SOCIETY FOR CLIMATE ACTION IN NIGERIA (SCAN) & UNIVERSITY OF PORT HARCOURT

Project Report

Project Title	Equip to Adapt Project
Location	Nigeria (Rivers and Enugu State)
Project Implementers	Society for Climate Action in Nigeria, University of Port Harcourt and University of Nigeria Nsukka
Lead Investigator/ Focal Person	Chinwoke Clara Ifeanyi-obi
Collaborators	Drs. Cynthia Nwobodo and Uche Chima
Duration	Three months
Executive summary	In a bid to further enhance gender and social inclusion into climate change adaptation in the Nigerian agricultural sector, 'Equip to Adapt' (ETA) Programme' was conceived and implemented. The objective of the programme is to build rural women and youth knowledge and capacity in innovative climate smart practices; provide weather information to guide planning of their farming calendar; establish linkage for continuous access to timely weather information for rural women and youth and institutionalize gender inclusion in climate change adaptation through establishment of Climate Smart Women Groups in all the agricultural zones in the two states. This activity is planned to also flag off the planting season for the rural women and youths in the two states. The training was held on the 22nd of February, 2024 in the two states concurrently. Rural women and youth association leaders from all the rural area dominated agricultural zones in Rivers and Enugu State were trained on identified Climate Smart Agriculture (CSA) Practices needed by the rural women to adapt their farming systems effectively to climate change. Project team synergized with the Nigeria Meteorological Agency (NiMET), International Institute for Tropical Agriculture (IITA) in implementing this programme. Resources persons were drawn from across universities, research institutes and key relevant organizations. In addition to the knowledge gained and capacity strengthened during the programme, participants also received improved seeds of maize, water melon, tomato, pepper and cassava stems. Through this programme, synergies were established among key relevant organizations, researchers, and farmers. A total of two hundred and fifteen (215) farmers directly benefited from the 'Train-the-Trainer Workshop' implemented by this programme. Outcomes and outputs include two CSA training manuals, short videos, policy brief, strengthened CSA knowledge and capacity, gaps and way forward in gender responsive adaptation identified and synergy among key relevant organizations established. Based on the experiences gained in implementing the programme, it was recommended that intervention agencies and responsible government arms should strive to organize such training for farmers at least twice every year. Also, greater synergies and collaborations among key stakeholders are important to strengthen ties and ensure greater impacts and sustainability of climate action projects
Introduction/Background	Climate change and its accompanying weather anomalies are causing serious impacts on agricultural production. High intensity rainfall, drought spells, proliferation of pests and diseases of crops and livestock, high heat intensity among others, affect the whole production systems and value chains in agriculture.

	Climate change has resulted in reduction in agricultural yield and quality of produce as well as unprecedented postharvest losses. The entire food production and supply chains are therefore heavily impacted by climate change. Smallholder farmers, rural households, women and youth face the worst impact of climate change. This is because these groups of people find their livelihood in agriculture which is the sector most vulnerable to climate change. Their reliance on a rainfed agricultural production system makes them highly vulnerable to climate anomalies as their source of income and household food security is impacted most by climate change. Lack of social safety nets in rural areas of sub Saharan Africa and Nigeria specifically reduces the resilience of rural farmers and the entire agricultural system. Social norms and gender related barriers and stereotypes further deepens the already existing vulnerabilities that women farmers face in adapting to climate change. To tackle these challenges faced by women and youths, the Society for Climate Change Action in Nigeria in partnership with University of Nigeria, Nsukka with support from the Adaptation Research Alliance (ARA) has worked to provide training to the women and youth farmers on climate smart agricultural practices. This project leveraged the lessons learnt and successes recorded from the previous project. The project team partnered with relevant stakeholders including research institutes, and government agencies to train these farmers on innovative crop and soil management practices for climate change adaptation. The training is aimed at building the capacities of the farmers in adapting to and building resilience to the impacts of climate change on their livelihood. This report presents the activities undertaken under this project, the lessons learned and recommendations for impactful and sustainable climate adaptation actions that target women and youths in agriculture.
Project Goal and Purpose	To further enhance gender responsiveness in climate change adaptation practices and policies in the agricultural sector in Nigeria
Project Objectives	The objective of the programme is to build rural women and youth knowledge and capacity in innovative climate smart practices; provide weather information to guide planning of their farming calendar; establish linkage for continuous access to timely weather information for rural women and youth and institutionalize gender inclusion in climate change adaptation through establishment of Climate Smart Women Groups in all the agricultural zones in the two states.
Activities	**Project activities implemented include:** **Rivers** **Activity 1: Stake holders engagement** meeting held on the 25th of January. The meeting brought together all project team members and key stakeholders to deliberate on the planned training workshop. It granted project team members the opportunity to allocate roles, agree on venue as well as screened the list of workshop participants ensuring that all target communities are represented. **Activity 2: Training workshop for rural women and youth leaders** A training workshop for rural women and Youth Leaders in Rivers state was organized on the 22nd of February 2024 at the Emerald Energy Institute, University of Port Harcourt. The programme brought together participants selected from all the agricultural zones in Rivers state. Out of the 100 participants invited for the programme, 96 persons attended. The participants were trained on 6 key modules, namely; module

	1 - Helping rural women and youths crop farmers understand climate change; Module 2 - Innovative soil management practices for climate change adaptation in Cassava-Maize-Vegetables farming system; Module 3 - Soil Remediation (Cleanup) with Biochars; module 4 - Innovative crop management practices for Climate change adaptation in Cassava-Maize-Vegetable farming system; module 5 - Mainstreaming Sweet Potatoes as a climate smart crop management practice; module 6 - Managing Maize Fall Army worm in maize farms; module 7 - Weed management in Cassava-based farming system; module 8 - Improved Cassava stems for Climate Smart Agriculture; module 9 - Accessing weather information for climate change adaptation. Resources persons were drawn from the university of Port Harcourt, Micheal Okpara University of Agriculture Umudike (MOUAU), National Root crop Research Institute, Umudike (NRCRI), Nigeria Meteorological Agency (NIMET) and International Institute for Tropical Agriculture (IITA). The modules treated were selected based on the needs of farmers in the state. The training sessions was a very enlightening session for farmers as they were introduced to innovative and cost-effective strategies of farming. Topical among them is the use of biochar in treating soil pollution. Rivers state is key oil producing state in Nigeria, known for oil spillage and other related environmental pollution. These drastically affect the soil rendering them unproductive. Farmers spend huge sums in trying to clean up their soil to make it fertile. Farmers were very excited to learn how to use their farm waste to produce biochar for treating soil pollution. It was also exciting for them to learn how to farm smart with sweet potatoes, using it as weed and erosion control as well as crop mix to reduce pest infestation and improve soil fertility. Maize army worm has become one of the most destructive climate-related pest invasions devastating the farming activities of farmers. Farmers have experienced huge losses as a result of this pest. They were happy to learn innovative ways of managing this pest from a renowned crop entomologist. Also, one of the contact farmers in our initial outreach programme was present to share indigenous ways she has used to effectively manage this pest. It was challenging for rural women to see their fellow woman speaking at that event. It was the first time for many farmers present to have one on one contact with IITA and NIMET. They were excited to have them speak to them. IITA trained them on their novel strategy of managing weed in cassava farm as well as brought improved cassava stem that was distributed to the farmers. Aside the knowledge and capacity building, the programme also provided a platform for rural women and youth leaders to directly interact with key personnel from IITA, NIMET, NRCRI and researchers from the university. They were able to ask questions on major issues affecting their farming activities and received immediate feedback. This also provided insight into the farmers problems to these institutions and will inform their future interventions. Starter packs comprising improved maize seeds (SC 526) and cassava stem were also given to all participants to enable them practicalize what they learnt as well as develop their farms as demonstration plots to be used in training other members of their community. Through this programme, SCAN has formalized collaboration with NIMET.This will impact positively on our future programmes. Also, the News Agency of Nigeria was in attendance and published the event in many of the country's dailies. This helped to create more awareness on the need

	for gender mainstreaming in climate change adaptation in the country. The new can be read using the following links: https://sunnewsonline.com/1239497-2/ https://tribuneonlineng.com/experts-advocate-smart-farming-practices-to-combat-climate-change-others/#:~:text=Experts%20have%20advocated%20smart%20farming,will%20be%20threatened%20by%202050 https://www.environewsnigeria.com/agriculture-experts-advocate-smart-farming-practices-to-combat-climate-change https://quicknews-africa.net/agriculture-experts-advocate-smart-farming-practices-to-combat-climate-change/ In addition, the university of Port Harcourt is expected to publish it in their special edition of the university Newsletter coming out soon. Evaluation form was administered to all training participants to assess their stauts before training as well as the training impact on them and possible arreas of improvement. It is interesting to learn from the analysis of data collected from this evaluation that most of the farmers were highly impacted positively through the training. At the end of the training, the participants were guided to form their climate smart groups. Each group elected a leader. They were encouraged to go home and mobilize other members of their community to join the group. **Activity 3** **Post workshop meeting of the Project team** The post workshop meeting of the project team was held on Monday following the training. This enabled the project team to assess and evaluate the programme implemented and plan for the proposed visits to the climate smart groups that will be formed by the programme participants. One key issue raised during the post workshop meeting was that the training workshop is supposed to be at least a two day affair to allow more time for interaction after each module. It was also noted that the programme should not be a one-time event, there is need for such training to be held at least twice a year, one at the beginning of the planting season and another at the end of the planting season. This will enable the organizers to harvest feedback from the experiences of the farmer during the farming season, hence informing their research activities. **Activity 4** **Step down trainings** The step-down trainings in Rivers state are still in progress and will be rounded off by 25th of April 2024. The delay is due to the farming season which is just commencing. Most farmers are extremely busy with their farming activities and find it very hard to attend other activities. Also, the bureaucracy associated with including the phone numbers of the group leads in NIMET database so they could be receiving weather information contributed to the delay. But the project team is extremely happy for this milestone

	as many rural women and youth farmers will for the first time begin to receive weather information. **Enugu State** **Activity 1: Mobilization of stakeholders:** Relevant stakeholders in agriculture and climate change adaptation in Enugu State were mobilized for collective action aimed at helping farmers adapt to the impacts of climate change. These stakeholders include women and youth farmers, Enugu State Agricultural Development Programme, Nigerian Meteorological Agency, private sector (East West Seeds Ltd). The aim was to have a robust discussion and interaction and synergies during the whole process of training the rural women and youth farmers. **Activity 2: Train the trainers Workshop: Climate Smart Training workshop organized for the Rural women and Youth leaders in Enugu North LGA, Enugu State on 22nd February 2024 by the Society for Climate Action in Nigeria (SCAN) in collaboration with University of Nigeria Nsukka.** The train-the-trainer workshop was held on the 22nd of February, 2024 at Enugu North Local Government Headquarters, Enugu State. The programme started by 11am with an opening prayer and introduction of key stakeholders and farmers. This was followed by a welcome remark by Dr Cynthia Nwobodo. She introduced the project's aims and objectives as well as the implementation modalities to the participants. She emphasized that climate change is causing an unprecedented impact on agriculture and that adaptation is very critical to ensure that women and youth who find their livelihood in agriculture will continue to enhance their livelihood activities. She said that linkage between farmers and climate service providers is very important to enable farmers to predict and adapt to climate change. She said that with the help from the Adaptation Research Alliance (ARA), the project is designed not only to train farmers on innovative adaptation practices but to link them to the Nigerian Meteorological Agency (NiMET) which will be providing them with continuous climate and weather information. She also explained that the women and youth will need to be formed into cooperative groups to ensure easy transfer of climate information and cross-fertilization of knowledge among farmers. After her presentation, Mr Njoku Clement N. (Chief Meteorologist, NiMET) who is a representative of the Zonal Manager of NiMET made his presentation. He shared the weather forecast information for the South East. He told the farmers that the onset of the rainy season for 2024 has been predicted by NiMET to start earlier than usual and farmers should plan their farming calendar in line with that. According to him, NiMET has predicted the onset of the rainy farming season for Enugu state to be on the 27th of March 2024. He mentioned that climate information is constantly changing and farmers will need to constantly stay in touch with NiMET to get up-to-date information for their farming activities. A presentation was made by Mr Patrick Njom, a former Director of Enugu State Agricultural Development Programme (ENADEP) on the climate and weather information of the different agricultural zones in Enugu State and how it affects cropping and livestock enterprises of the respective zones. He provided advice to farmers on how to diversify their enterprises to ensure resilience of the farming system against climate change. He emphasized the need

	to adopt improved varieties which are early maturing, can withstand harsh weather conditions, and yield higher even under climate change. Mr Njom advised the farmers to ensure that they irrigate their vegetable farms in order to produce more even before the rains come. After these, a group photograph was taken and the training session started. The title of the training was: **"Innovative Vegetable Production and Management for Climate Change Adaptation"**. Before the training started, some training materials were given to the farmers including: pen, notebook, file jacket, improved seeds of tomato, water melon, cabbage, and pepper, and a training manual. The training manual contained detailed information and guidance on the topic of the training. The training covered strategies for adapting to climate change by vegetable farmers. These various areas covered include: ● The use of hybrid seeds ● Good nursery establishment and management skills ● Good land preparation ● Hardening off before transplanting ● Mulching of vegetables ● Staking of plants like tomatoes ● The practice of integrated pest management ● Identification of pests on vegetables ● Nutrient requirement identification and management ● Harvest and post-harvest management During the training session, evaluation questionnaire was share before and after the training. This was designed to assess what the farmers knew and practiced as it relates to climate change and compare these with what they will learning from the training. This was used to determine the learning outcome of the training. The training ended at around 3:30pm. This was followed by formation of farmer cooperative groups. **Activity 3: Formation of farmers' Cooperatives** The farmers were guided to form cooperative groups according to their agricultural zones. Six cooperatives were formed and leaders were elected. Dr. Cynthia advised the cooperative groups to ensure that they get registered with the Corporate Affairs Commission (CAC). They were told to maintain a specific day of meetings for cross-learning of innovative practices for climate change adaptation. Dr. Cynthia promised to be available at all the step down training for the six coperative groups during their step-down meeting days. The farmers were very appreciative and lauded the innovativeness of the programme mentioning that this was the first time they came in contact with NiMET. The programme ended by 6: 15pm. **Activity 4: Step Down training** A step down training was organized by the respective leaders of the cooperative groups. The project team members visited the step down training events. More women and youths were mobilized by the cooperative leaders and the content of

	the training programme was once again shared among the farmers in a peer-to-peer learning process with facilitation by the cooperative leaders and guidance from the project team. Those groups who were not yet registered with CAC were enjoined to do so to ensure that they formalize their association. In one of the trainings, a staff of Enugu State Ministry of Environment was invited and he shared insights on the interest of the Commissioner for Environment in working with farmers to ensure climate change adaptation and mitigation. He stated that the Commissioner was ready to provide lands to farmers who need it for agricultural production. The cooperative declared interest in acquiring land from the State government for agricultural production and constituted a committee to work with the Ministry to achieve that. The farmers appreciated the learning process and requested for a follow-up visitation by the project team.
Total number of persons trained in the 'train the trainer' workshop	**Total number of participants in the train the trainer** **Rivers state** 22 Males 74 Females **Enugu State** 16 Males 101 Females **Grand total of participants trained.** Males 38 Females 175 Total = 213
Key Project Outputs	- Two Climate Smart Training manuals - Two Policy briefs (one completed and attached, while the other still in progress) - One 12 Mins Video - 12 Climate Smart groups - Two train the trainer CSA Training workshops
Key Project Outcomes	- Researchers present their research findings to the farmers facilitating research uptake - Possible evolvement of informed gender-responsive interventions and policies facilitated by the information exchange during the interactive sessions - Gaps and way forward in gender responsive climate change adaptation were identified through the discussions that ensued in the course of the training. - Rural women and Youth knowledge and capacity on climate smart agriculture strengthened - The workshop served as motivation for increased gender responsiveness among key organizations and government parastatals - Synergy among key organizations in agriculture and climate change established

Challenges encountered	Delay in disbursement of funds: A major challenge encountered during the project implementation was delays in disbursement of funds from the disbursing institution. The process of clearing the fund took a very long time. This delay caused financial pressures on the project team and led to sourcing of funding to implement most of the initial activities in the project. Inflation: Inflation also affected the price of project consumables and logistics arrangements. The project team had to negotiate prices a lot to obtain a manageable cost for each budget item. Limited time for engagement: The training was held for only one day while the farmers were still very enthusiastic to learn and engage more on issues of climate change. Bringing rural farmers together for training without material incentives has become increasingly difficult over time. Project team have to organize for incentives in the form of improved seeds to motivate attendance which actually worked well.
Conclusion	It is common knowledge that climate-smart agriculture (CSA) provides the link to resilient and responsive farm practices which are critical to achieving both food security and sustainable food systems in contemporary times. The grantees succeeded at gender mainstreaming of ideas and inclusive persuasions of the farmers towards adopting climate-smart approaches to farming with a view to building more sustainable food systems and enhancing smallholder farmers' resilience to climate change effects, improve on their livelihoods and create new business opportunities and, also, empowering them to become change agents in their various localities through our TRAIN THE TRAINER module. The trainings which comprised educating the farmers on farming methods such as composting, mulching, adoption of biochar practices, crop diversification e.t.c emphasized CSA because it was considered useful in maintaining and boosting yields while tackling land degradation and sustainable soil health. The approaches adopted in the climate-smart agriculture trainings also championed optimizing practices that encouraged farming drought-resistant crops. The training synergistically addressed problems of food insecurity, climate change, and ecosystem management. The CSA orientation also prioritized enhancing adaptive capacity through efficient mobilization of resources and the development of agricultural systems that can survive the challenges posed by climate change. A key observation from the training is that, the response to climate change, the pattern and extent of adoption of CSAs varied and was agricultural zone specific. Factors like resource constraints, ecological settings and farmers' experiences were significant determinants of CSA adoption. It was equally noted that socioeconomic constraints and variability and diversity in farming systems in the study areas were challenges militating against CSA uptake. To mitigate the challenges posed by changing climatic conditions, climate-smart agriculture (CSA) is recommended as the way to go as it is expected to enable farmers' cope with emerging challenges.
Recommendations	

	Based on experiences encountered during the project, we recommend that: - It may build more impact for a representative of the project funder to attend key project activity. This could influence more commitment from collaborating universities and even programme participants towards the project goal. - Producing an audio version of the training manual is key because of the fact that some participants and other potential trainees are not literate enough to read and write.
Key findings from the pre and post evaluation administered to train the trainer participants	**Pre evaluation:** - 68% of the train the trainer participants have not heard of climate smart agriculture before the training - 85.6% haven't attended any training on climate smart agriculture before **Post Evaluation** - 98.9% agreed that the training was helpful in improving their knowledge on CSA - In a scale of not satisfied at all, not satisfied, satisfied and highly satisfied, no participant indicated not satisfied at all and not satisfied; 19.8% indicated satisfied while 80.2% indicated highly satisfied - 2.1% indicated desired frequency of training as once in a year, 9.3 indicated once in two years, 52.5% indicated twice a year while 36.1% indicated quarterly - 99% indicated that the training has equipped them to adopt CSA practices - 99% indicated that the training has equipped them to get more involved in CSA decision making to a very little extent (0%), little extent (0%), high extent (42.3%) and very high extent (57.7%)
Important links	Link to the short video https://drive.google.com/file/d/1YWPVxNMF4CLpHrHEfOC6Q0wrgj0seUZj/view?usp=sharing Link to Policy brief https://drive.google.com/file/d/1pOT6_1TXkMTlXsSDjtpborkhQJIK5J1x/view?usp=sharing Link to Rivers train the trainer pictures https://drive.google.com/drive/folders/1M10EfyoedvDBuOw9cyja5cn0nlJ0OPIT?usp=sharing Link to Enugu train the trainer pictures https://drive.google.com/drive/folders/1EEd4vynHU_J3tlF2cZKrJWyGLIXtPFBU?usp=sharing Link to Enugu step down training https://drive.google.com/drive/folders/1eVaQ-0VHF0MU5C22bOtZz08tlxS9Payu?usp=sharing

	Link to training Manual – Enugu https://drive.google.com/file/d/1Lmsbhd-p-8vdxHBmNSd0-BRhlS5sbRDI/view?usp=sharing Link to training manual – Rivers https://drive.google.com/file/d/1Zop5Uxugl2dPFZDRUT2G2qvwB7ZWhBgP/view?usp=sharing