

# **Climate Resilient Sustainable Agriculture (CRSA) Tandaba, the, Gambia**

**The challenges facing smallholder farmers both Men and Women under Land and soil conservation, Water, Energy, Market Access stresses and Disaster Risk Reduction.**

**Prepared by**

**Salome Kiragu/Inspirator AAS/KEOH**

**December 2013**

**“An alternative Sustainable Approach of scaling-up, of inclusive, that provides livelihoods for all and preserves the environment in a sustainable manner is possible over time.”**



## Table of Contents

|  |                                     |
|--|-------------------------------------|
| SUMMARY .....  | 5                                   |
| 01. The concept of Climate Resilient Sustainable Agriculture .....                         | 6                                   |
| The Concept of Climate Change.....   | 7                                   |
| 02. Gender Equity and Women’s Rights in Access to Land and Water Resources. ....           | 8                                   |
| 03. Soil Fertility and Water Management in Sustainable Agriculture .....                   | 8                                   |
| Soil and Water Conservation .....  | 8                                   |
| 04. Agro-Bio Diversity Preservation and Seeds Production in Smallholder Farmers.....       | 9                                   |
| 05. Livelihood Diversification, Value Chain and Access to Markets .....                    | 9                                   |
| 06. Trend Analysis and Vulnerability in Agriculture.....                                   | 10                                  |
| Disaster Risk Reduction.....   | 10                                  |
| Interlinkage of Disaster Risk Reduction to Climate Resilient Sustainable Agriculture ..... | 11                                  |
| Field Work .....   | 11                                  |
| 07. Policy Recommendations.....  | 12                                  |
| APPENDICE 1: TRAINING PICTURES .....   | <b>Error! Bookmark not defined.</b> |
| APPENDICE II: CRSA framework vs Local intervention.....                                    | <b>Error! Bookmark not defined.</b> |

## SUMMARY

Severe and repeated droughts, disasters, scrambles to access and invest in farmland around the world, shifts in Market prices, and shocks in energy use and supplies underline the scarcity of resources we depend on to produce the world's food supply. It is increasingly clear that sustainably feeding world billion people whose consumption rate continue to increase, if they follow the current consumption pattern of industrialized countries, will require a much more careful and integrated approach to the use of land, water, and energy resources.

It is an absolute must that we start now to produce more food using fewer resources in a sustainable manner, prepare for and avoid disasters by adopting coping strategies and mitigation mechanisms by conserving land and water in order to harvest more efficiently. Globally, we are faced with the reality of repeated decades of effort and rhetoric failure to eradicate disasters, conserve land and water resources in curbing climate change. Among the world's most hit regions, Asia and Africa continues to feel the impact of climate change and have the highest levels of food insecurity and hunger. This has resulted to extreme suffering for millions of world's poor, vulnerable and most marginalized people.

The focus particularly is on the issue of how to ensure sustainable food Agriculture for the smallholder farmers by putting the women at the forefront under conditions of water, land, and energy use stresses in tackling climate change. Demographic changes, high level of rising incomes associated with changes in consumption patterns, and climate change, alongside persistent poverty and inadequate policies and institutions in regard to market access and fluctuation in marketing prices are all placing serious pressure on natural resources.

Governments, international agencies, non-governmental organizations and institutions need to work together through strategic partnerships in helping to alleviate these impacts of scarce and poor conservation of land, water and energy use on smallholder farmers.

Based on these findings in the field, a holistic strategy need to be embraced in dealing with all four sectors—land, water, energy, and food. These strategies involve governing natural resources more responsibly, scaling up innovative solutions for using scarce resources, and addressing the factors that contribute to natural resource scarcity and disasters, including climate change. Such strategies will not emerge spontaneously; they must be expressly designed and implemented. All disciplines that can contribute must do so from organizations to expert, from researcher to practitioner, from farmer to policymaker, and from economist to nutritionist. Sustainability is possible only if we conserve our land soils, water and energy and if we don't waste it.

## 01. The concept of Climate Resilient Sustainable Agriculture

**High levels of climate change are felt in those countries and regions where access and property land to rights, water, energy are limited or contested.**



Through Capacity building and raising awareness and understanding of regional and country differences in climate change, it is hoped to trigger actions in reductions of the effects of climate change in attaining sustainable Agriculture.

A sustainability Agricultural approach that offers several advantages and reflects the situation not only of the population as a whole, but also of a vulnerable group whom are at a high risk of illness, poor physical conditions leading to malnutrition, hunger death. In scaling up by integrating the conventional Agricultural approach with the Traditional approach and bringing all these two elements together to reduce the effects of climate change through sustainable agricultural production.

The arable land which is already under cultivation and unsustainable agricultural practices has led to significant land degradation. In addition, water is scarce and likely to become scarcer with climate change. To halt this trend, more holistic strategies are needed for dealing with land, water, energy, and food.

The stark reality is that smallholder farmers needs to produce more food with affordable extension resources due to the witnessed market domination by agents, demographic changes leading to income increases, climate change, and poor agricultural practices, high dependency on rain fed agriculture, policies and institutions that are driving natural resource scarcity in ways that threaten food production and the environment on which it depends.

## The Concept of Climate Change

The terminology of Climate change usually is confusing and not well understood by smallholder farmers at the level. The Green house effect can be used as an entry point to demonstrate and build their capacities on the concept of climate change and its effects by reflecting the global situation as a whole. Helping the smallholder farmers understand the effect of CO<sub>2</sub> emissions into the environment will limit their activities that are



of detriment to the environment posing great danger to the soil fertility. Thus coming up with suitable alternatives of soil conservation will not only increase their agricultural productivity but also enhance their income generation activities that are competitive at the market level. The need to produce more with less and to do so sustainably and in a manner that prioritizes the poor will remain.

Different training methodologies at the community level such as the use of role plays in building farmer's capacities and empowerment on the impact of climate change, adaptation mechanisms and mitigation factors could be applied. The mandate being on community education and sensitization awareness in the maintenance of their habitat in order to increase their resilience to climate change.

The government at the national level need to take a stand in allocation of resources and governance in the implementation of policy at the community for the realization of a fundamental change.

There is a high need to undertake a transition process to climate resilient sustainable agriculture. Prioritization on what works for the farmers through participatory appraisal and giving them the opportunity for pilot project test is crucial. Non-governmental organizations need to build partnerships with stakeholders, conduct monitoring and evaluation in order to implement these changes.

## **02. Gender Equity and Women's Rights in Access to Land and Water Resources.**

In many places globally, women's groups are still in their first stages and women may find it difficult to organise themselves to talk about their experiences due to social constraints. Moreover, women are often invisible to policymakers and not considered farmers in their own right. Action Aid's experience on the ground has shown that farmer-to-farmer exchange programmes designed specifically for women can be very effective in empowering women and encouraging their participation on the identification and documentation of local knowledge.

Improving women's access to and control over productive resources can be realized by promoting group dynamics and collective action among women farmers, increasing women's contributions to household income through training in financial literacy and marketing skills, enhancing women farmers' productivity and reducing the energy and time spent in food and non-food production by the use of sustainable agriculture techniques and by optimising women's time spent on unpaid care and reproductive work.

## **03. Soil Fertility and Water Management in Sustainable Agriculture**

The soil fertility study is crucial since the principle interconnects all the issues regarding and affecting community resilient to sustainable agriculture with the aim of understanding community problems. Burning of the vegetation crops after harvest was highly noted in most of the communities farming fields. Farmers need to be informed on the diverse effects this has on soil due to the reduction of soil fertility which results to increase in flooding in most of the arable lands leading to migration of community inhabitants which can be prevented through plantation of vegetation as a fodder for animals and at the same time increasing the soil fertility.

### **Soil and Water Conservation**

Dealing with the root cause of the problem is the key. Another alternative for farmers in response to climate change resilient sustainable agriculture is the use of mulching to reduce the extent of the spread of the weeds. This could be used as a starting local test point to build the farmer's capacity in soil conservation techniques.

High emphasis is on water conservation techniques through references from Action Aid case studies in Africa and Asia in line with the context of climate change and sustainability. There is the grave need to offer technical support to the farmers and empower them on the utilization and maintenance of water due to the high risk of soil sediments deposits in water sheds/dams, occurrence of water borne diseases due to the animal access of tend the same water facilities and also due to the alsanic conditions of certain types of soil meaning that water conserved in those areas can only be used for irrigation purposes and not for consumption.



Water is a main challenge even with high risk flooding areas. In the realization of access to water for communities, project proposal implementations from non-Governmental organizations need to follow government systems and procedures in order to gain support on policy change in provision of quality public water services.

## **04. Agro-Bio Diversity Preservation and Seeds Production in Smallholder Farmers**

The main focus is on seed quality and seed preservation. The types and quality of seeds the farmers are using and the challenges they are facing regarding the use of seeds need to be addressed. Farmers need to be sensitized to help them in analyzing and making a distinction on the various seed varieties between the traditional, Hybrid, high yielding varieties and what is more sustainable for agricultural use. Best practices on seed quality selection and preservation methods that fit within a different environment should be shared and put in place.

It is common practice for women and men farmers to select and store their own seeds at home, as a strategy to preserve genetic materials and agro-biodiversity, and to ensure that they will have enough seeds for the next planting season. Every plot of land has different characteristics of soil, vegetation, and moisture content, even when they are located in the same area. Due to this diversity, each farm requires different kinds of seeds, as there is no guarantee that a seed adapted to one agro-ecosystem will produce satisfactorily in another.

## **05. Livelihood Diversification, Value Chain and Access to Markets**

There is the high application of the conventional method by both the farmers and women which requires high cost of production and distribution mechanisms and lack of knowledge on the cost-benefit analysis in determining market prices due to the domination of the middlemen in the markets. The main challenges the farmers both men and women are facing is processing and access to markets in regard to marketing and value chain addition.

The idea is to study how the markets operate and come up with a methodology that will build farmer's capacity in market analysis. There is an ongoing AA work in the development of a toolkit that will aid in market study and analysis. The way forward in tackling these challenges, for instance is by reducing high dependency on external markets, scaling-up with the aim of being cost effective and lobbying for government support in order to narrow down the gap between the producers and consumers. Action aid Senegal has intervened on value addition to banana production in its LRP Tambacounda through diversification on the use of banana as a baby formula food which has helped to increase women employment in income generation.

## 06. Trend Analysis and Vulnerability in Agriculture

The basic consideration in dealing with Disaster Risk Reduction is the lateness in meeting the project deliverables. There is also the call to emphasize on community resilient sustainable agriculture through capacity building at the community level especially to the women. Attitude and perceptions of the women involvement in the decision making process need to take a fundamental change in order to effectively monitor and evaluate their response and aid in planning the intervention logic. Various LRPs across regions and across the Gambia and Senegal need to share best practices.

The rationale of approaching the community resilient sustainable agriculture in relation to the concept of the Cargill project is due to the failure of the existing development systems in humanitarian response as a result of disaster unpredictability. The holistic idea of doing things differently in climate change adaptation techniques is to prevent hazards resulting into disasters.

This should be result oriented free from dependency of interventions through identification of activities in the various LRPs and planning for local interventions through project management. Identification of activities that require dependency from other activities is essential in cost reduction in project implementation.

The training approach at the community level needs to change by focusing on the gaps posed in the training. For instance, the effectiveness of the training using the level of change as an indicator in women leadership positions in the communities and the impact of training by carrying out or implementing a local test.

Risk identification and the uptake of the project is important as part of project Management. The Response, Accountability, Consulting and Informing (RACI-Matrix) through identification of each stakeholder in the project activity is applicable.

### Disaster Risk Reduction

Disaster Risk Reduction (DRR) is a proactive approach to lessening the impact of disasters or action taken before a disaster to reduce damage to human life and productive assets and capital by disasters. It moves away from the usual approach of waiting for a disaster to occur before responding to it. DRR is mainstreamed into existing projects and it cannot be a project on its own. Empirical evidence has shown that DRR techniques are present in communities but they are not well documented or disaster terms are not well understood<sup>1</sup>

---

<sup>1</sup>**DISASTER**-A serious disruption of a Household, community ecosystem or society that leads to hardship, damage or property loss and that is too difficult for those affected to manage without outside help.

**RISK**-The chance of harmful effects occurring due to the interaction between a hazard and vulnerable conditions.

The Training Procedure for Disaster Risk Reduction outlines the Key activities from Hazard Assessment( identification, prioritization and characterization), Risk Assessment, Vulnerability Assessment, Capacity Assessment, Disaster Risk Reduction Plans( Consolidation Findings, Problem Solving, and Action Plan) and Stakeholder Feedback and key decision makers.

## Interlinkage of Disaster Risk Reduction to Climate Resilient Sustainable Agriculture

The rationale is on the roll out/implementation strategy in capacity building of staff and empowerment of communities through sensitization and awareness creation. The key area is in the identification of implementing stakeholders and evaluation of community trainings methodologies done by prioritization of hazards through facilitation participatory approach to the community. The purpose is to conduct risk vulnerability assessment for sustainability in community preparedness and response to Disaster Risk Reduction.

International organizations and non-governmental organizations need to form strategic partnerships in order to consolidate findings and plan by preparing checklists and tools applicable at the community level for problem solving and through development of action plans to be disseminated to all the key stakeholders.

### Field Work

This involved 3 field trips in the Action Aid Gambia LRPs, involved the introduction of AA team, Community Representatives and explanation of Field Mission to the Community and Application of community resource mapping, Venn diagrams, historical timeline and daily activity calendar tools practically applied through Community engagement. The main areas of intervention were on Agricultural Production, Seed and Seed

*“Facilitation through Participatory Approach to Community Preparedness in Response to Disaster Risk Reduction.”*



**HAZARD**-Things or processes that may have dangerous or harmful effects on people and the environment.

**VULNERABILITY**-Internal conditions that increase people’s susceptibility to hazards or other shocks and stresses.

**CAPACITIES**-Conditions and assets that sustain people’s existence and assist in mitigating, preventing or reduction the effects of harmful conditions on their livelihoods.

Banking and Community Resilience (Community experiences and Responses from 2011 to 2012).

Some of the evident changes realized at the community level due to some interventions are; provision of farm implements and seeds, farmer training and seeds, AA-Seed Provision and cereals and Capacity building on small ruminant management and composting though the small holder farmers faced challenges as a result of lack of enough farm inputs, Wild animal intrusion and destruction, Inadequate farm outlets, Domination of the middle men in the market, Soil salinity, Water logging and Inadequate seeds and Lateness in delivery of seeds.

The major impacts felt at the community level were the; Destruction of houses, sanitary facilities, farm lands and other properties and Displacement/ migration from old to new settlement.

The communities resulted to the use of middle men at a giveaway prices, Managed with the crude farm implements, Prepared quick compost organic fertilizer and Scared away wild pest animals as means of coping strategies.

The Government support intervened where there were no other alternatives but external services were evident through Action aid's work in the construction of Seed Cereal Banking Facilities and through other agencies such as UNICEF in the provision of Sanitary Facilities and WFP in food provision.

## **07. Policy Recommendations**

The challenges of water, soil conservation, access to land and energy scarcity are likely to increase due to the effects of climate change. If progress and improvements to the vulnerable are to be realized, changes in practices and policies need to take place to assure local communities have greater control over and access to productive resources.

As a result of growing food price volatility and food price hikes driven by land, water, and energy scarcity, many countries have started to rethink agriculture and food security strategies. This rethinking provides an opportunity to ensure that sustainability strategies are aligned with plans in relation to land, water, and energy. More holistic strategies can reduce the adverse impacts of policy incoherence across these areas and promote the sharing of successful innovation.

Greater collaboration is needed among government ministries with non-governmental organizations as well as with communities, civil society, and the private sector in policy design, implementation, and monitoring. It is crucial to monitor both the human and the environmental outcomes of developments in the land, water, and energy sectors and of alternative sustainable agricultural production strategies.

For action to be realized it can be attained through responsible governance of natural resources by getting the policy frameworks right, secure access to land and water rights, phase out subsidies and create a macroeconomic enabling environment.

There is the need for scaling up technical approaches by addressing the nexus through investment in agricultural production technologies that support increased land access and soil conservation, water, and energy efficiency. Foster approaches resulting in more efficient land, water, and energy use along the value chain. Prevent resource depletion by monitoring and evaluating strategies in water, land, energy, and agricultural systems.

Lastly but not the least is to address the drivers of natural resource scarcity by managing the risks. There is the need to address demographic change, women's access to land and reproductive health, raise incomes through marketing improvements, lower inequality, and promote sustainable lifestyles and mitigate and adapt to climate change through agriculture.

**act!onaid**