

A Brief Report on
Advanced and Scientific Approach towards
Vegetable Farming as a Viable Income
Generating Option for Farmers
(Phase-I)



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Summary

This report is consolidated document of pilot project on **Advanced and Scientific Approach towards Vegetable Farming** intervention and its immediate economic benefits obtained by the farmers. It includes a methodology applied for program implementation and the results of the intervention in the form of economic impact. It explains the processes of identifying the beneficiaries, the ways and means of farmers engagement in the intervention. In addition, it provides an understanding of the various aspect of economic impact through this intervention on the beneficiaries. Finally, it explains the recommendation from the field and the farmers to strengthen the upcoming strategies.

Introduction

This initiative aiming to improve the livelihood of small scale and marginal farmers involved in paddy cultivation and having irrigation facility in selected areas of Kurkheda, Wadsa and Armory Block. This was achieved by introducing a scientific vegetable farming model, applying improved Package of Practices (PoP), and strengthening their traditional methods. Project beneficiaries are paddy farmers across three blocks. The project had strong pro poor and participatory features and directly benefited 20 households (many of them male-driven families). Indirect benefit accrued to the wider community in target with a total population of about 800-1000 and beyond.

Rationale of the project

Vegetable farming using advance PoP and intensive land management targeted at 20 paddy farmers in Northern and Central talukas of Gadchiroli to address vegetable demand in local market. STRC facilitated farmers with best PoP and Good Agricultural Practices (GAP) to improve the quality and production of vegetables thereby improving their overall livelihood. At first, approximately, 20 farmers are targeted to access advance vegetable farming.

Unlike livestock, vegetable farming remains an underdeveloped sector in Maharashtra especially in context of Gadchiroli despite favourable conditions in Armory, Wadsa and Kurkheda blocks. In line with the Government of Maharashtra policy to diversify the economy and lessen the disproportionate dependence on livestock recent years, agriculture including smallholder vegetable farming has become a priority. Within agriculture more broadly conceived, investments in vegetable farming and marketing are considered particularly promising in improving the well-being of local farmers.

Gradually creating alternatives to collectivized agriculture, Gadchiroli has made strides to become self-sufficient in paddy, but until now, vegetable farming has received less attention and remains underdeveloped and inefficient. The demand for good quality locally grown fresh produce/vegetables is on the rise. In the absence of adequate post-harvest and storage facilities, local producers cannot benefit from the higher off-season prices and a large share of domestic demand is filled by imports.

Objectives

- To introduce crop diversification in Gadchiroli district.
- To provide opportunity of additional income to the farmer.
- To introduce advance agriculture practices, tools & Techniques to local farmers.

Methodology:

This project was designed based on a need analysis in the paddy dominated areas of the Northern Gadchiroli blocks. Informal small-scale field and desk surveys were conducted to characterize farmers cropping/farming systems, vegetable varietal diversity, vegetable demand in the market as well as off-seasonal vegetable suitable to the local climate, and to relate these to farmers' vegetable varietal preferences.

The key challenge is to introduce vegetable farming to the paddy farmers who never been cultivated the vegetable even the irrigation system is available at their farms. A method of Focused Group Discussion (FGD's) used to engage and to create awareness about multi-cropping amongst the farmers. Team had set criteria for selection the beneficiaries for this initiative. Basic information (name, previous cropping pattern, land holding, availability of resources etc.) was collected from male heads of separate households who are previously involved in paddy farming.

Team have adapted following methodology to achieve the goals and the objectives:

a) Geography Selection

Geography selection was done on the basis of STRC's previous on-going interventions in particular area. Also, the geography where STRC's field staffs were easily accessible. Our aim to select the particular geography was to easily access to that place at the time of monitoring and the local market also accessible to sell vegetable produce in satisfactory rates.

On the basis of these criteria's, we have selected the three blocks from the north Gadchiroli region name are as follows:

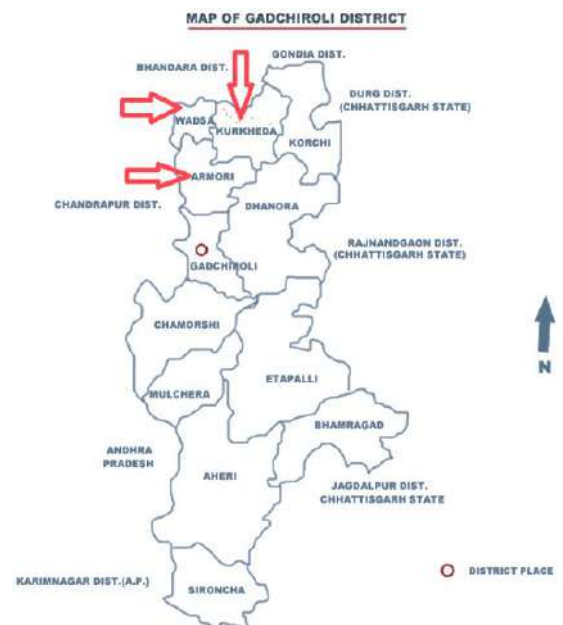
1. Armori
2. Wadsa
3. Kurkheda

b) Model Demonstration Unit (MDU) Sessions



Mobile Demonstration Unit (MDU) act as Information Disseminating Platform in this intervention. Before going for farmers identification and selection team had interacted with the villagers through this platform. Team were collected overall information about village, resources available, farmers dominant categories etc.

MDU sessions help farmers to get exact information about intervention and the



where STRC plays role in the intervention. About 8 MDU sessions were carried out during the intervention to engage farmers in the intervention. On the basis of no. of the interested farmers during MDU session, team have conducted FGD at eight different places. During the Focused Group Discussion farmers were informed and instructed about terms and conditions along with the selection criteria.

c) Farmers Identification & Selection

Farmers were selected based on the criteria for farmers selection, before going to select individual farmers, STRC have conducted FGD's and MDU session in the selected blocks/talukas. The farmers interest was the prime criteria in the selection. Following the detailed criteria of farmer's selection:



- To get benefit of this intervention farmers should have his own productive land.
- Farmer's land should be easily accessible to the visitors.
- Farmer must have sufficient land resource, basic farm equipment, and irrigation facility.
- Farmers must have interest in the intervention and willing to give his time and efforts in the intervention.

On the basis of these criteria following list of farmers were selected in the intervention

S.N.	Farmers Name	Village Name	Block Name
1.	Shri. Santosh Sahala	Dhamditola	Kurkheda
2.	Shri. Dharmu Uikey	Dhamditola	Kurkheda
3.	Shri. Kisanlal Sahala	Dhamditola	Kurkheda
4.	Shri. Premdas Pandhare	Dhamditola	Kurkheda
5.	Shri. Yuvraj Kapuderia	Dhamditola	Kurkheda
6.	Shri. Anand Sadar	Dhamditola	Kurkheda
7.	Shri. Rangnath Banjare	Dhamditola	Kurkheda
8.	Shri. Rushi Sonkusare	Talegaon	Kurkheda
9.	Shri. Raju Gayakwad	Talegaon	Kurkheda
10.	Shri. Moreshwar Sahare	Nanhi	Kurkheda
11.	Shri. Gokuldas Mungmole	Nanhi	Kurkheda
12.	Shri. Dulchand Janbandhu	Jamburkheda	Kurkheda
13.	Shri. Atmaram Nandeshwar	Jamburkheda	Kurkheda
14.	Shri. Digambar Nakade	Andhali	Kurkheda
15.	Shri. Bhagyavan Lade	Andhali	Kurkheda
16.	Shri. Mukhru Bambole	Kitali	Armori
17.	Shri. Kshirsagar Randive	Potgaon	Wadsa
18.	Shri. Purshottam Randive	Potgaon	Wadsa
19.	Shri. Sunil Barsagade	Suryadongari	Armori
20.	Shri. Arun Lingayat	Kitali	Armori

d) Input Distribution

After selection and finalization of farmers from all the locations team distributed the Inputs (Vegetable Seeds) to the all farmers. During the distribution, team gave the information about seed treatment and the other problems were discussed. All farmers were present during the distribution and they were inquired about their queries about the seed sowing and other problems. The seeds of Five commodities were provided for cultivation are Brinjal, Chilly, Bitter Gourd, Ridge Gourd & beans.



Per Farmer input:

S.N.	Commodity Name	Quantity	Rate	Total Amount
1.	Brinjal	25 gm	500/-	500/-
2.	Chilly	10 gm	380/-	380/-
3.	Bitter Gourd	50 gm	800/-	800/-
4.	Ridge Gourd	50 gm	380/-	380/-
5.	Beans	50 gm	350/-	350/-
Total input cost per farmer				2,410/-

e) On-Field Training



As few of the farmers were from the Saguna Rice Technique (SRT) intervention, team have advised them to used same beds for the cultivation of vegetables. Other farmers were introduced to on-field training where they got know about the land preparation and the seed sowing operations. The on-field demonstrations were back up by the MDU AV aids which helps the farmer for better understanding about the operations.

f) Package of Practice

After Farmers being selected team introduces the Package of Practice (PoP) to the farmers.

Team distributed the printed package of practices which will be support them after the training anytime they need. The PoP document was drafted in such way that the farmers would know the each and every aspects of the vegetable farming such as land preparation, seed treatment, seed sowing, integrated



pest management, preparation of organic nutrients etc. The detailed PoP is attached as annexure to this report.

g) Monitoring

After seed sowing, team had instructed LRP's to monitor the intervention farmers site for regular follow-up. Program team visits the intervention site twice/thrice a month during the period of vegetable farming. Routine monitoring visits for LRP's occurred one or more times during the week after the intervention Initiation. Guidelines for scheduling monitoring visits of Local Resource Persons was determined according to the stages of development and other factors such as pest management and nutrient supply.

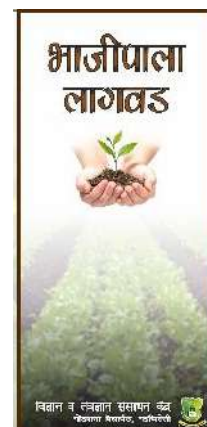


h) Data Collection and Compilation

After the one month of seed sowing team distributed the produce harvesting and marketing monitoring formats to the LRP's. LRP's have gathered the real time data of produce harvested along with date of harvesting, produce quantity and the market price at same time. After month end, LRP's regularly submitted the field data which was regularly compiled and analysed by the Junior Scientific Officer (MIS).

6. Tools & Technologies introduced

During the intervention period, team have introduced small tools for the intercrop operations and the Package of Practice (PoP) for Vegetable Farming. Small tools can benefit the farmer to reduce their drudgery and the labour cost which will ultimately help them to overall input cost reduction. The well designed and verified Package of Practice for Vegetable Farming was introduced which helps the farmers in absence of our team.

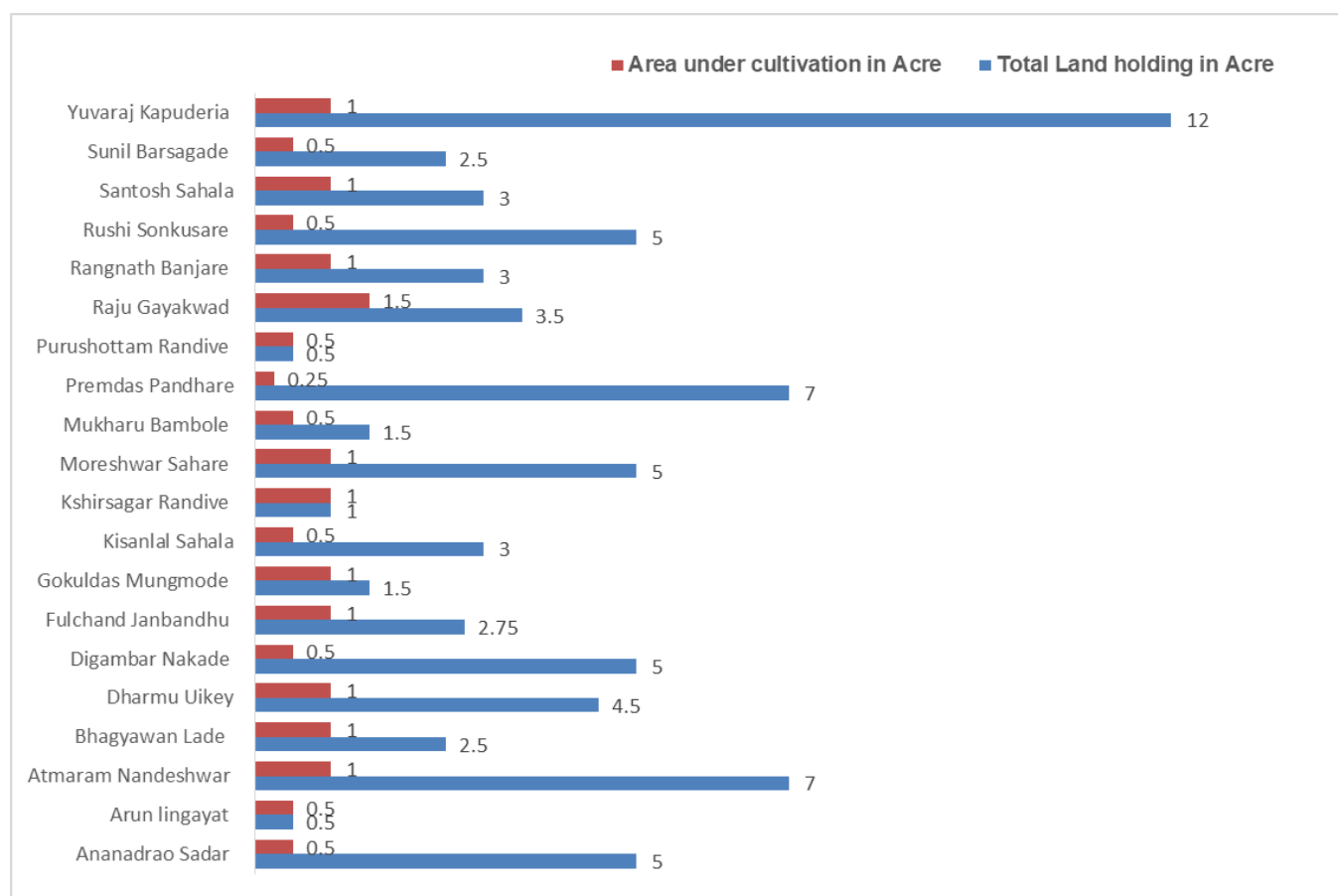


7. Contribution

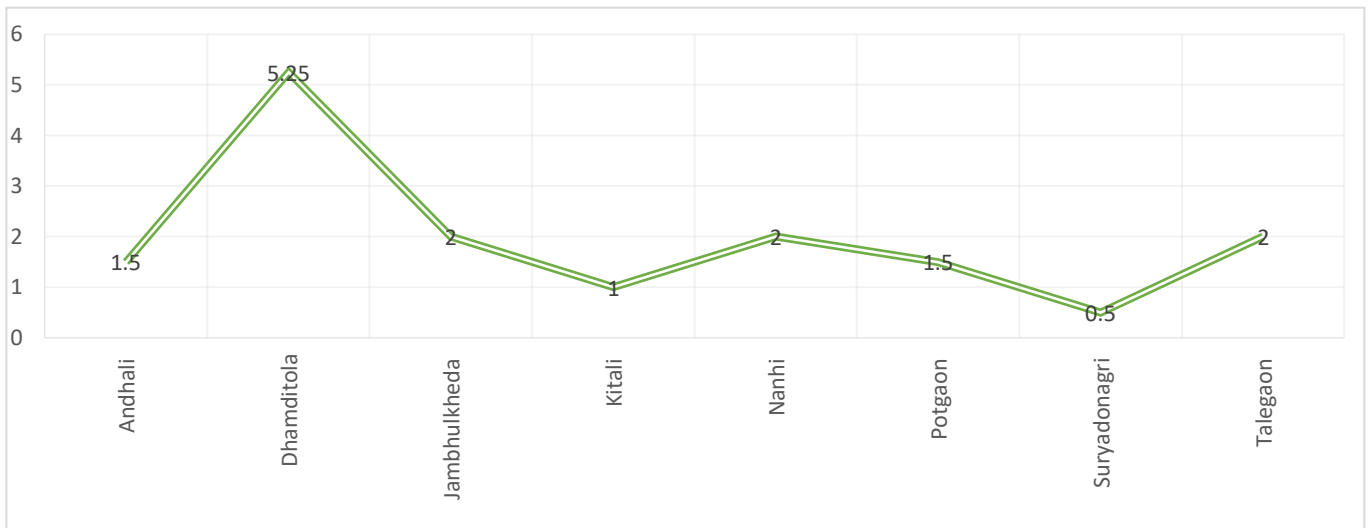
S.N.	STRC's Contribution	Farmers Contribution
1.	Seeds	Land Resource
2.	Package of Practice (PoP)	Irrigation Facility
3.	On Field Training	Labour
4.	Monitoring	Plant protection and nutrient management
5.	Demonstrations of Small tools	Farm Equipment
6.	Marketing Facilitation if required	Produce marketing

8. Economic Impact/ Immediate Output of the Project:

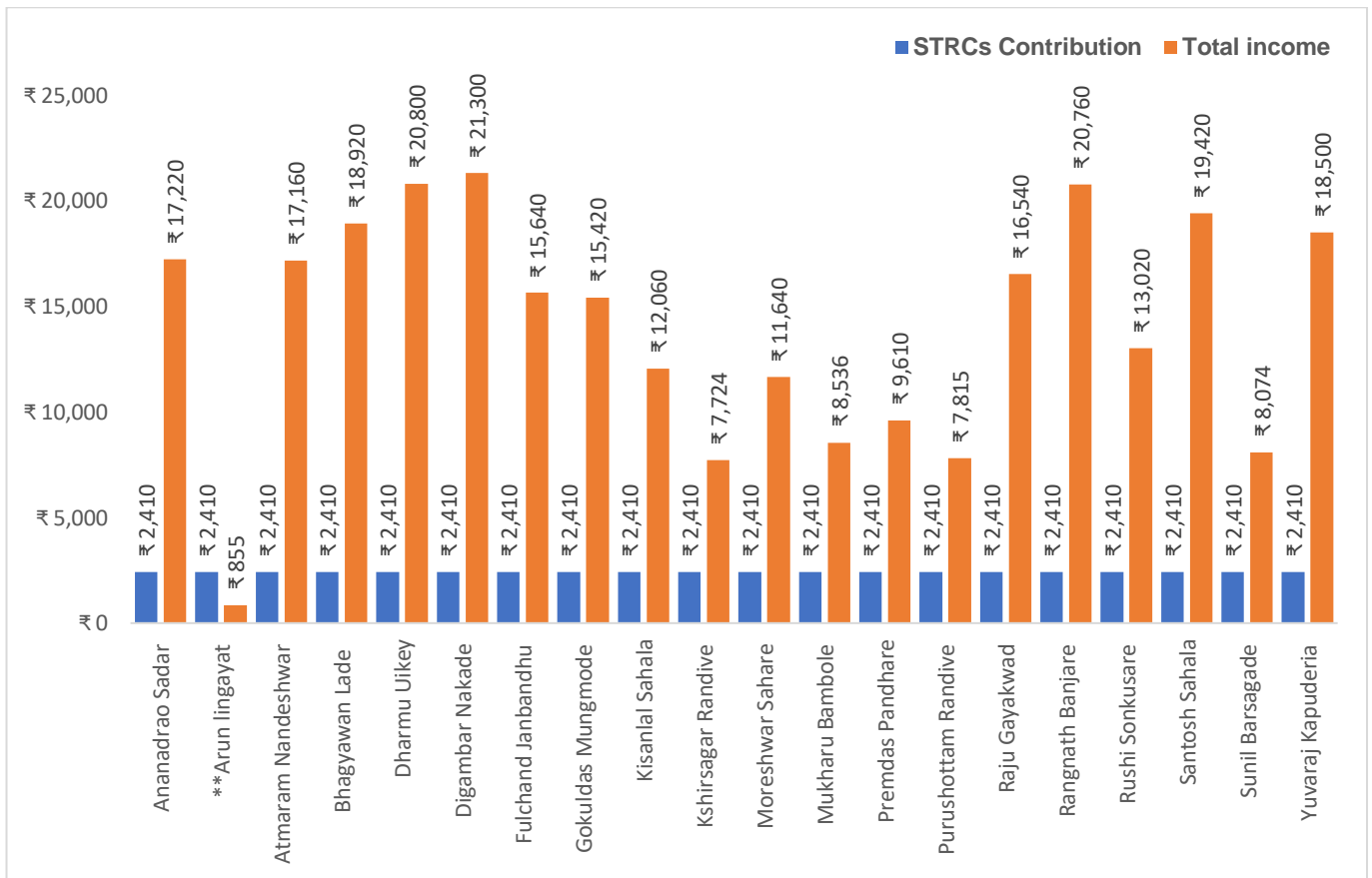
Through this small-scale income generation initiative, team had targeted the resource rich but paddy dependent farmers from the northern blocks of the Gadchiroli district. Through minor inputs such seeds and the technological facilitation, team had engaged the 20 Individual paddy farmers. Input of around Rs.2,400/- in the form of seed has been provided to the first-time vegetable growers for the three-to-four-month period. Whereas, individual farmers get substantial benefit out of it. On average Rs. 3,900/- additional income generation per month during the intervention period. On the basis of data received from the field (till 31st March 2020) following analysis was done. Still, some of produce (brinjal and chilly) can be obtain in upcoming 30-35 days which adds extra income to this.



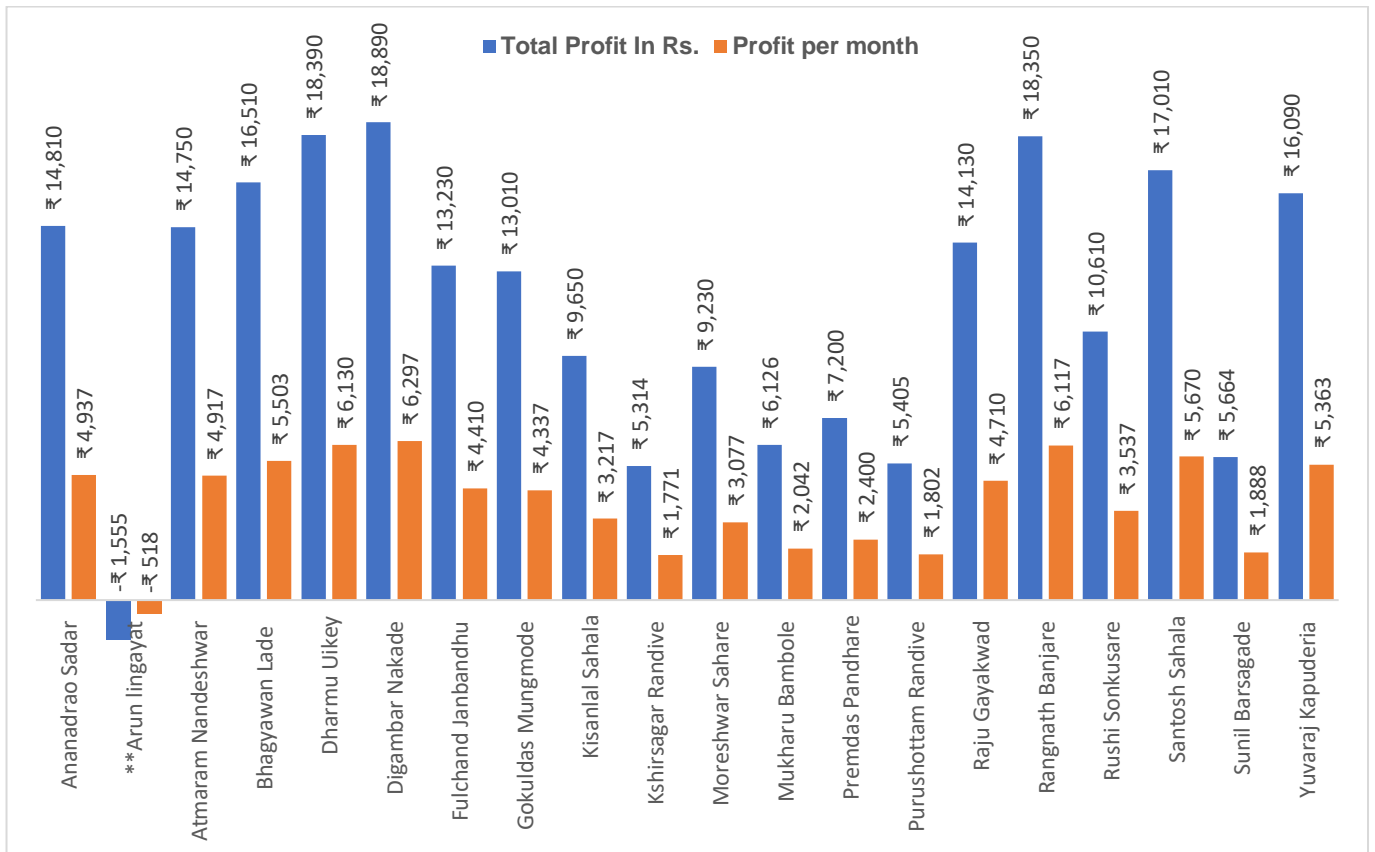
Graph 1: Showing Area Under Cultivation Vs Land Holding



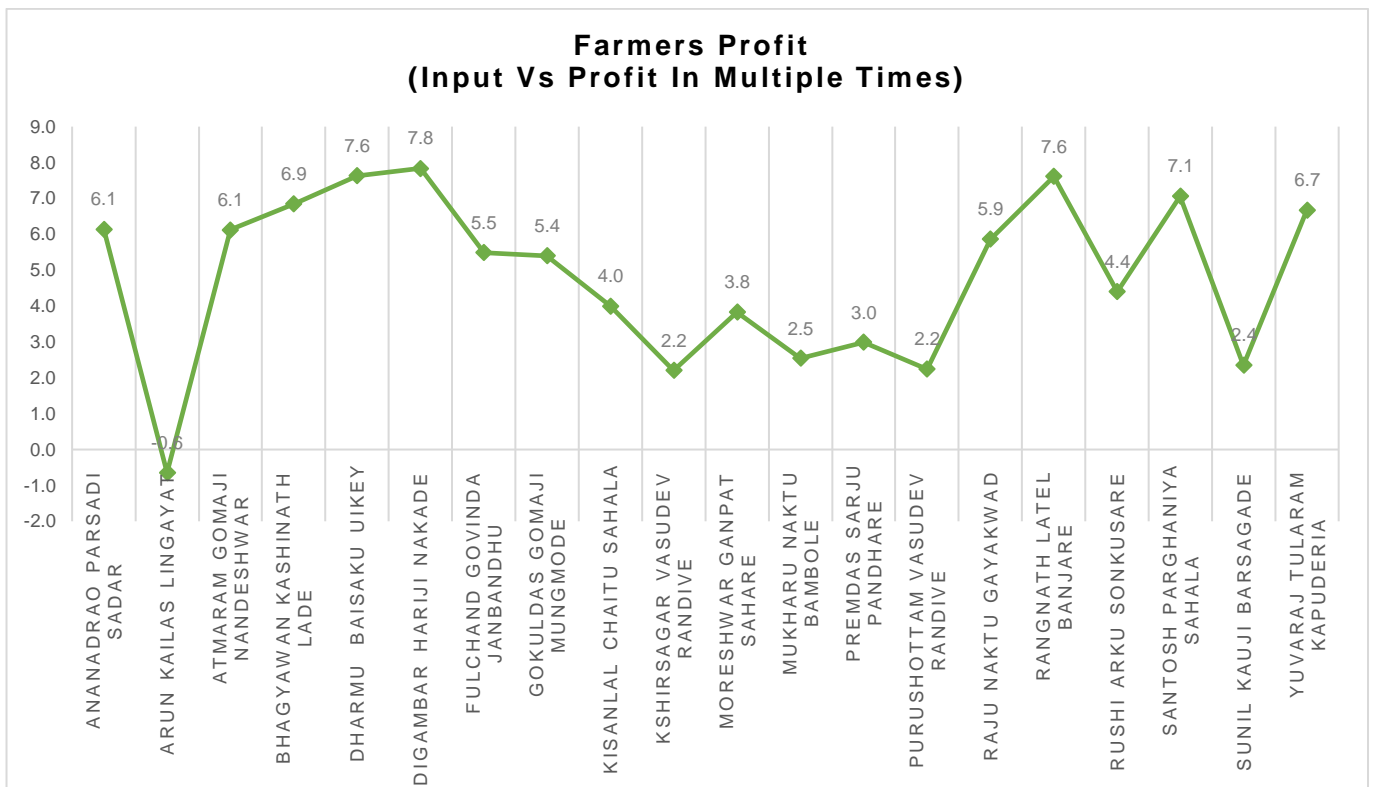
Graph 2: Showing Village wise area (in acre) under cultivation



Graph 3: Showing STRCs Contribution Vs total income generation (Each Beneficiaries)



Graph 4: Showing total income generated per month and income generated during intervention (Each Beneficiaries)Note Farmer no. 3 Arun Lingayat (Kitali): The negative value indicates that this farmer is yet to achieve expected results (this is due to late sowing and yet to harvest)**



9. Adoption and Extension strategy

Relying on cross-sectional data from 20 Vegetable Growers, the intervention examined the effects of best practices on High Value Vegetable Farming adoption and farm income in northern Gadchiroli blocks. A field generated data was used to assess the effect of this intervention on adoption of best practices was adopted to enhance the farm income. The results indicate a statistically significant effect of best practices on both adoption and farm income. According to the economic data, farm income of beneficiaries in High Value Vegetable Farming increased around Rs. 4000 per month. The report highlights significant efforts for adoption of PoP and farm income and provides insight into measures to enhance technology adoption and farm income among smallholder agrarian households in Gadchiroli.

10. Annexures

- List of Beneficiaries Farmers
- Package of Practice
- Farmers Profiles Template
- Farmers Agreement

- List of Beneficiaries Farmers

Sr. No.	Beneficiary Name	Adhar No.	Family Members	Address	
				Village	Block
1	Dharmu Baisaku Uikey	8098 6123 9159	10	Dhamditola	Kurkheda
2	Premdas Sarju Pandhare	3095 4839 9105	11	Dhamditola	Kurkheda
3	Kisanlal Chaitu Sahala	6004 3142 7861	5	Dhamditola	Kurkheda
4	Santosh Parghaniya Sahala	6320 3197 6678	7	Dhamditola	Kurkheda
5	Bhagyawan Kashinath Lade	6985-0777-1714	4	Andhali	Kurkheda
6	Rushi Arku Sonkusare	2828-4071-7283	5	Talegaon	Kurkheda
7	Fulchand Govinda Janbandhu	6026-7799-3666	5	Jambhulkheda	Kurkheda
8	Rangnath Latel Banjare	—	5	Dhamditola	Kurkheda
9	Atmaram Gomaji Nandeshwar	—	5	Jambhulkheda	Kurkheda
10	Moreshwar Ganpat Sahare	6316-8771-2406	5	Nanhi	Kurkheda
11	Yuvaraj Tularam Kapuderia		3	Dhamditola	Kurkheda
12	Digambar Hariji Nakade	5970-9101-2105	5	Andhali	Kurkheda
13	Ananadrao Parsadi Sadar	—	24	Dhamditola	Kurkheda
14	Raju Naktu Gayakwad	—	4	Talegaon	Kurkheda
15	Gokuldas Gomaji Mungmode	—	5	Nanhi	Kurkheda
19	Shrihari Urkuda Nikure	9403-0571-9375	9	Dudhmala	Dhanora
16	Kshirsagar Vasudev Randive	7522-5842-7077	4	Potgaon	Wadsa
17	Purushottam Vasudev Randive	2836-7649-6024	4	Potgaon	Wadsa
18	Arun Kailas lingayat	4017-0566-5525	3	Kitali	Armori
19	Sunil Kauji Barsagade	3164-4131-6435	7	Suryadonagri	Armori
20	Mukharu Naktu Bambole	6016-4190-8743	6	Kitali	Armori

● Farmers Profiles Template

विज्ञान व तंत्रज्ञान संसाधन केंद्र (STRC) गोंडवाना विद्यापीठ गडचिरोली

UID NO:		नामार्थी माहिती तपशील / उपक्रम माहिती		फोटो	
शेतकऱ्याचे पूर्ण नाव:		जन्म तारीख:	संपर्क क्रमांक:		
गावाचे व तालुका:		उद्योगिक क्षेत्र:	मीन धारण तपशील (पट नं / जमीन धारण / जमीनीचा प्रकार):		
कुटुंब सदस्य संख्या:	आयार क्र.				
भागीपाला लागवडीचा इतिहास (गारंपारिक तंत्रज्ञान / साधनांच्या वापरामुळे/उत्पादन ई.) : एकूण जमीन:					
इंग्रामी भागीपाला लागवड (Before STRC's intervention)			इंग्रामी भागीपाला लागवड: फळभागी/पातेभागी/बोन्ही (With SRT/Without SRT)		
लागवडीसाठी क्षेत्र: इंग्राम / कालावधी:			मिखातील क्षेत्र: इंग्राम / कालावधी :		
रू. घेत असलेली भागीपाला पिके:			Cost Tech./Agri. Tool :		
			रू. घेत असलेली भागीपाला पिके:		
तपशील	किंमत	/ बर	तपशील	किंमत	प्रमाण / बर
खताचा वापर (इन्फो / डीएपी / इतर)			खताचा वापर (इन्फो / डीएपी / इतर)		
गुरियाचा वापर			गुरियाचा वापर		
सॅट्रिय खत			सॅट्रिय खत		
फार्म गाई खत (FYM)			फार्म गाई खत (FYM)		
कीटकनाशक			कीटकनाशक		
बीजामृत (होम / नाही)			बीजामृत (होम / नाही)		
नांगरणी (____ वेळा)			नांगरणी (____ वेळा)		
रोजी (____ दिवस)			रोजी (____ दिवस)		
सिंचन (छात)			सिंचन (छात)		
शेतकऱ्यांचे स्वतःचे योगदान			शेतकऱ्यांचे स्वतःचे योगदान		
एच. टी. आर. सी. चे योगदान			एच. टी. आर. सी. चे योगदान		
एकूण खर्च			एकूण खर्च		
एकूण उत्पन्न / अपेक्षित उत्पन्न			एकूण उत्पन्न / अपेक्षित उत्पन्न		
चिकी किंमत			चिकी किंमत		
निव्वळ बाढीव लाभ			निव्वळ बाढीव लाभ		

● इतर कोणतेही शैतीविशयक / शैतीपुरक व्यवसाय :

● एकूण उत्पादन:

● एकूण उत्पन्न:

माहिती भरणाऱ्याचे नाव:

दिनांक:

सही

• Farmers Agreement



विज्ञान व तंत्रज्ञान संसाधन केंद्र

गोंडवाना विद्यापीठ, गडचिरोली (म.रा.)

राजीव गांधी विज्ञान व तंत्रज्ञान आयोग, मुंबई, महाराष्ट्र शासन द्वारा संकल्पित व निधी सहयित

उच्च मुल्य भाजीपाला लागवड शेतकरी ठराव

प्रस्ताविक:

विज्ञान व तंत्रज्ञान संसाधन केंद्र येथील NTFP, Medicinal Plant, Agri-Allied या कार्यक्रमा अंतर्गत उच्च मुल्य भाजीपाला लागवड (High Value Vegetable Farming) हि पद्धत शेतकऱ्यापर्यंत पोहचवून उत्पन्नाला/उत्पादनाला नवीन चालना देऊन शेतकऱ्यांचे आर्थिक उत्पन्न वाढविण्यासाठी कार्यक्रम राबविण्यात येत आहे. या कार्यक्रमाच्या मध्यमातून शेतकऱ्यांना उच्च मुल्य भाजीपाला लागवड या पद्धतीने भाजीपाला लागवड करून अधिक बाजारभाव मिळविण्याकरिता भाजीपाला लागवड करता येते. ही योजना सर्वसाधारण गटातील सर्व लाभार्थ्यांकरिता उपलब्ध आहे.

एस.टी.आर.सी. द्वारा राबविण्यात येत असलेल्या कार्यक्रमा मध्ये (नविन लागवड पद्धत, शेतकरी सराव पद्धति, मानक कार्य पद्धती) भाग घेण्याकरिता मी. आपल्या स्व: ईच्छेने सहमत आहे.

या योजनेअंतर्गत खालील अटी व शर्ती लाभार्थ्यांला मान्य असतील.

एस.टी.आर.सी. आणि शेतकरी खालील अटी व शर्ती स्वीकारण्यास परस्पर सहमत आहेत:

- शेतकरी एस.टी.आर.सी. ला आपली जमीन उच्च मुल्य भाजीपाला लागवडीसाठी प्रात्यक्षिक/ वाढीव उत्पादन प्लॉट म्हणून उपलब्ध करून देणार .
- निवळ झालेल्या शेतकऱ्यांना भाजीपाला लागवडीकरिता प्रोत्साहन म्हणून प्रत्येकी अर्धा एकर करिता बियाणे देण्यात येतील.
- शेतकऱ्यांना शेतात जीवामृत व दशपर्णी अर्कचा चा वापर करावा लागेल.
- शेतकऱ्यांना एस.टी.आर.सी. विभागाने दिलेल्या निर्देशांचे /नवीन पद्धतीचे पालन, त्यांचे अनुसरण आणि नवीन तंत्रज्ञानाची अवलंबन करणे बंधनकारक असेल.
- शेतकरी सराव पद्धती (PoP) आणि SoP चे पालन आणि त्यांचे अनुसरण करेल व असे न केल्यास होणाऱ्या नुकसानाकरिता लाभार्थी स्वतः जबाबदार असेल व एस.टी.आर.सी. विभागातर्फे कुठल्याही प्रकारची नुकसान भरपायी मिळणार नाही.
- शेतकऱ्यांना एस.टी.आर.सी. ने सांगितलेल्या रोग व किटकनाशक व्यवस्थापनाचे काटेकोर पालन करणे बंधनकारक असेल.
- एस.टी.आर.सी. हे तंत्रज्ञान सहाय्यकाची भूमिका निभावेल.
- एस.टी.आर.सी. व्यवसाय सुलभकाची तसेच मार्केट लिंकेज च्या दुव्याची भूमिका निभावेल.
- एस.टी.आर.सी. तर्फे मिळालेले प्रशिक्षण, निविष्टे, तंत्रज्ञान आणि मार्गदर्शनाची जाणीव शेतकऱ्यांना असली पाहिजे.
- पिक संरक्षण ही सर्वस्वी शेतकऱ्याची जबाबदारी असेल.

नाव

स्वाक्षरी

गाव

तालुका

१. _____

परिशिष्ट

लाभार्थी निवडीचे निकष:

लाभार्थ्यांची निवड खालील निकषांच्या आधारे करण्यात येईल:

१. लाभार्थ्यांची निवड ही योजनेचा विचार घेऊन केली जाईल.
२. योजनेचा लाभ घेण्याकरिता लाभार्थ्यांकडे पुरेसे जमीन क्षेत्र असावे.
३. लाभार्थ्यांची जागा ही सहज पोहचता येईल अशा ठिकाणी असणे आवश्यक आहे.
४. शेतकऱ्यांजवळ संसाधन उपलब्धता उदा. मुबलक जमीन, शेतकाम करण्याची उपकरणे (सिंचनाची सुविधा असणाऱ्या शेतकऱ्यांना प्राधान्य देण्यात येईल) इ. सोयीची उपलब्धता असणे आवश्यक असेल.
५. शेतकऱ्याला या योजनेचा लाभ घेण्याकरिता आवड असावी, तसेच योजना यशस्वितरित्या पार पाडण्याकरिता लागणारे परिश्रम करण्याची तयारी असावी.
६. लाभार्थीस त्याच्या संसाधनाचे प्रकल्पामध्ये योगदान देण्याची इच्छा तसेच मेहनत करण्यासह आवश्यक असलेले कामगार पुरवण्यासही तयारी असावी.
७. लाभार्थ्यांची नवीन तंत्रज्ञान आणि पद्धतींचे अवलंबन करण्याची इच्छा असली पाहिजे.
८. एस.टी.आर.सी. ने लाभार्थी निवडिचा अधिकार स्वतःकडे राखून ठेवलेला आहे.