A BRIEF ACTIVITY REPORT ON THE USAID/CENTER FOR DISASTER PREPAREDNESS (CDP) SPONSORED SEASON-LONG (OCTOBER 2020 TO MARCH 2021) ORGANIC SYSTEM OF RICE INTENSIFICATION (SRI) IN LOWER TIPARAK, TAMBULIG AND SWITCH, RAMON MAGSAYSAY, PROVINCE OF ZAMBOANGA DEL SUR, MINDANAO, THE PHILIPPINES

The Philippines, which has a population of around 109 million, is considered one of the fastest growing economies in the eastern Pacific region. Economic growth was 6.3 % over the last few years. However, the agricultural sector did not perform well. The country is still a net importer of rice and small rice farmers remain poor due to the high cost of commercial farm inputs, prohibitive farm labor expenses, and the negative effects of climate change. The unabated use of chemical fertilizer and harmful pest and disease control practices as well as antiquated and traditional farming methods has greatly contributed to the accumulation of greenhouse gases in the atmosphere bringing about climatic change. This has brought havoc to small farming communities as rice crops have been damaged due to strong winds, floods and droughts. It is in this context that the USAID/CDP Project PROSPER (Participation in Resilience Building and Organizing Safe and Progressive Communities for Empowerment, Climate and Disaster Risk Reduction) decided to try new farming methodologies in their areas of operation that are designed to mitigate the effects of climate change and at the same time make use of indigenous materials for rice production without sacrificing farm yield.

PROJECT LOCATION AND DURATION:

Two small rice farming villages in the Municipalities of Ramon Magsaysay and Tambulig, Zamboanga del Sur, were chosen as pilot demonstration areas for the Climate Resiliency Farm School (CRFS) that would implement the SRI methodology. Farmers in these villages suffered crop damages in the past due to poor and erratic weather conditions. The highest yield in Switch, Ramon Magsaysay was 5 tons per hectare while Lower Tiparak, Tambulig had higher yields of about 6.5 tons per hectare. Organic farming practices are unknown to farmers in these villages. Since the late seventies, conventional farming methods using chemical fertilizers, pesticides, fungicides and herbicides have largely been applied in their farms. This practice went on and on for years forming a vicious cycle that nobody wants to break. This has led to the physical degradation of soils and soil biota in these villages.

To jibe with the planting calendar and irrigation schedules of these villages, the project was conducted from the later part of October 2020 to the early part of March 2021.

PROJECT IMPLEMENTERS:

This Project was made possible through the partnership arrangements of the USAID/CDP/PROSPER, the Local Government Units(LGUs) of Ramon Magsaysay and Tambulig, Zamboanga del Sur, the Department of Agriculture (DA) Region IX Field Office, Department of Science and Technology and Ricewatch (R1).

Training funds, materials and support staff were provided by the CDP group, The LGUs shared Agriculturists with technical skills on rice production, the DOST provided weather and climate information, the DA provided some organic farm inputs and technical staff, and R1 lent expertise on organic farming practices and SRI. Due to the COVID 19 pandemic, strict travel restrictions have been imposed by the Philippine Government. This delayed the arrival of the R1 technician. So as not to further delay implementation of the CRFS, CDP had to scout for available SRI experts in the Region. And this was the entry point to the project of SRI Pilipinas. The services of Mr. Adelberto B. Baniqued, the Regional SRI Coordinator of Zamboanga Peninsula or Southwestern Mindanao, was tapped since he lives near these project areas. Technical staff of the LGUs were always at hand to serve as resource persons. Other government and private agencies in the rice industry were likewise invited to tackle topics not otherwise covered by SRI. This includes credit, crop insurance, marketing, climate change and environmental concerns.

CRFS PARTICIPANTS:

At the start of the CRFS classes a total of 34 farmers were enrolled at Switch, Ramon Magsaysay. Of this number 16 were women and 18 were men. In Lower Tiparak, Tambulig, 28 women and 12 men signified their interest to learn and gain skills in rice production using the SRI methodology. Classes were conducted in government owned buildings basically used for village assemblies and gatherings. The use of these facilities were free and served as classrooms for the season-long CRFS. In order to save time, the identified proposed demonstration areas were also located close to the classroom for ease in demonstrating SRI skills after each lecture.

METHODOLOGY AND TOPICS:

In order for the participants to fully understand the principles of SRI, video presentations were made. This supplemented the lectures and hands-on activities of the resource persons. Likewise sharing of experiences and insights of each learning was encouraged. Before the topic on SRI was taken up, a thorough review and analysis of the world climate situation was done, most especially greenhouse gases as a result of nefarious farming practices. Two sets of plots one for SRI and one for conventional chemical farming were prepared. Activities before actual land preparation were also identified and made for SRI, consisting of the formulation of organic concoctions such as indigenous microorganisms, fermented plant and fruit juices, fish amino acid, calcium phosphate, oriental herbal nutrient, bokashi and many more bio-control agents and soil enhancers and the preparation of cropping schedules (Annexes B & C). The usual rice production activities, land preparation to harvesting were done in the SRI demonstration areas following SRI methodologies and principles. Composted chicken manure, rice straw and vermicast were applied in the demonstration paddies. Three high yielding rice varieties, NSIC 160, NSIC 400 and NSIC 440 with a 115–day maturity were planted. Likewise, the conventional plots were prepared in accordance with the traditional tedious local farming practices.

Agro-ecological systems analysis (AESA) was done fifteen days after transplanting wherein farmers were grouped into five and were tasked to monitor and conduct a report of the status of pre-identified rice plants on a weekly basis until two weeks before harvest. Lively discussions and sharing of insights always followed these sessions. A typical example for SRI is how a single 8 to 10- day old rice seedling can manage to produce more than thirty tillers and why are there fewer insect pests in their demonstration farm where no chemical fertilizer and harmful insecticides were used, and also the presence of so many natural enemies were noticed.

Weed control was done starting 8 days after transplanting for SRI using mechanical weeders and in some instances where the mud is deep hand weeding was resorted to by the participants. Alternate wet and dry water control of the demonstration plots were strictly followed. Chemical weed control was done on the conventional rice plots and water level were constantly maintained from planting to two weeks before harvesting.

HARVESTING AND GRADUATION:

After more than six weeks of schooling the crops planted in the demonstration plots were ready for harvesting. It was noticed that the SRI crops matured earlier by a week compared to the conventional rice crops. There were also crop damage caused by strong winds in the conventional crops. No damage was seen in the SRI plots. A 2 meter by 5 meter crop cut was done per rice variety for both SRI and the conventional crop. These were threshed and weighed and then cleaned and weighed again. Annex A shows the result of the SRI and Conventional field trials in Switch, Ramon Magsaysay and Lower Tiparak, Tanbulig, Zamboanga del Sur.

Since the conventional plots were applied with lots of commercial fertilizer such as urea, complete fertilizers and sprayed with foliar chemical growth enhancers and insecticides, participants expected a higher and better yield compared to the SRI plots where only compost and organic concoctions were applied. However to their surprise, and with the least expectation, the difference of crop yields in the SRI plots and conventional plots were small and in some instances after cleaning and winnowing SRI yields turned out higher. This was attributed to the fact that the SRI plots were not attacked by stemborers due to organic insect repellants that were sprayed on the crops and the presence of a lot of natural enemies in these plots. On the other hand, insect pests and stemborers have manifested tolerance to chemical insecticides in the conventional plots.

Finally a short graduation program was held in Tiparak, Tambulig, Zamboanga del Sur on March 9, 2021, where all CRFS participants in both Switch and Tiparak were gathered. Local Government and National Officials, Agricultural Technicians, Municipal Agricultural Officers, MDRMMO (Municipal Disaster Risk Management and Mitigation Office) Officials, CDP and R1 Staff and local farmers attended this special occasion. A total of thirty farmers, twenty female and ten males from Barangay Tiparak received training certificates, while twenty-seven participants, fourteen females and thirteen males from Barangay Switch likewise received theirs. A part of the program is sharing of experiences and testimonies. Four farmers were chosen to

talk about their season-long CRFS learnings. The following are some of their comments, observations, realizations and recommendations:

1. SRI is a climate smart methodology in rice farming which the government should implement and fully support.
2. It was quite amazing to observe a single small rice seedling produce thirty to fifty tillers or more using SRI methodologies.
3. SRI rice plants have the capacity to produce higher and better yields using only compost, vermicast, other organic soil ameliorants and bio-control agents made of indigenous plants and materials and can be produced right in their farms.
4. SRI rice plants have better root systems which prevented these from bending during strong winds and have the capability to withstand other challenges brought about by climate change.
5. It was noticed that insect pests can easily be controlled by their natural enemies which abundantly thrive in a chemical-free environment.
6. Rice panicles for all varieties in the SRI plots are longer and with fuller grains resulting to an increase of about 30 to 50 per cent paddy yields over their usual harvest.
7. SRI rice crop matured earlier by 7 to 10 days as compared to the conventional crop.
8. As a result of the 3 day-wet and 7-day dry system of irrigation, about 40 per cent of water requirement was saved. This system also led to the increase in the number of rice tillers.
9. Most participants were very skeptical after transplanting, because the small single rice seedlings can hardly be seen by the naked eye but were so surprised to see how fast these seedlings grew and multiplied so fast after a few weeks.
10. Definitely all of them agreed that their harvested organic SRI crop is much healthier than the chemically grown conventional rice crop.

There are several more observations and recommendations which the participants made and foremost of which is for all rice farmers to try applying the SRI principles in their farms. The program ended with the question of sustainability. The CDP/PROSPER program will still be operating in the area to capacitate farmers and local officials mitigate the negative impacts of climate change and to prevent disastrous situations brought about by this phenomenon. All participants committed to continue applying SRI in their farms and will be closely monitored by CDP staff. SRI Pilipinas is likewise committed and will continue to aggressively pursue a levelled-up advocacy program and practice of an organic System of Rice Intensification.

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ANNEX A: CROP YIELDS OF THE SRI (ORGANIC) AND CONVENTIONAL (INORGANIC) PLOTS (MARCH 2021)

SWITCH, RAMON MAGSAYSAY, ZAMBOANGA DEL SUR, PHILIPPINES

NSIC 160		NSIC 440		NSIC 442	
SRI	CONVENTIONAL	SRI	CONVENTIONAL	SRI	CONVENTIONAL
Newly threshed					
8.1 TONS/HA.	8.8 TONS/HA.	8.92 TONS/HA.	6 TONS/HA.	7.6 TONS/HA.	7.83 TONS/HA.
162 CAVS*./HA,	176 CAVS./HA.	178.4 CAVS./HA.	120 CAVS./HA.	152 CAVS./HA.	156.6 CAVS./HA.
Clean/winnowed					
7.75 TONS/HA.	7.6 TONS/HA.	7.9 TONS/HA.	5.24 TONS/HA.	7.26 TONS/HA.	7.13 TONS/HA.
155 CAVS./HA.	152 CAVS./HA.	158 CAVS./HA.	104.8 CAVS./HA.	145.2 CAVS./HA.	142.6 CAVS./HA.

LOWER TIPARAK, TAMBULIG, ZAMBOANGA DEL SUR PHILIPPINES

NSIC 160		NSIC 440		NSIC 442	
SRI	CONVENTIONAL	SRI	CONVENTIONAL	SRI	CONVENTIONAL
Newly threshed					
10.8 TONS/HA.	10.5 TONS/HA.	8.96 TONS/HA.	11.5 TONS/HA.	10.5 TONS/HA.	10.8 TONS/HA.
216 CAVS.*/HA.	210 CAVS./HA.	179.2 CAVS./HA.	239 CAVS./HA.	210 CAVS./HA.	216 CAVS./HA.
Clean/winnowed					
9.8 TONS/HA.	9.3 TONS/HA.	8.6 TONS/HA.	10.8 TONS/HA.	10.3 TONS/HA.	10.7 TONS/HA.
196 CAVS./HA.	186 CAVS./HA.	172 CAVS./HA.	216 CAVS./HA.	206 CAVS./HA.	214 CAVS./HA.

*One cavan is equivalent to 50 kgs.

ANNEX B. Lower Tiparak Cropping Schedule

SRI SKEDULE SA MGA BULOHATON SA HUMAYAN
Cropping season: Dry/RC 160, RC 400 & RC 420 Rice varietiess: 115 days

Adlaw human sa pagtanom	Aktual nga Petsa	Mga Bulohaton (SRI Activities)	Adlaw gikan pagsabod
1	Dec. 5, 2020	Adlaw sa pagtanom	8
2-7	Dec. 11	Walay tubig (basa-basa lang)	14
8	Dec. 12	Patubigan (1-2 cms.)	15
9	Dec. 13	Sabwagan ug Soil Nutrient Enhancer dayon mag Rotary Weeder	16
10	Dec. 14	Pahubsan ug pag-spray ug concoctions (Vegetative)	17
11-17	Dec. 15-21	Walay tubig	24
18	Dec. 22	Patubigan	25
19	Dec. 23	Rotary weeding	26
20	Dec. 24	Pahubsan ug pag-spray ug concoctions(Vegetative)	27
21-27	Dec. 25-31	Walay tubig	33
28	Jan. 1, 2021	Patubigan	34
29	Jan. 2	Rotary weeding ug pagkarao	35
30	Jan. 3	Pahubsan ug pag-spray ug concoctions(Vegetative)	36
31-37	Jan. 4-10	Walay tubig	43
38	Jan. 11	Patubigan 2-3 cms.	44
39	Jan. 12	Rotary weeding (optional)	45
40	Jan. 13	Pag-spray ug concoctions (Vegetative)	46
41-48	Jan. 14-21	I-mentenar ang 2-3 cms nga tubig	54
49	Jan. 22	Pag-spray ug concoctions (Reproductive)	55
50-59	Jan. 23-Feb. 1	I-mentenar ang 2-3 cms nga tubig.	65
60	Feb. 2	Pag-spray ug concoctions (Reproductive)	66
61-70	Feb. 3-12	I-mentenar gihapon ang 2-3 cms nga tubig.	76
71	Feb. 13	Pag-spray ug concoctions (Reproductive)	77
72-81	Feb. 14-23	I-mentenar gihapon ang 2-3 cms nga tubig.	87
82	Feb. 24	Pag-spray ug concoctions(Reproductive)	88
83-92	Feb. 25-Mar. 6	I-mentenar gihapon ang 2-3 cms nga tubig.	98
93	Mar. 7	Pag-spray ug concoctions (Ripening)	99
94-108	Mar 8-22	Paughan ang basakan	114
109	March 23	Panahon sa Pag-ani	115

* Puedeng gamiton ang OHN, Anti-virus, Foliar Insect Repellant, EM-5, sa bisan unsang panahon kun dunay mamatikdan nga insect pest infestation o kun dunay sakit sa humay. Ayaw isagol sa ubang concoction.

500 ml per 16 liter sprayer tank.

NFS INPUTS	VEGETATIVE	REPRODUCTION	RIPENING
IMO	5%(25ml)	5%(25ml)	5%(25ml)
FAA	50%(250ml)	20%(100ml)	10%(50ml)
FPJ	20%(100ml)	25%(125ml)	15%(75ml)
FFJ	15%(75ml)	25%(125ml)	50%(250ml)
CALPHOS	10%(50ml)	25%(125ml)	20%(100ml)
TOTAL	100%(500ml)	100%(500ml)	100%(500ml)

ANNEX C. Switch Cropping Schedule

SRI SKEDULE SA MGA BULOHATON SA HUMAYAN

Cropping season: Dry Season /RC 160, RC 400 & RC 420 Rice Varieties: 115 days

Adlaw human sa pagtanom	Aktual nga Petsa	Mga Bulohaton (SRI Activities)	Adlaw gikan pagsabod
1	Nov. 24, 2020	Adlaw sa pagtanom	8
2-7	Nov. 25-30	Walay tubig (basa-basa lang)	14
8	Dec. 1	Patubigan (1-2 cms.)	15
9	Dec. 2	Sabwagan ug Soil Nutrient Enhancer dayon mag Rotary Weeder	16
10	Dec.3	Pahubsan ug pag-spray ug concoctions(Vegetative)	17
11-17	Dec. 4-10	Walay tubig	24
18	Dec.11	Patubigan	25
19	Dec. 12	Rotary weeding	26
20	Dec. 13	Pahubsan ug pag-spray ug concoctions(Vegetative)	27
21-27	Dec. 14-20	Walay tubig	33
28	Dec. 21	Patubigan	34
29	Dec.22	Rotary weeding ug pagkarao	35
30	Dec. 23	Pahubsan ug pag-spray ug concoctions(Vegetative)	36
31-37	Dec. 24-30	Walay tubig	43
38	Dec. 31	Patubigan 2-3 cms.	44
39	Jan. 1, 2021	Rotary weeding (optional)	45
40	Jan. 2	Pag-spray ug concoction (Vegetative)	46
41-48	Jan.3-Jan. 10	I-mentenar ang 2-3 cms nga tubig	54
49	Jan. 11	Pag-spray ug concoction(Reproductive)	55
50-60	Jan. 12-21	I-mentenar ang 2-3 cms nga tubig.	65
61	Jan. 22	Pag-spray ug concoction (Reproductive)	66
62-70	Jan. 23- Feb. 1	I-mentenar gihapon ang 2-3 cms nga tubig.	76
71	Feb. 2	Pag-spray ug concoction (Reproductive)	77
72-81	Feb. 3-12	I-mentenar gihapon ang 2-3 cms nga tubig.	87
82	Feb. 13	Pag-spray ug concoction (Reproductive)	88
83-92	Feb. 14-23	I-mentenar gihapon ang 2-3 cms nga tubig.	98
93	Feb. 24	Pag-spray ug concoction(Ripening)	99
94-108	Feb. 25-March 11	Paughan ang basakan	100
109	March 12	Panahon sa pag-ani	115

* Puedeng gamiton ang OHN, Anti-virus, Foliar Insect Repellant, EM-5, sa bisan unsang panahon kun dunay mamatikdan nga insect pest infestation o kun dunay sakit sa humay. Ayaw isagol sa ubang concoctions.