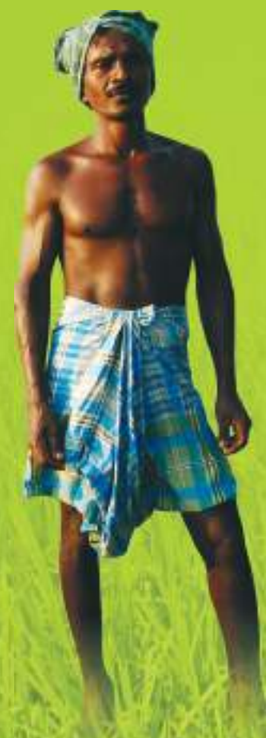
Implementing Agency

DEVELOPMENT RESOURCE CENTRE (DRC)

Gundicha Vihar, Sarboday Nagar

Puri-2, Odisha, India



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A REPORT

ON

SYSTEM OF RICE INTENSIFICATION (SRI)

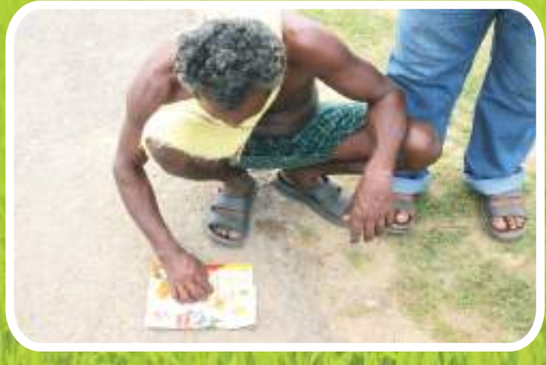
IN SATYABADI BLOCK (RABI- 2012)

Supported By:

FIAC-SATYABADI (ATMA-PURI)

(REPORTING PERIOD FROM JANUARY, 2013 TO MAY, 2013)


Demonstration on SR



WELCOME & SELF INTRODUCTION ABOUT THE IMPLEMENTER

.....Development Resource Centre popularly known as DRC came into existence in the year 2005 and got legal sanctity on 13th April 2006 by Addl. Registrar of Societies, Puri under Indian Societies Regn. Act of 1860 (XII). In the year 2010 DRC was registered under section 12AA of Indian Income Tax Act 1961. It is also affiliated to Nehru Yuva Kendra (NYK) an autonomous body under the Ministry of Youth Affairs & Sports, Govt. of India. DRC is affiliated with LIFE INSURANCE CORPORATION OF INDIA (LIC), for carrying out and catering micro insurance services among the un-served and under privileged communities of rural and urban Odisha.

REGD. OFFICE

Gundicha Vihar, Sarbodaya Nagar, Puri-2, Dist-Puri, PIN-752002, Odisha, India, Mobile No.-9040193050, 9439142688, Email- drcorg2006@gmail.com, Visit: www.drcOdisha.weebly.com

PROJECT OFFICE

01. At/Po-Baral, Via-Satasankha, Block-Satyabadi, Dist-Puri, Odisha-752046
02. At-Dakhinapantal, Po-Nagar,Via/Block-Astaranga, Dist-Puri, PIN-752109,Odisha.
03. At-In front of Rly. Malagodam, FCI Road, Kudiary Bazar, Jatni, Dist-Khurda, PIN-752050, Odisha

NATURE

DRC is a Non-Governmental, Non-Profit Making, Non-Political, Socio-Economic & Developmental Organization.

MISSION STATEMENT

The mission of DRC is establishment of a sound, effective and meaningful society through organized community effort, aiming at systematic & scientific development of un-organized, vulnerable and poorest of the poor community where haves and the have-nots live at par with following the values of sustainable development, Global Common-hood and empathy towards each other.

OUR BASIC OBJECTIVES

Empowerment of the poorest of the poor, marginalized, neglected, down trodden, mentally & physically challenged, disaster victims, destitute, women and children and the disadvantaged community etc through group formation, capacity building, sharing information, inculcating knowledge ,imparting training, organising exposure and demonstrations, providing platform for alternative livelihood systems, enabling conducive environment etc through participatory intervention in fulfilling their rights and discharging their fundamental duties towards the nation and mainstreaming their active participation in sustainable development.

ENTITLED TO WORK IN

As per the Constitution of DRC the area of operation of the organization is within the whole state of Odisha.

THE AREA WHERE WE WORK

Puri District- -Puri Municipality, Brahmagiri , Satyabadi, Kanas, Pipili, delang and Astarang Block.
Nayagarh District--Bhapur and Khandapada Block.
Khurda District-- Jatni Municipality, Balipatana, Tangi and Jatni Block .

OUR ONGOING ACTIVITIES

- National TB (RNTCP) & Malaria Eradication Programme in Astarang Block of Puri District.
- Micro Insurance and Financial Inclusion Programme in 15 nos. Blocks of Puri , Khordha and Nayagarh district.
- Bringing Green Revolution in Eastern India BGREI), Rashtriya Krishi Vikasi Yojana (RKVY) and Line Transplanting programme under RashtriyaKrishi Vikasi Yojana (RKVY) on Agriculture in Satyabadi block.
- National Environment Awareness Campaign (NEAC) in Puri district.

THE FRIENDS IN NEED ARE FRIENDS INDEED

We oblige to the following Institutions & Persons for their development support to DRC..

- Ministry of Health & Family Welfare, Govt. of India & Dept. Of Health, Govt. Of Odisha.
- Ministry of Agriculture, Govt. Of India & Dept. Of Agriculture, Govt. Of Odisha.
- Ministry of Envt. & Forest, Govt. Of India, Dept. Of Forest & Envt. , Govt. of Odisha. & Centre for Environmental Studies, Bhubaneswar
- Dept. Of ST & SC Dev., Govt. of Odisha
- Life Insurance Corporation of India, Bhubaneswar Division.,
- Bank of India, Nabakalebar Road Branch, Puri
- Udaybhanu & Co. , Chartered Accountants, BBSR
- The District Administration
- Advisors, Media, Resource Persons & Researchers
- Full Time Staff 10 nos., Volunteers -15nos. and 5nos. Development Consultants on contractual basis..
- Many more likeminded sacred Networks, Alliances, Organizations, Institutions, and Societies, persons related with us and .....
- The People of our Project Area as a Whole.....

ABOUT THE PROGRAMME

SRI AND ITS IMPLEMENTATION IN SATYABADI BLOCK DURING RABI-2012.....

BACKGROUND FLASH-

Odisha, predominantly an agricultural state.....

Orissa state is a part of the South Eastern Indian subcontinent, spreading through a geographical area of 155,707 sq. km. It extends from 17.5 N to 22.8 N in latitude and 81.2 E to 87.6E in longitude. 4Odisha is the tenth largest and eleventh most populous state in the country accounting for 5% of the Geographical area and 4% of the population of the country. The state has a geographical area of 1.56 lakh sq. km and a population of 3.68 crore as per 2001 census, out of which SC & ST constitute 17% and 22% of total population respectively. 85% of the population lives in rural areas and 47% are below poverty line. Cultivators and agricultural laborers constitute 65% of the total work force. Agriculture contributes 26% of the Net State Domestic Product. Thus, Odisha is predominantly an agricultural state.

Rice In Odisha

The latin name of rice Oryza Sativa is believed to derive its origin from Orissa or Odra Desha that means the land of cultivators In Odisha food and agriculture, to considerable extent means growing rice. Rice covers more than 70% of cultivated area and is the major cereal crop covering about 63% of the total area under food grains. Rice in Odisha is grown over an area of 4.5 million hectares and accounts for 91% of the area under cereals and contributes about 93% of total cereal production in the state. As rice is the staple food of almost entire population in Odisha, the state economy is directly linked with the improvement in

production and productivity of rice in the state. The state has a cultivated area (net area sown and current fallow) of 6.4m ha of a total geographical area of 15.5m ha out of which 2.9m ha are high land, 1.9m ha medium land and 1.6m ha low lands. The gross cropped area is 8.4m ha. Rice is the most important food crop in Orissa grown throughout the state covering over 53 % of the gross cropped area, often as a single crop though with tremendous diversity of rice varieties. The Jeypore tract of Koraput district in Orissa is recognized as one of the secondary centers of origin of cultivated rice in the world. The cropping intensity is quite low in comparison to other states of India and most parts of the state do not have a second crop. The climatic conditions and landholding pattern (predominantly small holder) has meant that farming is largely subsistence and rain fed with low use of inputs. Despite several interventions in the past to improve productivity, there seems to be a mismatch between technological efforts and farmers' practices resulting in large yield gaps and stagnant and even declining agricultural productivity. The farmers, especially those who are resource-poor, are losing interest in rice cultivation as its profitability is declining with increase in input cost. At this juncture, System of Rice Intensification appears as a ray of hope and a viable alternative to conventional method of rice cultivation that claims to save the expensive inputs, improves soil health/ quality and protects the environment substantially. The climatic conditions and landholding pattern (predominantly small holder) has meant that farming is largely subsistence and rain fed with low use of inputs. Despite several interventions in the past to improve productivity, there seems to be a mismatch between technological efforts and farmers' practices resulting in large yield gaps and stagnant and even declining agricultural productivity.

Major Agricultural Features of Odisha Land and Soil

The state has a cultivated area of 62 lakh ha, out of which 27 lakh ha is high land, 19 lakh ha medium land and 16-lakh ha low land. The state is broadly divided into four physiographic zones namely Coastal Plains, Central Table Land, Northern Plateau and Eastern Ghats. They are

Further sub-divided into 10 Agro-climatic Zones. The soil types differ widely from highly acidic to slightly alkaline and from light sandy to stiff clays. Further about 4 lakh ha to flooding and 0.75 lakh ha to water logging, particularly in the deltaic areas.

Land Use

The per capita availability of cultivated land was 0.39 ha in 1950-51, which has declined to 0.13 ha in2006-07. According to agricultural census 1995-96 there are 39.66 lakh operational holdings in the state out of which marginal and semi-medium holdings account for 78.5%, medium 16.8% and large only 4.7% of the operational area. In this backdrop, increase in productivity per unit land area and cropping intensity hold the key to agricultural development. lakh ha of high land, 18 lakh ha of medium and 15.5 lakh ha of low land. The entire Rabi area of 3 lakh ha is irrigated and covered by high yielding paddy whereas only 36% of Kharif paddy area is under irrigation. The yield rate of rice is 1.6 t/ha as against national average of 2.1 t/ha. Basing on the productivity of rice the state can broadly be divided into three productivity zones like Low Productivity Zone, Medium Productivity Zone and High Productivity Zone.

Climate

The state has tropical climate, characterized by high temperature, high humidity, and medium to high rainfall with short and mild winter. The normal rainfall of the state is 1451.2 mm, about 80% of which is received between June and September. Even though quantum of rainfall is so high its uneven & erratic distribution during monsoon makes agriculture often unsecured. Moreover, natural calamities like flood, drought and cyclones frequently occurring in the state either alone or in combination also severely affects crop production. The available information reveals that while flood & cyclones occur almost every year with varying intensity, drought conditions are experienced once in every three to four years. A study of meteorological scenario over a period from 1964 to 2001 shows that there were only 12 normal years out of these 37 (roughly 1:3). Rice is the principal food crop occupying about 45 lakh ha. The Kharif paddy area is 42-lakha

The Real Agronomic Situation of our State

In Odisha food and agriculture, to considerable extent means growing rice. Rice covers more than 70% of cultivated area and is the major cereal crop covering about 63% of the total area under food grains. Rice in Odisha is grown over an area of 4.5 million hectares and accounts for 91% of the area under cereals and contributes about 93% of total cereal production in the state. As rice is the staple food of almost entire population in Odisha, the state economy is directly linked with the improvement in production and productivity of rice in the state. The cropping intensity of our state is quite low in comparison to other states of India and further most parts of the state do not have a second crop.

The farmers, especially those who are resource-poor, are losing interest in rice cultivation as its profitability is declining with increase in input cost. At this juncture, System of Rice Intensification appears as a ray of hope and a viable alternative to conventional method of rice cultivation that claims to save the expensive inputs, improves soil health/ quality and protects the environment substantially. The climatic conditions and landholding pattern (predominantly small holder) has meant that farming is largely subsistence and rain fed with low use of inputs. Despite several interventions in the past to improve productivity, there seems to be a mismatch between technological efforts and farmers' practices resulting in large yield gaps and stagnant and even declining agricultural productivity.

Prospective of SRI in Odisha

From rice production point of view, the state of Odisha can be broadly divided into two physiographic regions i.e., the Coastal plains and the Plateau region. The agro ecological opportunities as well as constraints for rice production vary widely between these two regions. The coastal plains suffer from drainage congestion and water stagnation, whereas in the plateau region, undulations of topography lead to well drained situation and sometimes suffers from water scarcity due to surface runoff. Thus in Kharif season there is greater opportunities of SRI in inland region.

A Glimpse on SRI.

The System of Rice Intensification (SRI) was developed at Madagascar almost 20 years ago by Fr. Henri de Laulanie, S. J.and subsequently popularized there by an NGO, Association Tefy Saina (ATS). It is a "system" rather than a technology because it is not a fixed set of practices. SRI involves a number of specific techniques that are always to be tested and adopted accordingly. The package of practices followed is the one in which synergistic interactions can produce much higher grain yields than usually achieved by conventional practices with new varieties/hybrids and external inputs. SRI is being practiced in our neighboring state Andhra Pradesh successfully. By adopting this technology the farmers of AP harvested more from a unit area as compared to the conventional method. Keeping this view, to popularize this technology among the farmers of Odisha, it is proposed to conduct demonstration (1 Acre each, @Rs. 6500/- per acre) in SRI on pilot basis. The combination of plant, soil, water, and nutrient management practices that are used in SRI promotes:

(a) Measurably greater root growth (b) More number of tillers (c) Greater grain filling, higher grain yield.

The main focus in SRI is the water saving potential i.e. more grain yield per drop of water. Little water is used in SRI so that during plant growth, the soil remains well drained and reasonably aerated while still meeting the plant's water requirements. During reproductive phase that follows a thin layer of water (1-3 cm) is kept standing in the field.

There are six main basic principles in which SRI stands. They are :

(a) Early transplanting, (b) Careful transplanting, (c) Wide Spacing, (d) Weeding and aeration, (e) Water management, (f) Use of organics.

Early Transplanting- Transplant young seedlings of 10-12days in nursery.

Careful Transplanting- Life seedling with seed, roots and soils from the nursery and transplant one plant per hill within 15-30 minutes without plunging the plant in the mud ensuring the roots end not turning upwards.

Wide Spacing- Give a spacing of 25X25 cm. or 30X30 cm. to provide adequate space for roots for facilitating nutrient uptake including micro nutrients from a wider soil area, with more space for the predators to move around facilitating biological control of pests. By this we can accommodate only 16 plants/m2 and the seed required is only 5 kg/ha. Weeding & Aeration: Use a hand push weedier (Mandava weeder or cono weeder) 3-4 times to uproot and incorporate the weeds into soil and to increase soil aeration.

Water Management- No standing water during growth period, intermittent wetting and drying until panicle initiation is required. After panicle initiation 1-3 cm. of water is kept for about three weeks. About 50% less water is adequate. Use of Organic/Compost: Use straw, green manure and animal manure to enrich the organic content of the soil for promoting populations of earthworms, microorganisms and to facilitate nutrient availability. Use reduced amounts (<50%) of chemical fertilizer assessing the requirement.

IMPORTANT CONSIDERATIONS AND PACKAGE OF PRACTICES

Following are the important considerations, which can help us conceptualize the SRI methodology:

- Rice is neither an aquatic nor even hydrophilic plant, it is better to say water-tolerant.
- In SRI methodology, the uptake of nutrient should be a demand-led rather than a supply-driven process.
- The principle of 'feed the soil, it will feed the plant' may hold true in SRI technique.
- Rice plant growth can be usefully analyzed and promoted in terms of phyllocrons, not merely growth phases.
- Nutrient management relies more on organic sources than synthetic/chemical sources.
- No need of pending the field with 5-8 cm. standing water always, rather soil should be kept saturated always, except 5 cm. standing water during seedling establishment, tillering, flowering and grain filling stage.
- Below, surface soil (hidden treasury) plays a vital role than above surface emphasizing more attention to soil microbial constituent.

The following packages of practices are the major determinant for boosting the yield in SRI methodology:

- Special type of nursery bed preparation using a mixture of soil, FYM and SSP at 2:2:1 ratio.
- Careful uprooting of tiny seedlings without disturbing/ stripping off the tender roots.
- Main land preparation to a soft-muddy appearance.
- Adequate drainage facility allowing no stagnant water.
- Making the grid of square planting at 25 cm. X 25 cm. configuration.
- Transplanting young seedling of 9-12 days old along with intact soil.
- Provide irrigation only to saturate the soil, moisture and stop irrigation after milk stage.
- Nutrient management with FYM @ 10 t/ha and NPK-40, 20, 20; from third year onwards.
- Application of synthetic fertilizers should be avoided.
- Bio control of insects, pests and diseases or very less application of pesticides.

The Reason for Success in SRI

- Planting of young seedlings prolongs the vegetative growth period of the variety and facilitates the Production of maximum number of tillers under aerobic condition.
- Mechanical weeding with cono weeder facilitates soil mulching, fresh growth of root system and incorporation of weeds.
- Improvement in the activity of the beneficial microbes in the root zone due to aerobic situation.
- Maximum utilization of available carbon.
- Proper utilization of fertilizers, which will otherwise be leached out due to excess water under traditional method of cultivation.

Advantages of SRI Method of Cultivation

- Higher yields
- Reduced duration (7-10 days)
- Low incidence of pests and disease due to lustrous and healthy growth of the crop
- SRI method is a boon to the production of Breeder/Foundation/ certified seed
- Farmers can produce their own seed easily by ensuring quality
- Rouging is very easy and 100% genetic purity can be maintained
- Better utilization of fertilizers
- Less water requirement
- Soil structure improves through microbial activity
- Low seed rate @ 2 kg/acre
- 8-12 days old nursery is used for planting; hence the farmers can take up sowing even after receipt of rains
- Mechanical weeding with cono weeder facilitates the incorporation of green matter into the soil
- Better utilization of solar energy resulting in higher number of grains per panicle.

Conclusion

As on today, agriculture advances from traditional wisdom towards future conviction of food, nutritional and environmental security. Rice cultivation is passing through a critical phase of achieving the targeted demand of rice from dwindling resources of less land, water, labor and investment. Under this juncture, SRI may hold promise to become the boon in modern agriculture by not only producing more rice but this technology could also enhance the resource use efficiencies substantially.

Our Intervention in SRI

Rashtriya Krishi Vikas Yojana is one of the greatest Agricultural Schemes of Govt. of India for development of Agriculture and the Agriculture Community. Promotion of Improved Agronomic Package & Practices under RKVY Scheme for kharif-2012 under RKVY started in Satyabadi Block in the year 2012. DRC is being fortunate participating in SRI as a distinguished partner of DDA, Puri in fulfilling the objectives of Ministry of Agriculture, Govt. of India. After successful implementation of Kharif -2012 DRC was bestowed upon responsibility organizing SRI in 5nos. GPs of Satyabadi Block under Puri District.

A total 362 nos. of farmers of 19 nos. villages of 5nos. GPs. of Satyabadi Block covering 650 Acres of crop land found a massive drive in Line Transplanting. In the above scheme Starting from Selection of beneficiaries to Sample Crop Cutting DRC acted as a Silent Observer facilitating in the whole agricultural development process putting primary focus and priority on community participation.

PROGRAMME OBJECTIVES:

- Bridge the gap between actual and the potential yield capacity of the paddy crop.
- Increase the production & productivity of rice.
- Maintenance of proper plant population.

- Reduce the input cost in agriculture;
- Save time, labour, money and other required resources in agriculture;
- Involve lower seed rate, lower chemical fertilizer, less use of plant protection chemicals and low water consumption.

THE AREA & THE BENEFICIARY FARMERS COVERED UNDER SRI

SL.NO	NAME OF THE GP	SL.NO.	NAME OF THE VILLAGEs	Area in (Ac.)	No. of Beneficiary (INVOLVED)				TOTAL
					SC	ST	General	Women	
					1	2	3	4	
1	**BALARAMAPUR GARH**	1	BALARAMAPUR GARH	53.50	16	0	24	6	46
		2	GENDAMALI	18.50	0	0	11	0	11
		3	MADHIPUR	58.00	0	0	37	0	37
	G.P. TOTAL		**3 VILLAGES**	**130.00**	**16**	**0**	**72**	**6**	**94**
	PARAJAPADA	4	PARAKENA	10.00	0	0	5	0	5
	G.P. TOTAL		**1 VILLAGES**	**10.00**	**0**	**0**	**5**	**0**	**5**
2	**KADUA**	5	KADUA	14.00	6	0	1	0	7
	G.P. TOTAL		**1 VILLAGE**	**14.00**	**6**	**0**	**1**	**0**	**7**
3	**SUKAL**	6	BAMBARADA	29.00	4	0	21	3	28
		7	DAKHINAKERA	10.50	1	0	4	2	7
		8	SUKAL	94.00	10	0	67	7	84
		9	ALISHA	44.00	1	0	28	5	34
		10	MARKANDA PADA	28.00	2	0	19	5	26
		11	CHURALI	13.50	0	0	9	2	11
		12	GUALIPARI	21.50	1	0	17	2	20
		13	DOKHANDAPUR	15.50	0	0	15	0	15
	G.P. TOTAL		**8 VILLAGES**	**256.00**	**19**	**0**	**180**	**26**	**225**
4	**ALAGUM**	14	ALAGUM PATANA	11.00	0	0	4	1	5
	G.P. TOTAL		**1 VILLAGES**	**11.00**	**0**	**0**	**4**	**1**	**5**
5	**DASBIDYADHARAPUR**	15	DIHAPUR	6.00	0	0	5	1	6
		16	CHITALAPUR	3.00	0	0	3	0	3
		17	BASANTAPUR	4.00	0	0	2	0	2
		18	BHIMAPUR	8.00	2	0	5	0	7
		19	DAS BIDYADHARAPUR	8.00	6	0	2	0	8
	G.P. TOTAL		**5 VILLAGES**	**29.00**	**4**	**0**	**17**	**5**	**26**
	5 GPs		**19 VILLAGEs**	**450.00**	**45**	**0**	**279**	**38**	**362**

PROGRAMME COMPONENTS-

The above 5 nos. GPs were covered through the following programme components ...

SELECTION OF BENEFICIARIES-

Soon after the decision taken by the BTM-cum-Convenor FIAC-Satyabadi, Puri and DRC was assigned after a staff orientation Selection of Beneficiaries for the above scheme was done by DRC with active involvement of the line departments, Gram Sathi, VAW, Krushak Sathi, Pani Panchayat, Village Development Committee, Village Clubs, SHGs and Farmers' Clubs etc. Community was given ample freedom & scope to identify the beneficiaries followed by the norms of the Scheme. A total 362 nos. farmers from 19 villages and 5GPs of One Block were identified as beneficiaries for Rabi -2012.

MASS AWARENESS DRIVE-

DRC conducted Mass Awareness Programmes through a series of Community Consultations, Meetings, Group Discussions, Individual interaction etc. at community level. Public places were identified for the suitable awareness activities. The Local officials, Agriculture Experts and resource Persons on SRI were present in all the programmes covered in the above 5GPs.After series of awareness & sensitization programmes done at different locations at different times at last 362 nos. farmers were identified and selected for the programme.

CAPACITY BUILDING OF THE FARMERS TO INTERACT WITH HIGH OFFICIALS-

Keeping a bird's eye view on successful implementation of SRI programme in our Block we took initiatives to create conducive environment .DRC created conducive environment through awareness programmes, meetings, interactions, Distributing IEC materials, organizing Question Answer programme, demonstration and exposure etc as a result it became able in creating space for interaction between the farmers, Agriculture Experts, Govt. Officials, Line Agencies, NGOs and Opinion Leaders over agriculture and allied issues specifically on SRI .In this context we had created space from time to time for organising regular interface among cross sections of people with the farmers. on objectives of the scheme, activities to be organised, strategies to be adopted, benefits to be availed &role and responsibility of various stakeholders etc towards smooth implementation of the programme. This cooperative, coordinating, collaborative and enabling activities paved the way for a conducive environment for successful of SRI.in Satyabadi Block.

TRADITIONAL PRACTICES Vrs. SCIENTIFIC METHODS-

To some extent we were able to convince the local farmers on Traditional agricultural practices and the Modern scientific methods. Motivational & Sensitization programmes were organized aiming at making the local farmers capable in identifying the Major Agricultural Issues and Problems faced at their level and the potential available with them to address it. The daylong traditional practices in agriculture need to be changed and the new scientific temperament are to be induced, technology be adopted and the modern

practices be actualized. Hence DRC in all its awareness activities organized motivational programmes through Meetings, Discussions, Interactions, Demonstrations etc to make the farmers capable of sleeping away from the clutch of the traditional practices and adopt Line showing programmes for more production using less inputs with systematic approach. Many a instances,case studies of successful farmers were highlighted in the awareness programmes.After a series of motivational programmes the local farmers were convinced to start Line Transplanting activities I their crop lands. Empowering the Farmers adopting themselves with the new scientific agricultural practices for more production minimizing the input costs in paddy cultivation was the cream of the discussions at all level.

DEMONSTRATION & EXPOSURE

-In 450 Acre crop lands of 19 villages SRI was demonstrated. The SRI programmes were demonstrated at the crop lands of the farmers and some farmers were exposed to nearby successful SRI Fields to get better clarity on the future prospective of the said programme.

INPUT DISTRIBUTION

In order to motivate the farmers towards organising SRI during Rabi 2012 in their crop lands inputs in the form of cash @Rs.500/per acre were provided to the farmers. The objective was to attract the farmers in a large number for taking SRI as a drive and ensure farmers' participation in increasing the paddy production with less input cost, less time consumption and less resource utilization.

POST HARVEST ASSESSMENT THROUGH SAMPLE CROP CUTTING

Soon after completion of the agricultural process in SRI there were sample crop cutting to evaluate the SRI in above 450 Acers. The Local Agriculturists did Post Harvest Assessment. Accordingly we had done sample Crop Cutting in 20 no. Patches. Each Crop Cutting patch was an area of 25 Sq. mtrs. (5mtr. Wide & 5 mtr. Length). After cutting the Crops from each Patch the harvested paddy were measured in presence of the concerned Govt. Officials. Similarly the entire paddy harvested from the 20 nos. Patches were mixed and the aggregate quantity of paddy production was calculated. The following table depicts over the Crop Cutting Report of the above area..

CROP CUTTING REPORT OF SRI PATCHES DURING RABI-2012

SL.N	NAME OF FARMER	VILLAGE	G.P.	KHATA NO.	PLOT NO.	DATE OF CROP CUTTING	PADDY VARIETY	YIELD FROM (5x5) M (In Kg.)	YIELD PER HECTOR (In Qntls)
1	ACHUTANANDA MOHANTY	MADHIPUR	BALARAMAPUR GARH	NA	318	20-05-2013	PRATIKSHYA	21.450	85.800
2	DHUSASAN DALAI	MADHIPUR	BALARAMAPUR GARH	1707	400	20-05-2013	PRATIKSHYA	16.750	67.000
3	AKHAYA DALAI	MADHIPUR	BALARAMAPUR GARH	1707	400	20-05-2013	SAMRAT	15.550	62.200
4	DEBARAJA JENA	MADHIPUR	BALARAMAPUR GARH	868	173	20-05-2013	PRATIKSHYA	17.000	68.000
5	KARTIKA JENA	MADHIPUR	BALARAMAPUR GARH	831	958	21-05-2013	PRATIKSHYA	17.550	70.200
6	BHAJAMAN JENA	MADHIPUR	BALARAMAPUR GARH	837	413	21-05-2013	SAMALEI	16.400	65.600
7	RATNAKAR JENA	MADHIPUR	BALARAMAPUR GARH	837	413	21-05-2013	SAMALEI	16.350	65.400
8	BRAJAKISHOR BHOI	BALARAMAPUR GARH	BALARAMAPUR GARH	21	176	21-05-2013	SAMRAT	16.200	64.800
9	RABINDRA KU PATRA	BALARAMAPUR GARH	BALARAMAPUR GARH	1013	423	21-05-2013	SAMRAT	17.550	70.200
10	BHAGIRATHI JENA	BALARAMAPUR GARH	GENDAMALI	2395	778	21-05-2013	PRATIKSHYA	17.500	70.000
11	AJAY NAYAK	SUKAL	SUKAL	304	529	12-05-2013	SAMRAT	17.550	70.200
12	BALARAMA BARAL	SUKAL	SUKAL	867	949	12-05-2013	20 CULTURE	17.450	69.800
13	PRABHAKAR MOHARANA	SUKAL	SUKAL	621	318	12-05-2013	1010	16.550	66.200
14	GANGADHAR NAYAK	SUKAL	SUKAL	686	711	12-05-2013	PARIJAT	18.450	73.800
15	GOURANGA JENA	DOKAHANDAPUR	SUKAL	111	149	12-05-2013	SUMA	18.000	72.000
16	RAJAKISHORE BISWAL	ALISHA	SUKAL	217	269	10-05-2013	PARIJAT	17.500	70.000
17	EKADASHI SWAIN	ALISHA	SUKAL	235	289	10-05-2013	SAMRAT	18.500	74.000
18	BRUNDABAN SAHOO	ALGUM	ALGUM	683	462	10-05-2013	SAMRAT	18.250	73.000
19	SANJIB KU RATH	BHIMA PUR	DAS BIDYADHAR PUR	385	6	10-05-2013	PARIJAT	17.650	70.600
20	RAGHUNATH RATH	DAS BIDYADHAR PUR	DAS BIDYADHAR PUR	485	42	10-05-2013	SAMRAT	18.550	74.200

MONITORING & EVALUATION

The time to time visit of the Govt. officials like AAO- Satyabadi, BTM, BLATA and FIAC members Involvement of VAWs, Krushak Sathi, PRI leaders and many more well wishers and people committed for development of Agriculture and the farmers, made the programme more successful. Further timely organization of meetings at different convenient locations, rampant awareness generation programmes, Distribution of IEC materials , encouraging participatory intervention etc were some of the major positive factors that led the programme systematic, result oriented and progressive one.. The very objective of the above monitoring was .....

- Thinking in terms of a learning approach to project M&E and management;
- Emphasizing the value of stakeholder participation in M&E;
- Focusing on the concrete needs.
- Structuring the guide around stakeholders' routine functions and tasks and integrating M&E into the project cycle;

- Ensuring that a common planning and M&E language is used;
- Giving value to a diversity of working methods and styles; and
- Acknowledging the importance of institutional and humanitarian decision making

  Process.

Practice - Some Notions Demystified

Methods of cultivation are different in our previous practice and with SRI. Let us highlight a bit on other assumptions which we had earlier and how SRI demystifies them. A big difference is of course square vs. staggered planting. Common sense assumptions that proved to be wrong was that more plants (and hence more seed) give more production. As we saw with SRI, fewer plants also can give more production. Another difference was that in conventional production the field acts like a mini dam in rainy season by holding and percolating water. In SRI the field should be moist only. We used to believe that rice requires more water, and preferably standing water, but now we see that rice can do well without standing water. Last but not least is the former belief that rice cultivation is like studying hard for matriculation examination and never knowing what would the result be - a conception of rice cultivation that is now replaced. It is like doing PhD that requires not blind following of predecessors, but involves more knowledge input and one can be certain about harvesting more. It encourages one to go on discovering the potential of a plant. It makes a farmer a scientist.

Challenges Remain

There are many challenges ahead if we want to fully explore and realize the potential of SRI. This is not to indicate the limitations of SRI but challenges that we are thinking of and all of us perhaps need to collectively engage with..Some of the questions come to our mind as follows....

- How to convince farmers of this counter - intuitive method?
- Can SRI work in difficult soils like alkaline soils and saline soils, low lands etc?
- How to find out the right variety for the right soil?
- What would be the ideal weed management practices in SRI?
- Can we try direct seedling method and do away with Transplanting?
- What should be the land and soil preparation in Undulated terrain?
- How can we establish thumb rules for proper and locally adaptable water management?
- How to respond to reaction or opposition of non practitioners, scientists, government officials, and even family members?
- How to ensure that the practice of SRI goes hand in hand with proper understanding of rice cultivation and soil plant interactions?
- How to enable proper documentation and preparation of learning materials?
- What kind of support is required from the government, scientific community and other institutions?
- How to train a committed band of trainers?
- How to enable innovations and sustainability of the practice?

Our Silent Observations and Learning to Share wih

There are some limitations on practicing SRI. Thus for SRI there is need for motivation and skill. When the farmers will be convinced about the yield advantages, become more conscious, knowledgeable and confident, all these factors will overcome. Based on our experiences we have the following observations and learning to share:

SRI requires skill both for the Staff & the Farmers:

Initially SRI method requires more of labour. Even the markings that were done at 25 cm. X 25 cm. or 20 cm. X 20 cm. spacing for planting were done manually with the help of planting ropes. Use of roller markers or wooden markers will reduce the cost. Further, transplanting tiny seedlings at very tender stage also appears labour consuming but as our experience goes this is more a practice that gets transformed to habit. After completion of transplanting in our SRI plots when the laborers resumed back to their conventional planting techniques in other plots we have observed them facing inconvenience in planting multiple seedlings.

SRI requires some skills that are very different from the traditional practices of paddy cultivation. The farmer will have to learn about seed treatment, raised seedbed, land preparation and drainage, use of weeder, transplanting 8 to 12days old seedlings, planting single seedling with wider space, which are very much in contrast to conventional practices. Unless the farmer is able to adopt all these techniques as a package they may not be able to observe the differences. To change the age-old methodology of traditional paddy cultivation there is necessity of skill up-gradation of farmers and similarly staff are to go under skill up gradation..

Needs More Social mobilization and demonstrations in Field:

Social mobilization and demonstrations are necessary and need to go hand in hand to motivate farmers to adopt SRI.

Proper Water Management

Focus is to be given on proper water management and drainage which is an important aspect of SRI methodology. The most important one is the need of having good water control to get best results. It is possible to save water and make the soil aerated so as to get the benefits, only if farmers keep the soil saturated followed by hairline crack drying alternatively, avoiding flooding. In real field situation our farmers practice field-to-field system of irrigation. Thus there is need to improve water control by sacrificing a little land area for field channels

Need to find varieties that can adapt better locally

In our area we found that since the farmers have taken up long duration paddy there was problem in water management during the time of fruiting. Hence short duration paddy seems more preferred for SRI method of cultivation.

Skill development to reduce labour costs

Lack of practice resulted in labour intensiveness. Hence, there is a need for skill development of farmers. Lack of proper care at the time of transplantation damages plant growth and growth of tillers.

Green manure is effective

Use of green manure produced better results.

What We Think of SRI... Next Time DRC stands first in its overall performance in Puri district. We are immensely encouraged by the performance. So, we will:

- Continue to practice SRI
- Try to modify/correct our mistakes
- Try to convene an experience sharing workshop of the people we motivated.
- Continue to share our experiences with as many people/institutions as possible Process documentation for sharing with others for a greater impact.
- Lobby at Govt. and other agencies level for organizing Capacity building programmes for staff & Farmers.
- Act as a Resource Agency for SRI for Puri District.