QUARTERLY NEWSLETTER OF THE ASARECA CLIMATE SMART AGRICULTURE ALLIANCE

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Understanding CSA and its benefits

What challenges does climate change pose to African agriculture?

Practical CSA strategies that farmers can use to adapt to changes in seasonal rainfall

How gender responsive are the proposed CSA strategies?
EDITORIAL

Welcome!

The first and second quarters of 2022 was marked with exciting new activities that the ASARECA Climate Smart Agriculture Alliance (ACSAA) steering committee is pleased to share. In March 2022, ASARECA convened the 1st meeting of the ACSAA steering committee in Kigali, Rwanda to discuss the modalities of operationalizing the ACSAA activities.

Following the endorsement by the ASARECA Board of Directors (BoD) to establish the ASCAA, the Directors General (DG) of the National Agricultural Research Institutes (NARIs) nominated CSA experts to comprise the steering committee.

The ACSAA is a lobby Community of Practice (CoP) that supports the African Union’s CAADP biennial review processes, the identification and response to emerging climate-related cross-border challenges at national, regional and continental levels. Since everyone faces the negative impacts of climate change on all fronts, the time to act is now via ACSAA!

Sincerely,

Dr. Enock Warinda (Patron) and Joshua Okonya (Coordinator) of ACSAA

INSIDE...

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Contributing Authors
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What challenges does climate change pose to African agriculture?

Climate change is one of the most critical challenges facing the global community today. It threatens to undo decades of development efforts in all sectors, particularly agriculture, health, environment, roads, education, and fisheries, especially in developing countries.

From a food security perspective, sub-Saharan Africa (SSA) is arguably the most vulnerable region to many adverse effects of climate change due to a very high reliance on rainfed agriculture for basic food security and economic growth, and entrenched poverty. Among the climate-induced challenges affecting agricultural production in Eastern and Southern Africa are droughts/prolonged dry spells, floods, and extreme temperatures. A shift in rainy seasons negatively affects water availability for agricultural production leading to reduced crop and pasture yields. It also distorts the cropping calendar.

Climate-smart agriculture (CSA) has been proposed by several stakeholders as one approach that can be used to not only contribute to increased household food security but also climate mitigation and adaptation. According to FAO, CSA is defined as an approach that is used to “develop technical, policy, and investment conditions in achieving sustainable agricultural development for food security under climate change.”

Some CSA practices are already practised by smallholder farmers in the Eastern and Central Africa (ECA) region at different scales and evidence of impact and they ought to be scaled. These include drought tolerant and Striga resistant sorghum varieties (ASARECA T1; W2, AG3 and AG4), soil and water management technologies, and high-yielding bush bean varieties (RWK 10; RWR 1180) and disease resistant cassava (NASE 14 and wheat (Kingbird) varieties.

Key Messages

- There is need to co-identify and prioritize the best CSA technologies, innovations, and management practices in each country
- Several CSA technologies, innovations and management practices exist, thus the need to promote and scale up their utilization and adoption
- Some CSA technologies, innovations and management practices need to be gender-responsive to adequately address the needs of all gender categories.
- Policies, strategies and guidelines to guide the implementation of CSA approaches at farm level are lacking in many countries
- The financing of CSA technologies, innovations and management practices is low. Introduction of subsidies would enable farming households who currently rely largely on their individual capital, assets, and labour to benefit significantly.
- Documentation of evidence and impact of CSA practices on household food security need to be enhanced.
- Scaling is needed for CSA practices where evidence of impact is plenty.
Practical CSA strategies that farmers can use to cope or adapt to changes in seasonal rainfall

We asked six CSA experts the strategies used in their countries and this is what they had to say or recommend to farmers

In this issue, we shall highlight only those CSA practices that farmers are using to adapt or cope with changes in seasonal rainfall. Changes in seasonal rainfall include prolonged dry season rains or drought, Longer and more rain, Changed onset and cessation of rain season, Extreme/ intensive/ heavy rainfall, floods, mudlides or hailstones.

In response to these changes, smallholder farmers are using a combination of these CSA technologies, innovations and management practices:

(i) Early maturing crops varieties (MM3 Maize),

(ii) Agroforestry (shade trees e.g. coffee, cocoa, legume trees),

(iii) Rain Water harvesting and storage

(iv) Soil conservation and erosion control (terraces -Fanya juu/chini, Ditches and hedges on contour lines, Tied Ridging),

(v) Small-scale irrigation and water conservation (drip, dams, river bank gardens),

(vi) Switching crops and crop varieties to drought tolerant ones eg indigenous crops like cowpea, millet

(vii) Integrated pest and disease management (biocontrol, wood ash, pesticides, pest resistant crop varieties), “Diversifying my income sources into retail business enabled me to pay my children schools fees despite the poor crop harvest due to a prolonged drought in 2020”

(viii) Crop intensification (mixed cropping (intercropping eg sorghum-legume),

(ix) Integrated soil fertility management (Fallowing, Crop rotation, mulching, cover crops)

(x) Change of planting dates (late planting, staggered planting), (xi) Fodder making (silage, hay, rice straw, nappier grass),

(xii) Home gardening for urban dwellers (vegetables, diet diversification),

(xiii) Improved grain storage facilities

(xiv) Diversification of income(switch from crops to livestock which are less sensitive to climate change, do business) and

(xv) Use of ICT for GIS, remote sensing and mapping prone areas, providing advisories;

(xvi) Seed priming and fertilizer micro-dose of a compound NPK fertilizer at a lower dose of 0.3 and 0.9 g/hole for millet and sorghum

(xvii) use of indigenous knowledge for weather forecasting

All the above-mentioned CSA practices are currently being practiced by farmers in the ECA region. However, there’s need to promote them for adoption by most of the farmers as they have been proven to be effective.
How gender responsive are the proposed CSA strategies?

Whereas some of the above-mentioned CSA approaches are gender neutral (e.g. Rain Water harvesting and storage), many of them need to be engendered. For instance, Breeders need to ensure that new early maturing crop varieties meet the needs of women e.g. less cooking time.

Agro-forestry favours men more than women due limited land rights and involving perennial cash crops such as coffee and cocoa that mainly under the control of Soil conservation and erosion control measures e.g. digging terraces, Fanya chini, ditches and ridges are labour intensive and women must depend on men to dig them. Most Irrigation and water conservation equipment such as drips, dams are expensive.

Home gardening, Fodder making; Change of planting dates; Integrated soil fertility management and Switching crops and crop varieties to drought-tolerant ones are all gender-sensitive approaches.

Care should be taken to ensure that Improved grain storage facilities, Diversification of income plus use of ICT for GIS which are all inclined to favour men ought to be gender responsive.

For instance, construction of grain storage facilities such as granaries is usually done by men. There is also a male domination in receiving weather and climate information and extension services. In some villages, few opportunities exist for women diversification unlike for men who can easily find off-farm jobs such as brick laying, produce marketing, logistics (boda-boda riding).

Ownership of large livestock such as cattle is also limited to men in some African cultures with women left to own small animals such as poultry and goats.

Some of the immediate benefits of practicing CSA

These technologies are simple, low cost, low risk and suitable for marginal environments such as the Sahel.
In the News...

Dialogue for researchers and private sector identifies key Climate Smart Agriculture technologies for commercialization. Read more here.

Rwanda hosts first meeting of ACSAA Steering Committee. Read more here.

Climate Change: A Vulnerability for Burundian Small- and Large-Scale Farmers. Read more here.

The urgency and benefits of climate adaptation for Africa’s agriculture and food security. Read more here.

UN Intergovernmental Panel on Climate Change (IPCC) launches the 6th Assessment Report on Mitigation of Climate Change. Read more here.


New project launches: Land Soil Crop Information Services for Climate-Smart Agriculture in Ethiopia, Kenya and Rwanda. Read more here.

Updates from or Spotlight on ACSAA members

CSA scientists from ASARECA member countries are featured here. In this issue the spotlight is on Dr. Bashir Ahmed, the National Coordinator for the Digital Agriculture Research Program at Agricultural Research Corporation (ARC), Sudan.

Dr. Ahmed also serves as secretary of National Crop Husbandry Committee. He is also the national coordinator for the project “strengthening adaptation planning process and capacity for implementation of adaptation action in agriculture and water sectors”.

Dr. Ahmed is implementing the project “Socio-hydrological analysis of drought resilience in Sahelian Sudan farming system, SHADRESS”. Dr. Ahmed also supervises M.Sc. and PhD research students.

For instance, micro-fertilization by 0.3g of NPK fertilizer per hole increased sorghum yield by 50.4% under sub-optimal moisture conditions in Sudan. A combination of priming and 0.3 g fertilizer increased the net return of sorghum from 28.4 to 80 US $ ha-1.

By replacing diesel or petrol- with solar-powered water pumps in irrigated agriculture, there is a direct reduce in greenhouse gas (GHG) emissions. Water pumps also reduce the amount of time and labour used to fetch water during dry spells for both men and women.

What challenges of using some of the above CSA strategies?

1. High levels of initial capital investment
2. Some CSA practices are knowledge intensive and require training of farmers
3. Little to no incentives for farmers who are practicing agroforestry (instead of annual crops) that leads to carbon sequestration.
4. Lack of climate data and low capacity to process meteorological information into agro advisories for specific locations
5. Poor access to improved seeds that are early maturing, drought-tolerant, pest-tolerant, disease-resistant or high yielding.
6. Few opportunities for providing credit or loans to smallholder farmers amidst climate change from commercial banks.

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Further Reading


FAO. 2013. Climate-Smart Agriculture Sourcebook.


Opportunities and Upcoming Events

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<tr>
<th>Date</th>
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<td>4th – 8th July 2022</td>
<td>Training Course on CSA and Benchmarking exercise.</td>
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<td></td>
<td>Venue: Arusha, Tanzania</td>
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<td>14th – 16th Sept 2022</td>
<td>The 2nd Biennial Africa CSA Stakeholders Conference.</td>
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<td></td>
<td>Venue: Accra, Ghana</td>
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Publications by ACSAA members


The ASARECA Climate Smart Agriculture Alliance (ACSAA) is a multistakeholder platform that brings together agricultural scientists, agro-meteorologists, climate change experts, private sector players, farmers, extension workers and policy makers. ACSAA started in 2021 and is currently financed by the European Union (EU) and the International Fund for Agricultural Development (IFAD) through the Comprehensive Africa Agriculture Development Programme CAADP ex-pillar IV (CAADP-XP4) project as part of the grant awarded to ASARECA, AFAAS, CCARDESA, FARA and CORAF.

The ACSAA enhances coordination of the scattered CSA activities within the ECA sub-region with the ultimate goal of improving farmer resilience and livelihoods in the face of climate change and variability.

https://www.asareca.org/page/csa-updates

The ACSAA quarterly newsletter is sent four times a year. Getting this email from a friend? Subscribe for yourself, and stay connected with the latest CSA news and updates from ASARECA! If you have resources or news to share in an upcoming edition, send us an email at: csa@asareca.org