CRAFT
Climate resilient value chains for improved livelihoods

SNV Impact that matters

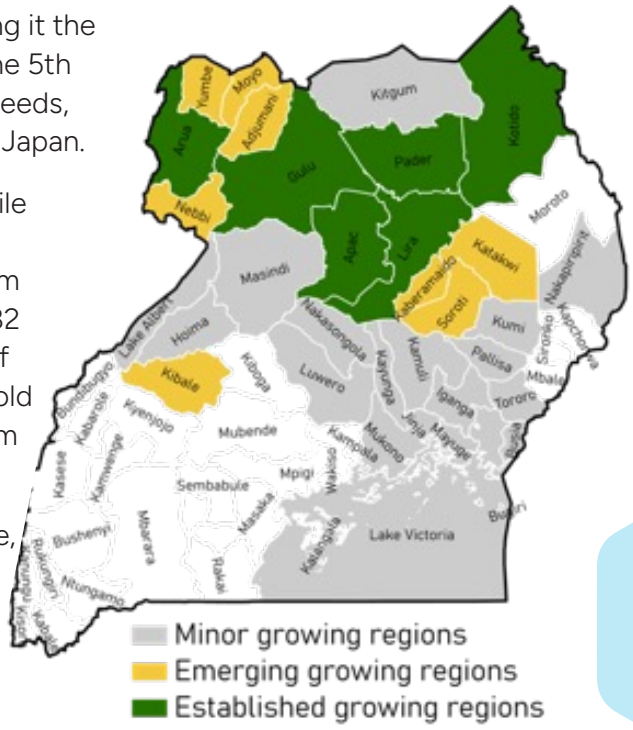
Climate Risk and Opportunities

Sesame in Uganda

Uganda's Sesame seed is grown by over 250,000 farmers, settling its production at around 173,000 tonnes, making it the fifth-largest producer of Sesame Seeds in Africa and the 5th largest in the world. Uganda exports 18.8M of sesame seeds, mainly to Turkey, the Netherlands, Germany, Israel, and Japan.

Sesame mainly grows in north Uganda, such as West Nile Gulu, Kabeiramado, and Lira in Northern Uganda, and Kumi and Katakwi in Eastern Uganda. Gross income from improved varieties produced for grain averaged $US 282 per household or $US 56 per head, assuming a family of five. This represented an additional $US 92 per household or $US 18 per head over the corresponding income from local sesame varieties.

The average yield of sesame is about 280kg/acre, which translates to almost 3 bags /acre (1 bag~100kg) (FAOSTAT, 2018). Kumi (~8 bags/acre) is the largest producer in the country, cultivating sesame of about 309 ha.

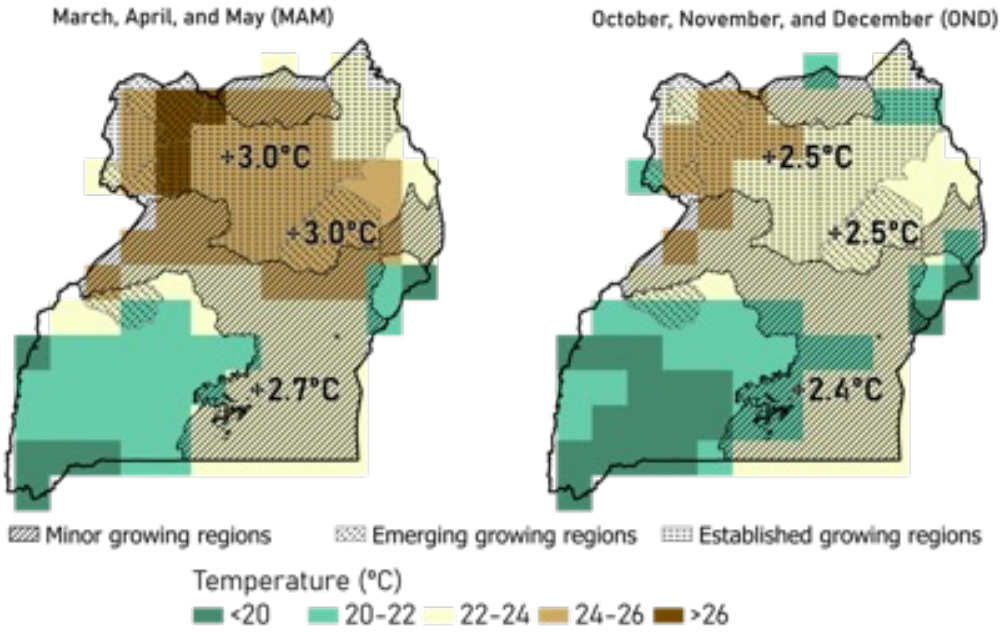


Note: RCP 8.5 emission scenario has been used to assess the climate change events and impacts. For future analysis, the 2050s (2006-2050) timesteps were used. For the current, the period 1981-2005 had been used. MAM refers to March, April, and May. OND refers to October, November, and December.

Data source: Ensembled CORDEX data.

Future climate

Temperature: In the 2050s, the temperature in sesame-growing districts in Uganda is projected to increase by +2.8°C in the March, April, May season and +2.4°C in the October, November, December season. The temperature in major sesame growing districts, Apac, Lira, Gulu, Pader, Kotido, and Arua, is projected to increase from 2.7 to 3.1°C both seasons.



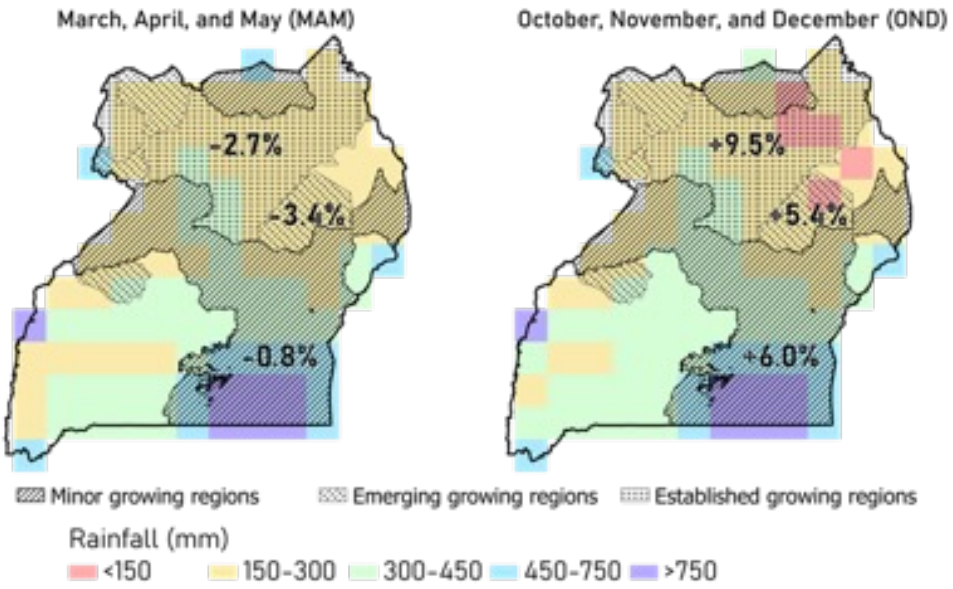
Note: The map shows the current seasonal temperature (°C) and the changes (°C) in the future (the 2050s) for the SSP3-RCP8.5 climate change scenario for various crop-growing regions

Rainfall: In the 2050s on average, rainfall in sesame-growing districts in Uganda is expected to slightly reduce in the March, April, May season but to slightly increase in the October, November, December season.

In the March, April, May season, the length of dry spells is expected to slightly increase (~1-2 days) over the country's northern and central sesame growing areas.

In the October, November, December season, however, the length of dry spells is expected to decrease by about 3-5 days over the northern and central sesame-growing areas.

During the March, April, May season water scarcity could be expected in the northern and central sesame growing areas of the country.



Note: The map shows current seasonal rainfall (mm) and the changes (%) in the future (the 2050s) for the SSP3-RCP8.5 climate change scenario for various crop-growing regions

Adaptation measures are listed based on the discussion with the CRAFT team from Uganda under the following objective, "To establish suitable adaptation strategies that will increase the adaptive capacity and resilience of the actors within the value chains." The listed adaptation measures mainly focus on the sesame value chain in Uganda.

Sesame is a drought tolerance and short growing cycle crop and naturally has the genetic enhancement, quality improvement, or the underlying mechanisms of stress tolerance.

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Climate change adaptation strategies

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Technologies used in CSA value chains 	Seed (early maturing and drought tolerant seed), solar pump, ICT and weather information and crop insurance services and hermetic storage facilities (plastic and metallic storage containers)
Practices used in CSA value chains 	Seed multiplication of early maturing sesame seeds, promoting solar irrigation in seed production, facilitating access to climate finance, multiplication of early maturing/ drought escaping seeds, promoting use of conservation tillage services, providing weather alerts and weather index through ICT, improving storage to reduce post-harvest losses, establishing demo plots to showcase CSA technologies and practices, introducing soil testing initiatives, and guaranteeing markets for products from CSA-compliant growers
IMPACTS	
Impacts in production 	Improved yields, high-quality production and improved market linkages
Contribution to adaptation/ resilience 	Increased resilience
Contribution to mitigation 	Mechanization to reduce time and cost on labor and reduced post-harvest losses

Acknowledgment

This document was developed by Wageningen Environmental Research (Ponraj Arumugam, Confidence Duku, and Annemarie Groot) and CCAFS (Teferi Demissie) with contributions from Bashir Kasekende (SNV), Allan Wayira (SNV), Joab Osumba (CCAFS), the Uganda SNV team, Agriterra, and Rabo Partnerships B.V.

The climate risk assessment was carried out in the context of the Climate Resilient Agribusiness for Tomorrow (CRAFT) project. The project (2018 - 2023) is funded by the Ministry of Foreign Affairs of the Netherlands and aims to increase the availability of climate-smart foods for the growing population in Kenya, Tanzania, and Uganda. The CRAFT project is implemented by SNV (lead) in partnership with Wageningen University and Research (WUR), CGIAR's Climate Change Agriculture and Food Security Programme (CCAFS), Agriterra, and Rabo Partnerships.

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