STRENGTHENING PRODUCERS’ CLIMATE RESILIENCE CAPACITIES IN THE GAMBIA

Best Adaptation Practices

NEMA-CHOSSO IN THE GAMBIA

KNOWELEDGE PRODUCT SERIES

First series November 2018
Climate change remains an impediment to reaching global goals of poverty eradication and food security and sustainable development. It continues to be one of the exacerbating challenges of the Gambia’s Agriculture Sector, affecting both crop and livestock value chains. Production and productivity levels have significantly decreased due to changes in temperature and increased pressure on water availability and quality, changes in pest and diseases as well as soil conditions.

One of the main objectives the Nema-Chosso Project is to support the process of climate change adaptation by increasing producers’ capacities in the use of climate resilient technologies for rice and vegetable production. To this effect, the Nema-Chosso project continues to invest in promoting viable and sustainable options for climate adaptation and resilience in Gambia’s agricultural sector, with focus on small scale women and youth farmers.

In the current knowledge product series, we share key project experiences and achievements over the past years. The series presents four experiences undertaken in collaboration with our key partners and project beneficiaries across the country. The series will increase awareness of major initiatives and achievements over the past years. The documentation of these experiences was made by the project, its key partners and beneficiaries with technical support provided by the West Africa Rural Foundation.
Integrated land management promotes climate resilience and reduces livelihood vulnerabilities

Background

In the Gambia, changing rainfall patterns over the last two decades continue to alter upland farming landscapes, posing significant challenges to farming populations as they grapple with the impact and consequences of climate change. The key changes include the unpredictability of the rainy season, narrowing of the rainfall window and the increasingly longer dry season. Added to these are the occurrences of flash-floods in different parts of the country. Key consequences of this complex mix of occurrences include accelerated land degradation, reduced soil fertility and associated low land productivity and poor crop yields in upland farming systems across the country. The negative effects of these on farm revenues and rural livelihoods cannot be overstated. Addressing these issues is central to promoting resilience of Gambian farming communities to climate change.

In the context of its overall goal of contributing to reduced rural poverty across the country, the National Agricultural Land and Water Management Development project (Nema Chosso) in The Gambia is supporting the development, promotion and dissemination of mitigation measures to help farmers adapt to the challenges of climate change. These measures, together with other initiatives seeking to enhance the performance of key agricultural value chains in the country, will contribute directly to the achievement of the nation’s strategic objective of reducing rural poverty through the development of viable and vibrant agricultural value chains.

In 2013, the Nema project launched an integrated land management initiative that focused on addressing key issues of degradation: soil erosion and gully formation in the uplands as well as sedimentation in the lowlands. As noted by Mrs. Aji Oulay Njie, the climate change adaptation specialist of the project:

Land degradation is a major threat to the livelihoods of farming populations across the country. In this framework, the Nema-Chosso land conservation initiative will continue to focus on addressing key issues of erosion, gully formation and sedimentation to address these threats and promote adaptation and resilience in the face of climate change.
The Gambia sustainable land management investment framework (2018-24) is the country's strategy and investment to upscale sustainable and climate resilient land management. To this end, the Soil and Water Management Services (SWMS) of the Directorate of Agriculture (DoA) has worked with Nema to implement the project's land conservation initiative. The initiative seeks to correct and reduce soil erosion and gully formation through innovative and participatory approaches in partnership with farmers. The specific objective of the initiative is to control erosion in the uplands, reduce sedimentation in the lowlands, maintain soil fertility as well as promote the healing of the gullies. These efforts will contribute to adaptation to the challenges of climate change and improving lives and livelihoods in farming communities.

The overall strategy draws from a highly participatory process in multiple phases, involving the project and key implementing partners. During the first phase, Nema-Chosso and its key implementing partners undertook an extensive information and awareness drive to ensure that beneficiary communities were fully informed of the initiative and its operational modalities. The awareness creation was undertaken at national, regional and district levels across the country, with opportunities for community feedback on identification of key problem areas and options for remedial actions. To ensure ownership and relevance, specific interventions are launched only at the request of beneficiary communities who make explicit requests for support from the project through the regional agricultural directorates (RADs). The SWMS of the DoA undertakes follow up technical field reconnaissance surveys to determine the magnitude of the problem and assess the costs and potential benefits of the intervention. The final selection of intervention areas is made by an advisory committee headed by the Governor of the region.

As noted by Mr. Kebba Manka, the Land Management Specialist of Nema:

“This rigorous but highly participatory process is designed to ensure that the interventions are relevant to specific challenges as well as promote transparency and ownership of both the initiative and its results at the regional and community levels. Also, selected communities have to explicitly engage themselves and take full responsibility for the maintenance and management of the structures as a key sustainability measure. They also contribute in kind by serving as host for all construction material and contractors’ personnel.”

ACHIEVEMENTS

The land conservation initiative continues to be a critical mechanism for adaptation to climate change in the project intervention areas. Over the past 5 years, the project has constructed contour bonds, diversion lines and gully plugs to protect and/or reclaim up to 4000 hectares of farmland from the effects of erosion, gully formation and sedimentation. The gully plugs installed by the initiative have permitted deep gullies to heal overtime.

These interventions have enabled farmers to reclaim and make effective use of agricultural land that would have otherwise been lost to extensive erosion and gully formation, notes the Director of SWMS. Thanks to this intervention, farmers will be able to continue with their farming activities and sustain their livelihoods even in the face of challenges of climate change. The importance of the results from this initiative is illustrated in the Sare Musa and Sumbudu cluster zone of the Lower River Division (LRR). Prior to the intervention, extensive areas previously used for upland cropping were abandoned due to extensive erosion and gully formation. With the construction of contour bonds and gully plugs in the affected areas, the communities have fully reclaimed the abandoned land.

Mr. Ensa Colley, The Nema Monitoring and Evaluation Officer, spoke on the importance of the initiative and how it has changed the lives of Nema-Chosso beneficiaries in the zone:
In this zone, farmers abandoned hundreds of hectares of farmland due to extensive erosion affecting many villages. Their livelihoods were threatened by inadequate food production. Also, their animals had to migrate to surrounding communities due to the unavailability of land for grazing. With the construction of the contour bonds and the installation of the gully plugs, they are now using the totality of the land for production and grazing of livestock. They no longer have to move their herds to neighboring communities for grazing.

Mr. Paul Mendy, the Assistant Monitoring and Evaluation Officer of Nema Project also notes

The gullies were so bad that villagers not even use horse and donkey carts in the area, and their children used to walk long distances to school due to gullies that they must avoid. This situation has been completely reversed with the complete healing of the gullies. The entire area is now accessible and the children now walk shorter distances to get to school.

For more information on this Knowledge Product, contact
National Agricultural Land and Water Development Project
Abuko, The Gambia

Soil and Water Management Services
Directorate of Agriculture
Yundum, The Gambia
Functional literacy: An effective means of promoting awareness of climate and resilience among smallholder farmers in the Gambia

CONTEXT

The engagement of Gambian farming communities in efforts to manage climate change risk is a key element of the operational modus of the Nema-Chosso project. The basis for this lies in the recognition that sustainable adaptation and resilience can be largely driven by the ability of rural communities to participate actively and take full ownership of adaptation and resilience options in the face of climate challenges. This implies in turn that communities must have the capacity and willingness to be active stakeholders in Nema-Chosso’s drive to promote adaptation and resilience. The importance of developing the necessary capacities and environment for this is a driving factor for the definition and implementation of key project actions.

A major challenge in rural Gambia remains the relatively high level of illiteracy, especially among women, who are the principal targets of the Nema-Chosso project. A report on literacy in The Gambia shows that in 2008, only about 34% of women in The Gambia are literate. (UNESCO, 2009). The figure is much lower for women in rural areas. Nema-Chosso recognizes that addressing the problem of low literacy among its target beneficiaries is a critical factor for the achievement of its key results on adaptation and resilience. The importance of this issue is reiterated by the Nema-Chosso Climate Change Adaptation Specialist « we are fully cognizant of the potentially negative effects of illiteracy on our efforts to promote and sustain adaptation and resilience to climate change. We need to continue to promote innovative actions that address this issue to ensure that our beneficiaries are capable of participating fully and actively in all project initiatives».

In 2013, the Nema Project launched the functional literacy initiative in the framework of its capacity strengthening support to project beneficiaries across the country. The initiative is a partnership between the project, National Women Farmers Association (NAWFA), the Adult and Non-Formal Unit of the Ministry of Basic and Secondary Education (MoBSE) and the Department of Community Development (DCD). The objective is to address the problem of high illiteracy among women and youth beneficiaries of the project.
The village development committees served as community entry points for the initiative. In 2016 the Chosso sub-project weighed into the initiative with an update of the functional literacy curriculum to include building farmers’ capacities on climate change and resilience through resilience and adaptation knowledge development and sharing, and adoption of Climate Smart Agricultural best practices. The initiative, which is more commonly described as Literacy for self-management, entails quick learning based on the expressed needs and interests of the learners. This approach, notes Fatou Samba Njai, who is the NAWFA focal person for the initiative, ensured that the learning focuses on the climate change adaptation and resilience issues that are most important and relevant to the learners.

The partners had a clear understanding of their roles and responsibilities to ensure successful implementation of the initiative: NAWFA was responsible for the sensitization of beneficiary communities, training of class facilitators and class management committees (CMCs), selection of class participants as well as ensuring the availability of training materials, whilst the Adult and Non formal unit of the MoBSE was responsible for the translation of instructional materials into local languages, provision of support for the training programme, and the supervision, monitoring and evaluation of the impact of the programme. The DCD participated in the selection of facilitators and supervision of activities, whilst the Village Farmer Association (VFA) monitored, supervised and managed the classes and provided oversight to ensure compliance, completion of allocated contact hours and punctuality.

**KEY ACHIEVEMENTS.**

The initiative was effective in promoting overall functional literacy and equipping beneficiaries with necessary materials to understand vulnerabilities to climate change as well as the key adaptation and resilience options. The programme covered 25 communities during the first training cycle that covered the period 2013 to 2015. Another 25 communities were covered during the period 2015 to 2017. A new batch of 25 communities is currently participating in the 2017 – 2019 training cycle. With an average class size of 25 persons, the initiative has now benefitted over 1800 rural smallholder farmers, more than 90% of them women.

The flexibility of the literacy for self-management approach enabled beneficiaries to apply their functional literacy capacities to immediate use. In the village of Boiram, Ebou Buoy, a beneficiary of the initiative, combined his love for oral poetry and new functional literacy capacity to write a poem on the importance of trees in the community.

**CONVERSATION WITH A TREE**

**A POEM BY EBOU BOYE, BOIRAM VILLAGE**

Farmer: I will have to cut down this tree this year to prepare my field for farming

Tree: How dare you stand in front of me and say you want to cut me down!!!

Don’t you know that I am a living thing like you and that I contributed a lot to your livelihood?

The house you live in is constructed with my branches,

The food you eat every day is prepared from by my products

The fruits that I produce are a major source of income for you

Your cows, sheep, goats, donkeys and horses will all starve without me.

Think of what will happen to you, your children and grand-children if there are no more trees!!

Hunger and famine

Homelessness

Poverty and degraded livelihoods

I know this is not what you want for your community

I can help you take a stand in the face of climate change,

Together we will adapt and be resilient

Farmer: Mmm….I will not cut down this tree, we are linked and stand a better chance together
The story of another beneficiary, Haddy Buoy, originally from Ndioben Fulladu, is another good illustration of how functional literacy is changing the lives of beneficiaries. She joined the first batch of trainees in 2013 and graduated in 2015. Now employed as a facilitator, she’s providing functional literacy support to her community and earning income to support her family. Haddy’s life has been transformed from being fully illiterate to one of a functional literate with gainful employment. Importantly, she is also putting her skills to use by promoting climate adaptation and resilience through her new-found role of functional literacy facilitator.

**Haddy Buoy**

For more information on this Knowledge Product, contact National Agricultural Land and Water Development Project Abuko, The Gambia

For more information on this Knowledge Product, contact National Agricultural Land and Water Development Project Abuko, The Gambia

**Soil and Water Management Services**

**Directorate of Agriculture**

**Yundum, The Gambia**

**FUNCTIONAL PRODUCER ORGANIZATIONS ENHANCING OWNERSHIP AND SUSTAINABILITY OF PROJECT INITIATIVES IN THE GAMBA**

**KEY SUCCESS FACTORS: PARTICIPATION,**

- Extensive consultation and participation of all partners enhanced through functional literacy
- Community awareness of climate change and resilience has improved
- Participatory review and validation of curriculum and training materials with beneficiaries
- Establishment and training of class management committees to strengthen supervision and ownership
- Agreement and signing of MOU with beneficiary communities

**CHALLENGES**

- Securing trained facilitators for the entire class duration
- Weak Monitoring and evaluation of the program due to lack of mobility
- Sustaining the interest and participation of the youth
- Limited budget in the face of high demand

**LESSONS LEARNT**

- Relevance is important: Focusing on what adult learners want to know and have interest in gives better results than imposing curriculum on them
- Mentoring and follow-up are essential: Participants want to apply/use what they have learned
- Don’t take youth participation for granted: Must have specific youth mobilization strategies
- Participation and engagement of communities: Put communities at the center of the initiative

**THE WAY FORWARD**

- Follow-up and mentoring support to graduated learners
- Skills training and support for income generation and livelihood improvement
- Exchange and learning visits for participating learners
- Mainstream Functional Literacy as an Extension Strategy

**FUNCTIONAL PRODUCER ORGANIZATIONS ENHANCING OWNERSHIP AND SUSTAINABILITY OF PROJECT INITIATIVES IN THE GAMBA**

**CHALLENGES**

- Securing trained facilitators for the entire class duration
- Weak Monitoring and evaluation of the program due to lack of mobility
- Sustaining the interest and participation of the youth
- Limited budget in the face of high demand

**LESSONS LEARNT**

- Relevance is important: Focusing on what adult learners want to know and have interest in gives better results than imposing curriculum on them
- Mentoring and follow-up are essential: Participants want to apply/use what they have learned
- Don’t take youth participation for granted: Must have specific youth mobilization strategies
- Participation and engagement of communities: Put communities at the center of the initiative

**THE WAY FORWARD**

- Follow-up and mentoring support to graduated learners
- Skills training and support for income generation and livelihood improvement
- Exchange and learning visits for participating learners
- Mainstream Functional Literacy as an Extension Strategy
The National Agricultural Land and Water Management Development Project (Nema-Chosso) in The Gambia is contributing to the overall goal of reduced poverty of rural women and youth by increasing their incomes through improved productivity based on sustainable land and water management practices. In this framework, the project recognizes that active participation of beneficiary communities in project planning, implementation and monitoring is essential for the relevance, effectiveness and sustainability of the project actions and key achievements. In general, active community participation in project implementation remains a fundamental development challenge. The classical top-down approach to project implementation has undermined the performance and sustainability of multiple developments in The Gambia as well as other developing countries. Addressing this challenge by pursuing a participatory mechanism for active beneficiary participation in project implementation is a priority for the Nema project.

In The Gambia, Producer Organizations (PO) and Community Based Organizations (CBOs) or ‘Kafos’ have long been an entry point and vehicle for engaging communities in project implementation. Almost every village and rural town in the country is characterized by the existence of at least one Kafo with multiple memberships. However, the overwhelming majority of these organizations lack the required organizational capacities and skills to serve as effective conduits to attain development objective. They face multiple challenges including lack of good governance, weak social mobilization skills, inadequate resources and political interferences. The resulting ineffective participation of beneficiaries in development initiatives is a contributing factor to weak ownership and unsustainability of development initiatives and results. Investments in improving the organizational dynamics and management of these organizations will have significant positive effects on the sustainability of projects in the country.

THE NEMA-CHOSSO INITIATIVE: STRENGTHENING CAPACITIES FOR FUNCTIONAL FARMER ASSOCIATIONS

With this in mind, Nema-Chosso has been providing capacity building support to multiple producer organisations across the 6 agricultural regions in the country since 2013. As noted by Bakary Jammeh, the Nema-Chosso Knowledge Management and Communications Officer and Focal Point for Farmer Organizations:

The initiative, which has so far benefitted farmer organizations in 75 communities, seeks to enhance the cohesiveness and functioning of the existing farmer organizations in Nema-Chosso targeted communities.

The sentiment is echoed by the DCD focal point for this initiative, Mr. Ebrima Sawaneh:

Strengthening the capacities of the targeted producer organizations will not only ensure their cohesiveness and active participation in the project activities, thereby laying the foundation for project implementation.

The initiative is piloted by the Nema Project Management Unit with a lead support by the Department of Community Development which is working in close collaboration with key partners such as the Directorate of Agriculture (DoA), University of The Gambia (UTG), United Purpose (UP), Women’s Bureau among others. MDFTs derived from diverse Institutions (DoA, Ministry of Health, WASDA, Catholic Relief Services and ActionAid The Gambia have direct responsibility for conducting the training sessions. Importantly, decentralized structures such as Village Development Committees (VDCs) and Alkalos/chiefs served as entry point into various communities and were involved in local group governance, in addition to serving as advisers and arbiters during conflicts within the group.

ACHIEVEMENTS, LESSONS AND PERSPECTIVES

Over the past 3 years, 70 field extension workers have been trained by the Nema Project in collaboration with the Department of DCD under the framework of strengthening the participation of the beneficiaries in project implementation. MDFT members have in-turn trained 576 group executive members from 32 producer groups, 54% of whom are women. Key areas of training include group formation and organizational management, leadership and management, record keeping, participatory planning, resource mobilization and financial and social accountability, as well as strategies for mainstreaming gender and youth issues in group operations.

Thirty-two farmer organizations, commonly called Village Farmer Associations (VFAs) have acquired legal status following official registration with the relevant authorities, and have developed clearly defined by-laws, governance procedures and strategic plans. Some have also accrued savings and assets. The associations are now organized into 6 Producer Organizations or Cooperatives and already providing easy access to agricultural inputs and machinery for their members. Key perspectives include mentoring, coaching and technical backstopping services as well as the consolidation of the established producer organizations to enable them respond adequately to the needs and aspirations of their members.
As noted by Mr. Modou Gassama, the Nema Project Director:
The consolidation of producer organizations will be a pillar for ownership and long-term project sustainability. We will continue to invest in this area to ensure that the organizations remain relevant and capable of providing support to their members well beyond the period of project implementation. We will continue the drive to make sure these organizations remain fully functional and operational and sustainable.

For more information on this Knowledge Product, contact
National Agricultural Land and Water Development Project
Abuko, The Gambia
Soil and Water Management Services
Directorate of Agriculture
Yundum, The Gambia

FARMER FIELD SCHOOLS CONTRIBUTING TO INCREASED CLIMATE ADAPTATION, RESILIENCE AND AGRICULTURAL PRODUCTIVITY IN THE GAMBIA
BACKGROUND

Low agricultural productivity continues to be a major bottleneck of the agriculture sector in The Gambia. The average yields for the principal crops remain much lower than potential yields, making agriculture unattractive to youths across the country. To address this issue, the National Agricultural Land and Water Management Development Project, funded by the Government of The Gambia and the International Fund for Agricultural Development (IFAD), seeks to contribute to the Overall Goal of reduced poverty of rural women and youth by increasing their incomes through improved productivity and incomes based on sustainable land and water management practices. In all the six agricultural zones (country wide) covered, the project specifically seeks to strengthen the capacities of women and youth engaged in rice and horticulture value chains in order to increase productivity and sustainable access to market.

In the horticulture sector, fruits and vegetables production have the potential to provide additional sources of food and income particularly for women and youth farmers in the country. The rice sector is an important source of food and incomes for thousands of women farmers across the country. Together, these value chains are very important to Gambian women and youth who are faced with the challenges of climate change and its consequences on their lives and livelihoods. Rice and vegetable pests and diseases are two specific problems that hinder the productivity of agricultural land on which rural women and youths depend for their livelihoods. Women fruits and vegetable growers regularly identify losses due to pests and diseases as their main challenges in the horticulture sector. Addressing these challenges will contribute significantly to increased agricultural productivity and incomes of women producers, who are especially confronted with the challenges of a changing climate.

NEMA-CHOSSO PARTNERS DRAW ON FARMER FIELD SCHOOLS (FFS) TO PROMOTE INTEGRATED PRODUCTION AND PEST MANAGEMENT (IPPM)

Nema-Chosso and its implementing partners have drawn from decades-long global lessons and experiences in Farmer Field Schools to effectively train farmers and promote integrated pest and production management in The Gambia. As noted by the Director of Plant Protection Services (PPS) of the Department of Agriculture (DoA), ‘IPPM and FFS are not new, with FFS in Asia by FAO more than 2 decades ago. What is remarkable for the country, however, is that the project and its partners have successfully adopted the approach to address key pest and disease problems of farmers growing vegetable, rice and also fruit trees in the face of climate change’.

This is echoed by the Climate Change Adaptation Specialist of Nema-Chosso: ‘As changes in climate intensify pest and disease problems for small scale farmers, the successful adoption of FFS for rice, vegetable and fruits producers offers a significant window for adaptation to climate change’.

AN INTEGRATED PRODUCTION AND PEST MANAGEMENT/FARMER FIELD SCHOOL APPROACH LED BY THE PLANT PROTECTION SERVICES

The successful adaptation of FFS in The Gambia was made possible by the participatory and integrated approach promoted by PPS and its partners. Under the overall leadership of PPS, the Horticulture Technical Services (HTS) of DoA developed a vegetable production curriculum whilst the National Agricultural Research Institute (NARI) was responsible for the development of a rice production curriculum. The University of the Gambia trained the Multi-Disciplinary Facilitation Teams (MDFTs). The FFS sessions were then prepared and facilitated by MDFTs in partnership with the Extension Services of DoA. It is important to note that farmers also played a critical role in the process. With facilitation support from the MDFTs, farmers conducted their own problem analyses and made comparisons between different production and pest management technologies and non-chemical inputs used to address key issues.

KEY RESULTS AND ACHIEVEMENTS

A total of 50 farmer field schools are established in the 6 Agricultural Regions across the country yearly, 25 on vegetables and 25 on rice, with 640 farmers actively involved in the rice and vegetable FFS sessions. Female farmers dominate the FFS in terms of membership and participation, making up 81% and 84% of the participants for the rice and vegetable FFS, respectively.

Participating farmers recorded significant increases in yields and revenues across the board. More specifically, yields and revenues increase by an average 56% to 85.7% for Onions, Cabbages and Tomatos, putting more cash into the hands bags of women farmers who participated in the FFS initiative.
THE EXPERIENCE OF THE FONI BEREFET FARMER FIELD SCHOOL

Berefet village is located in the Foni Berefet District, West Coast Region on the southern Bank of The Gambia. The village has a population of 351 people spread across 46 households, and women make up about two-thirds of the total population. The village is essentially rural with agriculture as the principal source of food and income for the overwhelming majority of its inhabitants. Women in Berefet are primarily rice and vegetable growers. As noted by president of the Berefet Garden KAFO:

We rely on rice production in our swamps as well as small-scale vegetable production for food, income and livelihood. Over the years, we have been confronted with low productivity associated with increased pest and disease occurrences due to changes in the climate. This has had negative consequences on productivity, production and our general livelihoods.

With support from Nema-Chosso, PPS and its partners worked with producers to set up the Berefet farmer field school to promote integrated production and pest management in their community garden. Following extensive mobilization, sensitization and negotiations, FFS training sessions started in 2016 with (25) farmer participants. The adult learning experience produced dramatic increases in productivity and incomes of small scale farmers working in the garden. After just 1 season of participation in the FFS, onion production in the garden increased from 5.2 tons to 8.5 tons between 2016 and 2017, with corresponding revenues increasing from D68000 to D11200 during the period. Similarly, cabbage production almost doubled from 0.7 to 1.3 tons, with associated revenues increasing from D10500 to D19500. Tomato production increased from 0.8 tons to 1.25 tons, with corresponding revenues from tomato sales increasing from D5000 to D7800.

The Berefet FFS is transforming the lives of Karafanding Badjie and others in her community. These are small scale farmers who continue to grapple with the effects of climate change on agricultural livelihoods. Karafanding explains thus:

Rice and vegetable production are our major sources of food and income. Over the last decade, we have faced problems of low productivity and production due to pests and diseases. With the knowledge gained through my participation in the FFS, we have realized significant increase in overall production and incomes from garden activities. With increased revenues from the sale of vegetables, I can now assist with the payment of school fees for our children as well as other household expenses. We are also beginning to save money to invest in vegetable production as well as other agricultural activities. The introduction of FFS in our community has definitely improved my life.

PROJECT PERSPECTIVES ON SUSTAINABILITY

- Mainstreaming Farmer Field Schools as an Extension Strategy
- Strengthening the capacity of PPS to ensure adoption of Good Agricultural Practices
- Adoption of appropriate technologies and improved and certified seed

For more information on this Knowledge Product, contact
National Agricultural Land and Water Development Project
Abuko, The Gambia

Soil and Water Management Services
Directorate of Agriculture
Yundum, The Gambia