

Civil Society, Farmer Organizations, and Communities:

- ⇒ Mobilize **farmer networks** to adopt and spread climate-smart practices.
- ⇒ Advocate for **inclusive policies** that empower women and youth in agriculture.

The Moment for Action is Now

Climate change is already impacting Sierra Leone's rice sector. The CRRP project has shown that **adaptation is possible, affordable, and impactful**. Scaling up these interventions will reduce food imports, create jobs, and strengthen national food security.



POLICY & ADVOCACY BRIEF

Climate Adaptation Strategies and Project Impact for Rice Production in Sierra Leone: Enhancing Resilience to Climate Change



Draft Outline for Policy & Advocacy Brief

1. Executive Summary
2. Background
3. Key Climate Adaptation Strategies Identified
4. Project Impacts on Rice Production
5. Policy Recommendations
6. Call to Action

What We Urge Policymakers, Partners, and Stakeholders to Do:

Government of Sierra Leone:

- ⇒ Integrate CRRP best practices into the **National Rice Development Strategy II (NRDS II)** and the **Feed Salone Initiative**.
- ⇒ Allocate **budgetary resources** for climate-smart rice production and infrastructure.

Development Partners and Donors:

- ⇒ Expand **technical and financial support** for scaling up climate-smart agriculture interventions.
- ⇒ Support **research, innovation, and regional partnerships** for resilient food systems.

Private Sector:

- ⇒ Invest in **rice value chains**, including seed production, mechanization, processing, and marketing.
- ⇒ Partner with farmer cooperatives and SMEs to create **inclusive agribusiness opportunities**.



Strengthen Policy and Regional Integration

- ⇒ Integrate CRRP outcomes into the National Rice Development Strategy II (NRDS II) and the Feed Salone Initiative.
- ⇒ Align CRRP activities with Sierra Leone's Nationally Determined Contributions (NDCs) under the Paris Climate Agreement.
- ⇒ Strengthen Sierra Leone's participation in the ECOWAS Rice Offensive for regional food security and trade.

Call to Action

The evidence from the Climate Resilient Rice Production (CRRP) project demonstrates that **Sierra Leone can build a resilient, productive, and sustainable rice sector** if the right policies, investments, and partnerships are prioritized. However, achieving scale requires **collective commitment and urgency**.



Introduction

Rice remains the most important staple in Sierra Leone, consumed by nearly every household and accounting for over 70% of daily caloric intake. Yet, climate change is threatening the nation's rice production systems. Erratic rainfall patterns, recurrent flooding, prolonged droughts, soil fertility loss, and pest outbreaks are undermining productivity and farmer resilience.

To address these challenges, the Climate Resilient Rice Production (**CRRP**) Project is providing research-driven, climate-smart solutions that strengthen national capacity, empower smallholder farmers, and contribute to food security and poverty reduction.

This Executive Summary synthesizes the project's key findings, lessons learned, and advocacy messages for policymakers, researchers, and development partners. It demonstrates how climate-smart rice interventions align with Sierra Leone's **Feed Salone Initiative**, the ECOWAS Rice Offensive, and global adaptation agendas.

Key Challenges

- ◆ **Climate Variability:** Unpredictable rainfall, droughts, and floods disrupt rice cultivation cycles.
- ◆ **Land Degradation:** Soil fertility decline and erosion reduce yields and limit expansion.
- ◆ **Pest & Disease Pressure:** Climate change increases vulnerability to pests such as stem borers and diseases like blast.
- ◆ **Low Adoption of Climate-Smart Practices:** Limited awareness and extension services constrain scaling.
- ◆ **Policy Gaps:** Weak integration of climate adaptation into national rice strategies.

Key Findings from the CRRP

Introduction of climate-resilient seed varieties has increased yield stability by up to 25% under variable conditions.

Water-smart practices (e.g., bonding, irrigation, and controlled drainage) improved resilience to drought and flooding.

Soil fertility management (integrated nutrient use, composting, and reduced tillage) restored productivity in degraded lands.

Training programs empowered youth and women farmers, enhancing adoption and sustainability.

harvest management.

Invest in Climate-Smart Infrastructure

Develop and rehabilitate small-scale irrigation facilities to ensure year-round rice production.

- ◆ Expand storage, milling, and processing infrastructure to reduce post-harvest losses and improve value addition.
- ◆ Promote renewable energy solutions (e.g., solar-powered irrigation and dryers) for sustainable farming.

Promote Inclusive Participation (Women & Youth)

- ⇒ Establish financing schemes, input support, and business incubation hubs for women and youth in rice value chains.
- ⇒ Mainstream gender-sensitive policies that increase women's access to land, credit, and mechanization.

Foster Research, Innovation, and Data Systems

- ⇒ Increase investment in adaptive research on resilient rice varieties, soil fertility, and water-use efficiency.
- ⇒ Develop data-sharing platforms for real-time climate information and rice market intelligence.
- ⇒ Support partnerships with universities, SLARI, and international research institutions.

Impact Snapshot:

- ◆ 25–40% increase in rice yields under climate-smart practices.
- ◆ 30% reduction in crop losses due to improved water management.
- ◆ Thousands of farmers empowered, including women and youth.
- ◆ Stronger linkages to national and regional rice policies.

Policy Recommendations

To scale up the successes of the Climate Resilient Rice Production (**CRRP**) project and sustain its impacts, the following policy actions are recommended:

Strengthen Seed Systems

- ◆ Support the multiplication and distribution of climate-resilient rice varieties through certified seed producers and community-based seed systems.
- ◆ Establish seed quality assurance mechanisms (certification, labelling, and testing) to ensure farmers' access to reliable planting materials.

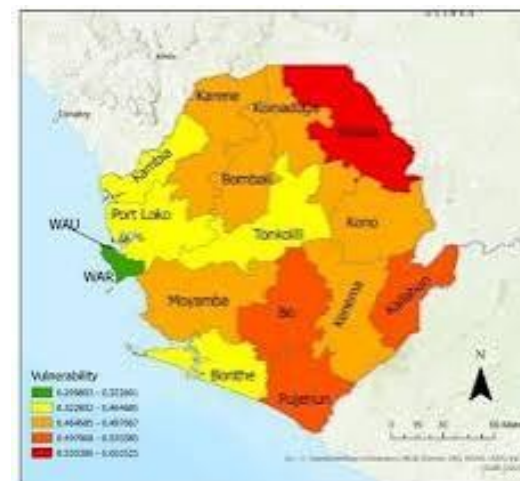
Enhance Farmer Capacity and Extension Services

- ◆ Scale up Farmer Field Schools and demonstration plots to reach more rice-growing communities.
- ◆ Train extension officers and farmer organizations in climate-smart agriculture (**CSA**) practices, digital advisory services, and post-

Strengthened institutional collaboration between SLARI, government ministries, private sector actors, and regional partners created enabling conditions for scaling up.

Policy and Advocacy Messages

- ◆ Climate-smart rice production is urgent to ensure food security in Sierra Leone.
- ◆ Mainstream climate adaptation into agricultural policies and the national rice strategy.
- ◆ Invest in research, extension, and infrastructure to accelerate the adoption of resilient technologies.
- ◆ Support public-private partnerships to scale climate-smart inputs and services.
- ◆ Leverage regional and global platforms to share knowledge and mobilize resources.



Action Recommendations

For Policymakers

- ◆ Integrate climate adaptation strategies into Feed Salone and national rice policies.
- ◆ Allocate dedicated budget lines for climate-smart rice research and extension.
- ◆ Strengthen land-use regulations to reduce degradation and protect wetlands.

For Development Partners

- ◆ Scale up investment in infrastructure (such as irrigation, storage, and processing) that supports resilience.
- ◆ Support capacity-building initiatives for youth, women, and farmer cooperatives.
- ◆ Facilitate regional knowledge exchanges to learn from success stories across Africa and Asia.

For Researchers and SLARI

- ◆ Expand testing of climate-resilient rice varieties suited to different agro-ecological zones.
- ◆ Generate data and evidence to guide policymaking and track impact.

Climate and Environmental Benefits

- ◆ Adoption of soil and water conservation techniques improved soil fertility and reduced land degradation.
- ◆ Water-efficient practices reduced methane emissions, supporting Sierra Leone's climate change mitigation targets.
- ◆ Integration of agroforestry systems increased biodiversity and strengthened ecosystem services in rice-growing areas.

Institutional and Policy Linkages

- ◆ CRRP outcomes are aligned with the National Rice Development Strategy II and the Feed Salone Initiative, advancing the national goal of rice self-sufficiency.
- ◆ District extension officers strengthened their technical capacity to scale up rice innovations across the country.
- ◆ Evidence generated from CRRP is contributing to Sierra Leone's role in the ECOWAS Rice Offensive for regional food security.



Project Impacts on Rice Production

The Climate Resilient Rice Production (**CRRP**) initiative has produced measurable improvements in Sierra Leone's rice sector, particularly in enhancing productivity, strengthening resilience, and building inclusive systems.

Increased Productivity

- ◆ Introduction of climate-resilient rice varieties boosted yields by 25–40% compared to traditional varieties.
- ◆ Adoption of improved water management techniques (e.g., alternate wetting and drying, small-scale irrigation) minimized drought and flood impacts, reducing crop losses by up to 30%.
- ◆ Establishment of community seed systems improved access to quality seeds for thousands of farmers.

Improved Farmer Capacity and Livelihoods

- ◆ Over 2,000 farmers trained through Farmer Field Schools and demonstration plots now practice climate-smart rice farming.
- ◆ Women and youth groups actively participated in production, processing, and marketing, ensuring inclusivity and improved household income.
- ◆ Diversification of cropping systems alongside rice has enhanced food security and income stability.

- ◆ Strengthen partnerships with universities and regional research bodies.

For Farmers and Communities

- ◆ Adopt climate-smart practices such as improved seeds, bonding, and soil fertility management.
- ◆ Engage in farmer groups and cooperatives to improve access to inputs and markets.
- ◆ Share indigenous knowledge and innovations for adaptation.

Climate change poses a profound challenge to Sierra Leone's rice sector, but it also presents an opportunity to reimagine agricultural systems that are resilient, inclusive, and sustainable. The lessons and evidence from the CRRP Project demonstrate that with the right mix of policies, investments, and partnerships, Sierra Leone can secure its rice future while contributing to regional food security and global adaptation goals.

Background

Rice is the staple food for over half of Sierra Leone's population and plays a central role in ensuring food security, supporting rural livelihoods, and contributing to the national economy. Despite its importance, rice production in the country and across West Africa faces growing challenges due to climate variability and change.

Key Challenges in the Rice Sector

- ♦ **Climate Stressors:** Increasingly erratic rainfall, prolonged dry spells, flooding, and rising temperatures reduce yields and threaten production stability.
- ♦ **Low Productivity:** Average yields remain below global benchmarks, largely due to limited access to improved seed varieties, inefficient farming practices, and inadequate irrigation infrastructure.
- ♦ **Soil Degradation:** Continuous cultivation, poor land management, and reduced soil fertility undermine resilience to climate shocks.
- ♦ **Economic Pressures:** Smallholder farmers, who produce the bulk of rice, often lack access to credit, mechanization, and post-harvest facilities, limiting their ability to adapt.

Regional and Global Context

The ECOWAS Rice Offensive emphasizes regional self-sufficiency in rice production and recognizes climate resilience as a cornerstone for achieving this goal.

Global climate frameworks, such as the Paris Agreement, call for agricultural adaptation strategies that integrate food security and climate change mitigation.

Lessons from Asia and Latin America demonstrate that climate-smart rice production, achieved through improved varieties, water management,

Policy and Institutional Measures

- ♦ **Mainstreaming Climate Adaptation into Rice Sector Policies:** Ensuring that national rice development strategies explicitly integrate climate adaptation and resilience-building.
- ♦ **Capacity Building for Extension Services:** Strengthening the skills and resources of extension officers to scale adaptive practices across regions.
- ♦ **Regional Collaboration:** Leveraging platforms such as ECOWAS Rice Offensive to align climate-smart interventions at the West Africa level.

Action Recommendations:

- ♦ Scale up the distribution of climate-resilient rice seed varieties.
- ♦ Institutionalize water-smart technologies through farmer cooperatives.
- ♦ Strengthen extension capacity to deliver adaptation services nationwide.
- ♦ Align CRRP outcomes with national and regional rice development frameworks.



alongside rice to improve household nutrition and income stability.

- ♦ **Agroforestry Systems:** Use of trees and shrubs to reduce erosion, enhance carbon sequestration, and provide shade and fuelwood.
- ♦ **Climate-Smart Livelihood Alternatives:** Promoting value addition and agribusiness opportunities (e.g., rice milling, processing, and storage) to diversify income streams.

C. Community-Level Adaptation Approaches

- ♦ **Farmer Field Schools (FFS):** Hands-on training platforms for knowledge-sharing on adaptive practices.
- ♦ **Participatory Vulnerability Assessments:** Engaging communities to identify risks and design context-specific adaptation plans.
- ♦ **Early Warning Systems:** Establishment of weather information services to support timely decision-making for planting and harvesting.



and sustainable agronomic practices, can significantly enhance resilience and productivity.

Role of the Climate-Resilient Rice Project (CRRP)

The CRRP was designed to address these challenges by:

- ♦ Generating scientific evidence on climate-smart rice practices.
- ♦ Enhancing farmer capacity through demonstration plots, extension services, and training.
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- ♦ Enhancing farmer capacity through demonstration plots, extension services, and training.
- ♦ Strengthening national and regional research collaborations, including partnerships with institutions like Cornell University.



- ◆ Supporting policy dialogue to mainstream adaptation strategies into national agricultural development frameworks.



Rationale for Policy and Advocacy Briefs

As the CRRP continues to generate research findings, monitoring results, and success stories, there is a strong need to synthesize these insights into policy-relevant briefs.

These documents:

- ◆ Translate technical results into actionable recommendations for decision-makers.
- ◆ Highlight the economic and social benefits of scaling up climate adaptation in rice production.
- ◆ Provide evidence to support national policies, regional strategies

such as the Rice Offensive, and global adaptation frameworks.

- ◆ Ensure that Sierra Leone's experiences contribute to broader knowledge exchange across Africa, Asia, and Latin America.

Key Climate Adaptation Strategies Identified

Through systematic monitoring of project results, experiences, and lessons emerging from the Climate Resilient Rice Production (CRRP) Initiative, several climate adaptation strategies have been identified. These strategies are designed to strengthen rice productivity, safeguard food security, and enhance the resilience of farming systems in Sierra Leone and across West Africa.

A. Climate-Smart Agronomic Practices

- ◆ **Improved Seed Varieties:** Introduction of drought- and flood-tolerant rice varieties suited for diverse agro-ecological zones.
- ◆ **Water Management Innovations:** Promotion of alternate wetting and drying (AWD), irrigation scheduling, and community-managed water control systems to reduce vulnerability to erratic rainfall.
- ◆ **Integrated Soil Fertility Management (ISFM):** Use of organic amendments, balanced fertilizer application, and conservation practices to enhance soil productivity under climate stress.

B. Diversification and Risk Reduction

- ◆ **Crop Diversification:** Integration of legumes and short-cycle crops