WEST AFRICA AGRICULTURAL PRODUCTIVITY PROGRAM (WAAPP)

TOT

Training of Trainers on System of Rice Intensification (SRI)

Bahtou (TOT) Secretary & M&E WAAPP

28th December 2015

This TOT was attended by Farmers, Community representatives, Extension workers, Staff of the ministry of Agriculture and the WAAPP project, United States Peace Corps, and NGO representatives.

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Introduction/Bacground

West Africa Agricultural Productivity Programme (WAAPP-1c the Gambia), made a request for assistance from CNS-RIZ through the Director of SRI in Mali to conduct a Training of Trainers for the System of Rice Intensification (SRI) in The Gambia. Sapu Central River Region South. December 14th , to 17th, 2015.

This TOT was attended by 45 participants constituting Farmers, Community representatives, Extension workers, Staff of the ministry of Agriculture and the WAAPP project, United States Peace Corps, and NGO representatives.

It is intended to train this wide representation of rice growers and partners with the intension of further spreading and sharing the benefits of SRI principles and practices through information sharing, and hands on activities for knowledge and skills transfer to facilitate behavioral and attitude change towards SRI best practices in The Gambia.

The training workshop was spear headed by Momodou Sambou SRI Facilitator and Aja Ramatoulie Hydara Sanyang M&E Officer WAAPP1c – Gambia, Drs. Gaoussou Traore and Minamba Bakayoko of Mali, and Dr Erika Stigen and Devon Kunsa Jenkins of Cornell university in The United States Of America as facilitators and resource persons.

Opening Ceremony

Senior officials MoA and highest Authority of Government in the region grace the occasion and opening ceremony. The high table constitute Governor of CRR, DGs of NARI and DoA, Dr. Gaoussou Traore SRI Coordinator Mali, and RAD CRR as the chairperson. The opening was preceded by a prayer which is a strong tradition in The Gambia. After the silent prayer the Regional Agricultural Director and chair Mr. Ousman Colly delivered the opening remarks. He expressed the importance of SRI in maximizing production and minimizing inputs by :-

- Improving soil fertility using organic materials minimizing the use of chemicals.
- Reducing the amount of seeds as compared to conventional practices.
- Encouraged participants to take the training seriously so that they can in turn train others they represented.
- He finally welcome everybody in Sapu.

The next speaker was the Director General of The Department of Agriculture Mr. Falalo Touray who delivered this statement.

- He reiterated the importance of SRI towards the attainment of food self sufficiency in The Gambia;
- Described the potential of The Gambia to implement SRI because of the ideal soil conditions, fresh water resources, the ideal environmental conditions and the strong support of the Government of The Gambia towards food security;
- This he mentioned is in line with the policy of the Government of the day as in visions 2016, 2020, and 2025;
- He also mentioned that The Gambia has the potential and enough land and resources to produce rice that can feed the population and have surplus for export;

The next speaker was the Director General of the National Agricultural Research Institute (NARI) Mr. Ansumana Jarju.

- Emphasized the importance of SRI as the previous speakers;
- Added the need for people to change their attitude towards workshops;
- Asked for a paradigm shift from participants just putting aside what is required of them as follow up activities from training workshops to actually implementing what is expected of them and implement follow up activities of the knowledge and skills gained from workshop;
- He quoted past negative experiences of past workshops and that they should be a thing of the past;
- He advised participants to share the Knowledge and skills leaned with others who did not have the opportunity to attend the TOT.

The opening remarks were delivered by the Governor of the Central River Region Mr. Omar Khan.

- He first expressed his delight to be honored to open such an important training;
- He immediately accepted the invitation as soon as it reached him without hesitation even with his tight and busy work schedule;
- He further went on to say that before today he did not know or hear much about SRI but from what he heard from the previous speakers he is fully behind the initiative;
- He was proud to be the Governor of the bread basket of the Gambia in terms of rice production striving towards the attainement of food security the The Central River Region (CRR) and the country at large;
- All Gambian are infovor of increasing productivity and if SRI is here to address that I am fully behind and my support is garantteed;
- He finally declared the training workshop officially open.

After ther opening ceremony a goup or family photo was taken followed by a ten miniuts tea break before regrouping again for the training sessions proper.

Proceedings and or Presentations

The TOT proper began with a presentations during the period of the training. The facilitators took shifts in presentations as per the agreed program for the activity. The raining took the form of a participatory session with all participants actively involved at all levels in the class room or hall and also during practical sessions.

The themes during the training and presented by Facilitors to participants in a participatory manner. The program and list of participants is attached as an annexes:

Presentations by Dr. Minamba Bakayoko from Mali:-

1. Listed the larger producers of rice in West Africa as Nigeria, Guinea, Ivory Coast and Mali;
2. There are 13 WAAPP/ECOWAS countries involved in SRI and 2 more are about to join soon;
3. Presented documented information of comparisons between food consumption and production and gap between the two. Consumption being higher;
4. He defined SRI as an agroecological climate smart methodology, for farmers to greatly increase their rice yields (20-50% and more), while using 90% less seeds, 30-50% less water and fewer or no chemical inputs;
5. Principles of SRI as 4:- a) early planting; b) lower seed rate; c) build fertile soil reach in organic matter; & d) less water usage;
6. Early and healthy plant establishment (use less seed per hectare and early transplanting 10-15 days old seedlings;
7. Minimise competition between plants (use 25cm x 25cm / 30cm x30cm)
8. Manage water carefully and avoid flooding and water stress (alterate wetting and drying for better soil aeration and tillering;
9. Build fertile soils rich in organic matter and soil biota (for better soil structure and texture as well as water retention capacity).

For Constraints the facilitator mentioned the followings:-

i. Labour
ii. Water control
iii. Access to biomass
iv. Land preparation

v. Appropriate tools
vi. Mechanization.

Presentations by Dr. Erika

Dr. Erika on her part took off from where the fore presenter stoped and began with rice production ecologies and not limited to as:-

i. Upland
ii. Lowland rainfed
iii. Lowland deep flooded
iv. Irrigated fields.

Went on to discuss the SRI principles as follows:-

1. Seed selection: conducive and fertile for plant growth, Reduce age of seedlings for transplanting.
2. Single seedlings and wide spacing
3. Enrich soils with organic matter, keep soils aerated. Better environment for roots and soil microbes
4. Avoid flooding and prolong dry periods (if possible)

Continued with SRI practices as:-

1. Single plant per hill
2. Transplant young seedlings 8 – 12 days old. 2 leaf stage.
3. Adopt wide spacing, plant in a grid.
4. Minimize water application during vegetative growth
5. Use mechanical weeder
6. Use organic amendments as base fertilizer.

Participants were showed a documentary videos on history of SRI and origin in Madagascar as part of the training.

Practical session to practice seed treatment and soaking for sowing next day was held in the morning of day 2.

Day 2. Recap of Day 1 done by Aja Ramatoulie Hydara.

Erika continued from where we left off on day 1.

She dwell into more detail on the principles of SRI. This part was extensively dealt with and backed up by a short film and examples from other SRI experiencies that the participants themselves participated with hyperexcitements.

Field preparation

1. **Application of manure;**
    - Lightly incorporate 5-15 tons of compost per ha;
    - Incorporate rice straw/residual after harvest;
    - Add organic matter and or use chemical fertilizer during plant establishment;
    - Use chemical fertilizer only as needed or as supplement at panicle initiation

2. **Ploughing by hand or tractor;**
    - Follow normal farmer soil preparation method;

3. **Breaking of soil chunks**

4. **Levelling.**

Seed preparation

1. Seed selection and calculations;
2. Select best seeds;
3. SRI uses substantially less seed than conventional method;
4. Use 8-10 kg seed per ha;
5. Soak seeds in water to eliminate floaters.

Devon later discussed seed preparation procedure and practical hands on activities took place with everybody participated actively in areas listed below.

1. See selection
2. Seed harvesting
3. Seed threshing and weighing
4. Seed treatment – water, salt, egg.
5. Discussed pre germination and incubation.

He treated seed treatment in detail and recommended to

1. Winnow and clean seeds
2. Weigh 8-10 kg per ha. (80 – 100g /m2 for nursery
3. Soak seeds for 24hrs before sowing nursery
4. Remove seeds that float.
5. Use only seeds that sunk to the bottom.

There was a handout for calculating nursery size and seed rate distributed to participant for easy refernces.

SRI nursery bed techniques:-

1. Raised bed and use either the wet bed or drybed method;
2. Non dense seed spread on the seedbed;
3. Uprooting the seedlings gently without damage to roots for transplanting
4. Transplant young seedlings (age 10-15 days);
5. Advanges of early transplanting was also addressed.

Phyllochron – A regular interval of plant growth, ranging between 5 and 8 days for rice that involves root formation and tillering.

1. Planting with ropes of 25cm x 25cm / 30cm x 30cm;
2. Making markers or row makers;
3. Careful transplanting to avoid damage to the roots for quick establishment

Mechanical weeding and types of weeders were discussed.

Field Practical Exercise

Nursery preparation and sowing field practicals.

1. Chose nursery area;
2. Demarcated area m^2/square meters
3. Prepared and amended a well puddle bed;
4. Divided bed into 2 halves;
5. Divided seeds into 3 parts;
6. Springle seeds over prepared bed;
7. Covered and mulched.

Erika spoke about planning a comparison trial during the same field practical session;

- Consideration to be made on timing
- Source of organic matter
- Train farmers
- Inform officials
- Site location
- Plot size
- Creating bonds as boundries.
- Selecting farmers
- Choosing varieties
- Planning ahead

Last part of the day Ramatoulie and Erika

1. Introduced and discussed Data collection.
2. Gave out data collection tools
3. Gave out collection tools hand outs.
4. Expressed the importance of data collection – planning. Monitoring, evaluation, assessment of progress.

Day 3 Practical Session Cont'd

Transplanting at Pacharr fields did not work due to circumstances beyond our control. The filed was ploughed and drained for SRI practical transplanting demonstration. At night the field/plot was flooded because of the Spring tide and the water level at the plot was found to be above 5 cm and the manual transplanting machine could not work under those conditions.

The Venue was then relocated to Sapu where the uprooted seedling were transplanted using 30 cm x 30 cm rope by participant. Before transplanting, the plot was measured 20m x 20m size, ploughed, leveled, and the seedlings transplanted.

The transplanting was done simultaneously after that the facilitators and participants also prepared Wetbed nursery to practicalized what was tought in the hall. Thus a 20cm x 20cm small plot was dermacated and a bed raised with an addition of compost manure puddle inside and leveled with the help of a levelling board before seeding. The soaked seed was then broadcasted on the bed evenly thrashed with a leveling board to burry the seeds and then mulch for good moisture retention and avoid birds picking up the seeds.

A lot of discussions were held with Questions and Answers during the day. Some observations and concerns at during the practical session are thus:

1. The seedling age and population ideal for the transplanting machine;

2. The indications are that the machine is not suitable for SRI transplanting method which advocates for single seedlings instead of multiple seedlings, and that the seedling should be yonger with only two leaves;
3. The transplanter needs to be caliberated even though it requires strong and matured seedling than the SRI young seedlings;
4. The work of the transplanter is effective under moderate water condition because it doesn't stick on the mud simply the mud is washed away from it by the water;
5. At the plot a practical demonstration on seedling uprooting was carried out by participants on young SRI seedlings;
6. Rotary weeders were also demonstrated but their effectiveness could not be manifested due to the mud because the plot is not flooded with water.


Harvesting was also discussed at a mature plot ready for harvesting, although no harvest was done.

Important information and practice took place at the plot. Here are some important parameters to be collected at harvest:

- Plant count,
- No of grains / panicle
- tiller count,
- grain count,
- Length of panicle
- Plant height
- Moisture content of grains.

End of the workshop was marked by the following:

- Videos of the machines shown
- Planting using ropes and other structures
- Mechanical harvester were used both combined and non combined.
- Advice was given to seek adaptable machines for these purposes by contacting our engineers in country.

TOT was concluded by action planned making. Groups were formed according to regions and representations.

1. CRR South and North
2. URR
3. URR
4. NBR
5. LRR
6. WCR
7. National Youth Service Scheme (NYSS) and
8. Peace Corps

Each group presented their action planned afterwards and critiqued by the rest of the larger group. We all learned from each other.

Conclusions

In conclusion all participants agreed that SRI practices can increase productivity by more >50% and more in irrigated as well as rainfed lowland and upland ecology systems. And now that the extension workers some even never heard of SRI before have acquired the capacity and expertise through this TOT to out scale the adaptation of the methodology or practices to their communities through stepped down trainings.

Groundwork foundation is laid in capacity. The department and project should now be commited to provide the financial support for the execution of the action plans. It is possible to produce most if not all of the rice for **The, Gambia** by scaling up SRI across the regions and not limiting it to irrigated peremters only.

Annex1

WAAPP TOT TRAINING HELD IN SAPU CRR/S

ATTENDANCE REGISTRATION ON TOT TRAINING

NO	NAME OF PARTICIPANT	ID NUMBER (NIN)	GENDER (F/M)	INSTITUTIONS	CONTACTS TEL/EMAIL
1	Jainaba Badjie	25o37421704	F	FARMER	7674808
2	Mahawa Taal	29069411582	F	Farmer	6640638
3	Fatou Samateh	11046571349	F	Farmer	7345961
4	Fatou Manneh	28036421580	F	DOA	6822327
5	Fatoumata Touray		F	IPM	7226848
6	Bunja J. Sanyang	047419	M	DOA	7197928
7	Alfred Mendy	25127811277	M	DOA	6808319
8	John Mendy	16047601499	M	DOA	3843631
9	Basaikou Kanteh	01096931417	M	Farmer	9330221
10	Kemo Jawo	16016141290	M	farmer	6666297
11	Dembo Darboe	11096021010	M	DOA	2298601
12	Momodou A. Bah	10036131753	M	Peace corps	7807681
13	Spencer Ramirez	1304914497	M	Peace corps	2506370
14	Mbye Touray	13036131753	M	DOA	7445796
15	Hawa Baldeh	03067473007	F	DOA	7503322
16	Lamin B. Janneh	09067151376	M	DOA	2298565
17	Karamo Touray	01047201535	M	farmer	2189987
18	Jalamang Touray	01015211274	M	farmer	2127536
19	Junkung Sanneh	04095451375	M	farmer	2127536
20	Musa Sanyany	05017101353	M	DOA	9002107
21	Wontonding Jammeh		F	farmer	7380445
22	Modi A.B Sanneh	04075461477	M	Famer	9997363
23	Yamdou S.K Darbo	10095461337	M	SRI Avocado	9825034
24	Cherno Bah	010688011477	M	DOA	9310112
25	Momat Nyang	03065611277	M	NYSS	6380131
26	Borry Fatty	240878771298	M	NYSS	6675267
27	Pa ousman Jobe	0303871477	M	DOA	3944146/6344146
28	Yaya A. Jarju		M	DOA	7064288
29	Muhammed Tambajang	24076012498	M	DOA	6904034/9906589
30	Landing Saidyleigh	10056421875	M	DOA	9906589
31	Kebab K.Sallah		M	Vision 2016	6234348
32	Baba L. Barrow	04038901810	M	DOA	6146349
33.	Alhagi Barrows	04057801573	M	DOA	2239885
34	Yaya yarboe	05046761374	M	DOA	2298545
35	Mahamad kanteh		M	DOA	2298590
36	Ebrima Sabally	80018844	M	DOA	3767675
37	Momodou Jammeh	10036821235	M	DOA	2298623
38	Kinsa Sedibeh	03077381764	F	Farmer	7808498
39	Modou Jobe		M	NARI	9993197
40	Modou Sabally	06067411953	M	NARI	6139879
41	Modou Badjie	PC 429059	M	DOA	6881136
42	Gibba Baldeh	1405700173	M	Farmer	6635220
43	Bakary K. Jammeh	15066021071	M	DOA	62989871
44	Falalo M.Touray		M	DOA	9966760
45	Essa F.B. Drammeh		M		9803200

46	Morro Manga		M	NARI	9957423
47	Momodou Saine	22125001036	M	CEES	998841
48	Samba Bah	1981214374	M	CEES	7774976
49	Batch Saine	1513914371	M	CEES	3686247
50	Abdoulie Singhateh	22027821050	M	CEES	9715251
51	Salleh Jalllow		M	farmer	6717407
52	Fatou Samba		F	Entrepreneur	9920315
53	Sisawo Manneh	O406556148	M	DOA	6227109
54	Amadou Ceesay		M	Driver	
55	Mankang Daffeh		M	Driver	9809032
56	Mbassey Sambou		F	WAAPP	6438457
57	Omar Sanneh				
58	Kebab Sanyang				
59	Momodou Sambou				
60	Ramatoulie H. Sanyang				

Annex 2

Program on Training of Trainers for the System of Rice Intensification SRI in the Gambia - Brikama-Baa Central River Region South

Date	Time Frame	Activity	Facilitator
Monday 14/12/15	**08.00 – 09.30**	• **Registration and breakfast**	**WAAPP**
	09.30 – 09.40	• **Welcome Remarks by Chairperson**	**Ousman Colley RAD CRR/S**
	09.40 – 09.55	• **Brief Statement**	**Falalo Touray DG DoA**
	09.55 – 10.05	• **Statement**	**Ansumana Jarju DG NARI**
	10.05 – 10.20	• **Over view of CNS-RIZ Support to Gambia**	**Gaoussou Traore**
	10.20 – 10.30	• **Opening Remarks**	**Governor CRR/South**
	10.30 – 11.00	• **Coffee/Tea Break and Family Photo**	**All Participants**
	11.00 – 11.50	• **Introduction to System of Rice Intensification (SRI)**	**Minamba**
	11.50 – 12.40	• **Seed Sorting and Soaking, SRI Calculations (handouts)**	**Devon / Erika**
	12.40 – 13.30	• **Full Technical Presentations**	**Erika / Minamba/ Devon**
	13.30 – 14.30	• **Lunch Break and Prayers**	**All Participants**

	14.30 – 15.15	• **Description of Local Rice Production Systems**	**Momodou Sambou /Fatou Samba**
	15.15 – 16.15	• **Adapting SRI to Local Production Systems / Q & A**	**Fatou Samba/ Momodou Sambou/ SRI farmers and Erika / Devon / Minamba**
End of Day One			
Tuesday 15/12/15	**09.00 – 09.15**	**Recap of day one**	**M& E WAAPP Ramatoulie H. Sanyang**
	09.15 – 13.30	• Morning: *TOT field sessions* o Nursery preparation o Nursery sowing o Field preparation	**Devon/Minamba/Erika Fatou/Sambou**
	13.30 – 14.30	Lunch Break and Prayers	
	14.30 – 16.50	• Afternoon: *TOT theory sessions* o Intro to harvesting for proper data collection o Setting up a comparison trial o Data collection forms, submission and sharing	**Erika /Minamba/Ramatoulie**
End of day two			
Wednesday 16/12/15	**09.00 – 09.15**	**Recap of day two**	**M&E WAAPP**
	09.15 – 13.40	• Morning: *TOT field sessions* o Transplanting o Direct seeding o Weeding and mechanization o Data collection and harvesting	**Devon/Minamba/Erika Fatou/Sambou**
	13.40 – 14.30	Lunch Break and Prayers	
		• Afternoon: *TOT Closure* o Action plan development o Presentation and finalization of training report o Certificate presentation	**Ramatoulie/ Minamba**
End of day three			
Thursday 17/12/15			
		• Planning meeting with WAAPP Gambia and all partner to implement new project • Debriefing with WAAPP Gambia and partners	**Ramatoulie/ Minamba**