CRAFT

CLIMATE RESILIENT
AGRIBUSINESS FOR TOMORROW

ANNUAL REPORT 2020

CRAFT

The Challenge

Across East-Africa, climate change and variability negatively impact the agricultural production, food systems and food security. Research has found that climate change has different effects on different geographical regions and crop performance, and vulnerable populations are likely to be the most negatively affected. Simultaneously, growing urban populations in Africa drive up the demand for food. This calls for the need for an integrated approach, namely the adoption and scaling of inclusive climate smart solutions and practices for sustained inclusive agribusiness development.

The CRAFT project

The Climate Resilient Agribusiness for Tomorrow (CRAFT) project was designed to address these climate change related challenges affecting the agriculture sector in Kenya, Tanzania and Uganda. This five-year project, launched in 2018, with funding from the Netherlands Ministry of Foreign Affairs, is implemented by SNV Netherlands Development Organisation in partnership with Wageningen University and Research, CGIAR's Research Program on Climate Change, Agriculture and Food Security, Agriterra, and Rabo Partnerships.

CRAFT works with and through the private sector and supports public sector partners in creating an enabling environment based on field evidence for wide-scale adoption of Climate Smart Agriculture (CSA) practices, including efficient, productive use of renewable energy in agriculture. CRAFT interventions are embedded in inclusive and climate responsive investments (business cases) to strengthen business performances of agribusiness and cooperatives across seven value chains in Uganda, Kenya and Tanzania, namely green grams, potato, beans, sesame, sunflower, soybean and sorghum.

The implementation strategy is based on complementary interventions at three levels: (a) farming systems, (b) inclusive value chains, and (c) the enabling environment.

The project expects to deliver impact in the following areas:

- Increased productivity and income for 300,000 smallholder farmers;
- Improved business performance for 50 agribusiness SMEs and 30 cooperatives (of which at least 25% are managed by women and/or youth);
- Climate resilient sustainable food production practiced on 600,000 hectares.

The overall goal of the project is to contribute to increased availability of accessible and resilient food for the growing populations in Kenya, Tanzania and Uganda.

Objectives:

To realise the overall project goal there implementation of three strategic objectives, namely:

1

Increase income for smallholder farmers and SMEs
This will be achieved through:

Increased adoption of climate smart technologies among smallholder farmers, SMEs and cooperatives.

2

Increase business performance for agribusiness SMEs and cooperatives due to climate related investments.

This will be achieved through:

Increased investments and business growth in climate smart value chains; and increased involvement of women and youth agribusiness development.

3

Improve the enabling environment favourable for large scale roll out of CSA.
This will be achieved through:

Increased collaboration and exchange among public-private actors on large scale roll out of CSA

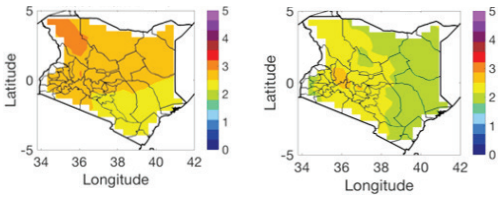
Cross cutting themes:
Learning and knowledge sharing | Gender and Youth Inclusion

Climate risk assessment

In the CRAFT project, the climate risk assessment (CRA) methodology explores what climate risks different actors, resources, and processes along a value chain face, and to identifies suitable adaptation strategies that can help to lower these risks. At the same time, insights derived from the CRA provides a rationale for the climate smart business cases being developed in the CRAFT project.

To understand the climate and weather variability, climate prediction models were developed for each crop in the value chains in Tanzania, Kenya and Uganda. The climate change projections were carried out for different climate variables (scenarios) in the identified value chains across the 3 countries. For each value chain, climate variables such as rainfall, maximum, minimum, and mean temperature were analysed.

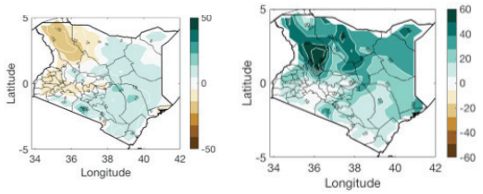
1. Temperature



The images show the projected seasonal mean changes in temperature for 2050s under the business as usual (RCP8.5) scenario, relative to the reference period (1961-2005). Left: March, April, May (First rainy season); Right: October, November, December (second rainy season)

The projection model shows for Kenya that temperature in the 2050s is expected to rise by about 2.4 to 2.8 °C and 2.0 to 2.4°C, in the south-eastern and western green gram growing areas of the country during the first (March-April-May) and second (October-November-December) rainy seasons, respectively.

2. Rainfall



The images show projected seasonal mean changes in rainfall for mid-century under the business as usual (RCP8.5) scenario, relative to the reference period (1961-2005). Left: March, April, May (First rainy season); Right: October, November, December (second rainy season).

In the 2050s, average rainfall during the March-April-May season is projected to decrease by about 10% in the western regions of the green gram growing areas in Kenya under all climate change scenarios. However, in the south-eastern areas such as Kitui and Makueni, the rainfall is projected to increase by about 10-20%. During the October-November-December season, rainfall is expected to increase in all the green gram growing areas and under all climate change scenarios. In the south-eastern green gram growing areas, rainfall is expected to increase by about 20-30%. In the western green gram growing areas, rainfall is expected to increase by about 5-10%.

CRAFT's COVID response

2020 was meant to be the implementation year for CRAFT. With a focus on developing and implementing inclusive climate responsive business cases and simultaneously roll out other strategies, such as engaging with financial institutions and other multi-stakeholder processes for learning and advocacy. Unfortunately, the COVID-19 pandemic restrictions affected the project activities, due to lockdowns and restrictions limiting project staff to travel, but also affected the engaged companies and cooperatives in their business operation.

Through a COVID-19 response facility the project supported the businesses to respond to issues related to the pandemic, which assisted smallholder farmers, cooperatives, and agribusinesses to cope with the impact of COVID-19. The support consisted of adding digital services to reach the farmers in business plans, integration of adequate sanitation and protective gear within the roll-out and adjusting investment plans to the changing business environment.

Impact of climate change on crop production: the example of green grams in Kenya

Crop yield modelling shows that in the high potential growing areas such as Kitui, Makueni, Machakos, Tharaka-Nithi, Meru and Embu green gram yields are expected to increase in both rainy seasons.

In case farmers apply improved agronomic practices such as soil testing, proper fertilizer applications, pest control, land preparation, yield will benefit from climate change. Yield increase is likely to vary between 50 % and 400 %. Without these improved agronomic practices yields are still expected to increase compared to current climatic conditions, however, the size of increase is likely to be significantly lower.

In the low and medium potential areas such as Tana River, Garissa and Kilifi green grams yield are also likely to slightly increase in the October-November-December season, but will likely decrease in the March-April-May season. In these areas, there are huge potentials to substantially increase yield with better agronomic practices under current and future climatic conditions .

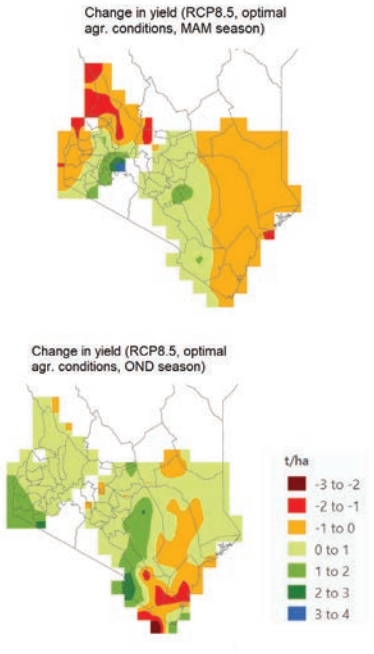


Figure: Change in green gram yield under optimal agr. conditions in the 2050s (RCP8.5) compared to current climatic conditions. Orange/red/dark red colours indicate areas where yields are likely to decrease in the future. The green and blue colours indicate areas where yields are likely to increase

Discussions with actors and informants about essential climate variables provided insights on how climate and weather-related opportunities or hazards affect agribusinesses. With the information, actors were able to identify adaptation measures that do not only address the ability to better manage and mitigate risks and opportunities, but also decrease costs, increase profits, create new markets, and/or improves reputation. Some of the identified solutions included provision of climate smart inputs such as certified seeds, crop specific fertilizers, provision of customized financial products, provision of mechanization service, access to weather information at a fee, and increasing value-addition lines.

Link to other climate risk assessments: First series of climate risk assessment reports CRAFT project published | SNV World

Publications

Info Notes:

- Private sector climate resilient agriculture co-investment reaches over 237,000 farmers in East Africa – Link
- Small and medium-sized enterprise champions promoting climate resilient agriculture in Eastern Africa – Link
- Findings from a scoping study on opportunities and barriers to adaptation and mitigation in crop value chains of Kenya, Tanzania and Uganda – Link
- Integrating climate resilience into Farmer Field School methodology in East Africa – Link

Climate and Business Narratives:

- Climate and business narrative green grams, and Climate & Business Narrative common beans
- The Climate-resilient farmer field school guidebook (FFS link)

Other publications:

- Article about the FFS application: Transforming Agricultural Extension Service Delivery through Innovative Bottom–Up Climate-Resilient Agribusiness Farmer Field Schools (mdpi.com)
- Research highlights:
  Scaling climate-resilient agribusinesses in East Africa – Link

Main Achievements

1. Climate smart Practices and Technologies for farmers

80,550
farmers were registered

41,290
(47% female)

80,550 farmers were registered and 41,290 (47% female) were trained on CSA practices and technologies, using the climate farmer field approach and validated CSA practices using validated manuals for specific value chains.

The majority of assessed farmers are adopting climate smart practices and using climate smart services, and for 56% of the farmers, this resulted in a better performance of their farms (better yields and income), while 16% indicated to be able to better manage possible stresses caused by climate related causes.

2. Financial solutions and investments in climate smart value chains

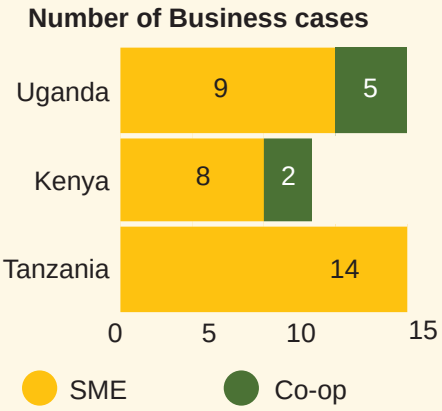
CIIF portfolio by December 2020

33.7 million Euro
Total commitment

28.1 million Euro
Grantee contribution

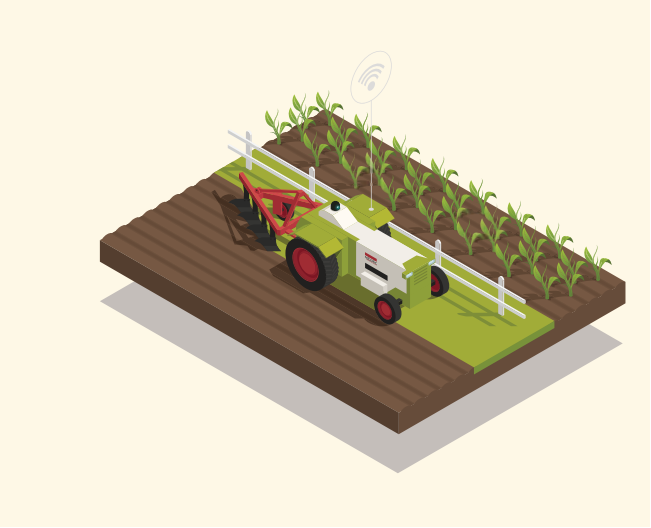
5.6 million Euro
CRAFT contribution

237,250
targeted Small Holder Farmers (SHF)



Through its Climate Innovation and Investment Facility (CIIF), CRAFT provides performance-based grants to the private sector. SMEs, Cooperatives and their contracted farmers are supported through a combination of climate smart agricultural practices and technologies, interventions to de-risk and facilitate the scaling of climate smart investments in the selected value chains. By the end of 2020, CRAFT had co-invested and assisted in building up 36 business cases and financing solutions necessary for the wide-scale adoption of climate smart practices in selected crop specific value chains. The business cases have a targeted outreach of 237,250 Small Holder Farmers (SHF) and 28,129,819 million Euro committed co-contribution. With the 36 business cases, the CIIF facility committed 75% of the available resources (7,5 million Euro)

3. Enabling environment for development and scaling of CSA



By working with national and regional government agencies, extension services, researchers, meteorological services, and financial service providers, the most significant institutional and socio-economic barriers for large scale CSA adoption are being identified, as well as the strategies on how to address them. The multistakeholder engagements with relevant stakeholders was limited due to COVID-restrictions, though the project participated and facilitated in various climate related national platforms.

The scaling readiness of the enabling environment for the roll out of validated climate smart technologies and practices was validated through contextual analysis of the scaling barriers in a specific value chain and through workshops with country teams.

4. Knowledge and learning

The climate & business narratives for green grams in Kenya were published while development of narratives for common beans and soybeans in Tanzania started. A climate & business narrative is a way to apply a climate lens to a value chain and opportunities for business development, interweaving quantitative and qualitative information, integrating challenges in crop production and actors' perceptions of climate change and how it impacts their livelihood and business. The first climate-resilient farmer field school guidebook was developed by CCAFS and while for six value chains, the formal extension curricula is being updated with climate change information and adoptive practices. Two manuals (Potato and green grams) were already formally endorsed by the Ministry of Agriculture in Kenya. Two PHD students started their research around the project activities.

The project monitors each business case performance through a cloud-based information system for day-to-day management of the grantees, to track performance, progress and quality implementation. To establish benchmarks against which to measure overall performance of the business cases, 16 baselines were conducted (10 in Uganda, 4 in Tanzania and 2 in Kenya). The change is monitored through annual reviews with the SME or Cooperative, farmers, and other stakeholders.

Learning events, to share about implementation of climate inclusive business cases were organised to create cross-learning among the grantees and other value chain players.

To showcase climate smart technologies and innovative practices, the project used technology demonstration events. The climate smart farmer field technology demonstrations provided a platform for businesses to interact with service providers and discuss options of integrating such technology in their supply chains. Other learning platforms included physical exchange visits amongst the grantees.

5. Gender and Youth Inclusion

The integration of a gender analysis has been key as differences hamper uptake of innovations, can put heavier burden on women, and increase inequality in power relationships and incomes. Therefore, in 2020 CRAFT applied several tools to map out youth and gender issues and dynamics within the selected value chains and business cases. To attract women-led or managed businesses and young entrepreneurs specific selection criteria were set, which led to 15 women and youth-led business cases working with CRAFT over the three countries.

Country stories

Tanzania

- The number of farmers reached by training on climate smart practices and technologies for their farming systems: 16,074
- 429 Training of Trainings organized
- 4,018 MT grains procured from small holder farmers

The story of Mwenge Sunflower Oil Mills Company Limited

Mwenge, one of the CRAFT partners, immediately organized its team and started conducting farmer trainings on post-harvest handling (PHH), when farmers were harvesting sunflower. The company successfully trained 3,146 farmers, (1,238 females, 1,908 males), which is 25% above the target. Furthermore, the company made use of these training sessions to distribute tarpaulins to farmer groups, minimizing the loss of sunflower grains during harvest. Community leaders attended the PHH training ensuring a smooth distribution of tarpaulins to farmers. As a result of the training, most farmers were willing to buy tarpaulins to improve sunflower harvesting.

Kenya

- 4,738 farmers were actively engaged in training, input acquisition and access to reliable markets
- active interaction with financial service providers, which strengthened the financial propositions of business cases

The story of Sereni Fries Ltd.

Sereni Fries Limited increased the total volumes of potato processed from a 110 tons to 180 tons per week, and set up 29 demonstration plots across the target areas, exhibiting recommended climate smart practices in the potato production process e.g., certified vs. uncertified seed, soil and water management practices etc.

Sereni's also started building farmer confidence in investing in climate smart practices by signed and honoured supply contracts, provision of certified potato seed and linkages to other input providers (of seed and fertilizer). With respect to absorptive capacity, Sereni purchased an automatic packaging machine for crisps which improved packaging efficiency and made them more resilient to market shocks: the machine allowed the firm to mitigate the effects of the COVID-19 environment, which depressed the fresh-cut potato market.

Uganda

- 6,495 smallholder farmers accessed improved climate resilient seed
- 12,272 smallholder farmers working with the agribusinesses reported an increase in their productivity

The story of Okeba Uganda Limited

Okeba Uganda Limited is one of the CRAFT partners working in the soybean value chain. The company promoted MakSoy 3N through technology demonstration gardens where smallholder farmers were able to see the difference between the home saved seed and the new improved seed performance.

In Mubende, the changes in rain patterns affected crop performance, especially for varieties with low drought tolerance. Integration of financial services in form of seed credit, which is advanced to the smallholders during planting season and deducted from proceeds at harvesting has addressed the issue of delayed access to seed and missing the key rains. Farmers have also improved on their saving culture and are now able to buy agriculture input at the time of planting. Now smallholder farmers can oversee their business and stock inputs, plant, weed and harvest at the right time.

"I have found Uyole-03 variety of common beans to be more resistant to pests and diseases unlike the local varieties that we have been planting in the past. It also bears more pods which are longer, meaning you get more beans from one plant than from the local varieties,"

Atuta Yereganis Chemba, a female member of the Kayumba Farmers Group in Mbeya, Tanzania

Future outlook

The project is half-way the five-year project period. For the coming year, CRAFT will have the following areas of focus:

- Harvesting of results and lessons for synthesis and dissemination: the CRAFT project will harvest the best practices in CSA climate smart farming system and service delivery models (including crop value chain technologies, practices, and innovations), as the delivery models are being tested in active business cases.
- CIIF support for sustainable CSA behaviour change: The SMEs and Cooperatives are investing in a climate resilient business case, and this is a long-term commitment for farmers. While adoption of CSA practices takes time, and the number of seasons per year is limited, CRAFT should consider different approaches in the future how to extend grants to ensure results are consolidated and scaling possibilities assessed.
- Service provision of climate smart services and technologies: This will be done by supporting service providers to scale their services through the CIIF and through the monitoring of practices in access and adoption of climate smart services and technologies within the climate smart inclusive business cases, including the bundling of such services.
- Strengthening evidence-based advocacy on climate smart agriculture: CRAFT's policy engagement strategy will be supported by the lessons from the business case implementation, climate change related studies and national level engagements.
- Strengthened engagements with financial institutions: deliberate efforts will be made to engage with financial institutions on how to integrate climate risks in their financial products.
- Sharing and updating of climate information: suitability maps for specific crops will be developed.
- CRAFT - through the Agriterra team - explored alternative ways of reaching-out and getting more cooperatives involved, as was learned that cooperatives were not all ready to take up scaling of their activities through relatively high investments. To include all potential cooperatives, three types were identified: Category A1 cooperatives are considered as investment-ready stand-alone business cases. Category A2 cooperatives have a high potential to become stand-alone business cases but require some intensive capacity building to build their bankable case and prepare for an instrument like CIIF. Investments must come from internal capital or other sources. Category B cooperatives are generally not yet at the level of category A: they are smaller or might not have the organizational capacity or governance in place, and as such they do not have the potential as a stand-alone business case. They are considered necessary as part of other business cases.

Case study: Unlocking finance for a cooperative

Alito Joint Farmer Multipurpose Cooperative Society Limited works with 5,000 farmers in soybean production in Northern Uganda and requested for a loan for working capital from the bank but was able to receive a low amount (15% of required) due to the low trade volumes and insufficient collateral before working with CRAFT. The anticipated co-financing from CRAFT was used to leverage access to finance from financial institutions. Therefore, the provision of co-financing grant is a tool that can be used to unlock barriers to accessing finance and promote financial inclusion for smallholder farmer-owned agribusinesses and hence promote their resilience. They were able to increase the production of seed (85Tons) in July 2020, which was partly sold in August 2020 for planting, worth UGX 340 Million, and in the second season ending in December 2020 they had a stock of seed (49Tons) worth UGX 196 Million which was all sold for current season (in 2021). With this current volume in seed sales, the manager has made consultation with the Loan manager of DFCU Bank and has agreed that now, the cooperation can borrow UGX 150 Million, because of their track record in repaying the previous loan and the turnover of seed sale which has gone up.

The Climate Resilient Agribusiness for Tomorrow (CRAFT) project is funded by the Netherlands Ministry of Foreign Affairs and aims to increase the availability and accessibility of climate-resilient food for the growing populations in Kenya, Tanzania, and Uganda. The project is implemented by SNV (lead) in partnership with the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Wageningen University and Research (WUR), Agriterra and Rabo Partnerships. For details, contact ***craft-info@snv.org***

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