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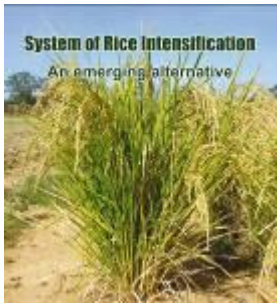

SYSTEM OF RICE INTENSIFICATION (SRI) TRAINING PROGRESS REPORT

SRI FARMER FIELD SCHOOL –CHINSALI DISTRICT, SEPTEMBER 2010

Prepared for:

Chief Extension Officer and Country Director
WILDLIFE CONSERVATION SOCIETY,
AND COMACO HQ, LUSAKA
by

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Acknowledgement

Firstly, I wish to thank all the groups of smallholder rice farmers for responding positively to the SRI new methods of RICE farming in Chinsali district. More also to people of Mfuwe in Mambwe district for pioneering SRI to a level where it has now been accepted in the WCS/COMACO mainstream.

I would like also to give great thanks to all my fellow staff at Chinsali CTC for their devotion in seeing that the SRI training was rendered with full support for successful results.

Special credit goes to WCS/COMACO Senior Management at Head Office, not only for providing financial support to the training programme, but for dedication and inspirations in g***etting the farmers and the community of Chinsali motivated for better productivity and gains from their rice yields.***

With best regards,

Henry N. Ngimbu

Chinsali, Zambia, September 30th, 2010

1. INTRODUCTION

This report has been compiled to provide insights on the training workshop activity for System of Rice Intensification (SRI) Best Practices and Group work dynamics under the farmer-field school (FFS) approach that took place in the months of August and September 2010 in Chinsali District. Therefore, the technical training material used was tailored to strengthen the capacity of responsible farmers located in COMACO catchment areas in Chinsali. It is understood that the training was tailor-made, dedicated to COMACO needs in order to get the best out of the effort. Therefore, certain elements of SRI were left out, e.g., demonstration of the use of rotary weeders and field markers, certain multi-media learning visual aids, etc. From the beginning, it should be understood that SRI farming practices are very location-specific, and it has been noted that experiences are not transferable across borders. Knowledge transfer at farmer-level regarding approaches of SRI agronomic best-practices is an ongoing process within an organization or company. This process encompasses needs-assessment, problem identification, development and implementation of solutions, assessment of outcomes, and planning for the future.

2. RATIONALE

Considering that SRI is an innovation which is knowledge-centered and knowledge-intensive, the Rice Grower Specialist applies his training approaches with information from the website of the **Cornell International Institute for Food, Agriculture and Development** (CIIFAD) and multimedia SRI knowledge sharing and learning toolkit of the **World Bank Institute** (WBI). The training model is a creation of the WBI with the theme: ***Achieving More with Less: A new way of rice cultivation***. The WBI multimedia toolkit uses audio-visual materials to illustrate knowledge and techniques on the System of Rice Intensification (SRI). This is a set of farming practices developed to increase the productivity of land and water, as well as other resources. SRI is based on the principle of developing healthy, large and deep root systems that can better resist drought, waterlogging, and wind damage, which are increased with climate change.

The World Bank Institute multimedia toolkit is organized as a step-by-step "how to" guide, summarized into six elements with illustrative images: 1) seedlings get transplanted at a much younger age; 2) only single seedlings, instead of a handful of seedlings, get planted in each hill; 3) plants are spaced wider apart in a square pattern; 4) water is applied intermittently to create alternately wet and dry soil conditions, instead of continuous flood irrigation; 5) rotary weeding controls weeds and promotes soil aeration; and 6) increased use of organic fertilizer enhances soil fertility. (full details available on the WBI website: (http://info.worldbank.org/etools/docs/library/245848/overview.html).

The World Bank Institute's multimedia toolkit is based on field practices and results that are shown from many countries, research, documentation, photographs, first-hand accounts, and interviews.

Farmers do not need to know all the scientific reasons for the efficacy of SRI practices to use them successfully; but the principles can be explained and communicated without much formal educational requirements. Knowing the principles, farmers can make appropriate adaptations. The largest and most pervasive requirement for SRI adoption is farmers' thinking and willingness to change. Farmers need a certain amount of skill and motivation to use SRI techniques successfully. Overcoming scepticism and mental resistance usually requires some physical demonstration, or visits to see SRI fields that are growing as explained. Visits to demonstration plots and farmer-to-farmer communication are usually the most effective way to overcome resistance, supplemented by illustrated materials and visual displays. The confidence of those communicating about SRI is also a key element in gaining acceptance.

GOAL OF THE TRAINING: By the end of the training programme, participants should have learned and acquired skills in SRI-based farming practices and have developed strategic plans for improved performance and productivity in their paddy rice crop, including group dynamics development.

3. MAIN OBJECTIVES

- Rice farmers are to be familiarised through the World Bank Institute multimedia SRI toolkit with agronomic characteristics and potential of SRI-based cropping system.
- Rice farmers who are interested in practising SRI will get organised and linked up with COMACO Chinsali CTC that is committed to the principles of conservation and organic farming.
- Rice farmers in Chinsali should be able to diversify their agricultural income sources and increase household food security as outgrowers for paddy rice achieved from SRI intervention.
- Best practices achieved by rice outgrowers and other cereal crops are identified and promoted.
- COMACO activities committed to the principles of SRI adaptation will have capacity-building to strengthen and improve service delivery to the local communities in the identified areas .

4. TRAINING PROGRAMME PLAN

COMPONENT	PERIOD	UNIT	TOPIC (SESSION)	TIME
Theory component	Day 1	1	SWOT analysis on prevailing rice growing in COMACO areas, focusing on: • Governance (by-laws, work plans, and record-keeping) • Traditional farming practices (seed selection, nursery and field management, post harvest; marketing and savings)	7 hours
	Day 2	2	Introduction to SRI farming practice (tool-kit)	1:30 hour s
		3	Life in the soil (conservation of micro-organisms)	2:00 hours
		4	Seed selection and priming	1:00 hour
		5	Preparing the nursery and starting seedlings	1:30 hours
		6	Field preparation	1:00 hour
		7	Conservation (organic) fertilization	1:00 hour
	Day 3	8	Taking seedlings from the nursery	1:00 hour
		9	Spacing transplanted seedlings	1:00 hour
		10	Water control	1:00 hour
		11	Weeding and aeration	1:00 hour
		12	Pest and disease control	1:00 hour

		13	Management after flowering	1:00 hour
		14	Harvesting	1:00 hour
		15	Rice value-chain synergizing with jatropha and millet	0:30 Min.
		16	Packaging and storage	0:30 Min.
Practical component (field training)	Day 4	17	Group work: (i) Question & answers, on lessons learned (ii) Field demonstration experimentation (nursery and field management)	 3hours 5hours
	Day 5	18	Planning session and formation of SRI Boards	6 hours
		19	Wrap up and training evaluation	2 hour

5. TRAINING PROGRAMME PROCEEDINGS

SRI is a simple but effective rice-growing technique for rice farmers. The significant points about SRI are:

Considerations for adopting SRI

- ✓ NO NEED to change varieties -- *HYVs and hybrids* can give the highest yields with SRI methods, but *local varieties* can produce 6-12 t/ha with SRI methods
- ✓ LESS SEED is used, because plant populations (plant density) will be greatly reduced; fewer plants well-managed will give more yield than several times more plants casually managed
- ✓ NO NEED for use of chemical fertilizers -- while these can raise rice yield with SRI, the best results are achieved with *compost* or other organic fertilization of the soil
- ✓ NO NEED to apply agrochemicals -- pesticides, fungicides, etc., are usually not necessary -- farmers find that these are not economical as SRI plants are usually resistant to pests/diseases
- ✓ SIGNIFICANT WATER SAVINGS – usual irrigation water can be reduced by 50% -- but *need good water control* to apply smaller amounts of water reliably, regularly
- ✓ MORE LABOR – is needed at first, but as the SRI methods are mastered, SRI management can even become *labor-saving over time*
- ✓ MORE SKILL AND MANAGEMENT EFFORT are needed -- SRI is intended to *improve farmers' capabilities* – SRI is knowledge-intensive and management-intensive

Simple growing instructions

- ✓ Transplant young seedlings (<15 days, with just 2-3 leaves)
- ✓ Set out plants singly with wider spacing
- ✓ In a square pattern (25x25cm or more) and
- ✓ Planted shallow, gently, and quickly --
- ✓ No continuous flooding during the period of vegetative growth, with either (a) minimum daily applications, or (b) alternate wetting and drying – keeping soil mostly moist but not inundated
- ✓ After panicle initiation, maintain a *thin layer of water* (1-2 cm) on field until 10 days before harvest

Remarkable results

- ✓ Increased TILLERING -- 30-50 tillers/plant, or more, if the soil and water are well managed
- ✓ Larger ROOT SYSTEMS – it can require 5-6x more force to uproot SRI plants (one evaluation found 28 kg of force was needed to pull up 3 regular plants vs. 53 kg to uproot single SRI plant)
- ✓ Bigger PANICLES -- 200-300 grains/panicle, or more
- ✓ *Positive correlation between the number of panicles and panicle size -- contrary to the negative relationship which is commonly reported – SRI can give more and bigger panicles*
- ✓ GRAIN QUALITY -- fewer unfilled grains and fewer broken grains when milling the paddy, so one can get a higher milled outturn of polished rice from one's paddy (unhusked) production
- ✓ RESISTANCE to pests, diseases, storms and drought as plants remain healthier with their deeper root systems and stronger tillers; LODGING is rare; also RATOON crop is possible
- ✓ HIGHER YIELDS -- ave. ~ 6-8 t/ha, even up to 15 t/ha or more
- ✓ *PRODUCTIVITY* gains – from all inputs (land, labor, water, capital); more important than yield

6. TRAINING ACTIVITIES

a) CHARCOAL BURNERS AND POACHER TRANSFORMATION TRAINING PROGRAM

This training activity was conducted 16th August 2010 at Chinsali District Business Association Centre, with an SRI component. It involved 30 people from various communities in Chinsali and was organized by Willie Banda, COMACO Wildlife specialist from Lundanzi. It was the first 'transformation training' in Chinsali for 30 transformed hunters and charcoal burners who took their first step in the natural resources conservation in their respective areas.

The SRI training was assigned a full day from 8:00 to 17:00 hours. The Rice Grower Specialist trained the participants on the background for SRI-based paddy rice farming practices, understanding the life in the soil, jatropha system, and benefits in growing paddy rice. An evaluation was conducted at the end of the training programme. It was seenthat none of the participants grew paddy rice the previous season, 2009-2010. Therefore, the training created high interest in the participants who expressed their desire and willingness to begin growing paddy rice this coming season, 2010-2011. The participants agreed to form an SRI-FFS Board. The Rice Grower Specialist was tasked to visit the participants in their various communities to organize them. At the end of the workshop, participants were taken to the new COMACO CTC premises to have an opportunity to see a rice cocoon holding 150 MT paddy and the CTC new structures.

b) SRI-FFS TRAINING PROGRAMME IN FOUR AREAS

WCS/COMACO officially commissioned SRI training in Chinsali district on 23th August 2010 where total amount of K7,900,000 was invested to train paddy rice farmers. The allocation was shared to cater for both upland and lowland ecological areas of Chinsali district. This included all four CTC block areas; Central, Kaso, Illondola, and Matumbo. In summary, 40 role-model farmers drawn from all the four COMACO operational blocks, including farmers from the Chinsali Stakeholders Rice Value Chain Forum, successfully completed the training course, which took five days in each block. The Rice Grower Specialist spent most of the month of September in the field training farmers. The completion of this training programme means that Chinsali CTC has now gotten trained rice farmers as "SRI Promoters" who should begin sharing the SRI information to others in their various areas. The SRI promoters are expected to carry out campaigns to spearhead the dissemination and spread of this new farming methodology known as the System of Rice Intensification (SRI) among rice farmers in Chinsali.

i. SEED-FARM (CENTRAL) BLOCK

The first training was held at the seed-farm area in Central Block, 23-27th August, 2010. The Area Manager for this block is Mr. Simwinga, who was present during the whole period of the course. There were 12 participants; 11 men and 1 woman. The training involved 4 days of participatory learning, including one day of field demonstration and experimentation. Each participant received a Certificate of Participation for successfully attending the course and for becoming new SRI promoters.

ii. MULILANSOLO SRI FFS TRAINING PROGRAMME


The second training was held at Mulilanso Catholic Mission in Kaso Block on 6-10th September, 2010. The Area Manager for this block, Mr. Witola, was present together with his assistant Mr. Chikwamu during the whole period of the course. There were 10 participants, and all the participants were men. The training, as in the first session, involved 4 days of participatory learning, including one day of field demonstration and experimentation. Each participant received a Certificate of Participation for successfully completing the course and becoming new SRI promoters.

iii. ILONDOLA SRI FFS TRAINING PROGRAMME


The third training was held at Mr. Mutale's Guest House in Illondola Block on 13-17th September, 2010. The Area Manager for this block, Mr. Mukuka, was present together with his Assistant Ms. Kampamba during the whole period of the course. There were 12 participants consisting of 11 men and 1 woman. The training involved 4 days of participatory learning, including one day of field demonstration and experimentation. Each participant received a Certificate of Participation for successfully attending the course and for becoming new SRI promoters.

iv. MATUMBO FFS TRAINING PROGRAMME


The last but not least training was held at ECZ Church in Matumbo Block on 20-24th September, 2010. The Area Manager for this block is Mr. Shula who was present together with his assistant Mr. Mamvule during the whole period of the course. There were 12 participants, and all the participants were men. The training involved 4 days of participatory learning including one day of field demonstration experimentation. Each participant received a Certificate of Participation for successfully finishing the course and for becoming as new SRI promoters.

v. GROUP WORK AND FIELD DEMONSTRATION EXPERIMENTATION



Critical self-assessment:
Participants had a chance during the training course to demonstrate their level of skills learned through self-assessment exercises that involved: i)seed selection process; ii) nursery management; and iii) field management. This was carried out to demonstrate the learning process, not only by word but by examples. SRI techniques encourage a **'seeing is believing'** approach to knowledge-sharing and awareness-building.

6. TRAINING PROGRAMME ACHIEVEMENTS/RESULTS

#	ACTIVITY	ACHIEVEMENT
1	TRAINING	FORTY (40) PARTICIPANTS TRAINED IN SRI-BASED FARMING PRACTICES AND GROUP DYNAMICS
2	RECOGNITION OF THE PARTICIPANTS	EACH PARTICIPANT RECEIVED A CERTIFICATE OF RECOGNITION SIGNIFYING HIS/HER READINESS TO ADOPT AND BECOME PROMOTERS OF SRI FARMING SYSTEM IN CHINSALI
3	ESTABLISHMENT OF DEMONSTRATION SITE	PARTICIPANTS AGREED TO PUT UP FIELD DEMONSTRATION SITES IN EACH AREA FOR THE PURPOSE OF SUPPORTING A LEARNING PROCESS. THE TARGET IS TO SUPPORT 2,000 FARMERS IN THE 2010-2011 FARMING SEASON
4	WORKSHOP EVALUATION RESULTS	THE PARTICIPANTS RATED THE WORKSHOP AS EXCELLENT. THE EVALUATION CRITERIA WERE BASED ON FACILITATORS' ABILITY, INFORMATION AND KNOWLEDGE ACQUIRED, AND READINESS TO SHARE KNOWLEDGE LEARNED

5	FORMATION OF NEW SRI AREA BOARDS	OUT OF THE WORKSHOP DELIBERATIONS, TRAINEES IN EACH AREA FORMED AN SRI AREA BOARD TO PROVIDE GOVERNANCE AND SUPPORT AT GRASSROOTS LEVEL
6	INCIDENT-FREE WORKSHOP	THE TRAINING PROGRAMME WAS DECLARED BY MR. EMMANUEL KASHINGE, COMACO REGIONAL EXTENSION COORDINATOR, AS AN INCIDENT-FREE PROGRAMME

7. SRI-FFS TRAINING PROGRAMME BUDGET

Workplan Reference	ACTIVITY		UNITS			Unit Cost	Amount (ZMK)
		Number of Events	Number of people	No of units required	Duration of Event (No of days)		
3	**Farmer-Field School: System of Rice Intensification integration with jatropha and millet training**						
3.1	Venue hire (Areas: Central/Kaso/Illondola/Matumbo)	4	1	1	5	30,000	600,000
3.2	Lunch (Areas:Central/Kaso/Illondola/Matumbo)	4	13	1	5	10,000	2,600,000
3.3	Health break (Areas:Central/Kaso/Illondola/Matumbo)	4	13	1	5	5,000	1,300,000
3.4	Participants' training stationery: books, pens, etc. (Areas:Central/Kaso/Illondola/Matumbo)	4	10	1	1	20,000	800,000
3.5	Markers (set): (Areas:Central/Kaso/Illondola/Matumbo)	4	1	1	1	20,000	80,000
3.6	Ream of paper (Areas:Central/Kaso/Illondola/Matumbo)	4	1	1	1	30,000	120,000
3.7	Stick stuff (Areas:Central/Kaso/Illondola/Matumbo)	4	1	2	1	10,000	80,000
3.8	Flip charts (Areas:Central/Kaso/Illondola/Matumbo)	4	1	2	1	40,000	320,000
3.9	Rice Grower Specialist per diem/night allowance (Areas:Central/Kaso/Illondola/Matumbo)	4	1	1	5	60,000	1,200,000
3.10	Training transport fuel (Areas:Central/Kaso/Illondola/Matumbo)	1	1	100	1	8,000	800,000
						Grand Total	**7,900,000**

8. CHALLENGES

- The Rice Grower Specialist has no access for ready transport to backstop and evaluate the adoption of training and for transfer of knowledge into farming practice
- The project has no training visual aids for demonstrating appropriate farming tools (e.g. weeders, markers, etc.)
- Training was conducted with the Rice Grower Specialist's own equipment since WCS/COMACO did not agree to purchase/provide the items, e.g. projector/laptop, small portable power generation set
- The funds were not enough to cater for participants' meals (breakfast/lunch/supper) and accommodation

9. LITERATURE REVIEW

More details on SRI, training materials and other technical information can be found on the following website: http://sri.ciifad.cornell.edu/countries/zambia/index.html