# The Private Sector and Climate Change Adaptation

## A Civil Society Perspective for West Africa


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WEST AFRICAN CIVIL SOCIETY FORUM
FORUM DAS ORGAIZACOES SOCIEDADES CIVIS DA AFRICA OCIDENTAL
FORUM DE LA SOCIETE CIVILE DE L' AFRIQUE DE L' OUEST
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SOS SAHEL

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# Foreword

This policy paper was produced using the Book Sprint method (***www.booksprints.net***) which allows for drafting, editing and publishing of a complete product in five full days. The outcome is a product that reflects the team's work rather than the personal opinions of the participants and their organisations. The paper was written in Accra, Ghana, facilitated by the Book Sprint team under the West Africa Dialogue on Private Climate Financing Project that is being managed by Oxfam Denmark and funded by the Civil Society in Development (CISU) in Denmark. The process was challenged by writing the book in both English and French.

The participants of the Book Sprint are representatives of the organisations that form the Alliance. These organizations include OXFAM-IBIS, ABANTU for Development (Ghana), SOS Sahel International Burkina Faso and the West African Civil Society Forum (WACSOF in Nigeria), through its national chapters from Mali, Niger, Nigeria and Togo under the coordination of the Regional Secretariat. The partners have met on earlier occasions in 2016 to discuss the possibilities and pitfalls of stronger engagement of the private sector in climate change adaptation investments.

This Book Sprint product is meant to serve as a policy paper that introduces the challenges for climate change adaptation in West Africa. It presents several successful climate change adaptation examples involving private sector engagement or potential private financing, from Burkina Faso, Ghana, Mali, Nigeria, Niger and Togo. It also presents an analysis of the context, with illustrations of practical case studies and lessons learned from each country.

The policy paper is a bold step towards increasing funds for adaptation projects with multi-stakeholder partnerships to protect rural communities, women and other vulnerable groups. The proposals are not exclusive, rather they lead the way to the development of solutions to address the difficult experiences being navigated by defenceless populations as a result of climate change effects.

Finally, the paper provides some overall lessons learned and specific recommendations about how governments, civil society and the private sector can jointly strengthen the private sector in adaptation investments. The recommendations target international climate financing institutions, the Economic Community of West African States (ECOWAS), governments, private sectors and civil society, and outline some initiatives toward multi-stakeholder partnerships to adaptation challenges.

The policy paper is a strategic tool for Alliance Members and as such will serve as an inspiration for further discussions rather than a fixed set of recommendations.

We would like to thank our Book Sprint facilitators, Faith Bosworth and Laia Ros Gasch, for their guidance and coordination and we would also like to thank the off-site Book Sprint team, including Henrik van Leeuwen (illustrator), Raewyn Whyte (copy editor).

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# Introduction

Climate change is affecting West Africa in a number of ways, including changing weather patterns and temperatures as well as increased risks of flooding and droughts. According to UNEP's report Africa's Adaptation Gap, Africa is facing significant challenges and costs to adapt to the changing climate. Though developed countries have committed USD 100 billion annually by 2020 for mitigation and adaptation to climate change in developing countries, so far only 20% is targeted to adaptation investments, leaving most African countries with a finance gap. Besides the funding gap, the limited engagement of the private sector is a major barrier to developing innovative and scalable adaptation solutions in West Africa.

From the perspectives of civil society, the private sector holds a huge potential to leverage financial resources, new technology, and services for climate adaptation initiatives in developing countries while still targeting the poorest households and respecting human rights. This policy paper shows the ways by which governments can create a needed space for the private sector to participate in the implementation of adaptation projects together with other stakeholders. It also provides strategic information to help the private sector to expand its knowledge of the potential to invest in adaptation initiatives that are pro-poor and economically viable.

This policy paper is a first step for civil society to begin advocacy for stronger private sector engagement in climate adaptation in West Africa. It calls for a strong multi-stakeholder collaboration between public, private and civil society in order to scale-up adaptation investments in West Africa. The policy paper also aims to provide inspiration for international climate change finance institutions, governments, and private companies, to see new opportunities and ways to transform climate change adaptation financing.

# CONTEXT

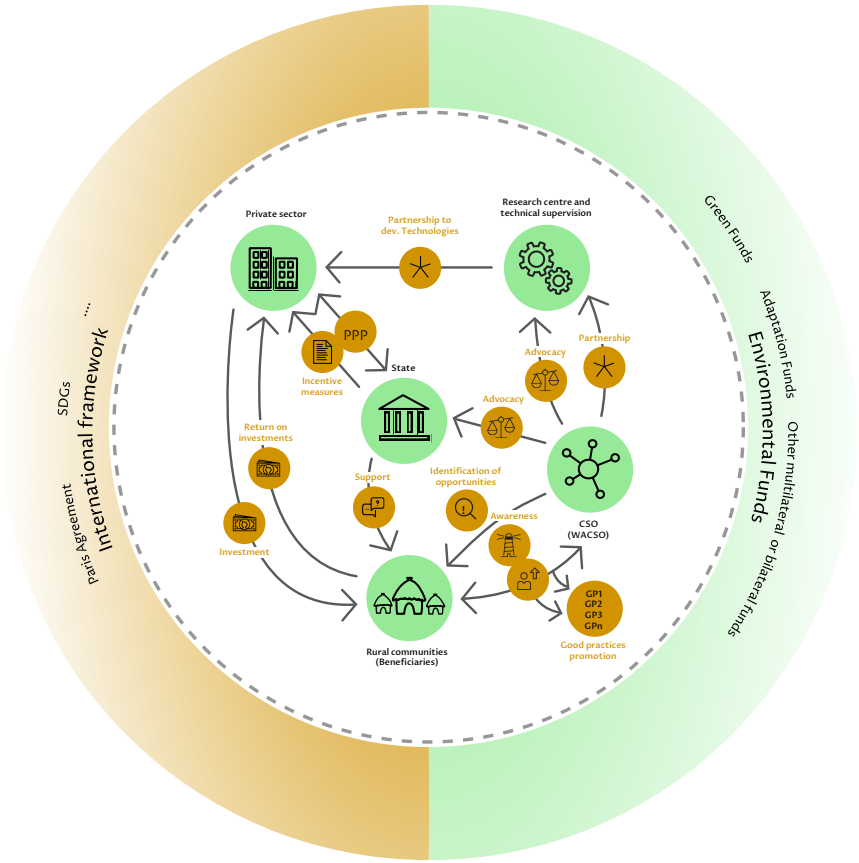
# Overview of the Climate Change Adaptation Challenge

Climate change impacts disproportionately on the world's poorest nations and peoples. The impact of climate change is already being felt by rural populations in West Africa but it poses a greater danger in the future, particularly if adequate global action is not taken to reduce greenhouse gas (GHG) emissions. Extreme weather phenomena are leading to accelerated land degradation in the Sahel region, along with increased food insecurity and poverty. Traditional rural livelihoods are threatened and increasing numbers of people are forced to migrate permanently or temporarily to find alternative livelihood opportunities.

Climate change efforts are two-pronged: mitigation and adaptation. Mitigation addresses the main causes of climate change by reducing GHG emissions, while climate change adaptation aims to strengthen resilience and coping strategies for a changing climate. Though the Paris Agreement emphasises a need to balance international climate finance between climate mitigation and adaptation efforts, in reality, no such balance exists. Oxfam emphasised before COP22 in Marrakesh (November 2016) that, at that time, only 20% of the total climate finance was targeted at climate change adaptation. This imbalance is likely to increase in the future if the private sector does not start co-investing in climate change adaptation efforts. As a consequence, the vulnerability of millions of people in developing countries may worsen as they face continued violation of their basic human rights as stated in the SDGs, such as the right to food and the right to escape poverty.

A key challenge to attract more financing for climate adaptation investment is that there is still limited agreement on the definition of what counts as adaptation and how it is measured. So far, there is a messy and unclear definition, and we need to clarify what can be labeled as climate change investments, how adaptation investments can be distinguished from other types of investment, such as those in the agriculture sector, or into renewable energy (for mitigation), and/or how adaptation projects can add additional value to other programme portfolios. If the challenge of defining what counts as climate change

adaptation investment is met, this could break down the barrier to attracting private investments, increase funding from international finance institutions for adaptation programmes, and encourage national governments to develop clear investment frameworks in which adaptation efforts are distinguished from mitigation efforts.




So far, climate change adaptation projects have been applying a relatively traditional 3-5 year project cycle. There is a great need to make climate change projects more sustainable by strengthening market-based value chains and solutions. Somehow, the adaptation narrative leaves out business opportunities, though most adaptation measures include different types of investment op-

portunities for the private sector, and new products and business models should be developed to make sustainable profits. Businesses urgently need an increased awareness of risks and opportunities related to climate change adaptation, particularly in infrastructure, agriculture and water sectors which can lead to new partnerships between vulnerable communities, businesses, and governments, to promote investments and solutions for climate change adaptation.

# International Frameworks and Stakeholders

The Sustainable Development Goals (SDGs) and the Paris Agreement provide an enabling environment for developing innovative multi-stakeholder partnership approaches which may provide financing and solutions to climate risks threatening the livelihood of millions of people in West Africa. These frameworks also call for much stronger participation and responsibility from the private sector.

While 2015 was a landmark year for adopting the new global framework for development and climate change, the forthcoming years will demand a willingness to accelerate the establishment of agreements and goals with associated operations and investments. Transforming agreements into the achievement of expected impacts and results will require strategic planning and comprehensive action by both public, private and civil society sectors at national, regional and international levels. One stakeholder's action and strategies are likely to influence those of others: for example, the government's encouragement can facilitate adaptive actions from the private sector and these are likely to influence interest in long-term investments.

At the international level, a wide range of international institutions plays an important catalytic role in engaging the private sector. International bilateral and multinational development agencies, funds, and finance institutions aim to leverage private finance and encourage innovation related to climate change adaptation in developing countries. While the Green Climate Fund (GCF) will be a major multinational stakeholder in the future, many of the existing funds such as the Adaptation Fund, Climate Investment Fund, African Development Bank and Global Environmental Fund still play a major role. However, in the future, the GCF-accredited entities which develop, implement and manage projects and programmes financed by the GCF will also be crucial stakeholders in encouraging private sector engagement to deliver pro-poor adaptation measures. At the moment, there are 48 accredited entities to GCF, a combination of private, public, non-governmental, sub-national, national, regional and international institutions.

At the West African level, ECOWAS provides an important political platform. The ECOWAS climate change initiatives are guided by environmental policy and the ECOWAS Vision 2020. The policy is designed to provide a framework to streamline the intervention of member states in the ECOWAS region and the vision offers space to harmonise the energy around initiatives by different partners.

At the national level, government policies and legal frameworks are important to facilitate good adaptation with the private sector. The newly established National Adaptation Plans (NAP) are vital for developing comprehensive climate change policy that builds synergies between different sectors and stakeholders. The NAPs identify medium- and long-term adaptation needs and present implementation strategies to address adaptation challenges. However, other sector-specific policies, legislation and regulations, can also provide important frameworks to promote adaptation investment. The capacity and responsibility of national institutions are the keys to providing a constructive dialogue between different stakeholders that can lead to concrete climate change adaptation actions and investments. For example, this dialogue can lead to Public-Private-Peoples partnerships (PPPPs) to accelerate innovations and investments towards increasing climate-resilient livelihoods in West Africa.

# Partnerships and Stakeholders

Public policies encourage innovative partnerships and multi-stakeholder collaboration as a vehicle for building climate resilience. Each stakeholder provides different skills and has different roles to reduce the climate risk for poor and vulnerable groups. The first step is to identify the different stakeholders, map their different competencies, and understand the ways in which they contribute to strengthening climate resilience in partnership with other stakeholders.

The private sector is a heterogeneous group which comprises the informal sector, small-to-medium enterprises, and multinational companies. The private sector can provide multiple products and services relevant for increasing climate resilience for rural communities. These products and services can, for example, provide weather information to farmers through mobile phones, saving and credit opportunities through banks, access to affordable equipment and farm products at a fair market price via merchant exchanges, and cutting-edge adaptation technology such as solar-powered irrigation systems from social entrepreneurs and multinational companies which have invested in their development.

Civil society is also a heterogeneous group made up of a number of different actors with both common and competing interests. These include community organisations, farmers' associations, labour unions, international NGOs, youth organisations and women's organisations, as well as religious and ethnic groups. All of these groups face different adaptation risks and/or propose different solutions for adapting to climate change.

Public institutions are another highly relevant stakeholder. These include both national and sub-national governments, ministries and specialised agencies such as forestry and environmental protection agencies. Public and private sector research institutions are also vital to provide relevant research and evidence about climate risk and in the development of new adaptation technology. International and bilateral climate and development agencies also play a critical role in promoting private sector and multi-stakeholder engagement by providing grants and risk capital.

It is obvious that these partnerships will not emerge at random. Though some partnerships already exist, many of the stakeholders lack information about climate change and are not familiar with the risks and opportunities associated with building climate resilience in developing countries. A paradigm shift is required if the private sector is to scale-up the production of relevant adaptation services and products necessary to enable lower costs and effective responses for poor and vulnerable communities in West Africa.

# Gender and Vulnerable Groups

Gender dimensions and vulnerable people are often neglected in the negotiation of climate financing. This has resulted in the exclusion of the majority of populations who are particularly affected by climate change – aged people, women, young and persons with disabilities. Gender responsive interventions and access by vulnerable groups to private sector adaptation investments are critical elements for the success of adaptation to climate change.

Some of the key challenges women, youth, aged people and people with disability face are limited access to land, efficient energy, capital and water, and often poor health. Limited access to land has increased as a result of excessive weather conditions, and these conditions have further limited the availability of arable lands for farming and animal rearing. This combination has also increased the risk of hunger, malnutrition, and higher rates of mortality.

Supplies of energy and water are critical products for most rural households in West Africa. Women's household responsibilities mean that they have to spend hours gathering firewood, and fetching and treating water for drinking, cooking and for animal grazing. Climate change is increasing this burden for women and limiting their opportunities for better livelihoods. Other impacts from extreme weather conditions include direct health implications such as pneumonia and skin diseases for which the cost of treatment drains the already limited income women have.

Given the diversity of challenges that women and vulnerable groups experience, development of specific products friendly to their peculiar situations is needed to facilitate their co-existence with the effects of climate change. The private sector can provide some of the solutions for women to adapt better to the new climate risks and challenges.

On the one hand, civil society, public institutions, and the private sector should jointly undertake a needs assessment for women's adaptation to climate change, which could lead, in turn, to specific project designs and investments. Moreover, for more general climate adaptation investments, the private sector should work with women and other vulnerable groups to provide opportunities

for them to influence the design of these new products, ensure they will be culturally acceptable, and also meet their needs without imposing adverse impacts.

Much as women are vulnerable, they are also active stakeholders in the climate adaptation discourse. Women entrepreneurs in the private sector can lead the scaling-up of adaptation interventions in their specific communities. This is because they are already confronted with the challenges facing their communities and are better positioned to mobilise the needed interest in a product that they may develop to ensure that it becomes marketable. Therefore, supporting and increasing the access of women entrepreneurs to capital investments in adaptation projects is likely to guarantee the sustainability of these interventions and the patronage of their products. However, as with adaptation financing, the credit made available can be provided either in the form of interest-free grants or loans or with access to technical training.

The private sector focus should also be on job creation through adaptation investments in order to contribute to the reduction and prevention of rural-urban migration of youth. This could be effective through the introduction of innovative and affordable technologies (such as landscaping technologies and rainwater harvesting systems) to restore degraded farmlands. Also, a focus could be on the development of alternative livelihoods for youth especially by promoting activities such as beekeeping, mobile financial services, food processing and packaging, resilient crop farming, and so on. Most especially, it would be relevant to facilitate access to credit for youth to enable them to develop products and services that are marketable (such as extension services, production of organic fertilisers, provision of soil analysis for local farmers, storage facilities for farm produce, and so on).

# Opportunities to Engage the Private Sector

The private sector is almost invisible in the effort to scale-up climate resilience for rural communities in West Africa. However, engaging the private sector in providing response measures will be important as it can catalyse greater investment for adaptation. The private sector can provide innovative climate-resilient technologies, services in high-risk sectors and scale-up accessibility through new business models and value chains adjusted to rural livelihoods in developing countries. Furthermore, it can also provide more resilience for climate risk for companies' own products that might also be affected by climate change in different ways.

In this sense, pro-poor adaptation projects can benefit both communities and the private sector. On the one hand, there are opportunities for technology transfers from the private sector to communities. This can have a direct positive impact on the quality of life of communities as it can contribute to improving their production techniques, access to weather information, and lessen their burden from climatic changes such as shifting rain patterns and hazardous weather. It also contributes to scaling-up climate resilient production capacity for targeted beneficiaries. On the other hand, it also presents a business opportunity for the private sector because it offers a new market for products designed to meet new climatic challenges.

Adaptation financing provides opportunities for the private sector, government and civil society to develop new partnerships that can benefit climate-affected households. Under the framework of these partnerships, the government can grant the company a set of advantages (free license, fast tracking of relevant documents, transparent regulations, incentives for investment in adaptation technology, etc) that will facilitate partnership operations. This could lead to a positive impact on the beneficiaries in the sense that they will enjoy more services provided at affordable prices and in a timely manner. Also, there is an opportunity to review community needs within the partnership framework to enhance services or products being provided. In return, the gov-

ernment needs only to make minimal investment in services that help to address the needs of target populations.

International adaptation financing can be used to promote new business models based on a participatory approach through a pool of funding to develop products or services that address community adaptation needs. In this way, both public and private funding will be invested in developing new technology along with a market approach which reinforces the sustainability of scaling-up the product while still benefitting the poor and vulnerable households (through affordable access to products). Thereby, products and services targeted to poor households can be developed even though there is a high risk for the investment or profits to be at a low level. This also provides an opportunity for the company to diversify its business sector by developing new or related business activities to expand its client service and its capital base. This helps the company to increase its investment portfolio and it also guarantees the continuity of service for the community because of leverage from other businesses by the service provider.

It is also vital to ensure funding opportunities for social entrepreneurs and small-to-medium size enterprises to develop and implement projects in the adaptation sector. For example, international public climate finance could use banks or micro-credit institutions to make credits with low or no interest available to social entrepreneurs and enterprises.

Traditionally, companies provide social amenities such as schools, health infrastructures, roads, water services, to address the needs of the local communities where they operate as part of their Corporate Social Responsibility (CSR). Corporate Social Responsibility, however, can increasingly be targeted to mainstream climate resilience interventions. CSR interventions offer an opportunity for companies to provide climate resilient adaptation initiatives for communities in which they operate. For example, extractive industries and the local communities could pilot new climate-resilient projects while the private company mainstreams climate resilience in their mining operations. These initiatives could contribute to improving climate resilience and increase community livelihoods while reinforcing the activities of the companies by creating amicable relationships with affected communities.

# Risks for Private Sector Adaptation Investments

Private sector investment has recently been emphasised as the panacea for climate adaptation challenges. However, private investment also includes a number of risks when clear frameworks and regulations are not in place. The private sector alone is unlikely to provide solutions for climate change adaptation, especially not for the poorest and most vulnerable groups. An enabling environment for climate change adaptation is necessary to provide investment opportunities, as are clear regulations to ensure positive impacts are targeted for the most vulnerable groups.

One major risk is that private sector technologies are based on patents that make life-saving equipment and services unaffordable for many people in developing countries. Promoting a balance between providing adaptation services and profits is important. This is particularly relevant to consider when the private sector is implementing investment blended with public international finance. In these cases, clear targeting of the poorest and most vulnerable groups, such as female farmers, is critical to success. It is likely that multinational companies can leverage greater private financing and capture the majority of the international climate funding, leaving national small-to-medium-scale companies without similar funding opportunities. Private sector products to assist adaptation to climate change might not always be the best solution for the individual family or farmer, and they could feel cheated by misleading marketing. Public-private partnerships also impose risks for investments and could end up becoming expensive for the users and buyers of vital adaptation products and services such as irrigation, resilient seeds, farm inputs, and so on.

Isolated private investment can have adverse social, economic and environmental impacts that could have human rights implications. While a project may be providing adaptation opportunities for smallholder farmers, it can at the same time lead to adverse impacts such as pastoralist-farmer conflicts or statelessness. Access to credit and investment in seeds and equipment may be useful for farmers but often only if these are combined with training and more holistic land-use management approaches. Therefore, the private sector is ex-

pected to provide specific solutions that are located in a broader and more holistic framework. However, without these private sector services and products, the adaptation measures are unlikely to become sustainable in the long-term.

# CASE STUDIES

# Introduction

The need for private sector participation in climate adaptation financing has become more evident than ever. Various national, multinational, private and civil society stakeholders have developed successful adaptation projects and programmes that are profitable for the private sector and worth sharing. However, generally, private companies are not aware of these experiences and are often absent from investing in climate change adaptation.

Fortunately, several of the existing initiatives, investments and projects have recorded milestones and increased the understanding and inspiration to engage the private sector in defining what can be considered as a climate adaptation investment. It is worth noting that some of the scenarios are private sector-led, others are Public-Private Partnerships initiatives, while other initiatives still are from international organisations working alongside their local partners.

The following are case studies pulled from countries across West Africa in areas such as agri-business, sustainable agricultural practices, natural resource management, use of new technologies, market access, biomass and revenue-generating activities. Within each model are opportunities for improvement, but also key lessons that are worth sharing. The cases present different opportunities for the private sector to add value within a broader frame of climate adaptation. Potential investors in climate adaptation programs can begin to consider new business models and products that can be scaled up in other countries and sectors while still targeting poor and vulnerable communities.

The cases have been seen as inspirational by the Book Sprint participants for demonstrating new products, types of multi-stakeholder partnerships, and innovative business models. The cases are not intended to present a comprehensive review of each adaptation measure but rather examples of pioneering approaches that can engage the private sector more in pro-poor adaptation investments.

# Case Studies on Agriculture Finance

# Agricultural Micro-Insurance Scheme, Burkina Faso

Burkina Faso, like other West African countries, has experienced changing rainfall patterns as result of climate change. This has led to increased risks for farming activities. An innovative insurance model was designed to curtail the harmful effects of these hazards. The international insurance company Allianz, in partnership with Planète Garantie and other financial institutions jointly developed a new insurance product called Agricultural Insurance. This product targeted small-scale farmers who were formerly excluded from the formal insurance system. Farmers subscribed to this alternative insurance scheme to protect their production against climate risks and weather hazards. The insurance product included two basic types of insurances: index-based insurance and climate insurance.

In the selection and application of any of the insurance models, the evaluation is based on the following principles: the insurer provides a service, which is defined within the framework of a contract and comes with a cost. This cost is determined by (i) the average assessed value of compensations which defines the basic amount of the insurance premiums, (ii) administrative and technical services management, (iii) expected profit, and (iv) the cost of reinsurance which is required in order to compensate in the event of any damage. Considering the broader and precarious risks in farming, applying safeguard measures becomes very fundamental. Some of the causal factors that are insured against are frost, heatwave, drought, and locust and bird invasions.

The promotion of this product not only made it possible to guarantee compensation in cases of loss of farm products but also to develop a new business model in the agricultural sector. It also entailed the development of a specific offer in micro-finance products to stakeholders and a reorganisation of agricultural financing. This experience benefitted more than 5,500 maize producers and 11,100 cotton producers between 2011 and 2014.

The major risk observed with the pilot insurance scheme was that farmers with insurance stopped diversifying their income and solely relied on the insurance which did not cover all agricultural losses.

# Warrantage: An Inventory Credit Improving Food Security, Burkina Faso, Niger and Togo

Warrantage is a type of agricultural credit that has been introduced in Burkina Faso, Niger and Togo, providing a warranty for farmers on surplus agricultural production, enabling them to obtain financial credit to meet immediate socio-economic needs. Poverty often pushes farmers to sell their crops just after harvest when prices are low in order to offset production costs. An inventory credit system, warrantage, aims to break this cycle of selling off agricultural commodities when prices are low.

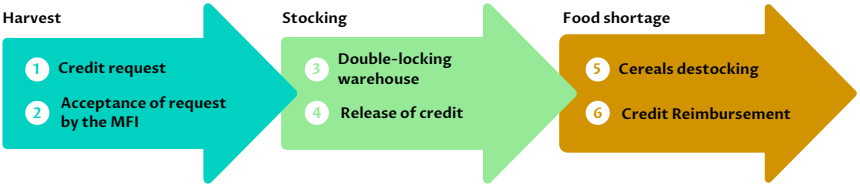
Warrantage is an innovative credit model that allows farmers to store part of their harvest in a warehouse for several months while using the harvest as a guarantee for a short-term loan. This allows smallholder farmers to access the means for immediate needs and essential inputs for the next planting season, while holding on to their food until crop prices are much higher. This loan amounts to 80% of the value of the stock and the stock is the guarantee for the loan but remains the farmer's property. After selling the stock at the market when prices are higher, the farmer reimburses the loan at 100% to the financial institution. In addition, the warrantage system also facilitates access to improved seeds that are more resilient to climate change and climate variability. From an overall perspective, the system also can contribute to improvement of overall food security.

These warrantage projects are respectively titled "Support to agricultural development in Togo," "Support to Local Development in Niger," and "Food Security for Farmers in Burkina Faso." In Niger, the project has been implemented by the government, while in Burkina Faso and Togo they have been carried out by two NGOs, namely SOS SAHEL and Inades-Formation Togo, respectively. These projects have involved micro-finance institutions and farmer associations.

More specifically, these three projects have helped establish a guarantee fund with micro-finance institutions to provide the warrantage scheme for farmers. It is an initiative which is contributing to reducing the climate vulnerability of farmers by allowing them to access higher prices for their harvest but also by facilitating access to improved seeds and piloting access to a micro-insurance scheme for agricultural production. The project has not only helped farmers get higher prices but also enabled micro-finance institutions to add new innovative business products.

The major risks that can be associated with the warrantage system, among others, are non-payment of loans, and a mismatch between the rolling out of the loan and the implementation of the activity.

*Warrantage Model*



# Case Studies on Sustainable Agricultural Practices

# Integrated Extension Services in Plateau State, Nigeria

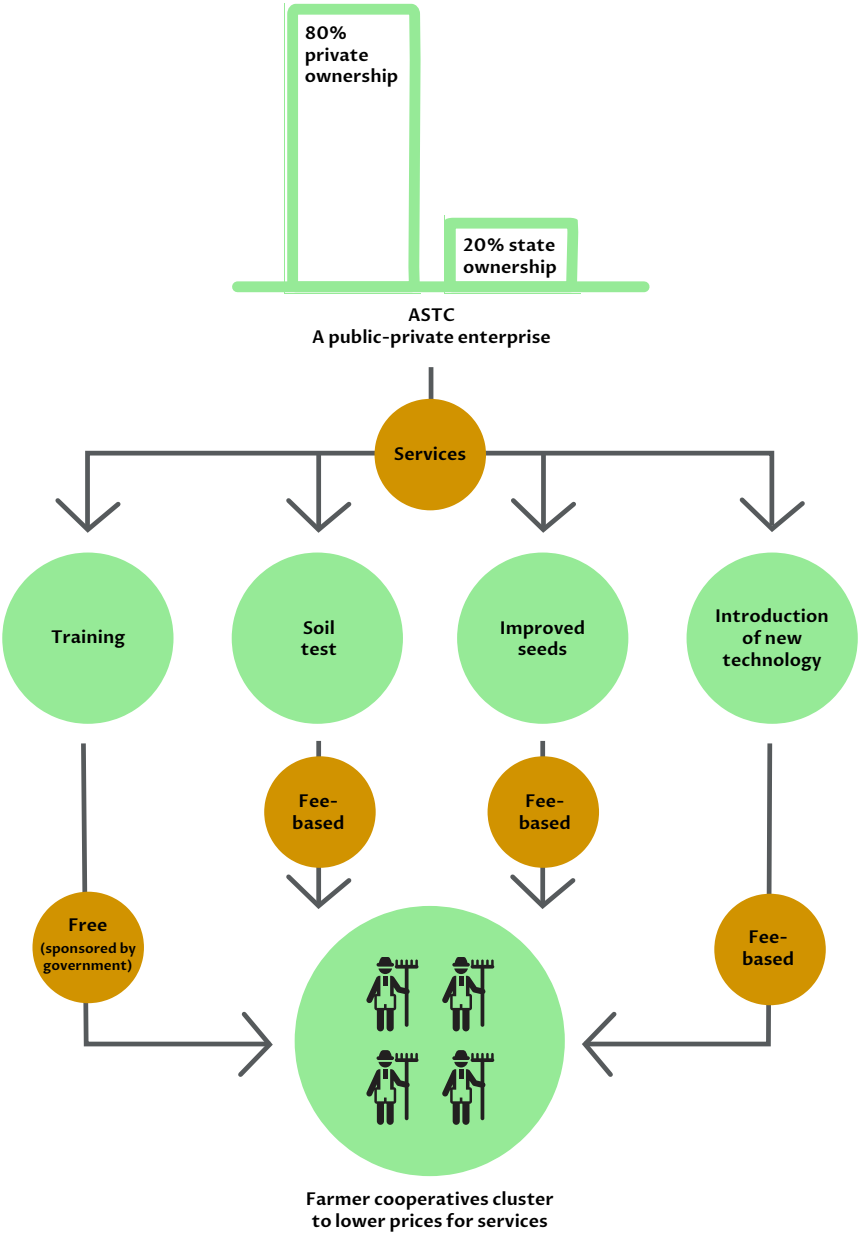
The Agricultural Service and Training Center (ASTC) is a Joint Venture Agreement between the Plateau State government and SEC Equipment & Communications Nig. Ltd (an Israeli company) located in three senatorial districts to provide comprehensive, proven and state-of-the-art climate-resilient agricultural practices and adaptation to farming communities in the State. This is a Public Private Partnership (PPP) initiative where the Company owns 80% and the state government owns 20%.

The services of this company include soil testing, training in sustainable land use and management, introducing new farming processes, processing of harvest, and improving storage. This initiative has increased knowledge among farmers and contributed to land recovery and improved yields. The business model demonstrates a new way in which government and the private sector can jointly provide extension services to local farmers that can transform climate adaptation interventions and build capacities to upscale yields.

Prior to this agreement, farmers and farming communities were facing challenges to adapt to climate change effects. This was due to weak extension services, lack of proper coordination of the agricultural development projects (ADP), a low ratio of extension service workers to farmers, and poor budgetary allocation to agricultural extension services. However, despite this innovative initiative, there are still teething challenges concerning the limited financial means of some farmers to pay for the complete service package. Moreover, in public-private partnerships, transparency in the company management is important to ensure access to information for the public such as media and individual citizens as extraordinary high profits or company losses can have adverse impacts on service prices and public revenues.

In sum, the project benefitted populations within the smallholder farmers, especially women's groups, filling existing gaps identified by the State as occasioned by climate change.

*Public Private Extension Service Scheme*



# Provision of Climate Resilient Seeds, Nigeria

The development and use of improved seeds are significant ways to increase crop yield and climate resilience for farmers. The Government of Nigeria (at both national and subnational levels) has on several occasions collaborated with research institutions such as the International Institute of Tropical Agriculture (IITA) and certified seed-selling entities including those in the private sector. Research institutions collaborate with different types of privately-led seed companies in producing certified seeds, operating a publicly-influenced system implemented on a market basis. Specifically, the companies are divided into seed companies and agro-dealers but without creating patents and monopolies. Rather, there is a strong engagement of local seed producers and local seed companies.

The collaboration has resulted in improved crop quality, productivity, and reduction in risk to producers and consumers, leading to viable business in agriculture.The farmers who have adopted the use of improved seeds and crops which are resilient to climate change have enhanced food security and improved livelihoods. These interventions have contributed to reducing poor harvests. The benefits of using the improved seeds and crops are shared by small-scale farmers, medium-scale farmers, and large-scale farmers.

The risks to the sustainability of this program are limited and low budgetary allocation to agricultural research institutes to research and improve on traditional and local seeds, the resistance of farmers to adopt new and non-traditional seeds, and farmers' limited access to information, credit and improved seeds.

It is essential that government-owned agricultural research institutes and educational institutions are adequately funded to research and improve traditional and local seeds. The market distribution of the improved seeds to farmers still needs to developed further, and the most vulnerable farmers need access to credit and training.

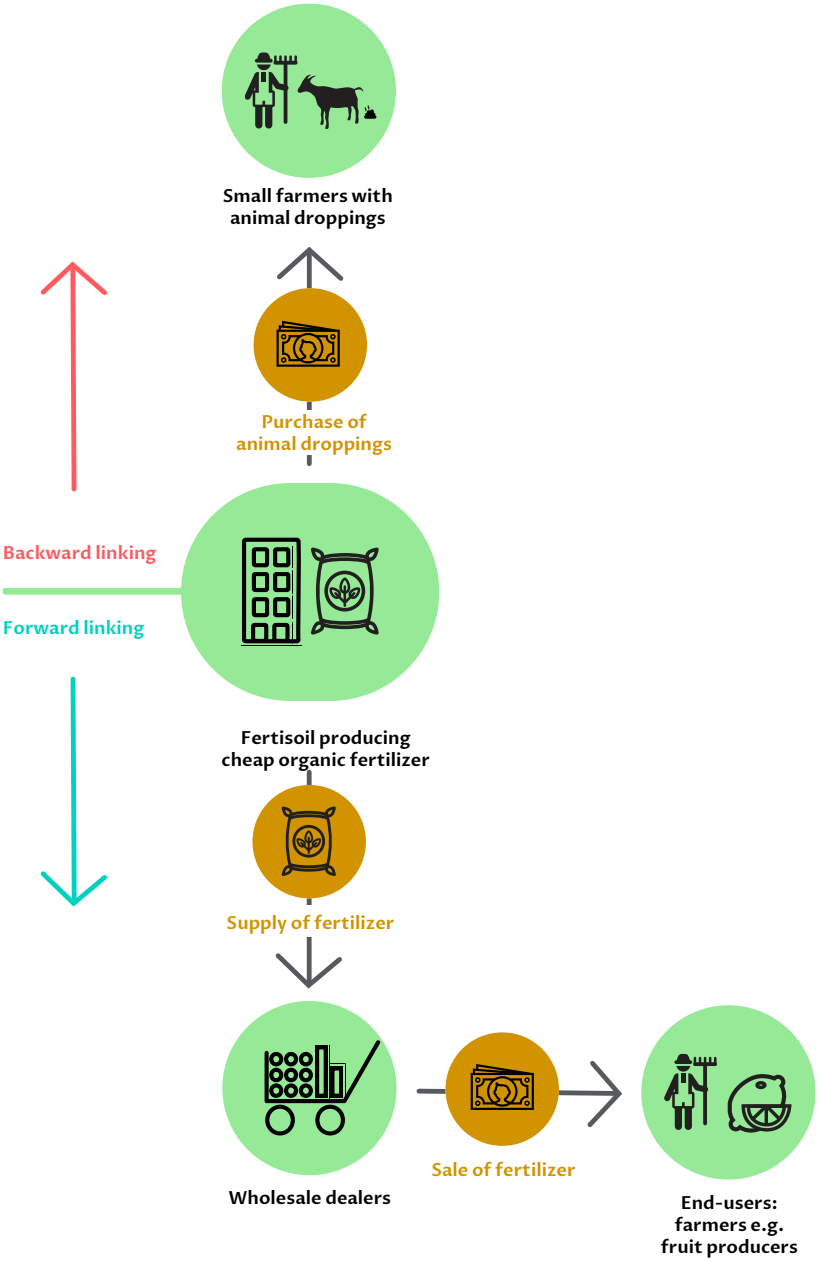
# Soil Conservation Practices, Ghana

The constraints posed by climate change compel the adoption of smart and efficient measures to optimise crop production with reduced input costs. Soil management is a good example of a prudent measure. Manure is critical to soil health, and has been promoted along with other Integrated Soil Fertility Management (ISFM) practices. Much as farmers appreciate manure, they complain that its production is time-consuming and actually impractical to produce in significant quantity for large-scale farms. Consequently, Fertisoils, a brand producing organic manure introduced by Deco Sustainable Farming Project in Tamale, sought to address this challenge. Motivated by farmers' need for organic manure instead of chemical fertiliser with its attendant challenges, commercialised organic manure has become a useful replacement. Farmers are excited about the positive effects organic manure has had on yields, and they also recognise the positive associated potential to protect the environment, conserve soil moisture and avoid chemicals.

This business model, even though 100% commercialised, has also created some pro-poor farming initiatives amongst local communities. Farmers now have alternatives to buying organic fertiliser that can increase yields, prevent the soil from losing nutrient, and support all-year-round farming. However, the fertiliser products are sometimes unavailable due to high demand and Fertisoil products have not yet become available across the country. Government buy-in is needed to support this initiative. Forthunately, the Ghanaian government is currently supporting a similar investment to produce organic manure in Accra in order to scale-up production and increase distribution of manure.

Currently, the organic manure costs an average of USD$30.00 per hectare, lower than the cost of inorganic fertiliser. If the current production level increases and optimises, the cost per hectare can be further reduced. Since organic manure has gained popularity among farmers in Tamale, organic waste (droppings from animal farms) has also increased in value. There is room for reasonable profit to the private investor who increases production, improves packaging for rural transportation, and extends the distribution network for organic manure. Demand is very high, especially among fruit farmers.

*Expanding Access to Affordable Organic Fertilizer*



# E-Agricultural Extension Services, Ghana

The ultimate objective of the E-Agriculture Extension Service project is to reduce poverty among food crop farmers by providing them with real-time weather alerts, crop advice, and delivery of market prices. The project is being implemented by ESOKO (an ICT company) in collaboration with Non-Governmental Organisations (NGOs) and farmer associations, telecommunication companies and other private companies, as well as a number of government institutions such as the meteorological service, government departments and research institutions.

The poverty profile of Ghana shows that food crop farmers are among the poorest. This situation is being exacerbated by the changing climate as farmers are unable to predict weather patterns for farming activities. Previously, farmers relied on traditional means of determining when there was the likelihood of rains, when planting season should begin and end, and what type of crop to plant at a particular time. However, with the phenomenon of climate change, it has become difficult for them to rely on these traditional aspects of farming. There is an urgent need to employ innovative means to provide weather and general information about climate change to farmers. The ratio of agriculture extension officer to farmers in Ghana is also inadequate, at 1:3,000 (Peasant Farmers Association of Ghana Survey: 2012).

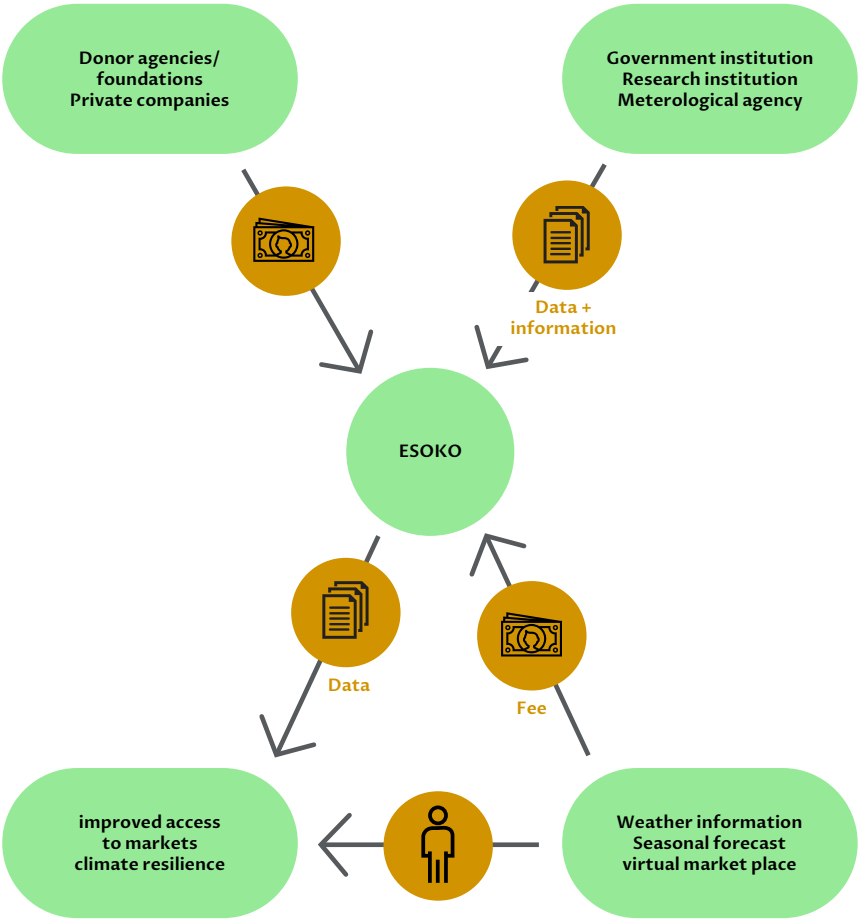
The ESOKO Platform is designed to deliver to farmer via mobile phone, timely, relevant information about post-harvest management, planting and sowing, seed varieties, fertiliser application, disease and pest control, weather forecast and commodity prices. This has increased their production and income levels.

Thousands of farmers have signed up to the Information and Communication Technology (ICT) platform and are receiving farming advice, weather updates, market prices and free calls through their cell phones. The Vodafone Farmers Club alone has 200,000 subscribers. A farmer is required to pay only GH$0.02 a month for access to information and many farmers are willing to pay this cost. However, Non-Governmental Organisations and private businesses have

invested in this project to provide agriculture information to farmers they work with in different parts of Ghana. As a result of the large number of subscribers, telecom companies are ready to subsidise the cost of sending and receiving messages in order to make the service affordable to farmers. The stakeholders include NGOs, private investors, meteorological services departments, farmer groups, telecommunication companies, research institutions. The primary beneficiaries of the e-agriculture extension project are smallholder farmers.

Farmers have become reliant on the information provided via the platform, and there is now a risk of ESOKO increasingly relying on commercial investors which may lead to provision of "sponsored" information rather than the much needed technical advice. The Government should, therefore, regulate the information provided through these platforms.

Across the continent, there are numerous other examples of apps and mobile services which provide key information to smallholder farmers. For example, the iCow app from Kenya has proved successful in assisting cattle farmers to manage the gestation periods or their livestock's lineage of their cattle, resulting in increased milk production. The business model of these online services varies but often includes a mix of private, public and civil society stakeholders before the services are extended to a broad audience and can operate on a market basis.


Donor agencies/
foundations
Private companies
Government institution
Research institution
Meterological agency
Data +
information
ESOKO
Data
Fee
improved access
to markets
climate resilience
Weather information
Seasonal forecast
virtual market place

# PICS Bags Reducing Post-Harvest Losses, Nigeria and Ghana

The Food and Agriculture Organisation (FAO) estimates that sub-Saharan Africa is losing 6-10% of food production to post-harvest losses (Shlomo Navarro, Journal of Pest Science. Springer: September 2012). Farmers, local market traders and consumers often face food losses due to lack of adequate storage systems. When it comes to grains such as maize, beans, cowpea, groundnuts and rice, these losses can be reduced by preventing insect infestation. Thus, improving storage facilities is critical to the improvement of food security in regions that face high climate vulnerability.

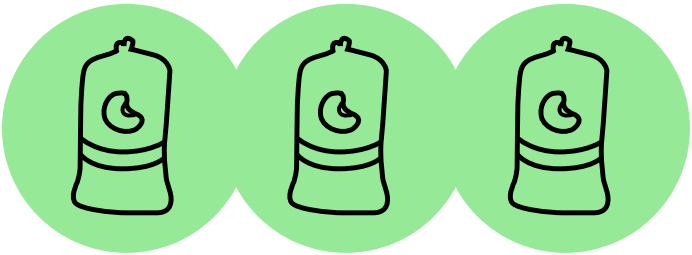
The Purdue Improved Crop Storage (PICS) system, "PICS bag," was developed by the Purdue University in collaboration with partners in Northern Cameroon with USAID funding and later promoted by the Bill and Melinda Gates Foundation in ten West African countries. PICS Bags have been successful in reducing grain losses to insect infestation (by weevils in particular), and over 2.5 million PICS bags have been sold globally. The bag is a triple layer bag and non-chemical hermetic storage system that limits the reproductive capacity of cowpea weevils. It is cheaper than other storage facilities which allow farmers and local retailers to access affordable and safe storage which can both reduce food losses but also increase prices for farmers as they can sell their grains when prices are higher.

In Northern Ghana, market surveys estimate that selling grain during the lean season when prices go up, rural farmers and market women make close to 120% more profit, just by being able to store their products with the PICS bags for up to six months after harvest. The risk is that low-quality copy-bags are entering the market and that many farmers who have not been introduced to the PICS bag yet may buy the inferior products.

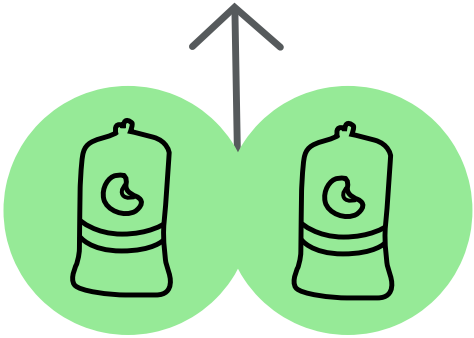
Today in Nigeria, the Kano-based Lela Agro Industries Nigeria Ltd company has the license to sell PICS bags and they are now sold on a market basis, proof that this affordable technology has demonstrated its value for small-holder farmers. In Ghana, the PICS bags are sold in Northern Ghana for approximately

USD$2 on a market basis after a promotion period, and today the bags are used by about 300,000 farmers in Northern Ghana. This successful business model goes from sponsored research, through a promotion and testing period sponsored by grants, to widespread use by farmers, distribution via market retailers, and sustainable production supported by market sales without major institutional intervention. At this stage of the commercialisation of the PICS technology is important and demonstrates the critical role of the private sector.

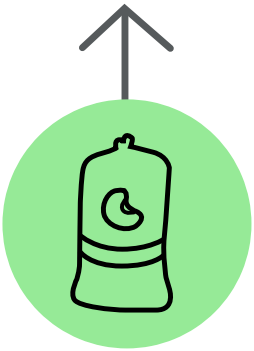
*Scaling Up Use of Improved Storage Bags*



**Scale-up by commercial retailer and farmers using PICS bags on a market basis**



**Grant from Gates Foundation to expand and disseminate the use of PICS bags in 10 West African countries**



**International research in collaboration with Northern Cameroon**

# Micro-Leasing for Land Restoration, Burkina Faso and Niger

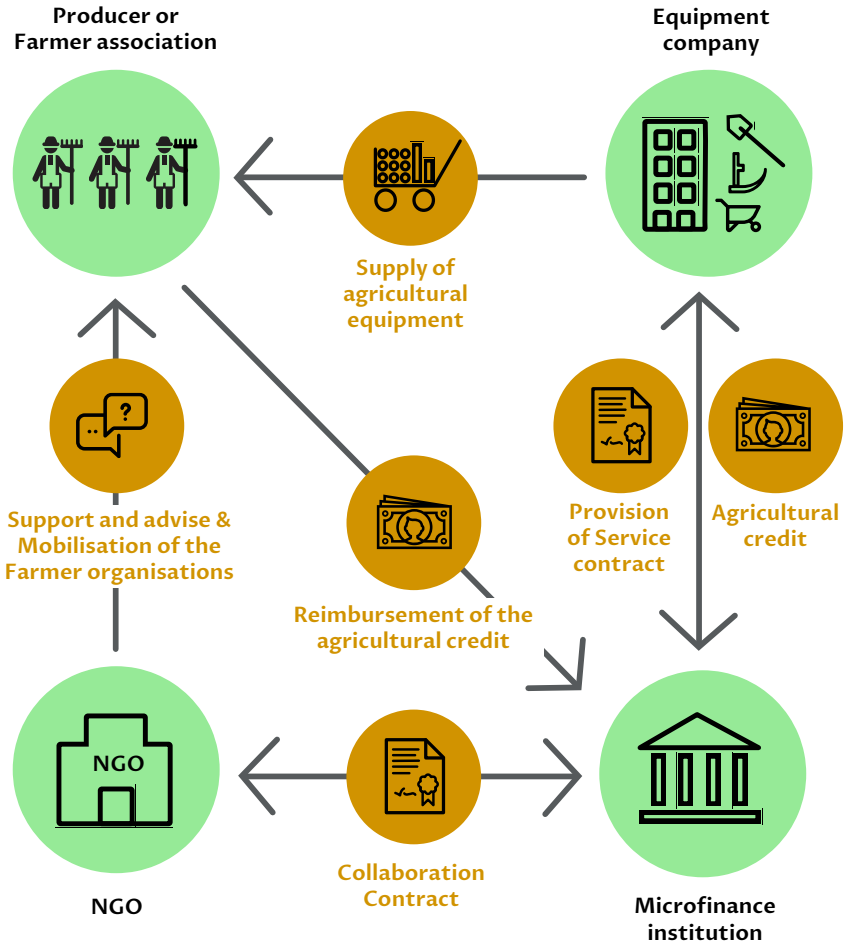
Land in Burkina Faso and Niger is mostly arid and/or semi-arid, a situation that is reducing farmers' ability to increase their productivity. This causes low productivity among rural farmers, and in consequence, high food insecurity in these countries. Given this situation, agricultural producers have developed Zai and Crescent techniques to recover soils and water, improve soil fertility, and ensure sustainable food and nutritional security of rural communities. However, access to equipment for small farmers remains a major challenge, yet increased access is needed to begin land restoration activities. SOS Sahel International, in partnership with the CTAA, has developed an innovative model (micro-leasing) to support producers to access low-cost and simple farming equipment through a project called Agrifinance. The micro-leasing model involves providing simple agricultural equipment (hoes, rippers, etc.) for farmers through an equipment loan scheme offered by the MFI. In the micro-leasing model, credit is given to an equipment company (Center of Improvement of the Traction Asine – CTAA), which makes equipment equivalent to 80% of the credit amount at the disposal of the producer. The equipment remains the property of the MFI until the producer repays 100% of the credit.

This model has improved access to farm equipment for producers, increased the area of cultivated land and boosted agricultural production in the regions in the two countries where it was promoted. For instance, in the Guie District of Burkina Faso, farmer testimonies emphasise that improved access to equipment reduced their workload; while associated land management techniques improved agricultural yields by 30-40 percent. This increase in yields again increases the resilience of producers to resisting the effects of climate change while the soil is also becoming more resilient to climate change. An innovative approach to providing farmers with credit to buy small agricultural equipment can also be achieved through a similar micro-leasing scheme.

The risk, however, is that in some cases the quality of the agricultural equipment has not resulted in the expected improvements in yield quality, and in

other cases, some farmers have not repaid the credit. Regulation of the quality of equipment to be provided should be strengthened.

*Innovative Business Model Financing Agricultural Equipment*



# Case Studies on Natural Resources Management

# Contract Based Reforestation System, Burkina Faso

Reforestation campaigns are usually annual in Burkina Faso, with the primary objective of planting millions of trees to fight desertification and climate change. The trees are often left without much care and face both human and natural threats, resulting in a seedling survival rate below 20 percent. As a result, this perennial effort has become unproductive and a waste of human and material resources.

To address this challenge, a contract-based reforestation system has been initiated by SOS SAHEL International Burkina Faso. The Contract Reforestation System consists of a contract signed by farmers to plant, nurse and maintain a certain number of trees for two years, and in return, the farmer is paid an allowance for each tree that survives after two years. The campaign launched under this contract-payment scheme, "Together, Let's Plant One Million Trees," is a joint partnership between SOS SAHEL, Environmental Technical Services, tree and seedling nurseries, microfinance institutions, and farmers.

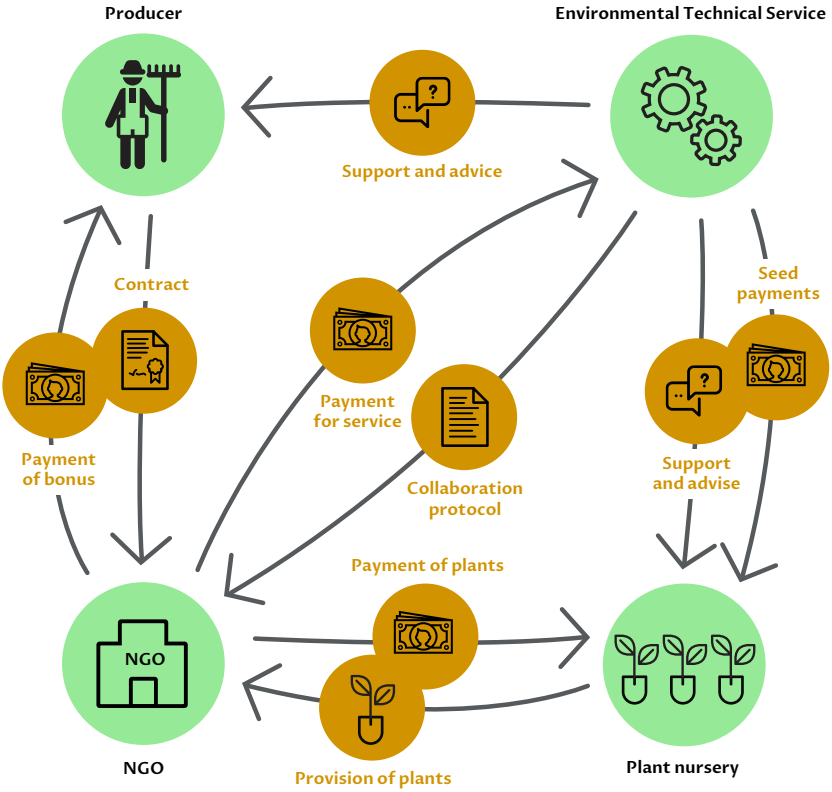
This intervention has resulted in a survival rate of above 70 percent of the planted trees. Plant seedlings that attract bees have also been planted along with moringa trees. The scheme has facilitated efforts by farmers in rural communities to address land degradation and has provided alternative sources of trees for firewood (though because of land degradation, women still walk many miles away, risking all types of dangers to get wood for cooking). The farmers have also benefitted from their harvest of forest products such as honey, moringa and wild fruits.

This new performance-based tree planting scheme has enabled local people to participate effectively in fighting desertification while reducing their vulnerability to climate change. Though the project is managed by an NGO, it is implemented jointly with private sector stakeholders, farmers, and plant nursery wholesalers. Local transport operators have also experienced a rise in their turnover as they provide transport for the seedlings.

Despite this innovative business model applying a performance-based system, there is still a risk of drought. Any lack of water can reduce the success rate and as a result, farmers may lose motivation.

The project demonstrates how civil society together with the private sector can provide efficient and scalable adaptation investments that benefit rural populations in Burkina Faso.

*Performance-based Payments for Reforestation*



# Drip Irrigation Technology, Burkina Faso and Togo

The Northern Region of Togo and the central region of Burkina Faso are areas where certain cereals are grown and where market gardening (beans, tomatoes, onions, eggplants, and so on) has been being practiced. These regions are threatened by lack of water because of long periods of dry seasons, repetition of periods of drought, and continued and unpredictable variability of rainfall during rainy seasons. These climate uncertainties mean that rural families are more and more vulnerable, and that irregular rains and lack of fertile and productive lands limit the agricultural activity that generates incomes. It is within this context that programmes and projects have been implemented to put in place microsystems of irrigation such as drip irrigation. In Burkina Faso, the experience has been developed through the General Direction of Irrigation (Ministry of Agriculture) whereas in Togo, the initiative has been implemented by NGOs such as Centre de Formation Rural (CFR) de Tami, Avenir des Jeunes Filles de Dapaong (AJFD), Action en Faveur de l'Homme et de la Nature (AFHON).

The technique consists of placing alongside rows of plants, pipes with small holes for the delivery of low-pressure irrigation water. The pipes deliver water very close to the roots of the plants. The secondary pipes diverge from the main pipe that is connected to a well with a mechanical system which integrates a pulley. Small taps are also on the pipes. The system uses low pressure to deliver water to the root of each plant in a slow and regular way, enabling carefully-considered delivery of water for agricultural production.

The implementation of this system requires signed contracts between all partners, including the businesses who deliver the irrigation materials to farmers. After delivery, training is organised by NGOs to strengthen the capacities of farmer organisations for the best utilisation of the materials. The benefits gained from this technique, among others, include: saving water and time and increasing production; income generation; decreased use of chemical products. The harvested agricultural products are sold at profitable prices and through signed contracts with private operators, enabling farmers not only to generate

improved incomes but also to maintain and renew equipment and materials. Thousands of farmers have benefitted from this innovative system.

This technique has, unfortunately, associated risks to consider during its implementation. These risks include obstruction of the drippers preventing delivery of water, difficult access to good quality pipes, and the destruction of pipes by animals and malicious people. In order to scale up similar irrigation initiatives, inspiration can be found in Kenya where solar-powered water pumps and irrigation systems have been developed together with a credit line for farmers which makes the new technology affordable.

# Case Studies on Infrastructure and Market Access

# Provision of Infrastructure and Market Access, Nigeria

Access to markets, processing and storage facilities are major challenges faced by women farmers in Nigeria. Inadequate infrastructure and equipment combined with exacerbated post-harvest losses limit farmers' ability to take advantage of lean season competitive prices, thereby losing market opportunities.

The JICA, Ollam and African Rice companies initiated programmes in North Central Nigeria, specifically in Benue, Nasarawa and Plateau States, with the overall goal to fill gaps in agricultural infrastructure, equipment and information services. These private firms work as wholesalers for the farmers, buying commodities from the farmers at acceptable rates based on the use of standard scales and measurements.

These programmes have largely contributed to the improvement of the livelihood of smallholder farmers from the target states especially, and from Nigeria in general. In fact, the programmes have responded to issues around food insecurity, hunger and nutrition and have contributed to the facilitation of market access. They have also helped to improve harvest quality and reduce post-harvest losses.

Previously, middlemen between farmers and markets exploited the difficulties of farmers to reach the markets by buying their harvest at very low cost in rural areas to sell back in urban areas with a large margin of profit. In so doing, these middlemen deprived the farmers of their benefits. The programmes contributed to addressing this issue by bridging the gap between the farmers and the market, and by providing farmers with what was needed, such as rice millers, destoners, storage facilities and profitable markets. Most of the interventions were usually done in collaboration with state governments, under the framework of Public Private Partnership models.

The most prominent risk to this project is around sustainability. The project is currently surviving on grants provided by JICA and the concern is what will hap-

pen when the project ends. Although the government already bought into the project, there is a risk that without grant support, the project will be abandoned.

# Extractive Industries Support Livelihoods and Improve Community Resilience, Nigeria

The Niger Delta region in Nigeria is currently suffering from resource curse effects due to the activities of International Oil Corporations (IOCs) and weak regulatory frameworks. Pollution and spillage, as well as artisanal refineries, have contributed to environmental degradation in the region where aquatic life, farming, and mangroves have largely disappeared and biodiversity is under pressure. IOCs have therefore adopted ESHRI (Environmental, Social, Human Rights Impacts) models as a policy that responds to environmental recovery, resilience and adaptation.

As part of this policy, because of the pattern of mining activities and the nature of the soil, IOCs have provided demonstration farms. These farms have become valuable ways to monitor impacts and the recovery process of the soil. They have also empowered youth to participate in agricultural activities through agricultural schemes, training programmes, soft loans, and insurance to increase and safeguard the livelihood of affected host communities. These initiatives complement government efforts in terms of economic diversification and the oil-for-food campaign.

The Corporate Social Responsibility (CSR) framework is part of the mandate signed up by the IOCs, communities and government as a way of giving back to their business environment. This program has two immediate benefits. First, it addresses the issue of implementing corporate social responsibility and secondly it helps to reduce rural-urban migration. The beneficiaries of this project include youth, women, host communities, small-scale and medium-scale farmers. Most specifically, this intervention has in recent years largely helped promote youth involvement in agriculture.

The risk is that pollution, spillage and environmental degradation are likely going to continue since the IOCs have at the back of their minds that they can

give a token to the local communities under their Corporate Social Responsibility approach.

# Case Studies on Reduced Use of Biomass

# Improved Stoves for Rural Women, Togo and Mali

Hundreds of rural households in Togo are adversely affected on a daily basis as a result of toxic fumes emitted by the use of stoves burning firewood and charcoal. Fuel-related injuries and fatalities not only affect people but are also a threat to the conservation of natural resources. Access to fuel for cooking is one of the most widespread developmental problems found in most constituencies in the country, and the high level of firewood consumption has resulted in deforestation, environmental degradation, and soil erosion which further threatens food security and increases vulnerability to droughts and climate change.

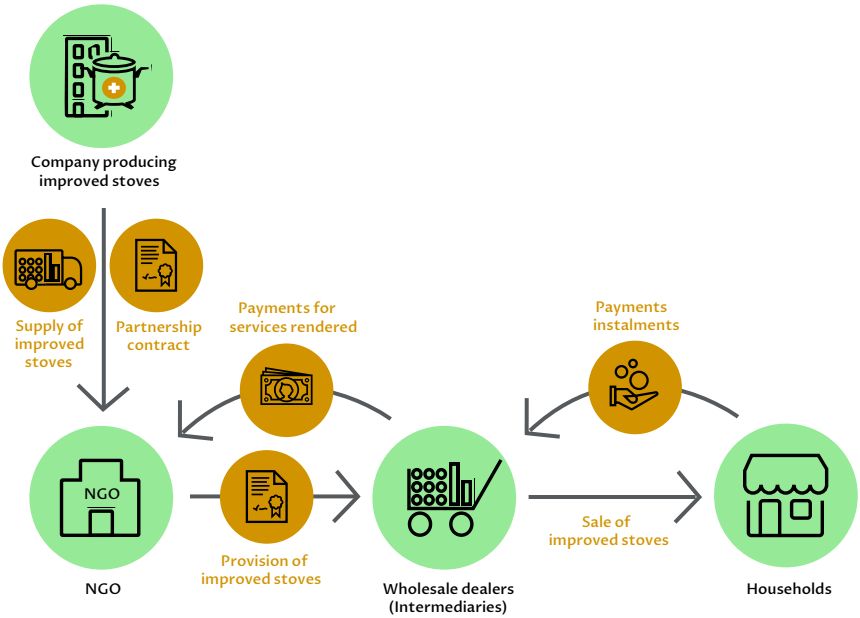
As a response to these socio-economic and environmental menaces in Togo, the Jeunes Volontaires pour l'Environnement, in partnership with the company SYTAP SARL, initiated a project promoting the use of improved cookstoves. The project consisted of acquiring and promoting thousands of improved stoves as well as building the capacity of women in the effective use of the stoves. The project aimed to reduce pressure on wood resources, ease the burden of women's day-to-day responsibilities to find fuel, and reduce household air pollution. The project has benefitted local communities in the Maritime and Plateau regions of Togo, and regions throughout Mali.

The introduction of improved cookstoves has led to a 25-40 percent reduction of the use of firewood and charcoal compared to the use of traditional stoves. Women and children now spend less time picking firewood, the environment is gradually recovering, and community resilience to climate change is increasing.

The initiative has had advantages for all the parties involved. The producer of the stoves made a profit on sale of the stoves and the households were also able to make savings as the payments were flexible, available, accessible and affordable.

The use of improved stoves may seem very attractive, but there are risks to affordability. If the stoves were to be purchased on a pure market-basis or without a micro-credit scheme, as their cost would be much higher.

*Partnership to Deliver Improved Stoves*



# Efficient Energy for Rural Women Businesses, Ghana

Throughout the year in the Lawra/Nandom district, the brewing of a local alcohol, gin, locally referred to as pito, is a major industry for women who sell it to support their income from farming. In pito brewing, a lot of wood fuel is needed, reducing the tree population in the area which leads to land and environmental degradation and makes the dry and drought-prone region even more vulnerable to climate change. Moreover, the heat and air pollution generated from the fuel is also a considerable health hazard to the women brewers.

During needs assessment at the initial stage of the project, Abantu for Development did some environmental scans about women's needs and how to provide alternative energy sources to replace the traditional use of biomass from local trees. Having secured the buy-in of local female brewers, Abantu contracted a local manufacturer who designed a prototype stove that was eventually mass-produced for the women. The project was considered an environment and climate change campaign as it mitigates current human behaviours that increase the local population's risk to climatic changes. Besides developing the prototype stove, a credit management scheme was introduced to promote the women's *pito* business. It was found that improving income generation and livelihood options for women, such as those achieved through pito brewing, and linking them to improved natural resource management, is reducing climate risk while increasing women's income.

The project has introduced improved stoves that are safer for the women's health due to the reduced application of fuel. On the other hand, use of the improved stoves has reduced pollution and health hazards posed by conventional stoves. The intervention has succeeded in the Lawra and Nandom districts largely because of community sensitisation about climate change packages through radio and workshops; but also the building of improved stoves using local materials, engagement with District Assemblies, women's groups, youth and traditional Authorities, and enactment of by-laws about tree planting in the communities. Rural business women, households and local artisans have largely benefitted from this project.

There is high demand for the new type of stove and women are expressing willingness to buy the stove on a commercial basis if the product develops a payment plan. Unfortunately, the project's scope did not provide a broader space for beneficiaries outside these regions and market-based promotion was not considered as a way to scale-up the successful experience. This limited scope is considered a risk but can be mitigated with adequate production of the materials to make them available in other localities -- the technology required is quite simple but a business model for commercialisation is an opportunity for expansion.

# Case Studies on Income Generating Activities

# 360 Degree Horticulture for Market , Burkina Faso and Niger

In the rural areas of Burkina Faso and Niger, horticulture is a source of alternative income to complement the generally low crop yields. In the two countries, many projects have been initiated. Some of these projects are building climate resilience of vulnerable and poor rural households in eight areas of the Yatenga and Lorum provinces in Burkina Faso.

In Niger, a micro-finance institution has set-up the Niya da Kokari, a financial product that provides agricultural tools on credit to local producers. In addition, the PADEL local development support project aims to popularise market gardening techniques at the national level.

The horticulture gardening takes place during the dry season to allow mostly women and young producers to supplement food scarcity during the dry season. Indeed, with the supervision of local technical services, access to motor pumps and other necessary tools are made available to farmers' organisations by private financial institutions in order to grow off-season crops. The water reservoirs are mainly built by the government but managed and maintained by farmers' association through user-fees. Horticulture is contributing to the reduction of climate change-related vulnerability, poverty and migration in rural communities, particularly amongst women and youth who are primary beneficiaries of the project. This intervention has also contributed to reducing the impact of desertification in these countries.

From a business point of view, this practice may be of interest to the private sector through micro-leasing, which is a financing mechanism facilitating farmers' access to agricultural tools. This creates a mutually beneficial partnership between three stakeholders: suppliers of agricultural implements, financial institutions, and the farmers. The projects have also solved problems related to water scarcity through the construction of water storage points, ponds (shallow wells), water pumps, large surface wells, and rain gardens.

The scaling-up process rests on the fact that once the area has been made cultivable, the farmers can still cultivate them the following year without borrowing from the micro-finance and new farmers can access credit. Also, the earnings of the farmers allow them to extend their production. The major risks in horticulture relate to poor storage and processing facilities plus unstable vegetable prices.

# Beekeeping as a Resilience Approach to Climate Change, Togo

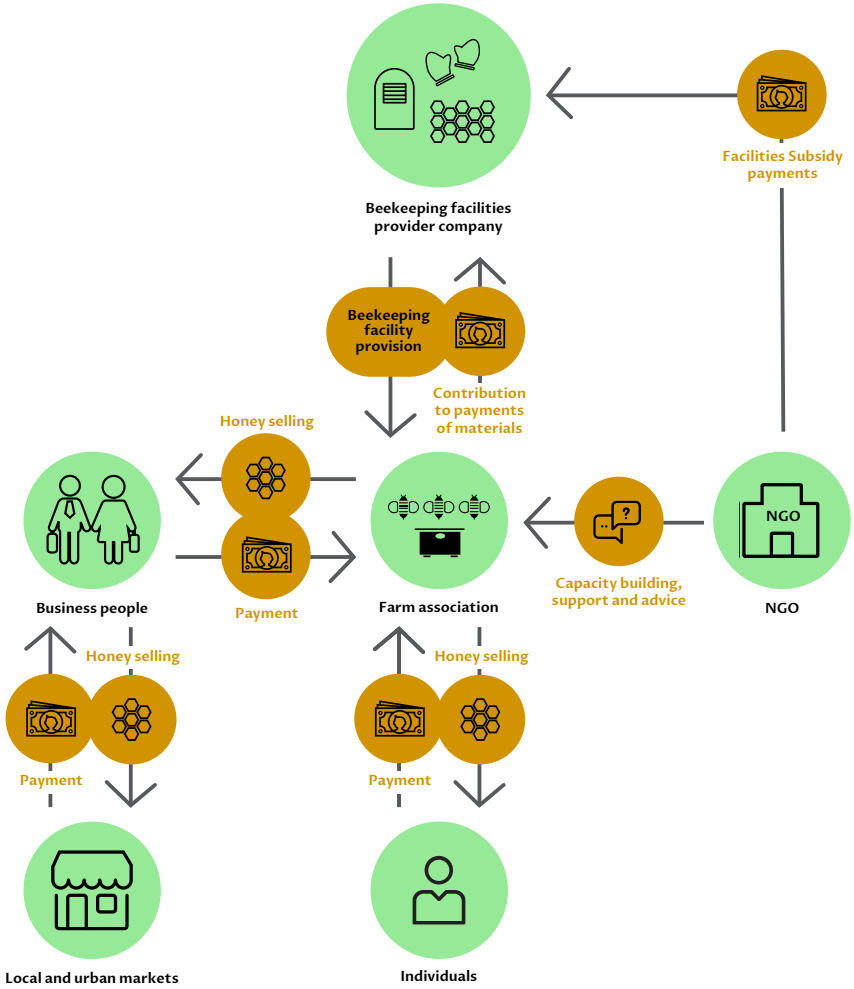
The improvement of living conditions of rural families and the need to preserve natural resources against climate change are major concerns for all development partners. It is in this connection that the NGOs Les Amis de Terre-Togo and Inades-Formation Togo have developed in 2012 and 2015 respectively modern beekeeping techniques in the south and centre of Togo. Modern techniques to beekeeping not only enable farmers to generate substantial incomes but also to preserve forestry ecosystems in the targeted areas.

The modern beekeeping projects consisted of signing contracts with enterprises providing beekeeping materials (beehives, extractors, smoking materials, boots, and so on) who make the necessary beekeeping materials accessible to farmers. After provision of the materials, capacity building sessions are organized for farmers on the use of equipment and on modern production and commercialisation of honey, such as business plan development and networking.

The harvested honey is sold on local and urban markets at profitable prices and through contracts with business companies. This enables farmers' organisations not only to generate incomes, but also to maintain and renew their equipment. This market-based project has benefitted more than 500 farmers.

The associated risks for this type of project are theft of beehives or destruction of the beehives by animals and bush fires.

*Business Model for the Production of Honey*



# LESSONS LEARNED AND PERSPECTIVES

# Lessons learned

## Agricultural financing (credit and insurance)

Access to innovative agricultural credit and insurance systems has resulted in enhanced agricultural production but also in improved processing and marketing carried out by smallholder farmers. Access to credit is critical for making the entire agricultural system more resilient to climate change as it allows farmers to invest in new technology and sell their products when prices are high.

## Sustainable agricultural practices

Building the capacity of rural families enables them to adopt new soil and water conservation techniques/technologies which are important for adapting agricultural practices to climate change. Mobilising additional funding for these capacity building activities is critical to the expansion of affordable training to more farmers to acquire such techniques/technologies. Private companies in collaboration with farmer associations can develop new ways of providing training.

## Sustainable management of natural resources

Reforestation of arid land and other ecosystems can reduce greenhouse gas emission and degradation of land, and thereby contribute to the resilience of local communities to climate change. However, most activities are highly labour intensive and there is a need to provide innovative and affordable ways to scale-up restoration of degraded land.

## Access to new technology infrastructure and markets

Access to storage infrastructures and markets for agricultural products are important components on which all stakeholders have to focus in order to ad-

dress the vulnerability of producers to climate change. Therefore, it is necessary to mobilise additional finance from the private sector to promote innovative business models to provide equipment, infrastructure and improved access to markets. Innovative solutions such PICS bags should be an inspiration to develop new affordable solutions.

## Reduced use of biomass

This is a viable approach which contributes to reduction of the use of biomass energy. It also contributes to reducing human pressure on wood resources. Financial support to this sub-sector is needed to strengthen local communities' resilience to climate change.

## Income generating activities

Experience has shown that women and youth are the groups most vulnerable to the devastating effects of climate change. It will be of paramount importance to enhance the capacity of women and youth by promoting income-generating activities to mitigate their vulnerability to climate change and their migration due to the effects of climate change. Private sector stakeholders such as banks, insurance companies and extension services should consider how they can champion successful women and youth entrepreneurs as models for others.

# Perspectives

The issue of private financing for climate change adaptation is a major challenge at international, regional and national level. Private sector participation in adaptation financing is still insufficient, despite the emphasis that has been placed on the private sector in the Paris Agreement and the Sustainable Development Goals to mitigate and adapt to climate change.

This policy paper has highlighted some success stories demonstrating the contribution of the private sector in financing climate change adaptation, especially in Ghana, Burkina Faso, Mali, Niger, Nigeria and Togo. Though these case studies show positive results, they are isolated examples and are not scalable in the absence of adequate business models and long-term funding plans.

Therefore, it is necessary to explore perspectives to increasingly mobilise the private sector financing for climate change adaptation. Options include: (i) Initiate or strengthen collaboration between all the stakeholders; (ii) Reinforce national and regional long-term adaptation programmes; (iii) Create enabling environments which encourage the private sector to increase its activities in the area of adaptation, (iv) The private sector begins to identify business opportunities related to pro-poor climate change adaptation.

All stakeholders have responsibilities to provide an enabling environment for engaging the private sector, and establishing multi-stakeholder alliances will be important to succeed developing affordable and sustainable projects. The development and implementation of such innovative adaptation initiatives could contribute fight against climate change risk in West Africa, especially for the poorest and most vulnerable groups.

# RECOMMENDATIONS

# Recommendations

The government, civil society and the private sector are the major stakeholders involved in addressing the challenges around climate adaptation. Though government and civil society are making efforts to contribute their part, so far, adaptation efforts have not managed to engage the private sector sufficiently. Therefore, there is need to emphasise and outline some of the opportunities available to increase private sector engagement. Most especially, a proactive and vibrant private sector should take up the responsibility given in the Paris Agreement and the SDGs by providing both investment and research into climate change adaptation solutions that are scalable and able to benefit the poor and most vulnerable people. Government and civil society should equally contribute to creation of an enabling environment for market-based adaptation solutions affordable for smallholder farmers including women and vulnerable groups.

To move ahead, the following recommendations are formulated towards the government, civil society and the private sector to encourage clear definition of what can be labelled as climate change adaptation investments and identify how pro-poor adaptation investments can be scaled- up.

## International Institutions

**International climate finance institutions should promote stronger private sector engagement in pro-poor adaptation investments to ensure that:**

- The Green Climate Fund and other major climate funds and institutions should actively explore concrete opportunities to strengthen stronger private sector engagement in adaptation.
- Policy and financing opportunities should also target the private sector more directly to provide innovative, affordable and scalable adaptation solutions and business models targeted the poorest populations in West Africa.

## Economic Community of West African States (ECOWAS)

**ECOWAS should develop a climate change adaptation strategy which:**

- Recognises the peculiarity of the region as a "hotspot" for climate change and the high risk this poses to rural populations.
- Establishes a multi-stakeholder dialogue platform to discuss climate change adaptation interventions and financing in the region.
- Harmonises the National Adaptation Plans (NAPs) of member states taking into account the needs of vulnerable groups.

## Government

**Government should improve and implement policy and regulatory frameworks that encourage private sector investments in climate adaptation interventions**. These can be achieved through:

- Providing incentives such as swift business registration processes, prioritised investment in selected sectors that are highly vulnerable to climate change, and creating a stable investment environment.
- National and sub-national governments providing grants, guarantees and credits in collaboration with international climate change and development agencies to scale-up prioritised climate-smart investment.
- Developing policies and programmes that promote investment in specific types of adaptation investments providing and promoting renewable energy.

**Governments should establish clear adaptation targets and monitoring systems.** In order to ensure effective and efficient use of the adaptation funds:

- Monitoring systems should be developed, based on clear targets which will help government and civil society to assess the level of implementation and the impact on the target beneficiaries, particularly vulnerable groups.
- Governments should improve the tracking of private investment in adaptation as most West African countries today have no explicit checks and balances on private sector impacts on adaptation.

**Governments should encourage Public Private People Partnerships (PPPP).**

- National and sub-national government should develop PPPP frameworks that provide innovative, accessible and affordable products to the most vulnerable people as well as leveraging additional funding for climate adaptation initiatives.

## Private Sector

**The private sector should develop innovative technology and make it accessible to climate-vulnerable households.** This should be done by:

- Developing specific adaptive technologies to improve land restoration, rainwater harvest, irrigation systems, and other such measures.
- Transferring these technologies to the rural communities to improve their climate resilience.
- Developing innovative business models to make the technology affordable for poor and marginalised people.
- Collaborating with research institutions and civil society to introduce the new innovations and business models for different stakeholders.

**The private sector should contribute to leverage funding and disseminate climate change adaptation information and mechanisms**. This should be done through:

- Innovative communication systems which leverage both traditional and new communication technologies, such as low-cost weather observation systems, and soil information and market price provision through the use of mobile phones.
- Innovative financial agricultural schemes, including insurance, micro-leasing and warrantage to support climate adaptation actions.
- Broader promotional and branding support using innovative mechanisms.

**The private sector should contribute to the fulfillment of the Paris Agreement and the SDGs by:**

- Taking up the responsibility given in the Paris Agreement and SDGs to deliver their part to assist vulnerable people to adapt to climate change.
- Putting in place adequate social and environmental safeguards that should guide adaptation investments to ensure that the interests of poor and vulnerable groups are protected.
- Considering the needs of women and vulnerable groups in the discharge of the responsibility.

## Civil Society Organizations (CSOs)

**CSOs should engage the government and the private sector to scale-up affordable adaptation solutions.**

- This should be done at both national and sub-national levels by putting in place climate adaptation solutions for farming communities at affordable rates, e.g. agricultural equipment, improved seeds, extension services, and so on. The provision of such solutions should be through an integrated approach to create synergy and maximise output. Civil society should also promote scaling-up or replication of successful climate adaptation practices that benefit poor and climate-vulnerable communities.

**Civil society should influence regional and international climate funds and policies to engage the private sector to provide pro-poor adaptation solutions.** Areas to ensure this could be to:

- Conduct high-level advocacy to influence the ECOWAS Regional Agricultural Policy for West Africa (ECOWAP) in order to strengthen its climate adaptation agenda.
- Develop Joint Partnerships with governments and the private sector to access funds from the Green Climate Fund and other climate funds for effective pro-poor adaptation interventions.
- Conduct monitoring of the use of climate change finance by government and the private sector, e.g. by creating accountability dashboards for climate adaptation funds.

**Civil society should strengthen the organisation of rural cooperatives/associations and facilitate new multi-stakeholder alliance building.** This could be done by:

- Facilitating platforms for a regular interface between governments, research institutions, the private sector and communities, focussed on the mutual development of climate-smart products and sensitising farmers towards new products which help them to adapt to climate change.
- Strengthening capacity of farmers and other rural associations to improve their readiness to adopt new technologies and make them more attractive for the private sector's technological solutions.
- Building knowledge about climate risks and adaptation solutions among rural households and also, in particular, strengthen opportunities for women entrepreneurs.

# ACRONYMS

# Acronyms

ADP – Agricultural Development Project

AFHON – Action en Faveur de l'Homme et de la Nature

AJFD – Avenir des Jeunes Filles de Dapaong

ASTC – Agricultural Service and Training Centre

CFR – Centre de Formation Rural

CISU – Civil Society in Development

COP – Conference of Parties

CSO – Civil Society Organization

CSR – Corporate Social Responsibility

CTAA – Center of Improvement of Traction Asine

ECOWAP – Economic Community of West African States Agricultural Policy

ECOWAS – Economic Community for West African States

ESHRI – Environmental Social Human Rights Impacts

ESOKO – Electronic Market

FAO – Food and Agriculture Organization

GCF – Green Climate Fund

GHG – Green House Gases

ICT – Information Communication and Technology

IITA – International Institute of Tropical Agriculture

INADES-FORMATION-Togo – Institut Africain pour le Dévelppement Economique et Social- Centre Africain de Formation Togo

ADT-Togo – Les Amis de la Tere-Togo

IOC – International Oil Corporations

ISFM – Integrated Soil Fertility Management

JICA – Japan International Cooperation Agency

MFI – Micro Finance Institute

NAP – National Adaptation Plans

NGO – Non-Governmental Organisation

PADEL – Local development support project

SDG – Sustainable Development Goals

SOS – Save Our Souls

SYTAP Sarl – Synergie des technologies appropriées

PPPP – Public Private People Partnerships

USAID – United States Agency for International Development

UNEP – United Nations Environment Programme

WACSOF – West African Civil Society Forum

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## Project Partners' Websites

- West African Civil Society Forum (WACSOF: Niger-Nigeria-Mali-Togo): ***www.wacsof.net***
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- Inades-Formation Togo: ***www.inadesfo.net***
- SOS SAHEL International Burkina Faso : ***www.sossahel-int-bf.org***