SAFE4ALL AFRICA

Funded by the European Union

Addressing the food-climate-migration nexus in Africa through needs-based climate services

Introduction

Climate change, food security, and migration are interconnected issues that have significant impacts on Africa. Climate change has led to increased frequency, intensity and duration of natural disasters, which in turn have negatively affected agricultural production and food security in many parts of Africa. Climate change is altering the frequency, intensity and duration of extreme weather events, and is in itself a global threat to food security. As a result, many African communities are facing food shortages and malnutrition, leading to an increase in migration within and across borders in search of better livelihoods. This migration can exacerbate existing social, economic, and political tensions, leading to further instability in the region. The impact of climate change on economic growth has dominated global policy discussions for many decades. While policy consensus is required to mitigate the prevailing symptoms of food insecurity, the underlying drivers of global food insecurity remain complex and inconclusive. Addressing these issues will require a coordinated effort from governments, civil society, and international organizations to build resilience, promote sustainable agriculture, and provide social safety nets to affected communities.

SAFE4ALL

SAFE4ALL aims at addressing food security, disaster management and migration issues with the prime objective to better support local and regional actors in decision-making to safeguard African foodsheds and to build resilience in communities across scales. The formulation and implementation of climate adaptation and resilience plans at the regional and local level needs to speed up rapidly to keep pace with projections of climate risks. SAFE4ALL aims to harness the EU climate services landscape and leverage it with local knowledge from African case studies to co-create information and facilitate its uptake at the local to district and regional levels (https://www.safe4allafrica.eu/).

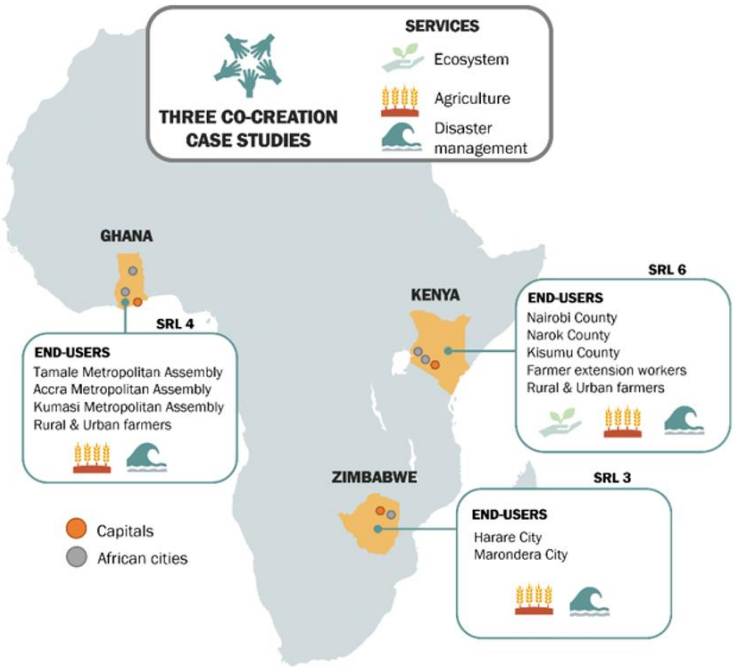

Figure 1: SAFE4ALL study cases

Needs-based climate information services

Foodsheds

The concept of foodsheds provides a holistic framework to address the balance between food demand and supply for urban populations amidst climate change and rapid urbanization in Africa. A foodshed refers to the geographic area supplying food to a population. SAFE4ALL applies this approach to assess current and future food linkages between urban and rural areas, evaluate land availability against food needs, and identify vulnerabilities in food systems.

Foodshed analysis integrates geographic, economic, and environmental factors to offer actionable insights across local, regional, and global scales. In Sub-Saharan Africa, urbanization and climate risks are reshaping food systems, requiring innovative adaptation strategies. By analyzing foodsheds, SAFE4ALL identifies measures such as enhancing urban agriculture, improving water management, investing in resilient food distribution systems, and developing trade policies to mitigate food security risks.

To support policymakers and stakeholders, SAFE4ALL co-develops foodshed indicators through local knowledge integration, providing tools like seasonal crop yield forecasts and long-term foodshed capacity scenarios under changing climates. These services inform resource allocation, urban planning, and trade policy, ensuring a coordinated response to emerging food security challenges.

For example, a foodshed analysis of the Tamale Metropolitan Area in Ghana highlights the relationship between maize production and population density, revealing areas vulnerable to food shortages. Such analyses, enriched with data on water availability, climate projections, and trade balances, offer decision-makers interactive tools to explore adaptation scenarios and strengthen food resilience strategies.

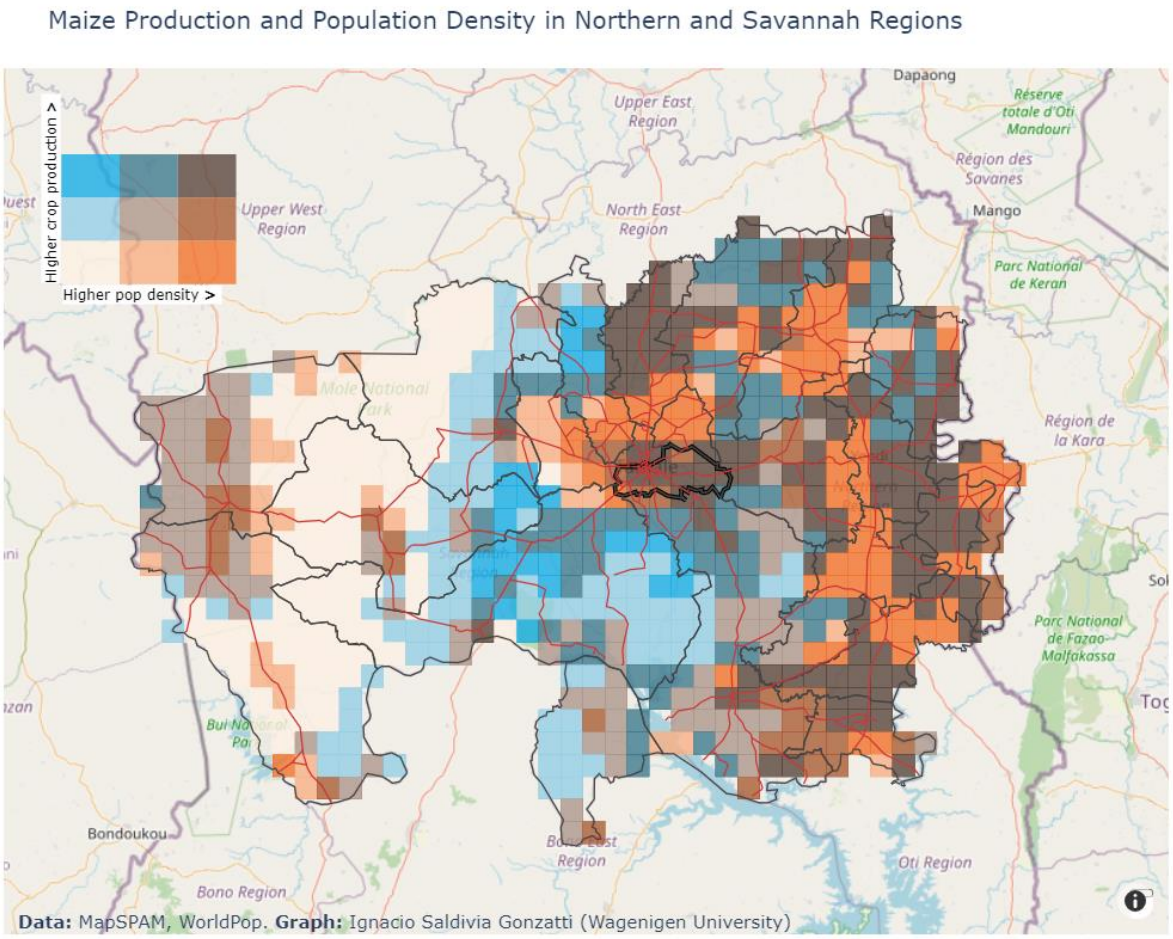

Figure 2: The bivariate choropleth map depicts maize production and population density in the Northern and Savannah regions of Ghana. While the area around Tamale shows high population density, maize production varies, with some regions having substantial production and others none. The road network, shown in red, indicates the connectivity of high-production areas to Tamale. The Tamale Metropolitan Area of Ghana is outlined in thick black.

Climate change and information services for adaptation

SAFE4ALL innovates a suite of user-friendly climate services which will be demonstrated across three case study countries in three regions (East, West and Southern Africa). The tools will build upon and be integrated with existing climate data and information services available in Europe and Africa. SAFE4ALL tools will utilize existing methods and approaches that have been developed but have not been widely adopted or which have yet to be made available as user-oriented tools; i.e. they have not yet managed to bridge the last mile of climate service delivery, to become routinely used in climate-smart decision-making. To drive the wider use of data and information services, SAFE4ALL tools will be tailored to better meet the needs and preferences of end-users, via co-design in the LivingLabs. Several existing applications/tools are further developed to allow for user-defined customization (selecting locally relevant indicators, user-defined threshold values, developing tailored risk assessments). Adapting to climate change requires context-specific and actionable information. However, it is not obvious that such information is available for diverse societal actors in an understandable and actionable format. Therefore, complex climate science needs to be transformed into user friendly climate services, providing tailored information products and support to

climate information users. SAFE4ALL will develop tailored services that support user defined risk assessments and apply these services in our LivingLabs. Development will take place in three cycles of agile software development, involving end users and service providers and will do so in iterative incremental steps of development, application and assessment. Proven concepts and principles behind Agile development - such as transparency, empirical process control, iterative and incremental development and self-managing teams will be critical for successful tool development.

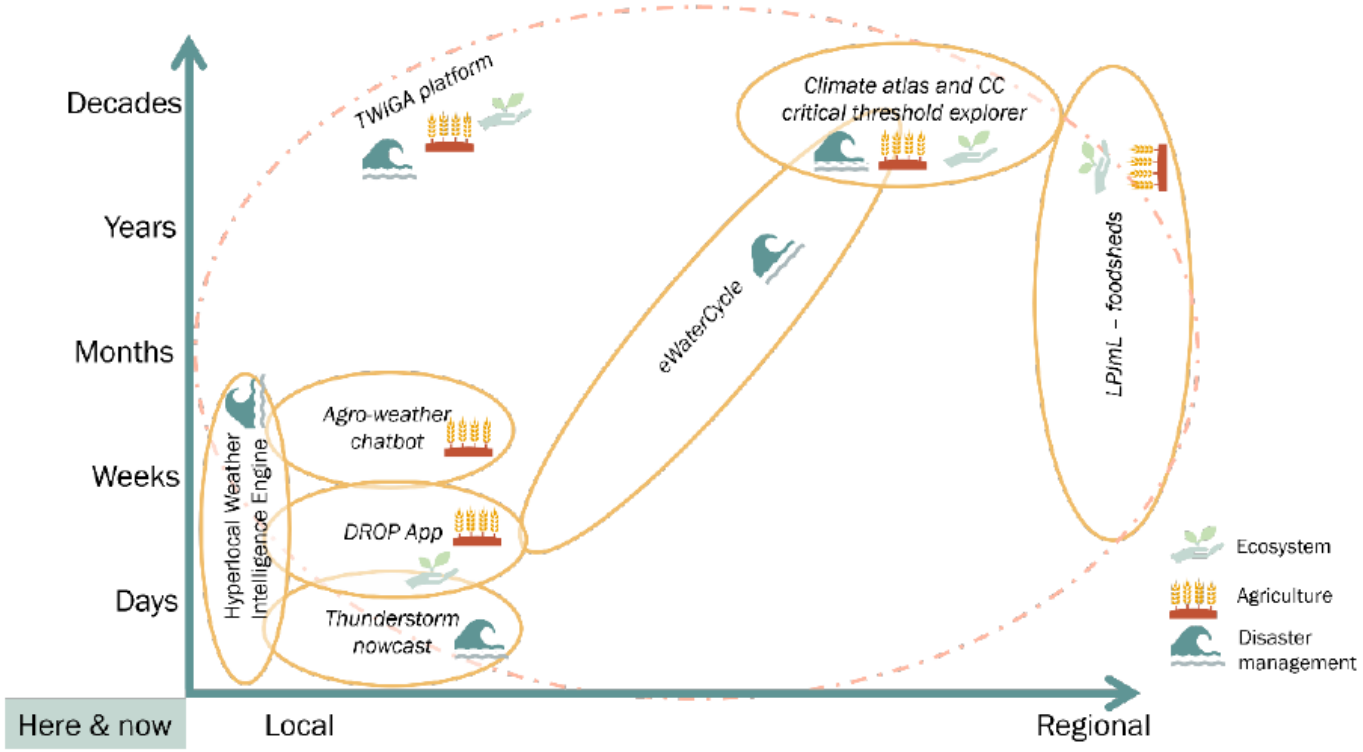

Figure 3: SAFE4ALL Tools located on the space and time scales they can be applied

Future actions

Policy Recommendations

This first-year policy brief provides an initial set of actionable recommendations for EU and Sub-Saharan Africa (SSA) policymakers, drawing on early insights from SAFE4ALL. As the project progresses, these recommendations will be refined and expanded based on emerging outcomes and stakeholder feedback:

Food security: Promote policies that integrate climate services into agriculture, water management, and trade policies. Support the development of user-friendly climate information tools that help agricultural producers, land managers, and trade policymakers optimize resources and plan for climate variability, ensuring food security across regions.

Migration management: Develop policies aimed at reducing climate-induced migration by proactively managing environmental stressors through tailored, needs-based climate information services. These services should provide localized, actionable climate risk assessments that enable communities to make informed decisions and adapt to climate impacts, ultimately reducing the need for migration due to extreme

weather events. By equipping communities with the right tools, policymakers can help manage migration flows and foster resilience to climate change.

Ecosystem protection: Incorporate climate-smart practices and tools, such as seasonal forecasts and tailored risk assessments, into ecosystem management policies. Support initiatives that empower local communities with actionable climate data to safeguard critical ecosystems vital for food production.

Implications for Future Action

As the SAFE4ALL project advances, it will play a pivotal role in shaping EU-Africa relations and strengthening shared policy frameworks. Key areas for ongoing action include:

- Building early-stage collaborations between EU and SSA institutions to co-develop scalable, locally relevant solutions.

- Identifying gaps for further research on climate change impacts, adaptation strategies, and food system resilience, with recommendations evolving as new knowledge emerges.

- Laying a foundation for in-country capacity building, mobilisation and knowledge sharing to empower local actors in SSA.

This policy brief sets the stage for enhanced and adaptive recommendations over the project's lifespan, ensuring that SAFE4ALL outcomes remain relevant and impactful.

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