity building of LDCs and other small island countries.

Jean Merlin Etohe from Cameroon

“At the national level, there should be an emphasis on the professionalization of small-scale farming. This, far from being essentially technical, is also and mainly organizational, and will allow smallholder farmers to quickly form a "policy" force. In addition, small producers should be given “direct” subsidies and should benefit from a securing land policy.

At the local level should be set up local observatories to identify and disseminate local adaptations to climate change. In addition, the poles of product development of small-scale farming must be established.”

Lambert Moundzeo from Congo

“In addition to good governance, capacity building for climate change, particularly adaptation occupies a prominent place in the recommendations to make. It should focus on the

enhancement of local knowledge and significant advances in science that have a significant impact on the countryside. Producers must be assisted by development NGOs, donors and policy makers. Agricultural research should be funded as it was decided at international meetings (percentage of GDP), and must be oriented towards the concerns of rural areas according to the current issues, namely poverty reduction and food security.”

Buwket Bely from Ethiopia recommended investment in research in drought and disease resistance varieties, early maturing varieties, soil conservation measures (terrace, ditch, check dam, agro-forestry), technology (farming machinery like improved plough design) Introduce mud bricks house, bio gases, and solar energy to ease the burden on forest, which has an important role in climate mitigation and adaptation), health centers, irrigation and water harvesting development, expanding fertilizer use, expanding markets, establishing crop insurance institutes, expanding education (farmers training centers, formal education), reforming land policies (tenure, size of land holding, farm fragmentation, use policy), establishing local meteorology stations, monitoring and publishing climate data, developing climate forecasts, and formulating planned and anticipatory adaptation strategies. The Government should also strengthen non-agriculture sectors (industries, enterprises), as creating opportunities for generation of added value, (particularly employment), outside of agriculture remains one of the dominant challenges of successful adaptation to climate change.

Noah Zimba from Zambia suggested small holder farmers need to be compensated by the polluters who have caused climate change.

Pacôme Tomètissi from Benin

At the national level, governments should work to ensure smallholders’ and poor households’ rights to food and environment. Due to climate change, agricultural yields have highly decreased. Food security can be reached only when farmers’ rights are met. Policy and program elaboration should involve and enable farmers’ participation. It should be an inclusive process that takes into account farmers’ voices. Governments should also foster knowledge sharing strategies including media, farmers, NGOs and researchers networking as a stakeholders’ platform on climate change adaptation for food security. Evidence collecting will help farmers learning from academia and their peers.

At the international level, industrialized countries should give an allowance to poor country farmers for their role in causing climate change and this will help farmers facing the adverse impacts. Calling rich countries to reduce their GAS emission is not enough. They should pay for their past actions. United Nations and country Parties should agree on and implement an equity-based trade and refuse unfair World Trade Organization agreements.

Sylvia NAMUKASA from-Uganda suggested training of farmers in modern agricultural methods and facilitation of applying knowledge gained in the field. She also mentioned the need to assist them in finding market for their products.

Fatimo Adekola from Kenya lament over dependence on rain-fed agriculture and traditional method of cultivation and crop husbandry makes small holder farmers more vulnerable to climate variability and change. She suggested the need to build a system for effective water harvesting techniques suitable for the different locations. She also added for the need to support adequate crop protection strategies to meet the challenge of increased pest infestation under a changing climate.

Abel J. Awuwu from Nageria said that small scale farmers who practice rain-fed agriculture in Kaduna state in the North-West Zone of Nigeria experienced change in rainfall pattern, floods, lost in soil fertility, low livestock production, inadequate farm input in the last three years. Farmers are trying to cope with climate change by changing planting dates, conservation farming, engaging in livestock production. He recommended building the capacity of the small-scale farmers to develop strategies that are adapted to climate change, through knowledge exchange and advocacy for policy reform.

Ignitius chagonda form Zimbabwe

“Climate change issues are not as obvious as a lot of people might think especially on marginalized communities. They might be aware of the signs of change like frequent droughts, shifts in seasons, heat waves and many more but are not aware of the causative agents; neither are they taking adaptation measures on a sustainable basis.

Rainfall amount (drought/floods) is the most devastating one and most adaptation strategies should put more attention to it.

National farmer extension efforts by various governments should be strongly complemented by local and regional meteorological offices that should issue a more precise rainfall forecast (weather short term, intermediate or long term). The forecasts, especially seasonal forecasts, must then guide the small holder farmer to choose from the basket of farming technologies that local extension officers offer. Governments should therefore make sure that that information is disseminated to the rightful people in time.

Furthermore, there is need to make the forecasts more precise by downscaling them to lowest possible levels. Meteorological offices from developed nations should join hands with those from developing nations especially from Africa to produce better forecasts that will act as shock absorber for small scale farming communities to the effects of climate change and climate variability.”

Main highlights/outcomes of the discussion

Observations and impacts of climate variability and change on smallholder farmers in Africa

- Climate change is real and it is happening in all corners of Africa in various forms.
- Small holder farmers who are dependent on rain-fed agriculture are highly vulnerable to climate variability and change
- Longer dry spell and increased drought
- Increased desertification in the Sahel and other areas
- Less water availability due to drying of rivers and decreased water levels in boreholes
- Increased floods
- Unpredictability of weather and shift in seasons
- Low yield in crop production and the inability to produce optimally even when all the cultural operations were fulfilled
- High rate of deforestation
- Migration in search of employment and or engagement in other none-farm activities to feed their families because the environment is no longer suitable
- More climate refugees are predicted

Farmers coping mechanisms to climate variability and change

- Changing planting dates
- Adopting early maturing varieties
- Migration in search of employment especially during drought years
- Drip irrigation technology
- Applying soil conservation methods (conservation farming)

Policy recommendations

- Capacity building of small holder farmers
- Encouraging irrigation agriculture
- Supporting research in drought tolerant crops
- Compensation of farmers by polluters
- Support farmers to plant and protect trees that can halt the spread of the desert, improve soil fertility and increase crop yields
- Improving weather and climate services by downscaling climate information at local level and improving accuracy of forecast
- Complement national farmer extension efforts by local and regional meteorological offices who should issue a more precise rainfall forecast
- Encouraging value addition of farm production
- Introduce water harvesting technologies
- Increasing farm productivity

Acknowledgement

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