



STEP CHANGE: ACCELERATING ADAPTATION TO CLIMATE CHANGE

Strengthening the CAPacity of the extension system to use proven knowledge and technologies to sustain equitable Locally LED adaptation among smallholder farmers (SCALE)

Second Technical Progress Report

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Executive Summary

The SCALE project has achieved substantial progress in its mission to support climate resilience in Nigerian and Senegalese farming communities. Managed by the African Technology Policy Studies Network (ATPS) in partnership with WAGEDI and IPAR, the project executed critical activities in alignment with the International Development Research Centre's (IDRC) Step Change initiative. Bi-weekly virtual meetings and a collaborative WhatsApp platform have been vital in enhancing communication and addressing project challenges, including political instability in Senegal. Key objectives have been achieved during the reporting period including, stakeholder mapping, needs assessments, and documentation of locally led adaptation (LLA) initiatives. Significant strides in gender and inclusion were realized via a gender-responsive situational analysis, which identified barriers such as low digital literacy level among women, land acquisition system, lack of climate-smart agriculture skill, and lack of knowledge on nature-based solution. The project also established a robust data management plan to ensure transparency and adherence to IDRC's Open Access Policy. The Key Performance Indicators (KPIs) for the period were accomplished in line with MEL framework with key outputs of stakeholder list, capacity needs assessment report, and documentation of proven knowledge. Next steps in SCALE project implementation activities include, expanding gender-responsive training, fine-tuning the MEL framework, and exploring additional funding for climate adaptation financing. This structured approach ensures sustainable impact on smallholder resilience in the face of climate change.

1.0 Project Management

The project management team at African Technology Policy Studies Network (ATPS), in collaboration with the consortium of partners IPAR and WAGEDI, and the ATPS National Coordinators of Senegal and Nigeria, has made significant strides in implementing the project **“Strengthening the Capacity of the extension system to use proven knowledge and technologies to sustain equitable Locally led adaptation among smallholder farmers”** over the past 6 months (May to October 2024). The management of this project is based on a collaborative framework between ATPS and the consortium partners, ensuring streamlined communication, resource allocation, and adherence to project timelines. Throughout the project period, we have maintained regular coordination meetings and established clear roles and responsibilities among partners to ensure smooth execution of activities. As part of maintaining cordial relationship, the project officer at ATPS, Engr Professor Joel Nwakaire visited IPAR office in Senegal where fruitful and frank discussions ensued to ensure robust implementation of the SCALE project. During this phase, we focused on enhancing internal communication channels through bi-weekly virtual meetings and progress tracking systems. These meetings allowed for real-time updates on the status of each partner's deliverables, facilitated problem-solving, and ensured that any deviations from the plan were promptly addressed. We instituted a risk management system through the WhatsApp group platform, which allowed us to anticipate potential challenges, document them, and develop mitigation strategies with input from all stakeholders.

Resource management has been a critical aspect of this reporting period. Working closely with consortium members, we ensured the timely distribution of both financial and human resources. This enabled partners to carry out their activities as planned while maintaining accountability through regular financial reporting. Additionally, in one of the bi-weekly meetings, capacity-building sessions were conducted to strengthen partner capabilities in technical aspects of the project such as mainstreaming gender equality and social inclusion in project reporting, ensuring uniform quality and output across the consortium. Overall, we have placed emphasis on meeting key project milestones, aligning partner deliverables with the overall project schedule. This has helped us achieve significant progress on major outputs and allowed for early identification of areas where adjustments may be needed in the next phase. For example, due to earlier disparities recorded in data mining and reporting from the participating countries, templates were developed for use in project activities such as data collection and reporting to ensure easy analyses, harmonization, and comparisons of data and results between the two countries.

2.0 Progress against Objectives and Next Steps

2.1 Progress against SCALE project objectives

The overall goal of the proposed SCALE project is to strengthen the capacity of the extension system to use proven knowledge and technology to sustain equitable and locally led adaptation among smallholder farmers and farming communities in Nigeria and Senegal. For the period under review, the project activities were focused on the specific objective 1, 2, and 3. These specific objectives are:

- a) Enhance the effectiveness and sustainability of the extension system in major agroecological zones of the focus countries by **mapping and analysing the key actors, their roles, and linkages to identify opportunities for improving efficiency, collaboration, and coordination in the extension system;**
- b) Strengthen the extension system by **understanding the needs of the key actors in the extension system and identifying areas of intervention** prior to providing targeted capacity strengthening and technical support interventions to enhance their agricultural productivity and climate change resilience;
- c) Strengthen the extension system by reviewing and documenting proven LLA knowledge and technologies that support gender equality and social inclusion (GESI) for eventual deployment to the smallholder farming communities;

In SCALE project description, the activities were organized in three work pages, with work package 1 at the centre of all activities implemented during the last 6 months. Work package 1 (WP) “**Situational analyses and needs assessment of the key actors in the extension system**”, was aimed at understanding the statuses in the generation, transfer, and use of knowledge and technology to sustain equitable LLA in smallholder farming communities. It will also seek to explore their roles and linkages within the extension system. ATPS National Chapter coordinator for Nigeria worked with WAGEDI, and the ATPS Senegal National Chapter Coordinator and IPAR also, worked to implement WP 1 in Nigeria and Senegal. The activities that were carried out were:

1. *Identification and mapping of key actors the key actors, their roles, and linkages in the extension system in the focus countries.*
2. *Conduct of detailed needs assessment of the key actors.*
3. *Auditing and documenting proven knowledge and LLA initiatives that support GESI in smallholder farming communities.*

Key highlights of the outputs from the Activities

Outcomes from the Activity 1.1

The agricultural extension systems in Nigeria and Senegal play a critical role in brokering critical knowledge and practices that supports locally led climate adaptation, supporting the enhancing agricultural productivity. The identified key actors in Nigeria and Senegal are important in the successful implementation the SCALE project in both countries. These actors include farmers, extension agents, research institutions, and private and non-governmental organizations (NGOs). In Nigeria, the Ministry of Agriculture and Food Security, Ministry of Livestock Development, while in Senegal, the Ministry of Agriculture, Rural Equipment and Food Sovereignty in both countries, are the key government institutions responsible for supporting the growth of the agricultural sector, coordinating the implementation of policies of the government. Findings from the review of the role and linkages of the actors in the extension system in both countries show that systems are often characterized by weak linkages between these actors, which hinders the efficient dissemination of agricultural innovations. In Nigeria, the **Research-Extension-Farmer Input Linkage System (REFILS)** focuses on improving collaboration between researchers, extension agents, and farmers. Very noticeable was the **low number of women involved as extension agents**. However, challenges such as **poor funding, inadequate training, and weak farmer organizations have limited its effectiveness**. Similarly, a case study of **private extension services** in Ogun State, Nigeria, highlights that private organizations tend to have **stronger linkages with farmers and provide better market access**, but face challenges in **sustaining trust and collaboration across value chains**. In Senegal, agricultural cooperatives and extension workers play a significant role in linking farmers to innovation systems. Studies show that while cooperatives often spread innovations through hierarchical structures, these processes are controlled by key leaders, **limiting equitable access to knowledge among members**. Furthermore, agricultural extension agents in Senegal **require additional training in communication for development to improve their effectiveness in facilitating agricultural innovations**. It was also noticed that **most extension of knowledge brokering in the extension system in Senegal are carried out by non-governmental organizations supporting climate adaptation practices among the rural farmers**. The list of stakeholders identified during the identification of stakeholders are found in annex I.

Outcomes from the Activity 1.2: Capacity needs assessment of the key actors

Findings (Nigeria)

The following findings highlights distinct capacity needs for extension agents, farmers, and researchers, alongside their respective challenges with climate finance and the influence of gender.

Extension Agents:

- **Capacity Needs:** Agents require training on climate-smart agriculture, digital tools for weather forecasting, and in-service training. They also need resources such as mobility for field visits, ICT gadgets, and platforms for knowledge exchange.
- **Climate Finance:** Agents lack awareness of available climate finance mechanisms and face barriers like poor remuneration and social status, particularly for female agents, who experience land inheritance discrimination. Increasing salaries and providing transport and mobile phone-based ICT tools for real-time pest and disease detection, digital soil moisture and nutrient detectors, digital soil PH meters, market linkage applications, Digital Payment Systems, and Community Radio Programs would enhance service delivery.
- **Gender Issues:** Female extension agents are disadvantaged due to cultural norms and restricted access to resources, which hinders their effectiveness in climate change adaptation efforts. In some cultures, and religion, female extension agents may be restricted from reaching out to men in the community with proven information based on stereotypes as these men may look down on the agents by mere fact that they are woman. Under this circumstance, a significant population of the community loses from accessing vital adaptation information or technology. Access to difficult farm terrains and long distant farmlands for farm demonstrations may restrict female agents especially where adequate mobility is not provided.

Farmers:

- **Capacity Needs:** Farmers, especially women, face significant knowledge gaps in accessing climate-adaptive crop varieties and pest management. Training in climate change adaptation and pest control is highly needed, with women showing a higher demand for such interventions (50% versus 41.7% for men). Field demonstrations and farmer schools are their preferred learning methods.
- **Climate Finance:** Farmers struggle with poor awareness of available financial resources, with 65.1% citing this as the major barrier. Women also face gender biases, making access to funds even more difficult. Both male and female farmers reported lacking access to climate finance.
- **Gender Issues:** Gender disparities persist in accessing finance, with women facing more challenges such as discrimination and limited access to agricultural resources like land.

Researchers:

- **Capacity Needs:** Researchers need improved collaboration with extension agents and farmers, as weak linkages hinder effective knowledge dissemination. Other gaps include difficulties in translating research into local languages, inadequate funding for scaling research, and limited use of digital technologies.
- **Climate Finance:** Researchers face barriers in accessing climate finance due to a lack of knowledge about grant-writing and funding mechanisms. They need long-term grants and targeted support for specific projects to scale climate adaptation research.
- **Gender Issues:** Women researchers, who predominantly hold PhDs (83.3% versus 66.7% for men), also require support in bridging gaps in research funding.

All three stakeholder groups (extension agents, farmers, and researchers) need significant capacity-building efforts, especially in climate finance literacy, digital tool utilization, and gender equity measures, to enhance their climate adaptation efforts.

Findings (Senegal)

Extension Agents:

- **Capacity Needs:** Extension agents report gaps in knowledge dissemination, particularly in climate change adaptation strategies and gender inclusion. Training on climate-smart agriculture, agroecological transition, leadership, and organizational management are prioritized. A significant capacity need is mastering local languages and utilizing communication support systems such as community radio, call centers, research outreach groups, e-extension applications, experienced farmer community support groups, and field days among others to facilitate farmer engagements.
- **Climate Finance:** Only 16.67% of extension agents have access to financial resources for climate adaptation. The main challenges include insufficient funding for capacity-building and limited awareness of climate finance mechanisms, with 92% of agents unaware of these opportunities.
- **Gender Statistics:** Female extension agents constitute 8.33% of the surveyed group, with an average of 3 years of experience compared to 7 years for males.

Farmers:

- **Capacity Needs:** Farmers, particularly women and youth, require training in farm management, water conservation, and climate-resilient agriculture. Key recommendations include more frequent visits from extension agents, practical training, and increased logistics support for extension services.
- **Climate Finance:** About 56% of farmers report having access to climate finance from agriculture banks, local cooperative banks, and thrift associations, but many still face difficulties in project formulation and accessing information on funding mechanisms.
- **Gender Statistics:** Among surveyed farmers, 36% are women and another 36% are youth under 27 years of age. Women have an average age of 37 years, with youth averaging 23 years.

Researchers:

- **Capacity Needs:** Researchers require enhanced capacities in scientific communication, knowledge dissemination, and negotiation. They also need support in resource mobilization and understanding climate finance.
- **Climate Finance:** 66.7% of researchers are aware of climate finance opportunities. However, 50% report limited resources for climate change adaptation research, with 33% indicating these are insufficient.
- **Gender Statistics:** Female researchers have 6 years of experience on average, compared to 13 years for men. Women also represent 16.6% of the research community.

From the analysis, each group faces distinct capacity and financial needs, with gender disparities evident across all categories.

Outcomes from the Activity 1.3: Documentation of Proven Knowledge and Technologies in Senegal and Nigeria

Literature review findings

Key findings from 48 reviewed grey literature from researchers in Africa on climate adaptation among smallholder farmers in Africa highlights several key proven knowledge and technologies that are critical for locally led adaptation. Information on the knowledge and technologies received from the grey literature will be subjected to considerations for trials and adoption based on need during the validation exercises that will be conducted in the two countries. During the validation exercises, efforts will be made to identify how the chosen and proven knowledge and technologies support GESI in smallholder farming communities.

On the key findings, first, the adoption of drought-resistant crops stands out as a widely reported and effective strategy. Studies indicate that the use of these crop varieties helps farmers cope with reduced rainfall and prolonged droughts, significantly enhancing their resilience to climate variability (Komba & Muchapondwa, 2012; Gbegbelegbe et al., 2018; Atube et al., 2021). Second, improved irrigation systems are vital for ensuring water availability during dry periods. The implementation of irrigation techniques enables smallholder farmers to maintain crop yields and reduce the risk of crop failure, thereby securing their livelihoods in the face of erratic rainfall patterns (Gandure et al., 2013; Makate et al., 2019; Mutekwa, 2009). Third, soil conservation techniques, including mulching, zero tillage, and agroforestry, are crucial for maintaining soil fertility and moisture. These practices not only improve soil health but also enhance crop productivity and sustainability, providing a stable agricultural foundation for smallholder farmers (Ubisi et al., 2017; Aniah et al., 2019; Rusinga et al., 2014).

Findings from Surveys, Key Informant Interviews and Focus Group Discussions

Findings of key climate adaptation Knowledge, Practices, and Actions by Stakeholder Groups in Nigeria

Extension agents observed several farmer-led climate adaptation practices. These include agroforestry, crop rotation, cover cropping, early planting of resistant cocoyam varieties, and using neem-based insecticides. The Extension agents noted challenges like lack of documentation for these local practices, inconsistent adoption, and limited knowledge on climate change impacts. Capacity-building needs include training in the documentation of local practices and the use of digital tools to improve service delivery. Digital tools can be effectively used for knowledge and information sharing between the extension agents and local farmers. One platform that has been popular on this is the e-extension applications where text messages, videos, and audio messages are used to disseminate agricultural extension information to local farmers and communities. The tools have also helped in reaching local people in remote places where road access is not good. Gender representation in this group is balanced, with 50% male and 50% female participants, showing equitable participation in knowledge sharing and skill-building efforts. Farmers employ diverse adaptation practices rooted in local knowledge to cope with climate variability. Methods include mixed cropping, agroforestry, and



Figure 1. Proven Knowledge for protection against stem cutting ants

use of local seed varieties that are resilient to changing conditions. Water management techniques, such as rainwater harvesting and sandbag barriers, were commonly applied. Gender-specific differences were noted, with 32 farmers (16 men, 16 women) participating.

Women, often engaged in vegetable and pepper farming, reported frequent crop failures and reduced yields due to unpredictable weather patterns. During the engagement with farmers, some reported unique practices they have adopted to adapt to climate change. A farmer located under his poultry house under the trees as an adaption strategy in Southeast Nigeria as seen in the video link: https://drive.google.com/file/d/1dltfSumtR7CVA1SOAPd2z2qta9FPGX0/view?usp=drive_link. Some women in Nsukka community working with researchers from the University of Nigeria, Nsukka found a solution to stem cutting ants. These stem cutting ants attack the newly transplanted pepper and tomatoe plants and cut the stems. The menace of these stem cutting ants has been exacerbated due to high temperatures and other climatic factors. The co-created solution involves the use of plastic bottled water or soda drink waste bottles to protect the young transplanted plant, effectively protecting it from stem cutting ants. The ants are unable to crawl through the slippery bottles. Figure 1 shows the co-created solution by the women and researchers.

The Knowledge gaps remain due to limited extension support on climate-specific practices and funding for adaptation, with many women relying on informal networks such as friends and neighbours and co-farmers for advice. Other extension methods such as radios and televisions are usually not very popular as they are affected by other factors such as power outages, lack of trust and practicality and lack of contextualization of needs which the extension agents usually provide. Researchers' focus areas include climate impacts on crop health, supply chains, and local food security, with particular emphasis on traditional adaptive practices such as intercropping and organic inputs. Collaborating with farmers and extension agents, researchers face funding constraints and limited infrastructure for outreach. Of the 12 researchers interviewed (6 men and 6 women), all self-fund their research, and 75% of women hold PhDs, highlighting a strong female representation in advanced research roles. Researchers recommend creating platforms for continuous dialogue and utilizing participatory research to enhance trust and adaptation receptiveness among farmers.

Findings of key climate adaptation Knowledge, Practices, and Actions by Stakeholder Groups in Senegal

Extension agents, primarily male (92%), the extension agents, with an average age of 35, focus on agricultural adaptation in Senegal's Saint-Louis region. Their work emphasizes crop diversification, organic fertilization, rice intensification, and mulching. Major barriers they encounter include limited access to water, organic material, and suitable seeds, as well as the financial strain of irrigation costs. Agents also noted challenges in communicating practices due to farmers' limited internet access and language barriers. Capacity-building priorities for agents include training on drip irrigation and climate change adaptation techniques. Agents recommend expanding the use of organic fertilizers and implementing agroecological techniques like crop rotation, dikes, and hedges. **Farmers** face climate impacts such as crop failure due to diseases, drought, and pest infestations. In response, they apply local adaptation strategies like crop rotation, organic fertilization, rice intensification, and mulching. Farm sizes vary by gender, with men holding an average of 1.93 hectares compared to 0.23 and 0.37 hectares for women and youth, respectively. Knowledge dissemination varies; 77% of men, 72% of women, and 37% of youth actively share knowledge, often through field schools and peer exchanges. To overcome challenges like lack of access to land, financing, and pesticides, farmers recommend increasing support for practical training in local languages and networking for collaboration. **Researchers**, mostly male (83%), focus on sustainable agriculture and agroecology, with an average of 12 years of

experience. Their work centers on developing resilient crop varieties, land management, and practices like agroforestry and rice intensification to enhance climate adaptation. Key barriers include limited funding and infrastructure, high technology costs, and the gap between developed technologies and farmers' needs. Researchers advocate for stronger partnerships with farmers and extension agents and emphasize knowledge-sharing via workshops and field demonstrations. They recommend creating dedicated platforms for information dissemination in local languages to facilitate effective collaboration and local adaptation integration. These findings will be validated and disaggregated during the proposed validation workshops and co-design and co-development of interventions.

2.2 Next Steps

The next steps focus on work package 2 which involves co-designing and implementation of targeted technical support and capacity-strengthening interventions in the areas of need. The following three activities will be implemented:

- Presentation and validation of reports from work package activities in both Nigeria and Senegal
- Submission of harmonized technical reports from the work package 1.
- Co-development, co-design, and co-delivery of training programmes based on the identified capacity needs
- Customized technical support that will involve field visit and practical assistance.

3.0 Gender equality and social inclusion (GESI)

The project's progress, as documented, demonstrates a committed approach to Gender Equality and Social Inclusion (GESI) across activities with notable consideration for the perspectives, roles, and needs of various groups, including men, women, and youth in agricultural communities. The gender analysis earlier conducted assisted the project team in ensuring that all approaches are gender responsive. The reports reveal specific efforts to ensure equitable participation, capture diverse voices, and address the unique barriers faced by these groups in climate adaptation practices.

1. Team Training on Gender Equality and Social Inclusion in data collect: During the May to July project implementation activities, training workshops were conducted for all team members focusing on how to conduct gender responsive data collection and analyses. This training was necessitated due to the earlier survey on the needs of team member to have capacity for GESI reporting.

2. Gender-Disaggregated Data Collection and Analysis: The reports provide demographic insights, differentiating participants by age and gender, with data showing a clear breakdown of the project's engagement with men, women, and youth. In Senegal, 50 farmers (14 men, 18 women, and 18 youth) contributed to the study. The explicit breakdown highlights an intentional approach to gender balance and youth inclusion. Similarly, extension agents and researchers, though predominantly male, were disaggregated by gender, underscoring the project's emphasis on monitoring gender representation in stakeholder roles.

3. Gender-Specific Challenges and Adaptation Practices: Women and youth farmers face distinct challenges, such as smaller land sizes (averaging 0.23 hectares for women and 0.37 for youth compared to 1.93 for men) and limited access to resources like agricultural inputs and financing. These disparities were documented to inform strategies that address specific constraints experienced by women and youth in farming. Furthermore, extension agents observed that women often need support with practical training in local languages and enhanced access to knowledge dissemination platforms, showing an inclusive approach to knowledge-sharing tailored to the needs of marginalized groups.

4. Representation in Extension Services and Research: Though women are underrepresented in extension roles (comprising only 8% of agents), the project acknowledges this imbalance and the impact it has on inclusive service delivery. For researchers, the gender gap is similarly noted, with women making up only 16% of participants. The project's identification of these disparities illustrates an awareness of systemic challenges in gender representation in agricultural support services and underscores a potential focus area for future GESI-sensitive recruitment or capacity-building efforts within extension services.

The reports from Senegal and Nigeria reflect a project keenly aware of the importance of gender equality and social inclusion. The project activities differentiated data collection, acknowledging specific challenges, promoting inclusive knowledge-sharing, and addressing capacity-building needs, the project is taking meaningful steps toward a gender-sensitive and inclusive approach. Addressing gaps in representation within extension and research roles will further enhance GESI outcomes, ensuring that adaptation practices are accessible and relevant to all community members.

4.0 Ethics, safeguarding, security

The project's compliance with ethics, safeguarding, and security protocols during implementation can be described based on key ethical principles and considerations integrated throughout its activities. Specifically, the project adhered to the following:

- **Ethical Considerations:** The project ensured that informed consent was obtained from all participants before interviews or data collection. This consent process was aligned with respecting cultural norms, ensuring participants fully understood the objectives and their rights during the study. Privacy and confidentiality were strictly maintained by anonymizing responses and safeguarding sensitive information collected during surveys, focus groups, and interviews.
- **Safeguarding Protocols:** In addition to ethical consent, efforts were made to avoid any harm or discomfort to vulnerable groups, including women and youth. The project placed significant emphasis on gender inclusion, ensuring that the voices of all gender groups were represented in the findings. Safeguarding measures ensured equitable participation without exploitation or undue pressure, particularly in marginalized smallholder farming communities. Following the guidelines and recommendations from the IDRC's safeguarding expert and other related training we will receive on the subject matter, the team will update the project safeguarding protocol as may be required.
- **Security Measures:** To protect both data and participants, security protocols were likely implemented in the collection, handling, and storage of data. All information has been stored in restricted google drive, restricting access to only authorized personnel, ensuring the integrity of both the data and the well-being of stakeholders involved in the project.

5.0 Data management

The SCALE project data management plan which was developed in line with IDRC's Open Access Policy and Open Data Statement of Principles, was clear on research data sharing pathway. Data was gathered through a combination of structured surveys, key informant interviews, and focus group discussions, ensuring comprehensive coverage of stakeholder perspectives. Data collection tools were developed to collect demographic, experiential, and capacity needs data from farmers, extension agents, and researchers, with particular attention to disaggregation by gender and age. Physical data, such as paper-based surveys, were digitized, and all digital data was stored in password-protected systems, accessible only to authorized personnel. The project prioritized confidentiality, ensuring that sensitive information, especially related to vulnerable groups, was handled with care. Descriptive statistics were used for survey data, while thematic analysis was applied to qualitative responses from interviews and focus groups. This ensured a robust and multi-layered understanding of the capacity gaps and needs of different stakeholder groups. In the future, journal publications from the SCALE project will be shared openly.

6.0 Monitoring, evaluation, and learning (MEL)

The MEL Officer participated in some training organized by the Step Change team in order to understand how to track outputs and outcomes. The project officer working with the MEL consultant made sure that all activities and their outcome keyed into the SCALE project's goal *“to improve extension services, agricultural productivity, and climate resilience among smallholder farming communities because of strengthened capacities of actors and implementation of equitable and inclusive Locally Led Adaptation (LLA) in Nigeria and Senegal”* which aligns with the goal for Step Change *“to improve quality of life and resilience for the most climate-affected people, especially marginalized groups.”* SCALE Project identified smallholder farming communities in Nigeria and Senegal through rigorous stakeholder identification, understanding their roles and linkages in order to inform an inclusive locally led adaptation. From the updated MEL framework, the Key Performance Indicators (KPIs) for the three key activities carried out during this period of reporting were:

- i. Number of actors identified in each of the study areas. See annex 1
- ii. List of needs required in each study country. These needs are found in the reports found in link:
Nigeria: https://docs.google.com/document/d/1S3-jKlZrtEaw-7-BXZzi2SxrxR519GKQ/edit?usp=drive_link&oid=111667362018075335191&rtpof=true&sd=true.

Senegal: https://docs.google.com/document/d/1_NXeIExmCDG23wnAb6tbA4qDns0c-qIT/edit?usp=drive_link&oid=111667362018075335191&rtpof=true&sd=true

- iii. Number of LLA initiatives that have worked and document. See annex II for literature documented findings

Nigeria Field Report:

https://docs.google.com/document/d/1xLY3H0s729Hy1TZRsfcwzppg-Z4n5MGX/edit?usp=drive_link&oid=111667362018075335191&rtpof=true&sd=true

Senegal Field Report:

https://docs.google.com/document/d/1SK-uCpy9uHEpOd7NkEEAJHhteEgz6tgJ/edit?usp=drive_link&oid=111667362018075335191&rtpof=true&sd=true

These reports keys in to the three broad outcomes of the STEP Change initiative:

1. Gender and social inclusion are integrated in climate change policies and practices from local to global scale.
2. Strengthened implementation of equitable ecosystem-based adaptation
3. Improved access to appropriate and equitable finance for locally-led solutions

7.0 Capacity strengthening

During the period, the SCALE team benefited from the series of STEP Change Learning workshop, especially the climate financing learning workshop. The next reporting period will be filled with capacity strengthening and activities that targets women, youth, the extension agents, and researchers.

8.0 Risk management

The risk management strategy provides guidance on expected risks and ways for their mitigation in the course of project implementation. Currently, there are no challenges or limitations in fund transfers to partners in the

focus countries. This was an earlier expected risk. Where budgets for project activities were not adequate due to changing economic times and high cost of living, the team has sought for approvals to re-allocate budgets across budget lines in order to ensure that activities are optimally implemented especially at project partner levels in Nigeria and Senegal. As at the reporting period, the SCALE project has achieved its intended objectives and has not encountered any significant risks overall. Project implementation meeting have been held to ensure partners align with the set priorities of the SCALE project. ATPS project team has utilized the translate tool found in WhatsApp messenger to ensure effective communication in French and English. This has reduced risks due to communication gaps created due to language differences, Overall, there is no significant risk threatening the implementation of the SCALE project and every activity has been implemented according to work plan.

9.0 Collaboration within and beyond Step Change

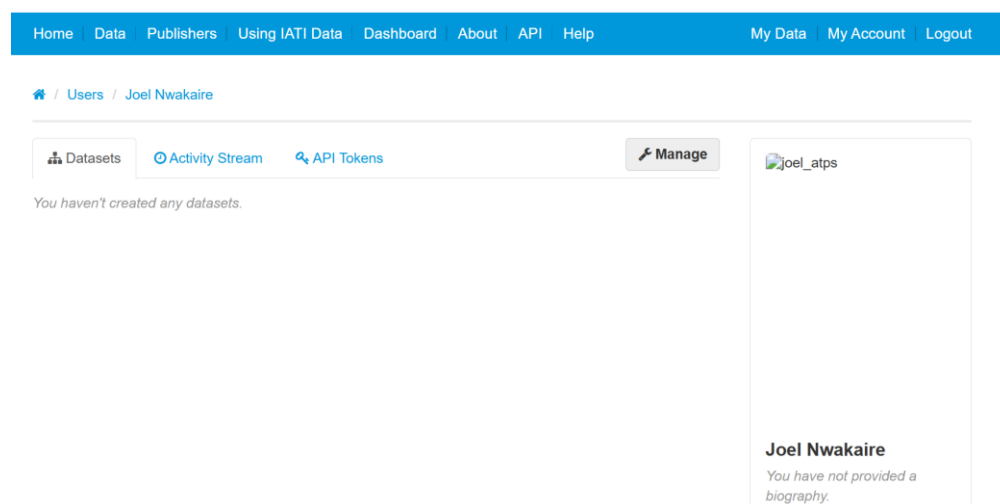
During the this reporting period, we had cross project collaboration with CDKN in shaping our field data collection instrument which was based on their years long experience working in the LLA landscape across sub-Saharan Africa. Their critical inputs shaped the collection of critical insights from the extension system in Nigeria and Senegal.

10.0 Reflections on budget

During the implementation period, we found out that some budget allocations to documentation of proven knowledge and technologies, and the capacity needs assessment in Nigeria were inadequate thus we had to utilize travel budget for the project officer to Senegal for the activities 2 and 3, to support a more robust data collection.

11.0 IATI reporting update

The African Technology Policy Studies (ATPS) has fully registered with the International AiD Transparency Initiative (IATI) and will be reporting financial data to IATI on a quarterly basis, as indicated in the grant agreement (money coming in from IDRC and money going out (expenses, including to IPAR and WAGEDI as sub-grants). We have also participated and concluded the online courses. The dashboard for ATPS IATI is shown below. The user id link: https://iatiregistry.org/user/joel_atps.



12.0 Recommendations

The SCALE project has made substantial progress in its initial stages, setting a solid foundation for enhancing climate resilience and agricultural productivity among smallholder farmers in Nigeria and Senegal. Key achievements include establishing effective partnerships, aligning project teams across regions, and developing gender-inclusive methodologies. These efforts, alongside a robust Monitoring, Evaluation, and Learning (MEL) framework, have enabled early successes in mapping key stakeholders, conducting capacity needs assessments, and implementing gender-responsive strategies. However, challenges such as political instability and gaps in adaptation financing require ongoing attention. Overall, the project is on track, with promising signs of achieving its goals through strengthened collaboration, targeted training, and adaptive management practices.

Recommendations

1. **Donor agencies, government should increase budget for Adaptation Financing:** Allocate additional funds specifically for climate adaptation financing research and knowledge-sharing, addressing financial gaps in implementing locally led adaptation strategies as seen from the finance gaps found in the needs assessment.
2. **Enhance cross-project collaboration:** Continue knowledge-sharing initiatives with partners like the Climate and Development Knowledge Network (CDKN) to foster innovation in climate adaptation and build on shared insights and resources.
3. **Expanded Gender Capacity Building:** Provide further training on gender-transformative practices for all team members to strengthen the project's gender equity and social inclusion impact.

Annex I: List of Stakeholders for Nigeria and Senegal

Nigeria

S/N	Name of Key Actor	Gender	Role and Responsibilities in Extension System in Knowledge and Technology Generation, Transfer, and use.	Contact Information including Email	Any Existing Collaborations or Intervention (if any, list them)	Areas of Intervention or Practice
Government Ministries/Department Related to Agriculture/Climate Change/Extension Services in Country X						
1	Ministry of Agriculture and Agro Industrialization	M/F	Agricultural lands preparation	Office of the Permanent Secretary, Ministry of Agriculture, Enugu State 08037426400	Donor Projects which includes – FADAMA, CADP, APPEALS, IFAD, ATASP, L-PRES, etc.	Agricultural best practices, technology and inputs support
2	Ministry of Education	M/F	Mainstreaming of Climate Change education awareness into academic curriculums of schools – primary and secondary	Office of the Honourable Commissioner for Education, Enugu State	UNICEF, USAID, WHO, DFID,	Academic Curriculum development
3	Ministry of Environment & Climate Change	M/F	Procure environmental knowhow and cleaning and clearing of the area involved. Introduction of	Office of the State Deputy Director/Head Climate Change Department, Ministry of Environment and Climate Change, Enugu State	NEWMAP, ESWEMA, FORESTRY COMMISSION	Erosion and Pollution control, Climate smart initiative, clean energy development mechanism,

			climate smart agriculture	08037741174	(REDD+) UNFCCC, NCCC	
4	Ministry of Rural Development/Local Government/Chieftaincy Affairs	M/F	Intensifying and indoctrinating the project of the rural dwellers on the need for the project. Accepting of MOU from the project for implementation in the rural areas	Office of the Honourable Commissioner for Rural Development/Local Government/Chieftaincy Affairs, Enugu State	UNICEF, USAID	
5	Ministry of Science and Innovation	M/F	Initiating Innovative framework for capacity building of women, youth and vulnerable groups	Chinwe 07033617982	UNICEF, USAID	Innovative practices – technological knowhow
6	Ministry of Poverty Reduction	M/F	Providing secured statutory framework to environment and Subsidizing the farm produce to be affordable to the populace especially vulnerable groups	Office of the Director, Cooperative, Ministry of Poverty Reduction, Enugu State 07033799715	UNICEF, UN-AIDS	Collaboration with National Clean Cook Stove
7	Enugu State Ministry of Budget and Planning	M/F		Office of the Permanent Secretary, Ministry of Budget and Planning, Enugu State 07033799715		

8	Enugu State Waste Management Authority (ESWEMA)	M/F		Office of the MD, ESWEMA, Enugu State 07033799715		
Researchers/Research Organization related to Climate Adaption in Agriculture and Knowledge Valorization in Country X						
1	Centre for Environmental Management and Control (CEMAC UNEC)	M	Climate initiative	Dr. Ogbuene Bright Emeka 08036004808	Agriculture and environment	Climate variability impact on food productivity
2	Nnamani Enoch N.	M	Create Innovative solutions through research and information dissemination	enochnnaemeka@gmail.com 08169640483	CEMAC UNEC APPEALS (World Bank Assisted) Project Conversion of poultry waste into dry odorless manure in collaboration with Magnet Farms	Soil erosion implication to crop productivity Climate variability implication to food security
3	SOLIDARIDAD West Africa		Promoting climate smart Oil palm production with inclusive and sustainable market across the value chain	Ernest 08063266045 08130355281	Ministry of agriculture, private sectors and individuals	Smallholder oil palm farmers /artisans, small scale oil palm processors and Medium size enterprises (SMEs)
			Field Research and Capacity Building			

4	Temple Oraeki	Male		08135402302		WASH
5	Dr. Daniel Ugwu	M	Field Researcher, Capacity Building and Youths Engagement	08065671192		Climate Change Advocacy
6	DR. Chukwemeka Chukwuone		Agric. extension	08051242411	UNCCC, UNN, CEMAC, UNED	
7	Prof. Eze		Agric. extension	08038864101		
8	Dr. Eze Hyacinth O.	M		Ezeho733@yahoo.com	NEWMAP RAMP	
9	Nneka Nebo	F		07063871769	CEMAC	
10	Dr. Didiugu O.	M		08033166391	NEWMAP, APPEALS, RAMP	
Extension Agents/Extension Service Provider in Country X						
1	IFAD, FADAMA, RAMP, NEWMAP, ATASP, etc.	F/M		State Project Coordinating Offices	WB, AfDB, FAO, etc.	
2	Nnachetam Reginald Chigbogu	M	Source mobilization, farm best practices and data collection	08127703618		Climate Smart Agriculture
3	Ogbodo David Ndubuisi	M	Source mobilization, farm best practices and data collection	07066251384		Climate Smart Agriculture

4	Farmer Samuel Okoro	M	Source mobilization, farm best practices and data collection	09062707984		Climate Smart Agriculture
5	Chinazom Anyaeche	F	Source mobilization, farm best practices and data collection	07038512281		Climate Smart Agriculture
6	Dr. Ochiaka Sunday	M	Capacity builder on farm best practices, data collection and analysis	08060943329		Climate Smart Agriculture
NGOs/CSOs and Donor Partners in Enugu and Ebonyi State, Nigeria working on Climate and Agriculture						
1	CIDJAP	M/F	Climate initiative			Smart climate capacity builder
2	Green Earth Environmental Consult	M	Proffer sustainable solutions to environmental problems through	dennisnebedum@yahoo.com	NEASRA, CADP, NEWMAP and APPEALS Projects (World Bank Assisted Projects)	Climate change
3	Rural Engagement and Development Foundation (REDFoundation)	M/F	Community Sensitization and Capacity Building of Smallholder Farmers on Climate-Smart Agriculture.	ruralgain@gmail.com 08138899669	Partnership with Solidaridad in her NISCOPS Project	Agriculture
4			Promoting climate smart Oil palm production with	Ernest	Ministry of agriculture,	Smallholder oil palm farmers, oil palm processors

	SOLIDARIDAD West Africa		inclusive and sustainable market across the value chain	08063266045 08130355281	private sectors and individuals	and Medium size enterprises (SMEs)
5	Eco-Cyclers		Plastic Waste Management	+234 703 058 8955	Urban Green Spacing in Enugu and Tree Planting and Plastic Population in respect to Air Pollution,	Environmental Waste Management
6	Earth Environment and Climate Care Ambassadors, Enugu State Chapter			+234 806 419 1451		
7	Green Environment Network Enugu (GRENE)	M/F	Youth Engagement, Resource Mobilization and Capacity Building	07039877588		Tree Planting, Environmental Sanitation and Urban Greening
8	South Saharan Social Development Organization (SSDO)	M/F	Youth Engagement, Capacity Development and Strengthening economic resilience of smallholder farmers	08032937657		Agriculture and Climate Change Advocacy.
9	Women Information Network (WINET)	M/F	Youth and Women Engagement	08063311962		Climate Change Advocacy

10	Network of Water Rights Initiatives (NEWARI)	M/F	Capacity Building and Advocacy	07083577282		WASH Advocacy
11	WASHFID	M	Capacity Building and Advocacy	07038427342		WASH Advocacy and Climate Justice
12	Centre for Climate Change and Development	M/F	Capacity Building and Climate Justice Advocacy	08121000761, 07037631055	International Visitors Award on Urban Greening and Climate Advocacy	Climate Justice Advocacy
Farmers and Farmer Groups in South-East of Enugu State						
1	SUNCHI Integrated Farms	M		08037130524		
2	ANIMALHEALTH Concept Farms	M		08036825033		
3	Enugu State Young Farmers Association (ENSYFA)	M/F	Resource Mobilization and Youth Engagement in Agriculture	08034961809		
4	Peace Farmers and VSLA Group, Umueze Awkunanaw.	M/F	Sustainable Land Use (SLU) and Best Management Practices (BMP)	07068662735		
5	Ifunanya Farmers and VSLA Group, Obe.	M/F	Sustainable Land Use (SLU) and Best	08063393169		

			Management Practices (BMP)			
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Senegal Stakeholder List

S/N	Name of key actor	Gender	Role and responsibilities in the extension system in terms of generation, transfer and use of knowledge and technology.	Contact details including email	Any existing collaborations or interventions (if applicable, list them)	Areas of intervention or practice
Government ministries/departments related to agriculture/climate change/extension services in country						
1	Papa Momar Khoule	Male	Director SDDR Podor	papamomarkhoule@gmail.com		
2	Abou SALL	Male	Director /Podor Delegation	Bousall@yahoo.fr		
3	Alassane Ibrahima SALL	Male	Chief DAPER SAED/ Podor Delegation	alassaneibrahimasall@gmail.com		
4	Sada Niane	Male	Head of project and program partnership cell/ANCAR	sadaniane@rocketmail.com		
5	Dr Alioune Diallo	Male	Director ANCAR / Ndium	Jalloalioune1965@gmail.com		
6	Ousmane SOW	Male	Director ARD/Saint Louis	oussousow@yahoo.fr		
7	Dr Mahamadou Thiam	Male	INP Director	thiammahamadou@yahoo.fr		
Researchers/research organizations linked to climate adaptation in agriculture and knowledge valorization in Senegal						

1	Dr Omar Ndaw Faye	Male	ISRA/researcher	omarndaw.faye@isra.sn		
2	Dr Mandiaye Diagne	Male	African/Director	m.diagne@cgiar.org		
3	Dr Fama Guèye	Women	UCAD	Fama27.gueye@ucad.edu.sn		
4	Dr Saboury Ndiaye	Male	UASZ	ndiayesaboury@yahoo.fr		
5	Professor Saïdou Nourou Sall	Male	UGB	saidou-nourou.sall@ugb.edu.sn		
6	Dr Amadou NDIAYE	Male	UGB	Amadou.ndiaye@ugb.edu.sn		
Extension agents/extension service providers in country						
1	Ousmane DIANKHA	Male	ANCAR extension agent	Ousmanedianka25gmail.com		
2	Papa Gueye	Male	ANCAR extension agent	Papamargueye81@gmail.com		
3	Marie Noelle	Women	ANCAR extension agent	marienoelfatou@gmail.com		
4	Mamadou Sene	Male	SAED extension agent	mamadousene810@gmail.com		
5	Aissata Ciré Wone	Women	SAED extension agent	-		
6	ISSA wade	Male	enda extension agent	Issa.wadagro28@gmail.com		
NGOs/CSOs and donor partners in Senegal working in the field of climate and agriculture						
1	Abdoul Gangué	Male	Project manager / ENDA pronat	abdoulhamath@gmail.com		

2	Mariama Kane	Women	Project manager/3D NGO	Mariam.kanesall@gmail.com mariam.sall@ong3d.org		
3	Moussa Abou Niang	Male	Coordinator/use-PIP	moussabniang.man@gmail.com usepip@orange.sn		
4	Abdou Hadji Badji	Male	FUNGS	abdouhbadji@gmail.com		
5	Khady Camara	Women	ACF NGO Coordinator	Kcamara@sn.acfspain.org		
Farmers and farmer groups in country						
1	Aboubacry DIOP	Male	Union galoya	dembayeld@yahoo.com		
2	Adama gay	women	Union of Transformative Women	adamagaye375@gmail.com		
3	Abdoulaye R. Hanne	Male	UJAK	kwirndepod@orange.sn		
4	Doudou DIOP	Male	Union of Guédé	+221775348622		
5	Djibril PAM	Male	ADIP/Secretary General	Djibrilpam000@gmail.com		
6	Ibrahima Hanne	Male	farmer	+221775652197		
7	Soura diop	Male	farmer	+221770515357		
8	DOUDOU DIO P	Male	farmer	+221774858423		

Annex 2: List of Capacity Needs for Nigeria and Senegal

Table 1: List of top proven knowledge and technologies documented from literature

Adaptation Strategy	Details	Number of Reports	Citations
Drought-resistant crops	Adoption of drought-resistant crop varieties to cope with reduced rainfall and prolonged droughts.	8	(Komba & Muchapondwa, 2012), (Gbegbelegbe et al., 2018), (Atube et al., 2021), (Tambo & Abdoulaye, 2013), (Makate et al., 2019), (Jiri & Mafongoya, 2017), (Ubisi et al., 2017), (Tambo & Abdoulaye, 2013)
Improved irrigation	Use of irrigation systems to ensure water supply during dry periods.	6	(Komba & Muchapondwa, 2012), (Gandure et al., 2013), (Makate et al., 2019), (Mutekwa, 2009), (Sani, 2016), (Waldman et al., 2019)
Soil conservation techniques	Techniques such as mulching, zero tillage, and agroforestry to conserve soil moisture and fertility.	5	(Ubisi et al., 2017), (Aniah et al., 2019), (Rusinga et al., 2014), (Sani, 2016), (Tesfuhuney & Mbeletshie, 2021)
Changing planting dates	Adjusting the timing of planting to match the changing weather patterns and optimize crop yields.	6	(Ubisi et al., 2017), (Gbegbelegbe et al., 2018), (Tambo & Abdoulaye, 2013), (Aniah et al., 2019), (Mwalusepo et al., 2015), (Rusinga et al., 2014)
Crop diversification	Growing a variety of crops to reduce the risk of total crop failure due to climatic events.	5	(Atube et al., 2021), (Aniah et al., 2019), (Sani, 2016), (Gandure et al., 2013), (Gbegbelegbe et al., 2018)
Access to credit and extension services	Provision of financial services and agricultural extension services to enhance adaptation capacity.	7	(Atube et al., 2021), (Komba & Muchapondwa, 2012), (Zamasiya et al., 2017), (Tambo & Abdoulaye, 2013), (Makate et al., 2019), (Tesfuhuney & Mbeletshie, 2021), (Thinda et al., 2020)
Water harvesting	Techniques for collecting and storing rainwater to be used during dry periods.	4	(Gandure et al., 2013), (Mwalusepo et al., 2015), (Mutekwa, 2009), (Sani, 2016)
Tree planting	Planting trees to act as windbreaks, provide shade, and improve soil quality.	4	(Komba & Muchapondwa, 2012), (Atube et al., 2021), (Tambo & Abdoulaye, 2013), (Sani, 2016)

Collective action	Forming farmer groups to share knowledge, pool resources, and increase bargaining power.	3	(Ombogoh et al., 2018), (Gbegbelegbe et al., 2018), (Tesfuhuney & Mbeletshie, 2021)
Total		48	

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