



Enhancing Agriculture of Women & Marginal Families

विकास के मूल सिद्धान्त (Principles of Development)

“पंच स” जिन्दगानी के लिए ।

“पंच ज” जीवन चलाने के लिए ॥

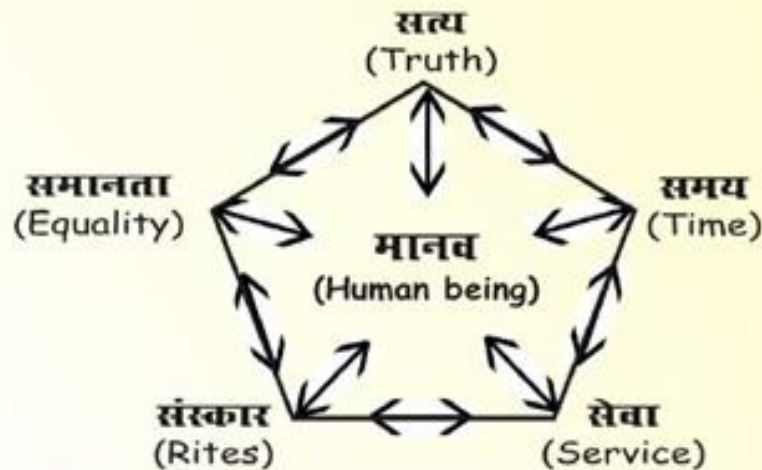
(Five S: To achieve the goals of life; Five J: To run the life)

पंच स (Five S):

1. सत्य (Truth) 2. समय (Time) 3. सेवा (Service) 4. संस्कार (Rites) 5. समानता (Equality)

जिस जन्तु के व्यवहारिक जीवन में सत्य, समय, सेवा, संस्कार एवं समानता का समावेश हो उसे मानव कहा जाता है। विकासकर्मों के लिये मानव बनना प्रथम शर्त है।

(A living creature having truth, timeliness, service, rites and equality in its practical life is called a human being. For development work a man has to become a human being first.)



पंच ज (Five J):

1. जल (Water) 2. जंगल (Forest) 3. जमीन (Land) 4. जानवर (Animal) 5. जन (Person)



सृष्टि/प्रकृति के विधि अनुरूप प्राकृतिक संसाधनों का स्थायी एवं टिकाऊ विकास करना ही श्री विधि विकास कहलाता है।

(Sustainable development of natural resources including human resource based on law of nature/God is called SRI method of development)

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Chapter-1: Introduction

Preservation and Proliferation of Rural Resources and Nature (PRAN) works with poor and marginal communities at the grassroots to enhance their food security and cash income through System of Root Intensification (SRI) method of crop cultivation. It also builds capacity of Government functionaries, grassroots organizations and various other actors of rural development in SRI. The primary operational area of PRAN is Bihar State.

PRAN is an offshoot of PRADAN. It was formed in 2012 with a view to address food security and income of small and marginal farmers. It is registered in the holy city of Gaya as a Public Charitable Trust under The Indian Trusts Act, 1882.

PRAN engages spirited youth – both from local areas as well as those who have earned higher academic qualifications elsewhere – to work closely with people and promote livelihoods based on natural resources through application of SRI principles in life and livelihoods. PRAN builds capacity of local and educated people through its principles of development: *Panch S (Satya, Samay, Seva, Sanskar and Samanata) and Panch J (jal, Jungle, Jameen, Janawar and Jan).*

Chapter 2: Our Mission and Approach

Our Mission

“Enhancing Agriculture of women and marginal families _ preservation and proliferation of rural resources and nature”

Our Approach to Grassroots Action

PRAN believes that SRI way of life and livelihood beginning with crop cultivation has great potential positively impact the community and the environment. Strengthening farming systems integrated with Climate change adaptation for women and marginal households in particular is main area of our intervention. The major focus of PRAN is to form SRI women groups to sustain the activities of SRI method of crop cultivation. PRAN also works with existing women collectives in villages formed by various organisations, Gram Panchayat and other social bodies. Facilitating women collectives to identify and nurture local cadres through phased training of village women and men farmers enable our interventions reach out to large number of small and marginal farmers.

Chapter 3: Area Profile and Outreach

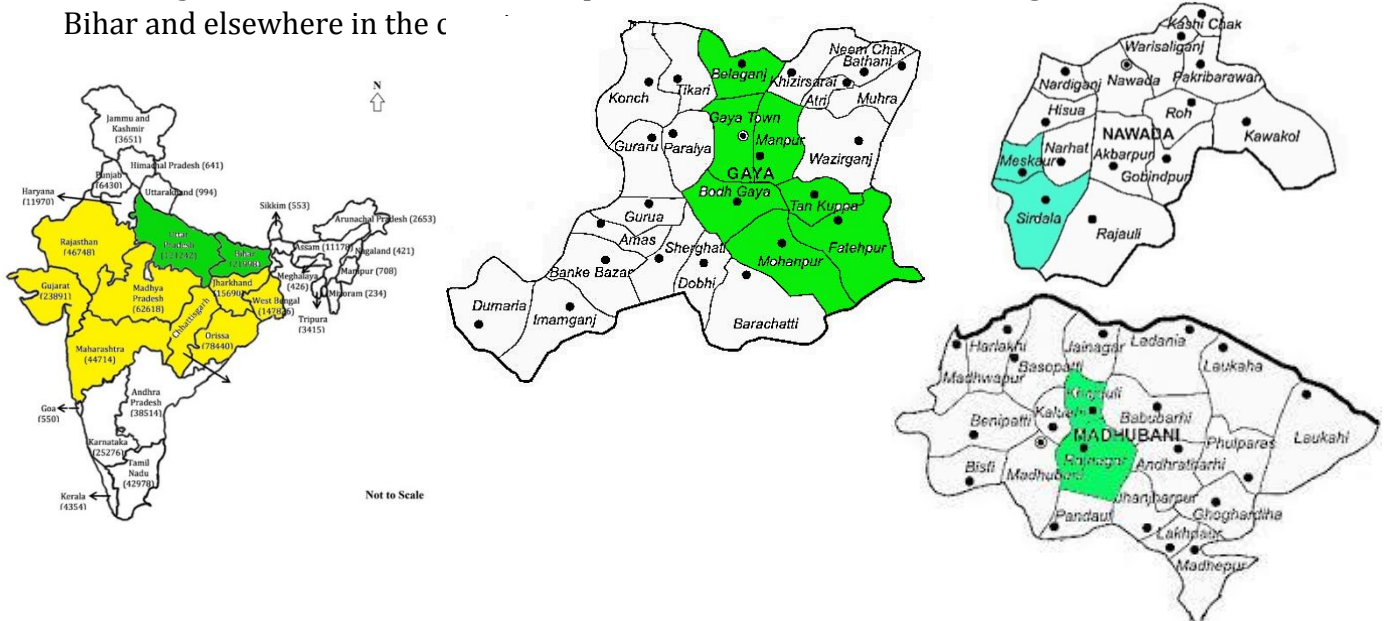
Area Profile

PRAN works with socio-economically disadvantaged communities, such as Schedule Castes, women, landless, backward communities and marginal and small cultivators. Grassroots action involving innovative and sustainable agriculture to enhance livelihoods is PRAN's primary focus. Improving the husbandry of natural resources is the broad avenue PRAN follows to enhance livelihoods. Average productivity of major food grain and other crops in general is very low in Bihar. Small and marginal rural households face food grain insecurity; poor and bad monsoon aggravate the situation. Distress migration to distant places in search of work is a common phenomenon.

Despite accelerating growth rates in food grain as well as non-food grain production, the status of agriculture in Bihar is not comparable to agriculturally developed states or even all-India average. With similar area, West Bengal produced more than double of paddy output in Bihar. Similarly, Haryana with half of the area produced almost equal of wheat output to Bihar. The case of other crops such as maize, arhar, gram, sugarcane, rapeseed/mustard, potato, etc. was no different. Moreover, the yield gap between the potential and the actual was large at 50-70% in the state, depending upon the crop and irrigation condition.

Outreach

PRAN's current grassroots operations are in 08 blocks of Gaya district of Bihar viz. Manpur, Tankupa, Mohanpur, Bodhgaya, Chakand, Bela, Gaya_Nagar and Fatehpur. However, for training of personnel and grassroots workers of other organisations, including Government, the resource persons associated with PRAN go to all districts of Bihar and elsewhere in the c



As PRAN works on two aspects **working with local rural communities** and **working on theme of SRI**, we focused our work accordingly.

Chapter 4: Working with local Rural Communities

We are partnering with different donor agency to implement SRI Scaling up project in Bihar. We focused our attention in 08 blocks of Gaya district of Bihar viz. Manpur, Tankupa, Mohanpur, Bodhgaya, Chakand, Bela, Gaya_Nagar and Fatehpur. PRAN is also giving training to officials and farmer from different organizations like Jeevika, BRLPS, ATMA Gaya, BRLF partner organization and others organizations who are promoting sustainable agriculture.

Particulars	Plan	Achievement
Number of districts	1	1
Number of blocks	8	8
SRI Kharif Crops	780 households	783 households
SRI- Other Crops	760 households	785 households
Mushroom Cultivation	100 households	122 households
Farmers using ITK preparations(Sri Pranamrit and others)	780 households	783 households
Training to common farmers on SRI-Paddy	1200 trainee days	1263 trainee days
Training to common farmers on SRI-Other Crops	1700 trainee days	1711 trainee days
Gender Training	2500 trainee days	2920 trainee days
SRI Wheat Area	124 Acres	395 Acres
Formal Education	100 Women candidates	129 Women candidates
Employment	150 Women candidates	87 Women candidates
Enterprise	50 Women candidates	57 Women candidates
Covid Relief Work	0	20000 Households
Dry Borewell Recharge	4	3
Desilting of Pond	4	4
Horticulture	200 Households	231Households
Demonstration of Dabholkar Method	10 households	10 households

Kitchen garden	20 households	130 households
Low cost soak pit	30	30

Chapter 5: Household coverage in previous year (2007-2020)

Year	SRI household Coverage	Cumulative No	Partners
2007-2008	128	128	PRADAN/BRLPS
2008-2009	5146	5274	PRADAN/BRLPS
2009-2010	5994	11268	PRADAN/BRLPS/ATMA
2010-2011	8864	20132	PRADAN/BRLPS/ATMA
2011-2012	24134	44266	Tata Trust/PRADAN/ATMA
2012-2013	31522	75788	Tata Trust/PRADAN/ATMA
2013-2014	17662	93450	Tata Trust/PRADAN/ATMA
2014-2015	36356	129806	Tata Trust/PRADAN/ATMA
2015-2016	38948	168754	Tata Trust/PRADAN/ATMA
2016-2017	19579	188333	PRAN/ATMA/BRLF/
2017-2018	2812	191145	PRAN/APPI/DF
2018-2019	3125	194270	PRAN/APPI/DF/ATMA/BRLPS
2019-2020	6645	200915	PRAN/APPI/PRADAN/ATMA/BRLPS
2020-2021	20785	221700	PRAN/UNICEF/PRADAN/UNITED WAY/APPI/Gov. of Bihar/Buddha Fellow/Banks/Other Organisations

Chapter 6: Major Interventions

Due to changing climatic conditions as a result of global warming, the water problem has become a common problem for entire Bihar. Due to global warming in the previous years the paddy crop in North Bihar also faced drought situation and large number of farmers lost their crops. The problem in south Bihar became more intense as traditionally it has been a dry zone area of Bihar in general and Gaya and its adjoining districts in particular.

Seeing the water crisis PRAN implemented project funded by UNICEF, Patna in two blocks i.e., Mohanpur and Bodhgaya blocks of Gaya district of Bihar. Main focus of this programme was “Enhancing food and nutritional security through promotion of organic farming & water security practices” in Gaya, Bihar.

For the security of water, we promoted various activities which are given below along with their analysis report.

SRI method of Paddy cultivation

Interventions Analysis Report SRI Paddy																
Particular	Intervention	Sub-Activity	Achievement													
			No. of Farmers	Area (Acre)												
Organic cum Natural SRI	Demonstration of natural SRI paddy cultivation	Nursery Raising	10	2.78												
		Land Preparation														
		Natural Fertilisers														
		Rain water														
		Supplementary Irrigation water														
Graphical Presentation of Analysis		<div>Comparison b/w Demo Vs Control Plot of Paddy</div> <table><thead><tr><th>Metric</th><th>Demo Plot (%)</th><th>Control Plot (%)</th></tr></thead><tbody><tr><td>Avg. Yield (Kg/Acre)</td><td>130%</td><td>100%</td></tr><tr><td>Per Acre Water (L)</td><td>56%</td><td>100%</td></tr><tr><td>Input Cost Per Acre (Rs.)</td><td>57%</td><td>100%</td></tr></tbody></table>			Metric	Demo Plot (%)	Control Plot (%)	Avg. Yield (Kg/Acre)	130%	100%	Per Acre Water (L)	56%	100%	Input Cost Per Acre (Rs.)	57%	100%
	Metric	Demo Plot (%)	Control Plot (%)													
Avg. Yield (Kg/Acre)	130%	100%														
Per Acre Water (L)	56%	100%														
Input Cost Per Acre (Rs.)	57%	100%														
Outcome	<ul style="list-style-type: none">• 44% reduction in supplementary irrigation in demo plot as compared to control plot• 2,98,242 Litre of supplementary irrigated water per acre is saved.• 30% more yield in demo plot as compared to control plot• 690 Kg of grain per acre is additionally produced• Input cost is reduced by 43% and saving of rupees 18730/- per acre in demo plot with comparison to control plot• Chemical less quality grain and straw is produced															
Impact	<ul style="list-style-type: none">• 0.79 acres of additional land will be provided supplement irrigation with same external irrigation provided by the farmer for one acre, thus for every 100 acres of external irrigation water in paddy, with the same quantity of water with SRI Vidhi 179 acres of land will be irrigated. With the same quantity of water 79% more of the paddy land will be covered.• Enhanced food security for round the year• Small and marginal farmers and share croppers including landless will also															

	<p>participate in intervention and hence is social inclusive</p> <ul style="list-style-type: none"> • Small and marginal farmers and villagers also others get healthy food for healthy and long life and strong upcoming countrymen • Livestock get healthy feed and become less sick and will produce healthy milk for calves and human beings • Physical, chemical and biological properties of soil get improved • The water holding capacity, soil permeability and soil aeration of cultivable land is enhanced significantly • Soil bio-diversity, microbial population leading to mineralisation and recycling of nutrients is improved • Ecosystem of biotic and abiotic components is improved and congenial for better environment and global warming • Overall fertility and carrying capacity of natural resources is enhanced for sustainable livelihoods for adaptation to climate change.
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Fig. Paddy field growing in the villages of Bodhgaya and Mohanpur

Yield obtained under SRI-Paddy for 2020-21

Our strategies of promotion of suitable varieties worked well and farmers at large in the project area could harvest good Paddy yield. The project average yield is 7.43 ton/hect. Out of a total of 10 households who transplanted Paddy with SRI we gather data from all farmers and result is as follows.



प्रतिष्ठान
PRAN

श्री विधि UNICEF परियोजना

उपज प्रमाण पत्र

प्रमाणित किया जाता है कि श्रीमती देवली देवी माता श्रीमती देवली देवी
पति/पिता श्री रमेश प्रसाद गाँव सागरपुर पखड मोहनपुर जिला अथा
ने अपने खेत में श्री विधि परियोजना के अंतर्गत प्रिजर्वेशन एंड प्रोविजन ऑफ
स्वतः रिसोर्स एंड नेचर (शान), नया की देखरेख में श्री विधि से खरीफ़रबी खरीफ़ में
VNR-2383 किस्म की एन-1 की खेती करके 5.134 टन प्रति हेक्टेयर की
उपज प्राप्त की।

क्र.सं.	पदाधिकारी/किसान का नाम	पदनाम	हस्ताक्षर (दिनांक के साथ)
1	राजेश्वर चौधरी	डिप्टी कमिशनर	<u>राजेश्वर चौधरी</u>
2	डॉ. विनोद प्रसाद	डिप्टी कमिशनर	<u>विनोद प्रसाद</u>
3	डॉ. विनोद कुमार	डिप्टी कमिशनर	<u>विनोद कुमार</u>

Fig. Yield estimation being done in front of Govt. officials

Yield Data of Paddy				
S.N	Block	Yield (ton/hec)	No. of farmers	Average yield (ton/hec)
1	Mohanpur	<4	0	7.09
		4-6	0	
		6-8	5	
		>8	0	
2	Bodhgaya	<4	0	7.76
		4-6	0	
		6-8	5	
		>8	0	
3	Gaya			7.43
The average yield of paddy is 1.5-2.5 ton/hec in conventional method. On an average the poor and marginal communities in rain fed area get 2 ton per hect.				

SRI-other Crops

Seeing good result in kharif in water saving as well as yield enhancement with low input farmers were motivated for next rabi crop and we demonstrated the rabi crop with various interventions incorporated in order to reduce water consumption and increase yield of crop.

Interventions Analysis Report SRI Wheat				
Particular	Intervention	Sub-Activity	Achievement	
			No. of Farmers	Area (Acre)
Organic cum Natural SRI	Demonstration of natural SRI wheat cultivation	Priming of Seeds	10	2.04
		Seed Treatment		
		Sowing		
		Weeding		
		Natural Fertilisers		
		Natural Pesticides		

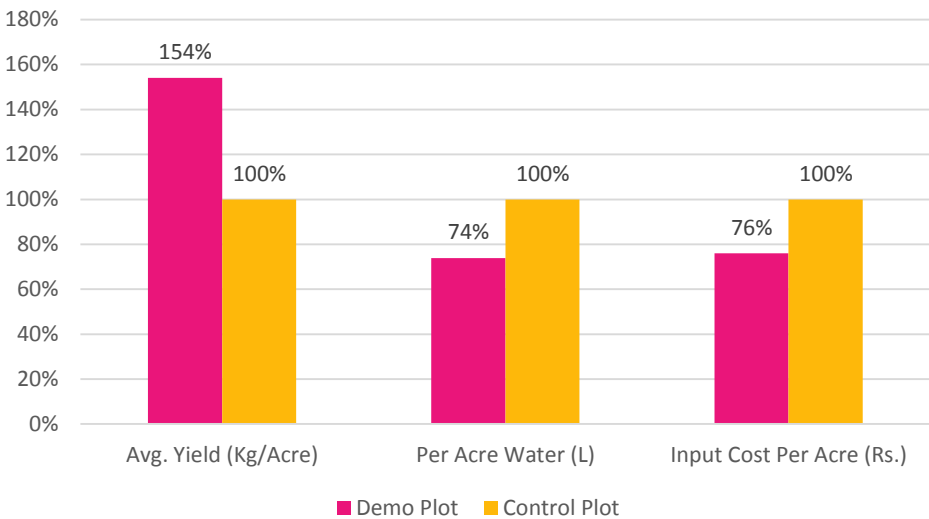
Graphical Presentation of Analysis	<div>Comparison b/w Demo Vs Control Plot of Wheat</div>  <table><thead><tr><th>Metric</th><th>Demo Plot (%)</th><th>Control Plot (%)</th></tr></thead><tbody><tr><td>Avg. Yield (Kg/Acre)</td><td>154%</td><td>100%</td></tr><tr><td>Per Acre Water (L)</td><td>74%</td><td>100%</td></tr><tr><td>Input Cost Per Acre (Rs.)</td><td>76%</td><td>100%</td></tr></tbody></table>	Metric	Demo Plot (%)	Control Plot (%)	Avg. Yield (Kg/Acre)	154%	100%	Per Acre Water (L)	74%	100%	Input Cost Per Acre (Rs.)	76%	100%
Metric	Demo Plot (%)	Control Plot (%)											
Avg. Yield (Kg/Acre)	154%	100%											
Per Acre Water (L)	74%	100%											
Input Cost Per Acre (Rs.)	76%	100%											
Outcome	<ul style="list-style-type: none">• 26% reduction in supplementary irrigation in demo plot as compared to control plot• 97,479 Litre of supplementary irrigated water per acre is saved.• 54% more yield in demo plot as compared to control plot• 673 Kg of grain per acre is additionally produced• Input cost is reduced by 32% per acre in demo plot with comparison to control plot• Chemical less quality grain and straw is produced												
Impact	<ul style="list-style-type: none">• 0.35 acres of additional land will be provided supplement irrigation with same external irrigation provided by the farmer for one acre, thus for every 100 acres of external irrigation water in wheat, with the same quantity of water with SRI Vidhi 135 acres of land will be irrigated. With the same quantity of water 35% more of the wheat land will be covered.• Enhanced food security• Small and marginal farmers and share croppers including landless will also participate in intervention and hence is social inclusive• Small and marginal farmers and villagers also others get healthy food for healthy and long life and strong upcoming countrymen• Livestock get healthy feed and become less sick and will produce healthy milk for calves and human beings• Physical, chemical and biological properties of soil is improved• The water holding capacity, soil permeability and soil aeration of cultivable land is enhanced significantly• Soil bio-diversity, microbial population leading to mineralisation and recycling of nutrients is improved• Ecosystem of biotic and abiotic components is improved and congenial for better environment and global warming• Overall fertility and carrying capacity of natural resources is enhanced for sustainable livelihoods for adaptation to climate change.												



Fig: Photo of SRI wheat crop at village Kenari of Mohanpur block

Target income enhancement planning

Under the project of UN, Women Second chance education we have done the planned demonstration of various activities among 750 farmers so that the farmers could earn surplus income of rupees 50,000/-. For the target income we have done crop planning as per the following:

Prototype adopted for ensuring the desired level of income:

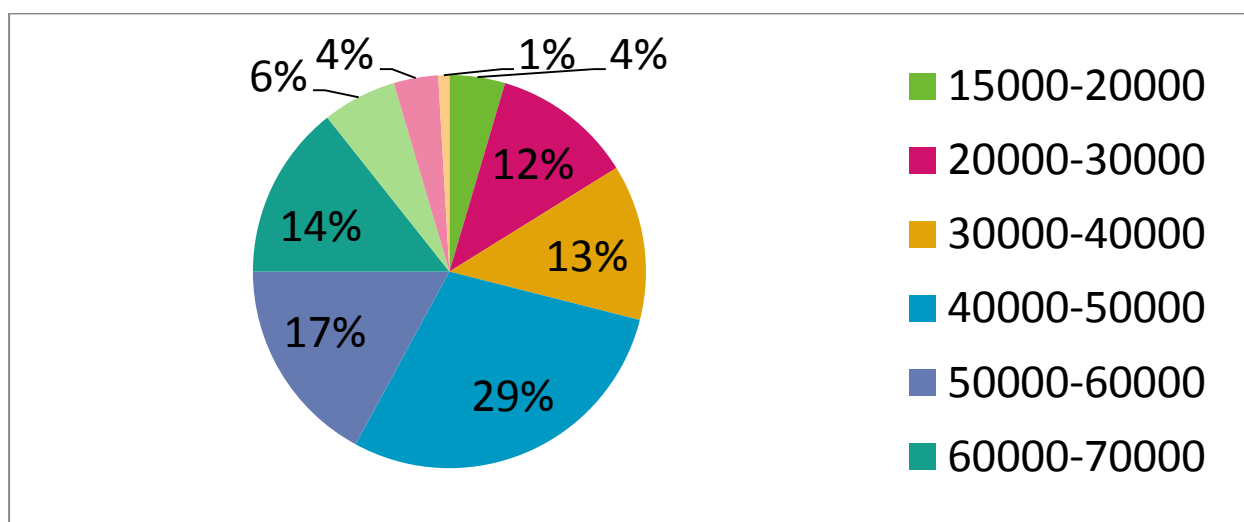
Sl. No.	Activities	Qty. / No.	Rupees
1	Wheat	2.5 quintal	5000
2	Rabi vegetables/pulses	5 quintal	10000
3	Green gram	2 quintal	12000
4	Summer vegetables	2 quintal	6000
5	Kharif Paddy	3 quintal	5000
6	Kharif vegetables	5 quintal	10000
7	Improve Goat farming	2	5000
TOTAL			53000/-

Farm Activity Details:

Sl. No	Season	No. Farmers of	Total Area (in acre)	Remarks
1.	Rabi 2019	328	129	Wheat, Maize, Mustard, Pulses, Vegetable (Tomato, Brinjal, Potato, chilli)
2.	Summer 2020	165	33	Green Gram, maize, Vegetables (ladies Finger, Smooth Gourd, Beans)
3	Kharif 2020	750	291	Paddy, Maize, Vegetables, (Bitter gourd, bottle ladies Finger, Chilli)
4.	Rabi 2020	750	331	Wheat, Maize, Mustard, Pulses, Vegetable (Tomato, Brinjal, Potato, chilli)

Additional income analysis 328 farmers:

Sl No	Income range	No of farmers
1	15000--20000	15
2	20000-30000	38
3	30000-40000	42
4	40000-50000	95
5	50000-60000	56
6	60000-70000	47
7	70000-80000	20
8	80000-100000	12
9	100000	3



- 70.71% of farmers got additional income of more than Rs 40000/-
- 41.81% of farmers got additional income of more than Rs 50000/-
- 10.51% of farmers got additional income of more than Rs 70000/-
- 28.8% of farmers got additional income in range of Rs 15000-Rs 40000/-
- Only 3 farmers could get additional income of more than Rs 100000/-

Mulching

Control Plot	Demo Plot	Water Saving
<ul style="list-style-type: none"> • Palewa irrigation is required pre sowing • 04 to 05 irrigations are given after sowing of wheat crop • 677.53 cum water is required for whole crop cycle of 1 acre 	<ul style="list-style-type: none"> • Paddy straw mulching i.e. live mulching before or after sowing of wheat requires less irrigation water in wheat • In extremely dry condition wheat integrated with mulching requires only three irrigations, at 15 days, 25 days at grain filling stage • 379.30 cum water is required for whole crop cycle of 1 acre 	<ul style="list-style-type: none"> • 298.23 cum water is saved for whole crop cycle of 1 acre • 44% water is saved
Process: Paddy straw is used to cover the empty space in between two lines of wheat. It is also done by leaving 10 inches of paddy stems from the ground and harvest the paddy crop. In this 10 inches paddy straw in the field wheat sowing is done through tractor drawn SRI seed drill. In plantation crops around the root upto 5 to 7 inches live mulch is done. In vegetable crops also mulching is done in between two rows.		

Kitchen Garden/Vegetable

Control Plot	Demo Plot	Water Saving
<ul style="list-style-type: none"> • More frequent irrigation is required • Weekly irrigation is required in most of the crops 	<ul style="list-style-type: none"> • Less frequent irrigation is required • Irrigation is required after 10 or 12 days or even at more longer duration because the natural fertilisers and pesticides enhances water holding capacity of the soil 	<ul style="list-style-type: none"> • 30% water is saved
<ul style="list-style-type: none"> • 62 trainee days (02 events) for 62 farmers on natural paddy and vegetable cultivation during kharif season • 157 trainee days (06 events) for 90 farmers on natural wheat and vegetable cultivation during rabi season • 11 farmers in 0.8625 acre have done demonstration of vegetable crop • 20 farmers in 0.375 acre have done demonstration of kitchen garden • Trainings of farmers on vegetable crop were given on water saving methodology like natural fertilisers and pesticides preparation, priming of seeds, seed treatment, mulching 		



Fig: Farmer preparing filed for kitchen garden



Fig: Kitchen Garden

SRI Plantation

Control Plot	Demo Plot	Water Saving
<ul style="list-style-type: none"> • More frequent irrigation is required • Weekly irrigation is required in initial stages and monthly in later stages 	<ul style="list-style-type: none"> • Once less amount of water i.e. one litre is required for long duration (10-15 years) plantation crops 	<ul style="list-style-type: none"> • SRI farmer will save 99.9% water while other will save 30% water
<p>Till now 36 farmers have planted fruit plants (Lemon, Papaya, Moringa, Plum, Custard apple) in 7.56 acre out of which one farmer has planted lemon tree with water saving SRI methodology while others have gone organic. 04 number of water saving plantation trainings with 41 farmers (123 trainee days) have been organised.</p>		



Fig: Farmer digging pit for plantation



Fig: Lemon Tree

Farmer Field School (FFS)

- 04 Farmer Field School (FFS) were organised on water saving methodologies like mulching, natural cultivation, Azola in paddy and vegetable crops at various crop stages
- Demonstration farmers shared his/her experiences with fellow farmers. The fellow farmers counted the tillers and found more tillers in water saving SRI methodology and non-use of external inputs like chemical fertilisers and pesticides.
- 89 trainees' day farmers participated in 04 events of farmers field school on water saving SRI practices



Fig: Farmer Field School being run at village

Farmers training on Improved crop and water management

- 08 Farmer training on Improved crop and water management were organised on water saving methodologies like mulching, natural cultivation, Azola in paddy, wheat and vegetable crops at various crop stages
- 219 farmers trainee days in 08 events for 90 farmers on water saving SRI practices

Farmers' Training on Organic Manure and Pesticides production and use

- 04 Farmer training on Organic Manure and Pesticides production and use were organised on water saving natural agricultural methodologies like mulching, natural cultivation, Azola in paddy and vegetable crops at various crop stages
- 96 farmers trainee days in 04 events on water saving SRI natural agricultural practices
- List of natural fertilisers prepared: Srijeewamrit, Srighanjeewamrit, Sripranamrit, Sribakramrit, Srigajramrit, Srisarvamrit, sriuplamrit
List of natural pesticides prepared: Srineemastra, Sriagneyastra, Srimatthastra, Sribeejamrit, srilohastra
List of organic fertilisers prepared: Vermicompost
- 10 farmers are practising natural farming
- Due to application of natural fertilisers and pesticides the water holding capacity, soil permeability and soil aeration of cultivable land is enhanced significantly. Soil bio-diversity, microbial population leading to mineralisation and recycling of nutrients is improved. Ecosystem of biotic and abiotic components is improved and congenial for better environment and global warming.



Fig: Farmers preparing natural fertilisers and insecticides

Urine collection structure

20 urine collection structures have been installed at different villages for urine collection to prepare different types of natural fertilisers and pesticides to be used for water saving agricultural methodology.



Fig: Urine collection centre

Identification and strengthening of CBOs/SHGs/FPOs

10 SHGs were strengthened and regularised. They were not functioning since one and half to two years. All these women groups have started their meetings regularly and the local Jeevika staff have taken over the responsibilities of these groups. Also we have created 03 water saving groups at different villages who are working and participating in water saving natural agricultural practices and also water conservation practices like soakpits and others.

Prepare Water Security Plan

Water security plan has been done at 10 places at different villages. During the water security plan following points were taken out by farmers:

- Construction of soak pits at household level and community level.
- Promoting community on judicious use of water during daily activities like bathing, washing utensils.
- Inclusion of climate resilient technologies in agriculture like mulching, natural farming.
- Promoting community not to have large number of borewells in a village.
- More effective method of irrigation like sprinkler, drip irrigation.
- Night irrigation.
- Aaahar repairing.
- Construction of water harvesting structures like Dobha, Pond.
- Desilting of Ponds, Aahar

Demonstration of desilting pond

After exploring existing individual and community ponds in project villages we discussed each of the ponds and how its benefit to the community around gradually came down. Size of ponds varied between 350 feet x 250 feet to 100 feet x 75 feet. All these ponds were heavily silted and water storage capacity of the pond were highly reduced. The residents around these ponds were not able to use water for domestic as well as agriculture purpose. After discussion with the village community, we finalised the ponds to be desilted.

Two ponds have been desilted by deploying JCB in excavating the ponds and silts from the ponds. Pond belongs to Sabalpur, Sagarpur and Kenari villages and on an average 3 feet depth silts were cleared from the ponds. The silts were taken to the fields and also used for strengthening of embankments of the ponds. Both these ponds are now filled with water. The farmers and residents of the villages around the pond are highly excited to see water stored in the pond.

These ponds in the coming time will recharge the borewells in the nearby area and enhance its water table in the ground. The farmers around the ponds will also use its water to irrigate their crops. A large number of similar ponds in project villages will enhance ground water table in the area. These ponds in coming future will also facilitate farmers for fish farming.



Fig: Desilting of Pond

Demonstration of Dry bore well recharge

The remote area of Gaya is rainfed and productivity of major food grain crop is low. It ranges between 1.5 to 2.5 ton/hect. By intervening in paddy the yield will be enhanced by 50 to 100%. The farmers in the rural areas of project villages are poor and after defunct of borewell done earlier by farmers they are not able to support the paddy crop for the lifesaving irrigation when Hathiya fails. Gaya is a rain shadow district of Bihar. The dry condition and erraticity of rainfall has become common in rural areas of Gaya. In varying climatic condition, the life blood food crop of poor community is also not getting ensured which leads to food insufficiency among poor and marginal communities.

After the revival of dry borewells in the area the farmers will be able to support the paddy crop with lifesaving irrigation and based upon the availability of irrigation water in the bore well. They will be able to provide irrigation to Rabi crops and summer crops also. From existing situation of 4 to 6 months of food grain

availability to the marginal farmers and share croppers, the increase in productivity from 2 tons to 5 to 6 tons per hectare will enhance food grain availability of the poor and marginal community to round the year.

Due to lockdown imposed by Govt. as a result of corona pandemic, Govt. stopped mobility of all kinds of construction and masonry work. They didn't allow the NGO workers to go to the villages. We completed the infrastructural work of recharging of dry borewell one in Sagarpur and other in Chornima village. These dry borewells so recharged will become viable in coming year after one to two rainy seasons. The coming out from these borewells will be used for domestic and agricultural purposes by the farmers and there will be minimum chance of again drying of borewell as there is a system in place which will keep recharging the borewell every rainy season. In the upper catchment of the borewell a small pit is created whose water is directed towards the recharge structure.



Fig: Dry Borewell Recharge

Training of Village Resource Person

Trainings of 63 farmers have been done on various types of water saving agricultural practices, among which 10 farmers were identified as village resource persons.

Farmers training on plantation and protection

Farmers training on plantation and protection was done four times among 41 farmers on how to plant fruit trees by SRI methodology of water saving and how to prevent plants from diseases and pests from natural methods. Also, training was given on how to protect plants from animals and wild animals without harming them.

Relief Work

After the onset of the COVID-19 wave pandemic and the lockdown at state level decided by the Bihar Govt. Food security, livelihoods, employment, and income of large portion of the common people in general and poor and marginal people in rural areas have got severely impacted across the country. The condition of Schedule caste communities in particular were highly pathetic. With more than 80 percent of India's working population in the informal sector, the lockdown has hit them the most. Among them most affected are the unskilled labourers, women headed households, landless farmers, physically and mentally challenged persons, migrant labourers, daily wage agricultural workers in villages and unorganized maids, rikshaw pullers, footpath vendors, migrant labourers in urban areas. With the threat of the pandemic becoming large, the living conditions of these persons have considerably worsened, due to lack of mobility and loss of access to essential provisions. These persons have been facing imminent hunger and destitution.

Gaya district of Bihar has large proportion of schedule castes including mahadalit. These persons in general and other destitutes such as physically and mentally challenged women headed households, landless, marginal holders in particular were in great problem. With the persons we were in constantly touch with them and always kept asking if any Govt. support on food and other items reached to them. We were highly concerned about the situation appearing in villages in general and poor and marginal communities in particular. In Bihar government was not allowing mobility and other support directly to the affected families. PRAN being known to top government officials and bureau crates, we approached them directly and shared the condition of poor and marginal communities affected by Corona pandemic. We distributed dry food packets and sanitary items among 20000 affected households.



Fig: Relief materials distribution



Fig: Awareness creation about health and corona pandemic

Second Chance Education and Vocational learning programme

The project was formally launched from 2nd of August 2019 and it covers four states i.e. Rajasthan, Bihar, Odisha and Maharashtra. In each of the states three districts are identified summing up to a total of 12 districts at the project level. It commits for delivering the following key results:

- 1. More marginalized women and young women access and benefit from high quality educational content, material and learning pathways.**

In education components of this project, we registered candidate under National Institute of Open Schooling (NIOS) curriculum and select five subjects according to candidate choice and get them ready for examination by giving proper guidance on course material of selected subject and regular assessment through assignment and test.

- 2. More marginalized women and young women benefit from increased employment, livelihood and entrepreneurial opportunities.**

In this project we engaged marginalized women in different training centre like DDUGKY, PMKVY and MATRIX in different trade across the India. Training duration of the selected trades like Sewing machine operator, Retail and sales and nursing is of different duration. After training on the selected trade candidates can start their own enterprise or will get placement in different private company. We mobilized total 182 candidates for training on different trade. The will go to training centre when covid-19 pandemic goes down. In farm and off farm enterprise, marketing of grains and mushroom were planned. For this we are leveraging inputs from Krishi vigyan Kendra, Gaya, Agriculture Technology Management Agency (ATMA), Gaya, Harvest plus, International rice research Institute (IRRI), and RSETI for demonstration of various crops. For the success of the project various improved technique of farming were incorporated such as System of Root Intensification (SRI) with various crops, Non pesticide management (NPM), Improved Goat Rearing practice and Mushroom cultivation.



Gender Sensitization training of
SCE participants and cadres



Women participants studying hindi
chapter on computer in women
empowerment hub

3. Establishment of women empowerment Hub

Women empowerment hub established with all basic amenities for the development of computer skills and other curricular activity which help the participants for the personal development. We established large number of computers so that they can easily access the computer and learn how to operate computer and Microsoft skill. Kolibari training were organised by United nation team for the implementing partner. In kolibari platform we can access a huge channel in which course material on different component were uploaded. United nation team gave training to our cadres how to access kolibari platform and how to create class. In empowerment hub all participants who registered in formal education visited once in a week and learn how to access NIOS course material on computer.

Chapter 7: Dissemination of SRI knowledge

PRAN participates in various kisan melas organised by department of agriculture and agricultural universities. It sends various materials on SRI in Hindi and English to various stakeholders including government and civil societies in state of Bihar and elsewhere in villages and block headquarters PRAN distributes various pamphlets relating to SRI method of crop cultivation and fertiliser and pesticides preparation. Various research institutes also get in touch with us and ask for SRI package of practices.

Field Day/ Kisan Gosthi/ District level dissemination workshop

We organized district level workshops at Bodhagaya on 21/01/2021 and on 29/12/2020. In the district level workshop in Bodhgaya the chief guest was Smt. Jyoti Devi, MLA, Barachatti, Gaya. Chief Guest was happy by talking to the farmers and knowing their experience in the field. The officials observed various fertilisers, pesticides, SRI implements, KIOSK displayed at the workshop. The SRI farmers shared their experiences of

doing SRI method of cultivation. Nearly 150 persons from villages participated in the workshop.

- 05 days kisan gosthis at different villages were organised on water saving agricultural practices
- 413 farmers participated in water saving fair i.e. kisan gosthi
- Farmers learnt water saving natural SRI practices in various crops like paddy, vegetables, plants benefiting demonstration farmers. All demonstration farmers shared their positive experiences on water saving agricultural practices. Awareness on water saving and high yielding practices got created among large number of farmers. The public representative like mukhiya and other govt. officials also participated in the gosthi. The importance of water saving was realised among participants in ongoing changing climatic situation.



Fig: Kisan Gosthi organised at different villages of Mohanpur and Bodhgaya block



Fig: District level workshop organised at Bodhgaya

Sri Vidhi Jhanki on Republic Day

Like every year this year also PRAN Jhankee on SRI Vidhi drew attention of ministers and officials on 26th January 2021 in Gandhi Maidan, Gaya. Addressing from the stage the honourable minister appreciated the SRI particularly in Paddy. Large number of women Village Resource Persons and PRAN workers along with farmers represented SRI Jhankee. Also our one of the SC Community's Kari Di learnt how to drive tractor and drove in Jhanki at Gaya which was attracting the spectator.



District Administration, GAYA
Photos from District Administration, GAYA's post in Mobile
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PRAN Jhankee on innovations and sustainable practices



Jhanki of PRAN at Gandhi Maidan, Gaya

Wall writings to bring awareness among communities

PRAN in its operational villages put wall writings on SRI and local fertilizers and pesticides being promoted among them. These wall writings on SRI principles and Indian Traditional Knowledge (ITK) products are drawing attention to rural communities and people passing by.

Wall writings have been done at 23 places in different villages. Wall writings have been done on various water saving natural agricultural products and practices to sensitize the local village community in general and small and marginal farmers in particular.

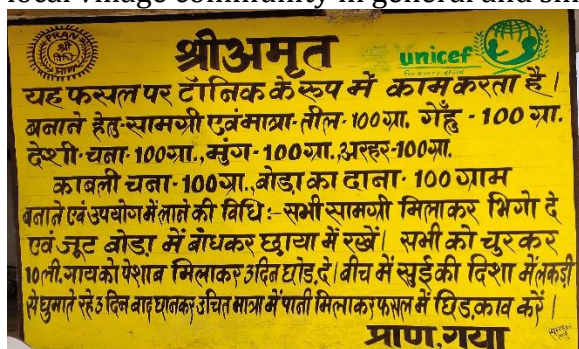


Fig: Wall Painting

SRI-stall in Bihar Agricultural University, Sabour, Bhagalpur

The Bihar Agricultural University, Sabour, Bhagalpur through its Director Extension invited PRAN to participate in Kisan Mela. Large number of farmers, officials and scientists interacted with women farmers on all innovations displayed by PRAN. PRAN won award for its good work.



Photo: Farmers Getting Details of Fertilisers and Equipment at Sabour Krishi Mela

Chapter 8: Visitors

- UNICEF Officials
- Deptt. Of Agriculture Cooperation, New Delhi
- Director of Rice Development, Patna
- National Food Security Mission official from Gaya
- PRADAN Representatives
- Honourable Smt. Jyoti Devi, MLA, Barachatti, Gaya
- U.N. Women official
- District Programme Officer, Gaya

Chapter 9: Review, Monitoring & Challenges faced

Review and Monitoring of the Ongoing SRI Project

In all the SRI clusters of Gaya district spread over 08 blocks weekly review and planning meetings were held on regular basis. In these meetings the respective skilled extension worker and village Resource Persons collectively review the ongoing SRI activities/organic manure in the SRI cluster. The weekly meeting in SRI cluster start with a SRI prayer and close with a SRI Song. The contents which are discussed are

- Respective crop status in the farmers' field
- interventions to improve the poorer status
- Diseases and pests if any in the fields
- Strengthening the existing SRI women groups
- Other issues concerning Village Resource persons and the farmers they are accountable for

Challenges faced

- Corona Pandemic
- Lockdown
- The dry and rain fed area
- Alternate year experiencing draught
- Highly infiltrated with leftist extremism
- Low Irrigation availability
- Changing climatic condition/unpredictable agricultural seasons
- High Fog fall during winter season/night temp falls low during winter
- Early westerly winds affect grain formation in wheat and other rabi crops

Chapter 10: Impact of our Interventions

The small and marginal households involved in SRI method of Paddy and Wheat cultivation are getting food grain security while families cultivating Paddy Wheat, Rapeseed and vegetables through SRI method are also getting cash income in addition to food security.

Getting influenced by our interventions Government of Bihar is spreading SRI method of Paddy all 38 districts through its agriculture department. The promotion of SWI through agriculture department has been closed down as it requires more labour during

sowing, govt says. The average productivity of Paddy in state of Bihar has gone up after introduction of SRI.

The PSP (Private Service Provider) model demonstrated by us under IRRAS-2 is being appreciated by the state government officials.

Chapter 11: Our Donors/Partners

- Azim Premji Philanthropic Initiative Ltd, Bangalore
- UNICEF, Patna, Bihar
- Agriculture Technology Management Agency(ATMA),Gaya
- District Agriculture Office, Gaya
- United Nation Women through PRADAN
- United Way, Bengaluru

Chapter 12: Board of Trustees

Name	Designation	Profile
Mr. Vijoy Prakash	Chairperson	Ex Agriculture Production Commissioner, Government of Bihar, Patna. Vast experience of managing government department as various capacities. He lead the formation of Child labour act in Bihar.
Dr. B. C. Barah	Trustee	Dr. B. C. Barah is NABARD Chair Professor at Indian Agricultural Research Institute, New Delhi. He was a principal scientist (economics) at NCAP, India leading the theme area of Agricultural Growth, Adjustment and Outlook.
Dr. M. V. Ashok Methil	Trustee	Chief General Manager (NABARD) since 2009, and currently heading the Department of Economic Analysis & Research at NABARD HO Mumbai. Currently serving as a Member on the Board of Agricultural Finance Corporation (AFC Ltd.)
Mr. Niraj Kumar Verma	Trustee	Mr Niraj Kumar Verma is associated with ATMA, Gaya as Deputy Project Director
Mr. Anil Kumar Verma	Managing Trustee	Mr. Anil Kumar Verma is the Chief Functionary of PRAN. He set up the Gaya project of PRADAN, which later was spun off from PRADAN and has founded the new organisation PRAN.
Mr Pramodh Gorain	Staff Nominee	Mr Pramodh Gorain is Project Manager in PRAN

Chapter 13: Audit Report FY 2020-21





***Jharkhand Office -
PRAN Office
Simdega (Jharkhand)***

Head Offices



Preservation and Proliferation of
Rural Resources and Nature

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