**End of Project Report and Grant Cycle: Environmentally Smart Rice Farming Practices (Supported by ShareYourself)**

**Background:**

Rice is a staple food in almost all parts of the world especially Africa and Asia as a rich source of carbohydrate. Rice is the daily staple for more than 3.5 billion people. Quite easy to cultivate and fast to harvest, it brings economic returns to every actor in its value chain and contributes directly to decent work and economic growth as well as increased foreign exchange earnings. However, rice cultivation contributes greatly to climate change through the emission of greenhouse gases involved in soil and plant management, fertilizer application as well as water management practices.

As much as there is improved advocacy for environmentally sound farming practices, farmers and investors are concerned about the economic viability of such initiatives. By assessing the economic viability of sustainable rice production, we educated and encouraged farmers to adopt environment-friendly farming practices; reducing the contribution of rice farming and processing to climate change.

**Project Objective**: Educating rice farmers about the economic implications of environmentally sustainable practices in rice production.

**Project Duration:** 5 months.

**Project Inception:** January 31, 2020.

**Project Location:** Emiworo, Kogi State, Nigeria

**Milestones:**

**Pre-Planting Operations:** The project started with the meeting with the Area Manager of the Lower Niger River Basin Development Authority (LNRBDA), Kogi State. She was briefed and we got her support to work with the existing farmers on the FADAMA project at Emiworo, off Ganaja road, Ajaokuta Local Government Area of the state. We met with the farmers who agreed to take part in the project. One hectare of land was obtained for the demonstration fram while they continued their dry season farming using the conventional farming method on their pre-existing farms.

The land was cleared manually, without burning or the application of herbicides. This took a longer time and labour than the conventional method. However, it paid off as less chemicals would leach into the soil and run-off into water bodies.

Organic fertilizer (locally sourced cow dung) was applied two days before the planting. Alternate drying and wetting (AWD) method was used to control the amount of water in the rice field. This was necessary to reduce the quantity of methane and nitrous oxide emitted from the farm.

**Planting Activities:** 2 bags of rice plants from the previous planting season were planted 2 days after the fertilizer application. Afterwards, we went intermittently to water it while ensuring that the farm was not flooded.

During this period, the conventional farms were also being monitored as their results were used to compare against that of the environmentally-smart method.

**Harvesting:** At harvest, the yields from both methods were taken and measured. The average returns from both farms are presented below:

**Returns:** As expected, the SRI method of rice cultivation produced relatively higher yield when compared to conventional rice cultivation. The average yield of SRI cultivation is **3,756** kg/ha, which is 19.54% higher than the conventional method of rice cultivation (**3,142** kg/ha). This is aside the cost of okra which was grown as a biological control to ward off insects as against the use of chemical-based insecticides in the conventional method.

|  |  |  |
| --- | --- | --- |
| **Particulars** | **SRI farm** | **Conventional farm** |
| Mean Grain Yield (kg/ha) | 3,756 | 3,142 |
| Price of Output (NGN/kg) | 100 | 100 |
| Income from Output (NGN/ha) | 314,167 | 314,167 |
| Income from Okra(Protective Crop) NGN | 3,900 | -------- |
| Gross Income (NGN/ha) | 379,525 | 314,167 |
| Total Expenses (NGN/ha) | 155,042 | 243,752 |
| Net Income (NGN/ha) | 224,483 | 70,595 |

This is what Uphoff (2015) described as the "**super-yield"** because the very high yields occasionally reported with SRI management are beyond what scientists have been able to produce in their on-station trials" (p. 21).

**Post harvest analysis and farmers education:** The final part of the project involved a knowledge sharing session with the farmers on the results of the research and discussions on ways to adopt the environmentally smart methods, for more profit and a healthier planet which is due this week.

This will require us to travel to Kogi state which was almost impossible due to the restrictions on inter-state travel.

To this end, we requested a modification of the last milestone from a physical event to a Zoom webinar. This was approved by Mitchell and the training held on Tuesday, 30th June, 2020 at 3pm GMT+1.

**Brief of the Knowledge sharing session on environmentally-smart rice farming practices.**

The research aimed at understanding and evaluating the method that gives a higher profit margin while having lesser environmental impact. The study’s primary sources of information require two distinct research methodologies and as such, two major types of data collection methods; qualitative and quantitative as suitable for participatory action research viz: questionnaire, focus group discussion, participant observation, key informant interview.

The research findings demonstrate that the environmentally-smart system of rice intensification is more profitable than the conventional method. It also reflects that the continuous application of agrochemicals may damage the soil and cause decreased soil productivity and biodiversity, as well as increased pest attacks and methane emissions.

In addition, the project assessed the attitudes and behaviour of Emiworo rice farmers to farming practices, while enhancing their environmental knowledge. It also suggests policy recommendations and further areas of research.

The knowledge sharing session shared the research findings with a larger audience, discussed the health and environmental implications of both types of farming practices while highlighting strategies to the adoption of environmentally-smart rice farming practices.

Speakers at the event included Dr. Tosin Komolafe, an agroecologist, Mr Adegboyega Lawal of the Federal Ministry of Environment and Mr Kinsley Adindu, Head of African Operations at ShareYourself.

**Highlights Of The Knowledge Sharing Session and Next Steps**

1. There is limited knowledge on environmentally smart rice farming practices.

**Action:**

We would be working with the Federal Ministry of Agriculture, Federal MInistry of Environment, agronomists, farmers as well as civil society organisations involved in sustainable agriculture to embark on a farmer education campaign to share the benefits of ES (environmentally-smart) practices with them.

1. There is a gap in the optimal use of organic fertilizers.

**Action:**

We are organising a training session in collaboration with stakeholders on the production of high-quality organic fertilizers.

1. Consumers are not fully aware of the dangers of consuming foods that were grown with synthetic fertilizer:

**Action:**

Working closely with the FCCPC, CSOs and agricultural organisations, we will embark on a consumer education program.

1. Due to the high labour requirement of ES practices, farmers are usually discouraged from adopting the methods.

**Action:**

We will connect with our network of produce buyers and work out a modality for off-taking crops grown with ES practices as a way to encourage the farmers

1. More research needs to be done on ES farming practices on a variety of crops:

**Action:**

In the coming months, we hope to connect with other research institutes, tertiary institutions and researchers to advance research on ES practices.

It is our sincere hope and belief that you will work with us to make these projections realistic.

Together we can do so much more.

Best regards,

Mujidah Ajibola,

The Sustainability Hub.

+2348053140691.