

Annual Project Update:

ICCO-SODI PPVCD PROJECT

Project Title: *Strengthening value chain of pigeon pea in three districts of south Odisha.*

Project Number: 71-01-03-045

Period of reporting: From 1st April 2013 to 31st December - 2013

Date	10 th January, 2014
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Project/ Programmatic Cooperation	Strengthening value chain of pigeon pea in three tribal districts of south Odisha,
Organization	Madhyam Foundation on behalf of SODI partner Organizations
Country of implementation	India
Project Nr.	71-01-03-045
Period covered	1 st April 2013 to 31 st December - 2013
1	Context of the project or program
<p>South Odisha Development Initiative (SODI) is a consortium of seven development organizations working in south Odisha which came into being in 2009 – 2010. Pradan, Harsha Trust, RCDC, Madhyam Foundation, Pragati, OPDSC and Chetna Organic Farmers association (FFID) are the present partners of SODI. The main objective of SODI is to establish a model of collectively working together in 10 districts of South Odisha, while improving the socio-economic well being of the poor & marginalized community, specially the tribals. Madhyam Foundation of Bhubaneswar, Odisha has been co-ordinating the activities of SoDI as its convener.</p> <p>10 out of 30 districts of Odisha are falling under Eastern Ghat and Southern Highland region. In terms of ecological vulnerability and indices of poverty, all the CD blocks in these 10 districts are backward (Ghadei Comomission report - 1994).</p> <p>ICCO& Kerk in Actie, The Netherlands, gave a grant of Euro 8,953.70 (Rupees 4,89,500) to SODI through Madhyam Foundation (Project No: 71-01-03-040) on 17th June, 2010 to facilitate a series of consultations among the SODI members, commission a contextual study of South Odisha and</p>	

organize a strategy building workshop, to be attended by ICCO representatives. The main purpose of this whole exercise was to identify the development issues in South Odisha, examine relevance and strategic space of SODI and to finalize an intervention plan. During the strategy building workshop held on 23rd April, 2011 and attended by ICCO representatives, a consensus was arrived to undertake a 2 year pilot project on strengthening value chain in pigeon pea in selected 3 districts of South Odisha.

Subsequently, ICCO & Kerk in Actie sanctioned Euro 1,20,000 for 2 years starting from 1st of October,2011 to SODI net work through Madhyam Foundation .Now the project has completed its 2nd year of implementation.

District wise coverage under different pulse crops:

(A: Area is in 000ha, Y: Yield in Kg/ha),

	Green gram						Black gram						Pigeon Pea	
	KHARIF		RABI		TOTAL		KHARIF		RABI		TOTAL		KHARIFF	
	A	Y	A	Y	A	Y	A	Y	A	Y	A	Y	A	Y
Koraput	0.56	250	1	260	1.56	256	3.76	250	1.01	250	4.77	249	5.6	725
Rayagada	2	210	1.71	250	3.71	229	6.43	270	4.82	350	11.3	305	17	929
Odisha	227	372	513	407	740	396	277	382	321	428	597	407	133	803

There was immense potential to expand the cultivation of pulse crops in the area because of the availability of large chunk of suitable uplands. Average land holding is 1.5 ha, of which around 1ha is upland. In many places farmers cultivate paddy, millets, pigeon pea, etc in these uplands and the yields are quite low. These lands face severe crop loss due to erratic rains. The soil depth is low and has low fertility. Almost all the uplands are acidic in nature that affects the plant growth. So low nutrient consuming, drought tolerant and deep-rooted crops like pigeon pea was a suitable option for these lands.

Farmers' preference for pigeon pea:

- As farmers prefer Arhar dal in their diet it is mainly grown for consumption purpose.
- This is preferred as the cost of cultivation is low.
- Its stem leaves and hulls are used as fuel.
- This is a rich source of protein.

Pigeon pea is also cultivated as an inter-crop with paddy, cotton, maize, etc. It is now introduced with other crops like millets, Black gram, Cow pea, turmeric etc. Landless families also grow this crop in the encroached sloping lands below the hills. It enhances the soil health by nitrogen fixation. Fallen leaves of the plant also increase organic content of the soil. Most of the lands are rain fed up lands and farmers are dependent on monsoon for their agriculture activities.

Important Changes/ Progress made so far: The project is focused on value chain development of pigeon pea through improved technical and input support to farmers and promotion and strengthening of institutions to organize the farmers for collective action.

At this point of time SODI in partnership with ICCO cooperation is working in 3 districts of south Odisha. The outreach for the current year is as below:

Outreach				Total Farmers covered		Total	Area under pigeon pea (Ac)	Total capacity building program held in numbers
SI #	Name of PNGOs	Block	No. of Villages	Male	Female			
1	Chetana Organic Farmers Association (FFID)	Ambadila	22	00	512	512	250	14
2	RCDC	K.Singpur	12	00	530	530	445	8
3	PRAGATI	Koraput	19	198	187	385	385	20
4	HARSHA TRUST	Bisam Cuttack	28	111	309	420	375	13
5	PRADAN	Kolanara	65	-	577	577	375	28
6	OPDSC	K.Singpur	12	114	456	570	544	5
Total			158	423	2571	2994	2374	88

Against the target of 3000 farmers/2250 acres 2994 farmers/2374 acres could be covered

SPECIAL CHANGES IN POP COMPARISON TO LAST YEAR

SI#	Name of PNGOs	Attributes
1	Chetana Organic Farmers Association	Area under line transplanting increased, transplanting method demonstrated, topping done everywhere, inter cropping area increased
2	RCDC	Seed treatment, transplanting, organic manure application increased
3	PRAGATI	Line sowing is perfect, bio fertilizer application, proper weeding and topping, inter cropping area increased
4	HARSHA TRUST	Inter cropping area increase, pest control done well ahead. Biozime applied
5	PRADAN	Area of inter cropping increased, bio fertilizer application and proper weeding and topping done at proper time
6	OPDSC	Topping, weeding, intercropping, bio fertilizer application and pest control well ahead

Capacity enhancement of SODI member staffs and PO representatives is of primary focus of the consortium. Various programs have been designed for different stakeholders at different levels. A total of 88 capacity building programs have been organized during the reporting period.

Programme Output delivery:

As per the indicator, 6 larger producer organisations were identified by 6 PNGOs to implement the program. The project concept and budget has been shared with the PNGOs, POs and farmers as well. Regular meetings have been organized with POs for concept seeding and sharing project

interventions. The details of the output delivery as per the pre fixed indicators are described below.

Activities at consortium level:

- 1. ICCO-SODI Project partners meetings:** Regular SODI partners' bi-monthly meeting has been organized to review the project activities and plan for the next month. So far 5 partners meetings have been organized during the reporting period.
- 2. Capacity building initiative:** 2 central level trainings have been conducted for enhancing the capacity of SODI-ICCO pigeon pea project staffs. The first one was regarding learning consolidation on development of value chain in pigeon pea and another was its follow up for documenting the best practices and developing area specific PoP. All the above trainings were organized at Rayagada. .
- 3. Capacity building need assessment of the POs :** A capacity building mapping and need assessment has been made for the POs by the SODI network. It is in final form and will be implemented by the consortium members in subsequent years.
- 4. Peer learning strategy:** A strategy paper on peer learning among SODI partners, across POs and CBOs have been evolved and finalized by the SODI consortium members. Some of the major areas of expertise of SODI partners were listed out and considered for replication through the process of learning.
- 5. On field technical support by experts during crop growth cycle:**

Apart from regular supervision by the project staffs, on farm technical support was given through direct field visit by the project experts during the critical growth stages. The purpose was to provide on farm trouble shooting support to the farmers practising organic farming in pigeon pea. This initiative could be able to minimize the most harmful blister beetle and aphid attack to the pigeon pea crop.

- 6. Procurement Plan for PP:** A joint visit to Gulberga, Karnatak has been made by SODI members. The experience and findings of the visit was shared in the SODI partners' bimonthly meeting. It was seen that after all sorts of value addition farmers will be able to get Re. 1/- over the current price which is very marginal. The procurement price of local PP was Rs.30/- during harvesting time, which increases subsequently. After processing the finished product, the cost of production comes to around Rs. 57/- per Kg which is Re.1 less than the price prevailing at Gulberga. It was decided to sell the value added products in the local market to fetch better price.

Different organizations have different marketing experiences. All the marketing initiatives and experiences of the PNGOs in this regard was consolidated and recorded for future reference.

Activities at partners' level:

- 1. POs profit loss account:** All the PNGOs have facilitated preparing the profit loss account of the POs for the last year. This was mandatory for those who are working with the Producer Cooperatives. Those working with CBOs like SHGs and FGs were asked to prepare and share a profit loss account for the above period, at least for one CBO implementing the project. In case the CBOs are not involved in collective marketing, the total income from the

yield of PP by the farmer members will be taken in to account to calculate the profit-loss of the CBO as a whole. As the current year crop is in harvesting stage, it will be done in next couple of months.

2. Yield measurement exercise :

A variety wise yield measurement exercise has been conducted in the field of the PNGOs with the technical guidance of Mr. Sabhapati Khadenga, Agriculture Expert. It was observed that the yield varies from 2.96 to 5.8 Qtls per acre under standard package of practices which is very satisfactory from rain fed Odisha context (The average yield of pigeon pea crop in Odisha is 2.0-2.5 Q/Ac). The plots have been selected randomly by random sampling process. It was observed that the farmers those have followed the standard PoP under organic farming practices have got better yield than conventional farming practices under similar soil and climatic condition. Again local varieties have performed well than ever before under organic farming practices. SODI consortium shared the consolidated report to all SODI partners along with photographs.

3. The introduction of electronic weighing machine at village level helped a lot to the farmers in measuring the actual weight of their produces before taking to the market. The possibility of exploitation of the farmers by the local traders have been reduced to a considerable amount due to this small intervention.
4. Emphasis was given on post harvest handling, grading, sorting up to marketing of the pigeon pea crop. As storage grain pests play a major role during post harvest period, training on post harvest handling of the crop has been organised at village level. The shelf life of the produce has increased by this initiative.

Major Challenges :

- Traders play monopoly in pricing of the produces in South Odisha. They have their own collection agents in almost all locations. Elimination of these local middlemen is not practically possible. However collective marketing of the products of PP crop is one of the measures to keep away the local agents. This is the major challenge ahead which in fact is not yet achieved for 100% of the produces.
- Replacing cotton, the major commercial crop of Rayagada district is the major challenges in front of all the PNGOs working in the district.
- Pest attack during the flowering stage, especially during the current year, needed to pay a special attention as most of the crops are grown organically and there was hardly any approved method for organic pest control in PP crop .
- Line sowing with proper spacing will need special attention in subsequent years after the project period as broadcasting is the age old practice in PP crop.
- Manure application to PP crop is not in practice. Under organic farming practices, the farmers have to adopt a PoP which needs organic manure application.
- Shifting a cotton based farming practice to pigeon pea based cropping pattern will take time.

Development in relation to multi stakeholder approach:

SODI as a consortium has made convergence with various govt. organisations and research institutes for sustainability of the program.

1. Convergence made with CTCRI (Central Tuber Crop Research Institute) Bhubaneswar. For promotion of tuber crops among 82 pigeon pea farmers by promoting crops like yam, elephant foot yam, yam bean, sweet potato, colocassia for increasing food diversity of the tribal farmers. Technical and on farm support as well as planting materials were provided by CTCRI.
2. SODI has been sanctioned a project under MKSP of National Rural Livelihood Mission, Govt of India worth of INR 18,55,00,000.00 for a period of 3 years. This project, along with other deliverables, aims to promote cultivation of pulses including pigeon pea among 7500 tribal households in existing four districts of south Odisha.

2 Progress Monitoring Protocol

Progress with respect to Results/ Milestones agreed upon :

Results/ Milestones agreed up on	Units Planned/year	Achievements	Remarks
A. Result-1. No of emerging POs supported towards profitability/ sustainability/ gender sensitivity	6/ 2013	6	Achieved as per agreement
Annual gender sensitive assessment of capacities of POs including assessing gaps between current and desired capacities and a capacity building plan to address these specific gaps	6/2012	One Capacity building need assessment and CB plan for all POs have been prepared and to be revised once in 3 years	Accordingly a book keeping training for each PO has been planned and implemented in the PP Extension project
Annual profit-loss statement of POs are made by their leadership and shared with the respective NGO	6/2012	6	Annual Balance sheet prepared and shared with respective NGOs
Result-2. No of POs that has an up to date business plan and MIS	6/2013	6	MIS designed and currently implemented but Business Plans are yet to be finalized
POs are trained on business	6/2012	NIL	No training on preparing

skills and making a basic business plan for their organization			business plan has been organized,
B. Number of small producers have improved their income (Gender segregated)	3000/2013	2994(M-423, F-2571)	The actual margin of income enhancement is yet to be calculated for the current year as the crop is now in harvesting stage .
Partners collect gender specific data on outreach	6/2012	6	All the data collected from the partners are gender segregated

Monitoring protocol:

All the partner organizations of ICCO-SODI are implementing the program through their existing CBOs. The natures of the CBOs are somewhat diversified though they are altogether called as Producer Organizations (POs). Chetana Organic Farmers' Association and RCDC through farmers' cooperatives, PRADAN and OPDSC through women SHGs, Pragati through farmer clubs and Harsha Trust through Both SHGs and Farmer Clubs. Against the target of 3000 farmers/2250 acres 2994 farmers (423 male and 2571 women farmers)/2374 acres could be covered at the 2nd year of intervention.

In SODI network, monitoring is done for three major aspects of the program-

1. Crop husbandry aspect (technical aspect)
 2. Process monitoring for organizational development(CBO strengthening)
 3. Financial management aspect.
1. All the partner organizations are having Community Service Providers (CSPs) and professionals at grassroots level. They are directly working with close contact of the community. Each community service provider caters the need of around 50-100 households. They are trained local persons. The service provider visits each farmer in each alternative day and the professional in four days interval. The CSP maintains the records regarding details of the farmer, different stages of the crop and also keep a vigilant eye on the crop situation. In case any problem in the crop field or the CBO, he immediately report to the concerned professionals/field supervisors/ field coordinators (different designations used by different partner organizations).

The planning and implementation is directly taken care of by the professionals/ field coordinators in consultation of the PO representatives and of course as per the action plan developed at SODI network level. Professionals/ field coordinator reports to the team leader/ Project coordinator at weekly interval regarding crop condition in the field. He also plans for training and capacity building of farmers and CBOs after consultation with the POs representatives. As the POs are the actual grass roots implementing partner, all the support and inputs flow are being coordinated through these institutions. They share the information to the team/management through the service provider and professional and vice-versa.

In case of any emergency that need technical expertise, SODI network engages technical expert to provide on farm technical support to the farmers at his doorstep.

2. For process monitoring, all the partner organizations conduct monthly Planning and review meetings for the POs & project core team. Apart from regular field visits, the project management core team also plan for conducting trainings and exposure visits for skill up gradation of the PO representatives and farmers. The net work level consultation and review held during the bimonthly SODI partners meeting. The information then flows to the SODI net work level with all relevance at bimonthly interval.
3. For the financial monitoring of the POs, monthly GB meetings are conduct where the all the income and expenditure for the last month get formally approved. They also plan for the upcoming month. Financial review and monitoring at organizational level (Partner NGO level)/network level is done at bimonthly interval with an interim stock taking in the mid way.

3 What went well and what didn't

The SODI members have a wide range of experiences and cases where ideas disseminated in the fields resulted positive. Almost all the PNGOs have introduced organic farming practices in pigeon pea and seed treatment which was not in common practice of the tribal farmers. Intercropping, mixed cropping and trap cropping practised taking pigeon pea as the major crop .Introduction of electronic weighing machine not only helped pp farmers to measure their produces accurately, but also helped other farmers to measure all their produces before taking to the market. (Generally farmers take their produces to the market by volumetric assessment and sale the produces to the middle men in whole some, which usually incurs loss to them). One of the cases is attached for reference.

The partner wise innovations consolidated for learning purpose are as follows:

Pradan:

- Pradan introduced cycle wheel hoe for weeding in the dry pp fields where other weeders do not perform well.
- Used air tight bags for safe storage of seeds keeping away the store grain pests.
- The practice of broadcasting shifted to line sowing by continuous effort of the extension workers.
- Selection of suitable variety and seed lot for planting.
- Seed treatment in organic methods.
- Intercropping with vegetables, field crops and plantation crops with proper spacing as per the findings of learning consolidation workshop.
- Nipping at suitable height for profuse branching.
- 3 spraying at flowering stage reduced the pest attack.
- While going for pp crop in newly developed crop land, most of the tribal farmers could be able to identify and recognize their lands after a long period. Unless the lands must be fallen fallow

for years as usual treating it as unproductive waste land.

RCDC:

- Use of weighing balance to measure all the crops including vegetables.
- Nipping of pp crop at suitable height to increase the yield.
- Some of the farmers prepared dal out of local pp crop by frying and crushing for domestic use and also sold in good price.
- Application of SRI principles in pp crop.
- 4-5 quintals of PP sold for seed purpose by which they earned up to Rs. 18000/-.

OPDSC:

- Intercropping PP in almost all upland crops including millets, paddy, eucalyptus, ground nuts and many other crops.
- Line transplanting in millet fields
- Manure application in pp crop, which is not the usual practices of the farmers of the area.
- Alteration and change in spacing in pp crop and intercrops for better crop performance.
- Developed an attitude of space management among pp farmers. They utilized the open spaces and the field bunds for maximizing the net cropping area.
- Cotton intercropped in pp and pp intercropped in cotton for trapping the harmful pests.

FFID (COFA):

- Introduction of pheromone traps for detection on the most harmful pests of PP, i. e. *Heliothis armigera*.
- A varietal suitability research in pp crop carried out by COFA taking 12 local and improved pp varieties into consideration. This inferred that two varieties, namely BRG-1 and BRG-2 are suitable for Kalahandi and Rayagada.
- Sucking bug control by spraying of neem oil and chilli garlic extract gave better result.
- Local pp (Kandula) is a mixed variety of bold and medium bold varieties. By segregating the varieties before harvesting the crop according to the seed size and then marketing fetched good price in the market.

Harsha Trust:

- The age old practice was to cultivate pp for subsistence farming. For the first time the farmers took pigeon pea as commercial crop.
- 90% of the crop in intercropping in ground nut and vegetables
- Collective marketing of the produces gave a premium of at least Rs. 2-5 per Kg.
- PP as a sole crop practised in many fields gave good result

Pragati:

- PP has been reintroduced in the villages where farmers have already been shifted to other crops.

- PP intercropped in mango, vegetables, millets, paddy and even field bunds for proper space management.
- By introduction of weighing machine all the produces are now being weighed before taking to market.

In general, practices of seed selection from the own lot of seeds of the farmers have been encouraged by all of our partners. The farmers are trained on seed selection and treatment in organic way without using any hazardous chemicals.

Pragati, one of the SODI partner, has prepared video on seed treatment and pest control of pigeon pea which has been disseminated among the POs those have done pigeon pea cultivation. This added value to the training aspect and reduced cost and time for orientation of farmers as they could see and learn in their local language.

4 Lessons learned

On crop husbandry and technical issues:

- Nipping at certain height of pigeon pea plant encourages profuse branching and thereby increasing yield.
- Air tight bags and containers when used for storage of pp seeds and grains, there is minimum risk of infestation of store grain pests.
- Raising seedlings in poly pots and transplanting PP adopting SRI principles give better result.
- Cycle wheel hoe works well in dry land for weeding crop fields.
- Gaji Kandula, a medium sized local PP variety has much demand in the market and also preferred by the farmers.
- Neem oil spray is sufficient measure for sucking bug control.
- PP can be intercropped/ mixed cropped with almost all crops in upland situation.
- BRG-1 and BRG-2 are the most promising varieties in Odisha condition out of the 12 popular varieties tested so far.
- Cotton and ladies finger can be used as trap crop for fruit borers in the pp fields and vice versa.
- Pheromone traps are suitable for detecting Heliothis attack in pp fields.
- The best combination of intercrop in pigeon pea is with 6 lines of ground nut.
- Spacing 6x3, 5x3 and 4x3 are recommended for pp as sole and intercrop (Gaji Kandula).
- 3 sprayings at 15 days interval during pre flowering, flowering and post flowering stage reduces the attack of pod borers.
- Productivity of pigeon pea is directly proportional to the climate during flowering/pod development stage.

On Marketing Issues:

- Collective marketing is the only way to minimize the exploitation by the market leaders of PP.
- Instant selling of PP crop after harvest fetches lesser income to the farmers due to lower market prices. Keeping the produce for about 2 months after harvest and then selling fetches better price in the market.
- Weight measurement in the electronic weighing balance reduces weight loss due to exploitation by local traders.

Social Issues:

Regular and periodical meetings of POs not only address the food security / livelihood issues of the farmers, but also to many of the social and contextual issues related to wealthy living. This also strengthens the social bund among the farmers.

5 Gender and the Rights Based Approach

Since inception, SODI net work has been giving emphasis on valued participation and contribution of women in the program. Basically we selected the beneficiaries who belong to institutions like women SHGs, Women self help cooperatives, UVS, Farmers' Clubs etc. The majority of our beneficiaries are women. Out of the total 2994 farmers, 2571 are women farmers in our program. Through the program women are more involved in preparation and use of organic manures, execution of standard PoP, plant protection measures , post harvest crop management and marketing.

We focus on strengthening and capacity building of women through training, exposure, cross learning avenues and ensure the active participation of women during planning, implementation and monitoring. Most of our CSPs are women. They are very comfortable in interacting with women farmers and reporting to the project management team. Most of the office bearers of the cooperative are women. There is a specific agenda for creating awareness about Government social welfare schemes (NMB Scheme, AAY, food security schemes, old age and widow pension schemes etc), RTI, FRA and MNREGS among them during periodical meetings. This year, almost all of our women members participated in the Pallisabha and Gramsabha meetings for preparation of their village development action plan.

Program Photographs:



Training and follow up on organic manure preparation...



Present crop status