

### OF LIVELIHOOD INTERVENTION OF CRC PROJECT



Developed & Submitted By: Professional Assistance for Development Action (PRADAN), Dholpur Implementing Partner: VAAGDHARA, Banswara

> Submitted To: Save The Children, Jaipur

### CONTENTS

	Abbreviation	2
	Acknowledgement	3
1.0	Brief description of project	4
2.0	Objective of study	5
3.0	Methodology	5
4.0	Study area & Tools	6
5.0	Caveats of Study	8
6.0	Livelihoods Interventions of the project	8
6.1	Sunken pit	9
6.2	Low cost water harvesting structure	9
6.3	Well deepening	9
6.4	SIFS activities	12
7.0	Training & Capacity building	13
8.0	Impact of Livelihood intervention	15
9.0	Fact sheet – Showing improvement in income of family	26
10.0	Case studies	29
	Annexure	
1	Before and after status of open wells	37
2	Change in crop, area, no of irrigation and yield of Kharif, Rabi and Jayad crop	38

### Abbreviation

C.C	Cluster coordinator
C.R.C	Child Right for Change
D.A	Development Activist
F.G.D	Focus Group discussion
H.H	Households
Ha.	Hectare
M.J.S.A	Mukhyamatri Jal Swablamban Abhiya
L.F.A	Log Frame Analysis
MGNREGS	Mahatama Gandhi National Rural Guarantee scheme
N.R.M	Natural Resource Management
PRADAN	Professional Assistance for Development Action
SIFS	Sustainable Integrated Farming system
VCPC	Village Child protection committee
WHS	Water harvesting structure
WRD	Water Resource Development

### ACKNOWLEDGEMENTS

This impact assessment report is an outcome of joint efforts of PRADAN Dholpur and Vaagdhara, Banswara. On Behalf of PRADAN, I am thankful to Sanjay Sharma, General manager, State programs, Save The Children for giving us an opportunity to involve in this project as technical partner and also provide opportunity to conduct impact assessment study. I also want to express my sincere thanks to Sh. Om Prakash Arya, Assistant manager for his consistent support during the project. Our sincere thanks and heartfelt acknowledgement goes to Sh. Jayesh Joshi, secretary Vaagdhara for his valuable suggestion and guidance. I also express my deep sense of gratitude to Mr. Abhinav Sharma, Project Manager, Vaagdhara , P. L. Patel, Vaagdhara and all CRC, Development Activist and Aajeevika Mitra for facilitating this assignment, constant support and cooperation during study.

We are very much thankful to members of VCPC, Aajeevika mitra, Cluster coordinator, farmers and women who provided critical support by responding to our data collection instrument.

Last but not the least we acknowledge our gratitude to the entire Vaagdhara team which rendered all their possible support & cooperation for study.

Sanjay K. Sharma

**Team Leader** 

PRADAN, Dholpur

# **IMPACT ASSESSMENT REPORT**

#### **1.0 Brief Description of Project**

IKEA foundation supported Save the Children in two blocks of Banswara district of Rajasthan state across 200 villages from 2013 to 2017 to address the issue of migratory child labor. The expected outcomes of the project are

- A. Increased protection against abuse , exploitation and violence in the villages
  - Prevention from migration for work
- B. Improved quality of education with focus on learning at pre-school and primary/elementary level
- C. Enhancing access to social protection schemes for improved income

Vaagdhara was implementing partner in Ghatol block for implementation of the project. Livelihoods are an important component of this project and Save the Children appointed PRADAN as strategic partner to facilitate Vaagdhara for this particular component.

#### Key highlights of Livelihood component -



Fig 1 – Features of livelihood component

#### 2.0 Objectives of study

It is imperative to evaluate the impact assessment of different water harvesting structures and SIFS activities on certain parameter. It is also necessary to asses the status of Livelihood plan developed for 20 villages so this study will help to understand following aspects.

- 1. To study of impact assessment of Livelihoods intervention implanted in two villages
- 2. To highlights the major success of implementation
- 3. To study the change in agriculture status of farmers in Kam ji ka khera village at pre and post construction of water harvesting structure (WHS);
- 4. Assess types of impacts through WHS constructed in the core villages
- 5. Analysis of cost effectiveness and feasibility of investment on WHS
- 6. Document case studies, interviews with individual families, focus group discussions
- 7. Assess the implementation status of Livelihood plan prepared for 20 villages

#### 3.0 Methodology:-

This report has been prepared after the followings methodology.



Fig-2 Steps followed for study

#### 4.0 Study Area and Tools:-

The study team consisted of two people from PRADAN and four members from Vaagdhara (one coordinator and three C.C). The field work of study was started on 10<sup>th</sup> May and ended on 22<sup>nd</sup> May 2016. Study team covered two core villages and 18 extension villages for impact study.

Following tools/methods followed to conduct the study.

- 1. Structured formats Total four formats designed to gather the data.
  - First format was designed to assess the change in Kharif , Rabi and Jayad crops in Kam Ji ka Khera
  - Second format was designed to assess the impact in agriculture due to water recharging in Kam Ji ka Khera
  - Third format was designed to assess the impact in agriculture due to well deepening activity
  - Fourth format was designed to collect the information regarding work done by Vaagdhara team under convergence as per livelihood action plan in 20 villages for livelihood enhancement.
- **2.** Questionnaire with beneficiaries Information regarding benefits of work were asked from four families each of Kam ji ka khera and Surpur families
- 3. **Participatory focus group discussion** FGD organized with various stakeholders *viz* group of aajeevika mitra, beneficiaries of SIFS in Surpur, farmers of Kam ji ka khera
- 4. Interaction with Vaagdhara team
- 5. Field visit of core villages

Table- 1 Description about study tools								
S. No	Name of Villages	Structured format (5)	Interview/ Questionnaire (2)	FGD (4)	Field visit			
1	Kam Ji ka Khera	Agriculture format-62 HH Water recharging -33 Well deepening -4	Individual beneficiaries - 4	With Aajeevika mitra, Beneficiary farmer and Village child protection committee (3)	$\checkmark$			
2	Surpur			With SIFS beneficiaries (1)				
3	Rest of 18 villages	Convergence for activity on individual land – 20 villages Convergence for activity on community land -20 villages	Individual SIFS beneficiaries - 4		×			

#### **Description about tools**

Agriculture format –This format has been designed to assess the impact in agriculture of Kam ji ka khera village due to livelihood intervention activities. Information related to cropping area, no of irrigation, name of crop and yield were captured through formats. This information has been collected for all direct/indirect beneficiaries' i.e 63 farmers

Water recharging format- This format has been designed to assess the impact in form of water recharging in wells of Kam ji ka khera village due to livelihood intervention activities. Information was captured from 33 wells owners.

Questionnaire with beneficiary of SIFS activity – a structured format designed to get perception of on benefits of SIFS activity. 4 formats filled from surpur village only.

**Interview with beneficiary** –Four farmers of Kam ji ka khera identified for detailed interview to assess the impact of livelihood intervention activity in Kamji ka khera village.

**Participatory focus group discussion** –FGDs organized with Village child protection committee, Aajeevika mitra and beneficiary farmers in Kam ji ka khera and Surpur villages. *Fig-3 Glimpses of use of various tools in field.* 



#### 5.0 Caveats of study

- 1. Study team took impression about the impact on the basis of FGD, field visits and few structured formats. Intensive approach did not followed due to lack of availability of resources and two core villages have been adopted for study and it is recommended to do intensive study to get in-depth and detailed impact of the project.
- 2. It is always preferable to have as many households covered as possible to have near realistic assessment but often it is not possible due to the financial implications.
- 3. Impact study has been carried out in May month when all structures were dry up and no crop in the field to assess the physical verification.
- 4. There were many quantitative information in the formats which poses challenges because respondents were unable to offer exact estimated.
- 5. No base line study has been carried out at initial stage of project so bench mark information were not available

Table	Table- 2 Activities implemented under Livelihood component							
S. No	Name of Livelihood activity	Unit	No	No of Villages	Families covered			
А	Preparation of Livelihood Plan	No of plan	20	20				
В	Water Resource Development (Kam Ji Ka Khera Village)							
1	Construction of sunken pit	No	5	1	63			
2	Low cost water harvesting structures	No	5	1	63			
3	Deepening of open well	No	4	1	15			
С	<b>SIFS Activity</b> (Kam ji ka khera, Surpur and 18 other villages )							
4	Kitchen Garden Kit	Family	2000	20	2000			
5	Compost pit	Family	5	1	5			
6	Panch Taru Plantation	Family	2000	20	2000			
7	Fruit plant	Family	2000	20	2000			
8	WADI Plantation	Family	300	20	300			
Source	e –Vaagdhara							

#### 6.0 Livelihood Intervention implemented in the project under CRC

**6.1 Sunken pit**- Five pits dug by excavating machine in the stream of Kam ji ka khera. Depth of sunken pit is 8 ft and length and width of sunken pit is according to site condition. Single time storage capacity of the sunken pit is between 112 to 280 cum but these sunken pits filled with water for four times in this monsoon so cumulative storage capacity is 450 to 1120 cum. Cumulative storage capacity of sunken pit is 3353 cum which is amazing. Water stored in the sunken pit for five to six months which helped to recharge the ground water of open wells. Few farmers also harvested the water for irrigation to crops. It has informed that 6 Ha areas directly irrigated from the sunken pit.

Table- 3 Storage capacity of Sunken pit								
Sunken Pit No	1	2	3	4	5	Total		
Single storage capacity	225.5	115	107.8	280	110	838.3		
Cumulative storage capacity	902	460	431.2	1120	440	3353.5		

**6.2 Low cost Water harvesting structure** – It was a challenge to treat the 800 m stream by series of structure so it was not possible to construct pure masonry structure. Catchment area of the stream is at lower side and proposed height of the structure is less so Pradan developed the special design where low cost but with full consideration of strength as per catchment area considered and Vaagdhara constructed five structures in the 800 m stream. Height of these structures was up to 0.75 m and catchment area of all the structure was below 50 ha area. Back water length of the structures was between 45 to 60 m. Water availability in these structures till month of November, which helped to recharge the ground water in open wells.

6.3 **Well deepening** – Open well is the only source of irrigation and most preferable activity of the project area. It was very challenging for the committee to identify only four families for well

deepening where demand was more than 25 wells from one village. In well deepening cost of blasting and expenses of crane borne by Vaagdhara but labor cost for cleaning of well managed by beneficiary which is approximately 50%. Total four wells were deepened in the Kam ji ka khera village only and this activity provided help to enhance livelihoods through improve productivity of 22 HHs. Approximately 30 Ha area got additional irrigation due to well deepening activity.



Fig-4 well deepening work at beneficiary field













Fig-5 before & after images of Sunken Pit



Fig -6 various types of low cost water harvesting structures

**6.4 SIFS Activity** –\_This is a model developed for sustainable livelihoods through sustainable integrated farming system (SIFS). SIFS is about mixing up in proper ratio, the ecological, economical and social understandings with the aim of poverty alleviation through appropriate scientific technology. SIFS activities planned are to address important aspects of agro-hortiforestry in Integrated Farming System for sustainable productivity. Activities implemented under SIFS in 20 villages are

- Wadi Development
- Vegetative measures on bunds
- Compost pit
- Intercropping
- Agro-horticulture
- Crops demonstration (Moong, Urad, Maize) + green leaf manure species (mixed/intercrops)



#### Fig-7 various activities under SIFS





### 7.0 Training and Capacity building

Tab	Table-4 Description of Training and Capacity building program								
S. N o	Subject	For whom	Venue	No of Days	No of Trg	Total Particip ants			
1	Exposure	Aajeevika Mitra		5	1	20			
2	Training on Preparation of Livelihood Plan	Aajeevika Mitra	Village and Vaagdhara	5	1	20			
3	TOT on POP and Mix cropping	Aajeevika Mitra	Vaagdhara campus	2	1	20			
4	Training on POP and Mix cropping	Farmers	20 Villages	1	20	1836			
5	Training on POP of Green Gram	Aajeevika Mitra	Kam Ji ka Kheda	1	1	20			
6	Training on SIFS for farmers	Aajeevika mitra	Ghatol	1	1	114			
7	Review and Follow up Workshop on Livelihood Plan	Aajeevika Mitra		1	2	40			







Pics of exposure cum training on Livelihood planning

PRADAN\_ Dholpur



Fig-8 Pics of Livelihood planning workshop at Vaagdhara(above) and farmer training on SIFS(below)





PRADAN\_Dholpur

#### 8.0 Impact of Livelihood Interventions

**Human Capital enhanced** – 20 villages of Ghatol block has been identified for livelihood intervention. Kam ji ka khera and Surpur villages identified as two core villages among 20 villages. In the project, only 10 lacs have been allocated for livelihood component. It is like "single seep in ocean" but efforts were made to make some changes in the lives of community. Vaagdhara believe that human capital is the most important livelihood capital. Pradan and Vaagdhara have large experience in field of livelihoods and they knew very well that they can not make any big change in the project area with a small fund of Rs. 10.0 lacs in 20 villages by constructing any physical assets but it could be possible by develop human capital only Vaagdhara developed strategy to build capacity of cadre staff in the field of livelihood planning. They were provided intensive training and exposure on livelihood planning and as a result, Vaagdhara cadre staff developed best quality livelihood plan of 18 of villages after their capacity building and training program.

Technical agency Pradan facilitated cadre staff in three stages. At first stage, Pradan organized three days training cum exposure on project planning for livelihood enhancement for Vaagdhara cadre staff members. They have been provided one day exposure tour to NRM works implemented by SRIJAN at Nana, Pali and two days training on project planning. At second stage, five days training program organized at Vaagdhara Banswara on livelihood planning. Various participatory tools like resource mapping, transect walk, community problem analysis and prioritization of problem tools learnt by participants for livelihood planning. The outcome of this training was that livelihood plan of kam ji ka khera and Surpur prepared by the participants under facilitation of Pradan. Review training and follow up program helped to develop livelihood plan of rest of 18 villages. These plans prepared within two months. These livelihood plans shared with village community in the village meeting. Vaagdhara made special efforts to execute the activity in the 20 villages as per livelihood plan.



Vaagdhara and Pradan also organized training on improve practice of package of key crops of the project area. Field trainings cum demonstrations were provided to farmer. It helps to enhance their knowledge on improve knowledge on agriculture practices which ultimately help to improve the income of family.

**Mobilization of financial resources through Convergence** – It was a great challenge for Vaagdhara to mobilize the financial resources in 20 villages under convergence with Government schemes for livelihood enhancement because no fund has been allocated for 18 villages so convergence through various schemes was the only option. Vaagdhara cadre staff has been trained related to schemes where fund can be mobilized in respect to livelihood plan. Vaagdhara made reasonable efforts to implement some activities in the 20 villages through convergence. Under scope of study it was not possible to assess the impact of these activities implemented under convergence but efforts were made to collect the data about livelihood intervention from every village. Table 5 mentioned below reveal the fact that *Vaagdhara mobilized the livelihood interventions of 395 lacs on private land and community works of 176.5 lacs on common land under various Government schemes (MGNREGS-Key scheme)*.

MGNREGS is key scheme and most of the activities implemented in 20 villages through convergence with MGNREGS however few other activities implemented from schemes like MJSA, routine scheme of Horticulture department, TAD etc. These activities of 570 lacs help to treat 1085 Ha area and provided benefits to 1245 farmers. It was limitation of study that individual household data could not collect from the rest of 18 villages about impact in terms of increase of income from agriculture. But FGD organized with

team of Aajeevika mita, it was discussed that various activities implemented under convergence provided economic benefits to farmers and their income increased from agriculture from 5 to 20%. They shared few examples like well deepening and construction work increased the farmer's income at least by 20-30% from agriculture, masonry structure like anicut/ check dam and earthen structure also helped to increase the income from agriculture at least by 10-20%. Activities like earthen bunding reduced the erosion and also enhance the productivity up to some extent.

Tab Priv	Fable-5List of livelihood intervention implemented in 20 villages under convergence onPrivate land							
	Name of activity	Nos	Area	No of HH	Expenditure	Coverage	7	
1	Cattle shed	13	0	13	395 lacs	Coverage 18		
2	Anicut	1	8	10		villages		
3	Bunding	41	65	41				
4	Waste weir in farmer field	3	15	3				
5	Check dam	3	24	18				
6	Compost pit	11		11				
7	Earthen dam	2	30	25				
8	WADI	320	320	320				
9	Well deepening	32	135	160				
10	Well deepening and Construction	7	35	35				
			632	625			Ì	
List land	of livelihood intervention im	plemer	nted in 20 villa	ages unde	r convergence o	n community		
1	Anicut	11	320	112	176.5 lacs	17 Villages		
2	Bunding	80	125	80				
3	Canal lining	1	55	70				
4	Check dam	2	25	25				
5	DLT works	2	15	21				
6	Face wall	1	12	46				
7	Levelling	1	1	1				
8	Percolation tank	8	45	65				
9	Nadi	2	15	36			]	
			613	456			ĺ	

**Yield of open wells increased** – It was reported by farmers during FGD and data collected through structured format for 33 open wells that water table of wells (refer annexure-1) increased up to 12 ft. Analysis of data clearly proved that water table in the well improves from



PRADAN\_Dholpur

2 to 6 m. It was reported that now farmer irrigated the field in less time and irrigated more land due to adequate water availability in well. Few farmers took third crop and few farmer earned significant income through sold water to adjoining farmers.

No of hours of running of diesel engine at a time is an important parameter to prove the water yield and data shows that up to 5 hours capacity increased of wells near by stream which has treated in Kam ji ka khera village so it clearly proved that water yield of well increased.



**Increased cultivable area under crops** –Water resource development works at Kam ji ka khera mainly attributed to the fact that due to assured irrigation supply farmers increased cultivation area under Kharif and Rabi crop but most surprising fact is that few farmers took third crop (jayad) due to water availability in wells.

Data collected from 61 farmers of Kam ji ka kherea village and analysis of data reveal the fact that there has been significant change in area (90 bigha(18 Ha)) under Kharif crop. It is 30%. 37

farmers reported that they have cultivated kharif crop in more area in respect to previous year due to assure availability of life saving irrigation during critical period. In Rabi crop it is 78 bigha(15.6 Ha) which is 25% more and in Jayad 59 bigha(12 Ha) area increased which is 210% as compare to previous year.

Farmers informed in the FGD that from last two years 30-40% of cropped area increased under Moong and Urad crop and this was mainly happened due to crop demonstration. This activity motivated the farmers for third crop. Similarly maize crop area also increased under Rabi crop.

Table –6 Cultivable area increased under crops									
	Kharif			Rabi			Jayad (third)		
	Before	After	Differen ce	Before	After	Differen ce	Before	After	Differen ce
Area under cultivation	294	384	90	312	390	78	28	87	59
No of farmers	61	61		61	61	0	20	39	19

Source-Structured formats









**No of irrigation increased** –Data reveal the fact that earlier farmer did not have facility to provide sufficient irrigation to crops as per requirement so yield of crop decreased and many times totally damaged in poor monsoon but now farmer have ensured irrigation facility to crops. Please refer annexure shows about how no of irrigation increased for Rabi and Jayad crop. Data analysis for Rabi crops shows that average 2.42 irrigation increased to Rabi crop and 147 additional irrigation provided to 78 ha area due to water resource development works in Kam ji ka khera village. 61 farmers reported to increase 1 to 4 additional irrigations to Rabi crops.

Table- 7 Information about no of Farmers access to additional irrigation to Rabiand Jayad crops							
	No of Irrigations						
No of irrigation	0	1	2	3	4	5	
No of Farmers for Rabi	0	8	28	16	8	1	
No of Farmer for Jayad crop       22       1       9       8       12       9							

Source-Structured formats





**Cropping intensity increased** – Availability of irrigation facility helps to increase cropping area under Kharif, Rabi and Jayad. It helps to increase cropping intensity of Kam ji ka khera village. Data proved that it the cropping intensity increased from 189 to 257 % of Kam ji ka Khera village. In Surpur cropping intensity is also increased by 20-25% because fallow land during April –June came under Moong crop which increased the cropping intensity of the village.

Increase in area under Irrigation - Water resource development works provide the facility of

irrigation to the farmers in two ways first is directly harvesting from the sunken pit and secondly irrigation through open wells. Data collected through different structured format mentioned in table below proves that 64 farmers got benefits of additional irrigation to their farm land in 50 ha agriculture land.

Table –8 Additional area increased under irrigation in Kam ji ka khera						
Particular No of Additionally						
	farmers	area irrigated				
Sunken pit	11	22				
Well deepening	20	129				
Recharge through Open well	33	97				
	64	248				

**Increased in Production of crops** – This is most significant impact of the water resource development works. There has been significantly increased in yield between 57 to 270 % in yield

FGD organized with farmers in Surpur informed that 50-60% productivity increased of Moong crop due to seed distribution. Now farmers got 2 to 3 qt

of crops.

Table –9 Yield increased of Kharif, Rabi and Jayad crops (In Qt) in Kam ji ka khera village								
Kharif			Rabi			Jayad (	third)	
Before	After	Difference	Before	After	Difference	Before	After	Difference
428.5	648.5	220	591	1244	653	29.9	110.5	70.6

per bigha but earlier it was only 1 to 1.5 qt only. It increased the income of farmer 6000 to 10000

from single crop per season only. Few farmers also got additional production from Urad crop and maize also. Table -10 shows about additional production achieved by beneficiary farmers of deepening of well activity in Kam ji ka khera village.



Tab ben wor	Table-10 Change in production in beneficiary field due to well deepening work							
S. No	Name of beneficiary	Additional production in current year (In qt )						
1	Narayan/Uda	23						
2	Laxman/Khom ji	35						
3	Kripa /Vikram	33						
4	Manji/Kaniya	42						

**Crop diversification** – Kitchen gardening and WADI are the two main activities which motivated the farmer for crop diversification. Panch taru fruit distribution is also one of the activity motivated the farmer to grow at least five needful fruit plant in the homestead.

Vaagdhara distributed vegetable kit among 2000 farmers in 20 villages. The results of vegetable kits are very encouraging. Majority of farmers reported in FGD in both Kam ji ka khera and Surpur village about saving of expenditure of Rs. 2500 to 3000 on purchase of vegetable. Farmer used the fresh vegetables in their food for three to four months and they preserve the vegetable as dry vegetable and again use for three four months so seven to eight months availability of vegetable improve nutrition status, reduced expenditure on purchase of vegetable. Data collected from sample beneficiary of kitchen gardening is mentioned in table below. That clearly prove that kitchen gardening activity provide at least four to eight months availability of vegetable. Majority of farmers use vegetable for self consumption but few farmers earned additional income up to 35000/- by sold the vegetable in local hat. Now majority of famer preserved the seeds and will use the same in next season for vegetable cultivation.

Vaagdhara also motivated the farmers to develop WADI in 0.5 to 1 bigha land with 20 to 50 fruit plants of mango with 300 farmers in 20 villages. However results are not very encouraging of mango plantation but it is expected that after three years, beneficiary farmer will get additional income from WADI.

Panchtaru (Provide five fruit plants of Kathal, aowla, lemon, Guava and Papita to one family) in 20 villages with 2000 farmers. The purpose of these all activities is to make available nutritious food item to the family without any cost along with sustainable income source.

Table-11 Information about sample farmers growing vegetable cultivation											
S. No	Name	Area (In bigha)	No of Months of availability of vegetable	Saving of expenditure on vegetable	additional income after self consumption at home	Total income					
1	Laxman/Khomji	0.5	7	8400	0	8400					
2	Unkar/	0.5	6	7200	0	7200					
3	Dhanji/Khomji	1	6	7200	15000	22200					
4	Kheama/Phatiya	1.5	6	7200	30000	37200					
5	Nagji/Dhaniya	1	6	7200	18000	25200					
6	Maniya/Poja	0.5	4	4800	0	4800					
7	Kaliya/Piri	0.5	4	4800	0	4800					
8	Chiriya	1	8	9600	0	9600					
9	Ranji/Roopa	1	8	9600	20000	29600					

Source- Questionnaire with beneficiaries

**Change in cropping pattern**- Farmer changed the cropping pattern after getting assured irrigation in their field. They went with high income crop and table mentioned below proved the same.

Table- 12 Change in cropping pattern						
Earlier		Current year				
Kharif crop						
Maize		Maize, Soybean				
Maize-Urad, Maize-	Kuri,	Maize, Soybean				
Maize -Kodra						
		Maize, Urad (In surpur only)				
Rabi crop						
Barley-Gram	Wheat	t –maize				
Gram-Wheat	Maize	Wheat				
	Maize has introduced as new crop in rabi period					
Jayad crop						
No crop		Moong				

#### Natural impact-

- 1. **Runoff reduction** Kam ji ka khera model worked on the concept "stop the running water and conserve the stopped water". These structures helped to check and reduced the runoff which was flowed down to River but now it has stored in the village through various WHS.
- 2. **Increased Ground water table** Their have been increased in ground water as a result of recharge due to construction of WRD works. It was reported that approximately 35 well have been recharged.
- 3. **Increase in surface water** –Every sunken pit has multiple storage capacity of 4500 to 11250 cum and farmer used the surface water also for irrigation of crops. It has reduced the ground water exploitation.

#### **Economical Impact**

**Increase in income from agriculture crops**- Increase in yield or production is critical factor that enhance income from agriculture. The yield impact is assessed for Wheat and Mustard crop mainly.

To estimate the impact of project on income household survey format collected the data from various income sources. It reveals that agriculture; animal husbandry, wages (MGNREGS, mines, agriculture, and skill work) and migration are the key source of income. Household data informed that average household income range were 90000 to 250000 before construction of pokhar which has now improved between ranges of 115000 to 360000, which is quite significant.

One farmer from marginal, small and medium category farmer were also identified to assess the change in income pattern. Result developed on the basis of available data with sample farmers presented in below figure. It clearly indicates that contribution from agriculture is significantly improved after construction of pokhar. It helps to divert farmer from wages and migration to agriculture so total income from this head reduced up to some extent. Income from animal husbandry also increased due to availability of dry and green fodder.

Data analysis and result developed of 61 farmers have field near by water resource development works in table below which clearly proved that farmer average income increased due to water resource development works in Kam Ji ka khera. Table clearly shows that average farmer income increased in range of 51 to 268% for various season crops and average it has increased around 110%, which is a significant figure. Average income increased to each farmer is 31030/-which is quite significant.

Table-13Additional income generation of beneficiaries due to Low cost water harvesting and sunkenpond work in Kam Ji Ka khera village										
	Ad	ie	Average income per farmer			Consolidated additional income				
	Kharif	Rabi	Jayad	Kharif	Rabi	Jayad	1891665/-			
Before	578475	1498185	165000	9483.2	24560	2705	consolidated			
After	1251605	2273410	607750	20518	37269	9964	income			
Additional	673130	775225	443300	11035	12708	7267	31030 Per farmer			
Increase In	crease In 116 51 74 268									
%	110	5171	200							

Source- structured format

Fast fact- Additional Income generation of farmers due to sunken pit and low cost water harvesting structures								
No of farmers	61							
Total population benefitted	326							
Expenditure from project	2.7							
Total income increased of farmers of Kam ji ka khera	1891665							
Average income increased Per farmer	31030							
Important point- 1. Income increased in Kharif is 116%, in rabi 52% and in Jayad it is 268% which is highly significant.								

Source- Structured format



Fast fact- Additional Income generation of deepening work at Kam ji ka khera	farmers due to well				
No of farmers	4				
Total HHs benefitted	18				
Expenditure from project	2.25 Lacs				
Farmer contribution	50%				
Earlier income from the field	19900				
Now this year income from the same field	226700				
Additional income from agriculture	206850				
Extra income by selling of water to neighboring farmers	14500				
Total income	221350				
Important point-					

- 2. Project cost recover in first year of project families
- 3. From this year all 18 families will take third crop so 100 % migration reduced
- 4. Sustainable source of income from agriculture

Source- Structured format

Fast fact – Additional income (reduce in expense earning by selling of surplus vegetable )	diture and
Total no of villages	20
Total no of vegetable kit	2000
Total no of beneficiaries	2000
Approximate % of farmers those used vegetable for household purpose and saved the money on purchase of vegetable purchase up <b>to 7500 to</b> <b>18000 in a year</b>	70% (1400 HHs)
Approximate % of farmers those used vegetable for household purpose and earn the additional income between 5000 to 37500 in a year	30% (600 HHs)

Source-FGD in two villages

#### Social impact

**Reduction in Migration** – It has reported in the FGD that livelihood intervention significantly reduced migration due to the following reasons.

- ✤ After water resource development works there is huge work opportunity is available in agriculture in the Kam ji ka khera village which helped to check migration.
- Majority of farmers migrated in lean period to search employment opportunities but water resource development works in Kam ji ka khera provided opportunity to farmers for third crop because adequate water is available in the well for third crop.
- Crop demonstration of *Moong* also motivated the farmers for third crop especially in Surpur village where enough water is available for irrigation in the perennial nala so they took the risk to grow third crop rather than go for migration.

**SHGs condition improved** - In the project villages, Vaagdhara provided focus on improve the condition of SHGs and producer company also formed from the representatives of these villages. They are now share holders and moong produce collected from the farmers by federation from last two years.

**Status of MGNREGS improved**- Due to focus of Vaagdhara team, condition of MGNREGS improved in three Gram Panchayat. No of days of employment, women ration of employment, wage rate , labor budget and quality of work improved in the project area villages.

**Child labor** – Many poor parents involved their child in labor at household works, in Gujrat for wages etc but majority of families reported in Kam ji ka khera and Surpur village that their children are not involved in any type of labor pr physical activity. Kam ji ka khera has declared as child labor free village.

### ) Kam ji ka khera Livelihood Model

"A perfect example to improve livelihood of community through water resource development works"- How a small stream become life line of village

In the CRC project, 20 villages have been identified for Livelihood intervention and only two villages have allocated Rs. 5.0 lacs. One masonry structure can not design in 5.0 lacs in such types of undulated topography of villages so in such condition Vaagdhara and Pradan jointly decided to develop a model in two villages which can be replicated in future for livelihood enhancement of poor community.

In Kam ji ka khera one stream (nala) pass through the village and meet in the river after flowing for 3.5 km. During rains this nala gets full of runoff and become empty after few hours because all runoff goes down in river. After participatory rural appraisal it was finalized that upper reach of this nala would be treated with sunken pit and low cost water harvesting structure. Approximately 800 m stream treated with five sunken pit and four low cost water harvesting structure. Single filling storage capacity of these structures is 1450 cum and cumulative storage capacity is approximately 4500 cum. Total expenditure on these structures are around 2.5 lacs and storage capacity is 4500 cum. This work helped to provide irrigation facility to 45 ha area. A structure with approximate cost of 30 lacs is not able to provide such benefits but 57 farmers got benefitted of irrigation to 45 ha area with little investment of 2.5 lacs which is incredible. Beside this, erosive velocity of runoff has been checked, recharging of ground water, insitu moisture conservation are the other benefits. Overall treating the small stream with low cost water harvesting structure -Kam ji ka khera proved as best model for livelihood enhancement.

Rest of 2.5 lacs spent on well deepening of four wells. This work helped to provide irrigation facility on 25 ha land where farmers earned additional income of more than 2.5 lacs and now 20 families depend on these wells got sustainable source for livelihood enhancement. *Economic analysis proved that expenditure of 5.0 lacs on WRD activities helps to increase income of farmers by 22 lacs from agriculture of farmers in first vear*.

#### POVERTY DOES NOT STARE ME ANY MORE

2

It seems like a dream to us, is it real I still imagine. Till yesterday my family struggled to make both ends meet, managing to keep our family of five members. This is painful but inspiring story of kripa w/o late Sh. Vikram. His husband died in year 2014. She has four children, her youngest child is 4 years old and elder child is 13 years old. Kripa had 6 bigha of land but it was of no use and it has barren due to non availability of water for irrigation. Open well is available but it was near to dry. She could not get enough production from the field and have to manage food requirement from ration shop or purchase from the market for self consumption. She has covered under "Palanhar " yojna due to efforts of Vaagdhara and gets 3500 per month which is huge support to her family. Wages is another important source of livelihood to her family. She worked in the MGNREGA in the village but she had to migrate Mansaur , approximately 160 km from her village for wages. During her migration she kept her two small children but have to left rest of two children alone in the village. It was very painful but she has struggles to both ends meet. She faced very challenging life and her fate has been very cruel to her family but God heard problem of Kripa and her all problems end now. Her name was selected by village committee in facilitation of Vaagdhara due to her name under Palanhar and widow category. Total 375 holes deepen the open well. She also managed contribution for 80 man days in form of labor. This time Kripa got enough water in the well. Let's hear about changes in her life from her own language

- I got 9 qt wheat this year earlier hardly I got 4 qt wheat through managed the irrigation by purchase the water so this time I have enough food for my family.
- Earlier I spent money to purchase water for irrigation but this year I sold additional water and earned 1600/-
- Earlier I always doubt in mind about availability of irrigation because I have to manage from near by source but now I have assured source of irrigation.

- Earlier I had to move up to 2-3 km to fetch water for drinking purpose but now no need to go anywhere so it saves my lot of time and energy. Reduction in drudgery make positive impact on health
- This time I got vegetable for four to five months. It saved my expenditure on purchasing of vegetable First time my family got regular nutritious and quality food ever.
- My two children were not go to school because I had to go for wages so they managed the home but now they are going to school.
- She said that her children faced great problems when they had to live alone in village when she had to go outside/Mandsaur for wages but now there is no need to go outside and she has enough work in agriculture
- Her social status is significantly improved. Earlier her family members were never taking care of but now they are moving around her.
- She said that now she will construct pucca house for her family because enough stone are available from deepening work. She will start taking third crop and also go for vegetable and fruit plantation to get sustainable income for her



family.

Kripa said that now my garden has bloomed. Well deepening work has changed my life; I am living happily with my family because God give enough to my family. Now I have no worry

Story how WRD works helps to get rid of children from child labor and migration

Hakriya/Jeeva children are very happy today because now they have sufficient time to play and they don't have to do hard work at home and in the field but this situation was not same two years ago. Hakriya has hardly 3 bigha lands so he had to go to outside the village in search of wages and his wife also went for wages in village or neighboring areas so in such condition Hakriya elder daughter has to manage all household works and son has to do physical work in field along with his father. Many times he also joined his father during wage labor. Poverty has not caste or creed. He had low land holding so he and his other family members had to work as labor to earn income on daily wages to make the both ends meet. Wages severely affect the health of family members specially both children. Children were not able to go to school due to work. Hakriya said that I knew that I did wrong but I had no other option because wages serve more than 75% of income of family. I have only 3 bigha land and without unavailability of water it hardly filled the food requirement for four months of family and we had no other employment opportunity in the village. Now WRD works increased the water table in the well so he took more production sufficient to his family. Continuous efforts of village child protection committee (VCPC) also convinced the Hakriya to get free of their children from child labor. Now children are enjoying their life.

President of village committee informed that now Kam ji ka khera has been declared as child labor free village from child labor and all children are going to school/Aganwadi for education.



3

0

### I don't worry any more

Gautam is small farmer and he owns 10 bigha land. He has five members in his family. Agriculture is the only source of livelihoods of his family. Earlier he hardly earned significant income from agriculture but now scenario has totally changed.. Sunken pit and lost cost water harvesting structure constructed in stream near by his field changed his life because enough water available in well to irrigate his land. He got bumper crop this time.

#### Calculation of income to Gautam after livelihood interventions

4

	Before			After		Diff. in	Value	Remarks		
Crops	Are a	Prod.	Crops	Area	Prod.	Yield	of prod.			
Kharif										
Maize	9.0	12 qt	Maize Soybean	9	25 qt	16 qt	44000	Yield increased due to moisture and assured irrigation of WRD works. Sold soybean of 26000 in market		
Gram	1.0	4	Gram Wheat Maize	9	5 45 2	1 45 2	102800	Sold surplus 30 qt wheat, 5 qt Gram in the market No irrigation provided to Gram, got production from moisture in field only		
Nil	-	-	Moong	3	6	6	30000			
Nil			Mango	1				No income at now Produce after 3 years		
Nil	_	_	Vegetable	1			38000	20000 income from sold in market and consumption for 8 months in the home		
							70000	Earned through sold sand (deposited in field due to works)		

Total additional income due to WRD works in field =2.85 Lacs

Udai said that now my garden has bloomed. Pokhar has changed my life. I no longer worry what to do if drought comes now I am living hannily with my family because good give enough to my





Fallow field in May 2016



same field in May 2017



When, he was asked about his planning and use of additional income. Gautam said that he easily managed the marriage of his daughter. Otherwise he has to take loan of 100000/- at high interest rate. He is spending money on education of elder son. Approximately 60000/- invest on his education.

Gautam said that he has *got more water than Mahi dam and now he found the path for sustainable income from agriculture.* Now he will go with high income crops along with vegetable and WADI. Many other farmers came to Gautam field and highly impressed with the progress of Gautam.

#### "Well deepening work changed my life"

Poverty has no caste or creed this Laxman meena of kam ji ka khera realized. He is a happy man today. He is a poor marginal farmer with only 4 bigha land. I was not able to earn adequate food from small land to fulfill the requirement of family. That time I was very upset and curse my poverty because my family was forced to live a very poor and tension full life. Wage is the only source which equally contributes to my livelihoods. I have the well but we four families depend on it so due to lack of adequate water to crop, productivity of crop was very low. But God heard me and my name has been selected for well deepening work by committee. This year my well has enough water and we all took three crops and still water is available in the well. I also sold water to two farmers those did not have for irrigation.

	Before			After		No of	Additio	Remarks
Crops	Area	Prod.	Crops	Area	Prod.	irrigatio n	nal income	
Kharif								
Maize	2	3	Maize Soybean	4	6		7500	
Rabi								
-			Wheat	4	10	4	16500	
Jayad								
-			Moong	2	3	4	11000	
							3500	By sold water to other farmers
							38500/-	Four times more to earlier income from agriculture

Highlights:-

5

- 20 ft water table increased in the well which helped to 5 families on 30 bigha land. This year 23 bigha additional area under cultivation increased.
- Farmer took third crop first time otherwise they all have to migrate during March to June period to outside the village in search of wages.

### Human Capital Development – Most significant impact of project

Many times we all practitioners argue that which is most important among five J- Jal, Jungle, Jan, Jameen and Janwar. In Rajasthan most of peoples say immediately about Jal or Jameen but correct answer is Jan because if Human being is developed with proper knowledge and skill and if he/she gets opportunity then he/she will create all physical assets and Vaagdhara and Pradan paid special focus to build up the capacity of Vaagdhara Aajeevika staff, C.C and Farmers. There are few examples which proved the above statement.

- There are still very few peoples in rural development sector, those know about livelihoods planning and have the skill to develop project report but tribal peoples from most backward district Banswara prepared excellent quality livelihood plan of 18 days after series of training and follow up under the project. This is really incredible.
- Government and NGO sector disseminate about various modern technologies in agriculture but if we review the percentage about adoption rate of farmer, it is extremely low but in our case, it is totally different. 2000 Farmer sown the Moong crop in 400 ha area with Package of practice which they were delivered during training session. Farmer yield increased by 50% and majority of farmers preserved the seed and used the same in this year.
- Same practice followed with few farmers for Urad in Kharif and Maize in Rabi crop.
- Sustainable integrated farming system (SIFS) is an approach developed by Vaagdhara to get income from farming system on sustainable basis and under this project 2000 farmers were aware on this concept. Under this project few demonstration on SIFS activities like Crop demonstration, Compost, Panchtaru, WADI, Agronomic measures on bund etc were demonstrated with farmers so that they can sensitize on this aspect. Results are very encouraging.

6

### Annexure -1 Impact in open wells assessed through structured format

		Before				After		Difference		
		WT	Area under irrigation	No of Hrs motor run	WT	Area under irrigation	No of Hrs motor run	WT	Area under irrigation	No of Hrs motor run
S.No	Name					0				
1	Narayan/Heera	0	0	0	12	8	5	12	8	5
2	Kripa/Vikram	0	0	0	10	7	3	10	7	3
3	Laxman/Khomji	5	2	1	15	7	6	10	5	5
4	Manji/Khaniya	3	2	0.5	10	14	5	7	12	4.5
5	Bapulal/Rakesh	5	4	1	10	8	6	5	4	5
6	Unkar/	8	10	3	20	10	8	12	0	5
7	Jeevaram	9	5	4	16	7	7	7	2	3
8	Dhanji/Khomji	7	3	2	12	6	4	5	3	2
9	Rawli	10	5	4	20	10	8	10	5	4
10	Raman/Nathu	8	4	3	15	8	6	7	4	3
11	Manji/Poja	11	5	4	20	9	7	9	4	3
12	Dhuliya	15	6	5	20	10	8	5	4	3
13	Ramesh/Kachru	10	4	4	15	8	8	5	4	4
14	Kheama/Phatiya	12	5	5	20	7	9	8	2	4
15	Nagji/Dhaniya	15	7	6	21	10	10	6	3	4
16	Maniya/Poja	10	4	3	14	7	7	4	3	4
17	hakriya/jeeva	8	2	2	10	4	3	2	2	1
18	Kaliya/PIRIA	15	5	4	20	8	8	5	3	4
19	Devji/harji	7	2	3	10	4	5	3	2	2
20	Chiriya	12	6	4	18	8	7	6	2	3
21	Jotia	6	1	1	10	3	2	4	2	1
22	Bhagwania	15	5	3	20	7	4	5	2	1
23	Khomji	12	3	2	15	4	3	3	1	1
24	Vaneshwar	16	5	4	20	7	5	4	2	1
25	Вари	10	2	1	12	3	3	2	1	2
26	Kamji/walia	9	1	2	11	2	3	2	1	1
27	Ranji/Roopa	11	2	2	15	4	4	4	2	2
28	Mangia/Kaushala	16	5	4	20	7	8	4	2	4
29	Dhuliya/Beliya	7	1	1	10	2	3	3	1	2
30	Bhanji/Beliya	10	3	2	12	3	3	2	0	1
31	Manji/Nathu	12	2	2	15	4	4	3	2	2
32	Virji/Manjgi	8	1	2	10	2	3	2	1	1
33	Ranji/raman	10	3	2.5	15	4	4	5	1	1.5

Annex-2 Data collection from beneficiary farmers for Kharif, Rabi and Jayad crops (before and after analysis)

S.No	Name of Farmer		Befo	ore		After				
		Name of crop	Area	No of irriga tion	Yield	Name of crop	Area	No of irrigation	Yield	
1	Gautam/Rakma	Maize	5	0	12	Maize, Soyabean, Groundnut	9		25	
2	Rajmal/Gautam	Maize	2	0	2	maize	2	0	3.5	
3	Lalu/Heera	Maize	4	0	8	Maize, Soyabean,	4	0	10	
4	Narayan Heera	Maize	4	0	7	Maize, Soyabean,	4	0	9	
5	Kanti/Bela	Maize	5	0	9	Maize, Soyabean,	5	0	11	
6	Mani lal/Bela	Maize	5	0	8	Maize, Soyabean,	5	0	11	
7	Babu lal/Rajesh	Maize	4	0	7	Maize, Soyabean,	4	0	10	
8	Surya /Rajesh	Maize	4		6	Maize, Soyabean,	4		9	
9	Bhan Ji/Keshiya	Maize	2	0	2	Maize, Soyabean,	2	0	3	
10	Gattu Lal/Laxman	Maize	2	0	1.5	Maize, Soyabean,	2	0	3	
11	Narsa/Laxman	Maize	5	0	7	Maize, Soyabean,	5	0	10	
12	Meera/Raman	Maize	3	0	4	Maize, Soyabean,	3	0	4	
13	Manishankar/Kh omji	Maize	4	0	3	Maize, Soyabean,	4	0	4	
14	Rao ji/Khom ji	Maize	4	0	4	Maize, Soyabean,	4	0	5	
15	Prabhu /Khomji	Maize	4	0	4	Maize, Soyabean,	4	0	4	
16	Dhanji/Khom ji	Maize	4	0	5	Maize, Soyabean,	4	0	6	
17	Hakriya /Khom ji	Maize	4	0	4	Maize, Soyabean,	4	0	5	
18	Bapu/Keshiya	Maize	15	0	18	Maize, Soyabean,	15	0	20	
19	Onkar/Phatiya	Maize	3	0	4	Maize, Soyabean,	3	0	4	

20	Mohan/Onkar	Maize	5	0	8	Maize, Sovabean.	5	0	9
		intuize			0	Maize,			
21	Ramesh/Onkar	Maize	5	0	8	Soyabean,	5	0	10
22	Prabhu /Onkar	Maize	5	0	7	Maize, Soyabean,	5	0	11
23	Shankar/Dhiriya	Maize	5	0	9	Maize, Soyabean,	5	0	10
24	Deo ji/Hur ji	Maize	7	0	10	Maize, Soyabean,	7	0	11
25	Alu/NARIYA	Maize	7	0	11	Maize, Soyabean,	7	0	12
26	dHAnji/Udiya	Maize	3	0	4	Maize, Soyabean,	4	0	6
27	Surajmal/Viriya	Maize	5	0	9	Maize, Soyabean,	7	0	15
28	Kalia/Heriya	Maize	10	0	15	Maize, Soyabean,	12	0	18
						Maize,			
29	Rama/Punjia	Maize	5	0	7	Urad	7	0	10
30	Ramchandra/Bha nji	Maize	4	0	6	Maize, Soyabean,	5	0	10
31	Kanti lal/Bhanji	Maize	5	0	6	Maize, Soyabean,	7	0	10
32	Laxman/Khom ji	Maize	6	0	7	Maize, Soyabean,	7	0	10
33	Maniya/Nag ji	Maize	4	0	4	Maize, Soyabean,	5	0	7
34	Tolaram/Nagji	Maize	3	0	7	Maize, Soyabean, Urad	7	0	7
35	Kripa/Vikram	Maize	4	0	6	Maize, Sovabean.	5	0	10
36	Hakriya /Jeeva	Maize, Urad, Toor	10	0	15	Maize, Soyabean,	15	0	25
37	Virchand/Punjia	maize	4	0	8	Maize, Soyabean,	7	0	15
38	Khomji/Rajesh	maize, toor	5	0	7	Maize, Soyabean,	7	0	12
39	Mangi lal/Nag ji	Maize, Bajra	4	0	6	Maize, Soyabean,	7	0	10
40	Lalu/Kam ji	maize	4	0	6	Maize, Soyabean,	7	0	12
41	Rangji/Rupa	Urad, Maize	7	0	10	Maize, Soyabean,	10	0	15
42	Laxman/Pula	Urad,	4	0	4	Maize,	8	0	12

		Maize				Soyabean,			
	Dhherai	Maize, Sovabea							
43	mal/Parta	n	4	0	6	Maize, Rice	7	0	10
44	Rakma/Parta	Urad, Maize	4	0	5	Maize, Soyabean,	7	0	12
45	Mani lal/Gautam	Maize, Kuri	3	0	4	Maize, Soyabean,	5	0	10
46	Kalu/Gautam	Maize, Kuri	3	0	4	Maize, Soyabean,	5	0	10
47	Aar ji/Kaushal	Maize, Kuri	2	0	4	Maize, Soyabean,	5	0	10
48	Mania/Kaushal	Maize, Kuri	2	0	4	Maize, Soyabean,	5	0	11
49	Mohan/Pulia	Maize, Kuri	3	0	5	Maize, Soyabean,	6	0	12
50	Ramesh/Dhulyia	Maize, Kodra	3	0	5	Maize, Soyabean,	5	0	6
51	Prabhu/Dhuliya	Maize	5	0	8	Maize, Soyabean,	7	0	10
52	Vimal/Dhuliya	maize	5	0	7	Maize, Soyabean,	7	0	12
53	Bapu lal/Dhuliya	maize	4	0	7	Maize, Soyabean,	6	0	10
54	Dhuliya/Ragaliya	Maize, Urad, Toor	10	0	15	Maize, Urad, Toor	12	0	20
55	Ramesh/Kachru	Ма	5	0	7	Maize, Urad	7	0	12
56	Nanu/Pulia	Maize	7	0	10	Maize, Urad	8	0	15
57	Sagji/Gangaji	Maize, Urad	5	0	7	Maize, Urad	7	0	10
58	Mania/Lasia	Maize	7	0	9	Maize, Urad, Toor	10	0	15
59	Manji/Nathu	Maize, Toor	10	0	15	Maize, Soyabean,	15	0	20
60	Laxman/Phuliya	Maize	3	0	4	Maize, Soyabean,	5	0	10
61	Birji/Ganga ram	Maize. Koyra	5	0	7	Maize, Urad	7	0	10

S.No	Name of Farmer	Before				After			
		Name of crop	Area	No of irriga tion	Yield	Name of crop	Area	No of irrigation	Yield
1	Gautam/Rakma	Gram, Wheat	7	3	30	Wheat, Gram, Maize	9	5	45
2	Rajmal/Gautam	Gram	2	0	3	Gram	2	2	5
3	Lalu/Heera	Wheat, Maize	4	3	12	Wheat, Maize	4	5	15
4	Narayan Heera	Wheat, Maize	4	3	11	Wheat, Maize	4	5	14
5	Kanti/Bela	Wheat, Maize	3	3	13	Wheat, Maize	3	5	16
6	Mani lal/Bela	Wheat, Maize	5	3	14	Wheat, Maize	5	5	15
7	Babu lal/Rajesh	Wheat, Maize	4	3	11	Wheat, Maize	4	5	14
8	Surya /Rajesh	Wheat, Maize	4	4	12	Wheat, Maize	4	5	14
9	Bhan Ji/Keshiya	Wheat, Maize	2	3	5	Wheat, Maize	2	5	10
10	Gattu Lal/Laxman	Wheat, Maize	2	3	4	Wheat, Maize	2	6	9
11	Narsa/Laxman	Gram, Wheat	5	3	12	Wheat, Maize	5	5	15
12	Meera/Raman	Gram, Wheat	3	4	9	Wheat, Maize	3	5	13
13	Manishankar/Kh omji	Wheat	4	3	12	Wheat , maize	4	4	16
14	Rao ji/Khom ji	Wheat	4	3	13	Wheat , maize	4	5	16
15	Prabhu /Khomji	Wheat	4	3	11	Wheat , maize	4	5	15
16	Dhanji/Khom ji	Wheat	4	4	12	Wheat , maize	4	6	16
17	Hakriya /Khom ji	Wheat	4	3	11	Wheat , maize	4	5	15
18	Bapu/Keshiya	Wheat	11	3	25	Wheat , maize	15	6	50
19	Onkar/Phatiya	Wheat	3	3	5	Wheat , maize	4	5	13
20	Mohan/Onkar	Wheat	5	4	10	Wheat , maize	5	5	18
21	Ramesh/Onkar	Wheat	5	4	11	Wheat , maize	5	5	13
22	Prabhu /Onkar	Wheat	5	3	12	Wheat , maize	5	4	14

						Wheat,			
23	Shankar/Dhiriya	Wheat	5	4	11	maize	5	6	13
24	Deo ii/Hur ii	Wheat	7	4	13	Wheat , maize	7	4	15
					10	Wheat,			10
25	Alu/NARIYA	Wheat	7	3	13	maize	7	6	16
						Wheat ,		_	
26	dHAnji/Udiya	Wheat	2	2	5	maize	4	5	15
27	Surajmal/Viriya	Wheat	5	3	1	Wheat , maize	7	5	21
						Wheat ,			
28	Kalia/Heriya	Wheat	10	3	10	maize	12	5	24
20	D	Comm	_	2	7	Wheat ,	7	-	25
29	Rama/Punjia	Gram	5	Z	/	maize	/	5	25
30	nji	Gram	4	1	4	maize	5	5	15
						Wheat,			
31	Kanti lal/Bhanji	Gram	7	2	8	maize	7	5	10
						Wheat ,			
32	Laxman/Khom ji	Wheat	2	2	10	maize	10	5	25
22	Maniya /Nag ji	Gram	2	1	1	Wheat ,	5	5	25
	Mailiya/Nag ji	Grain		1	1	Wheat			23
34	Tolaram/Nagji	Wheat	3	1	3	maize	7	5	30
						Wheat ,			
35	Kripa/Vikram	Gram	3	0	2	maize	5	5	15
26	Halmina (Lanna	Wheat,	0	2	10	Wheat,	1 5	-	45
30	Hakriya / Jeeva	Gram	8	Z	10	Maize	15	5	45
37	Virchand/Punjia	Wheat	5	1	10	maize	7	4	25
		Wheat,				Wheat ,			
38	Khomji/Rajesh	Gram	7	3	10	maize	7	5	25
		Wheat,				Wheat ,			
39	Mangi lal/Nag ji	Gram	7	3	12	maize	7	5	25
40	Lalu/Kamii	Wheat, Cram	7	2	11	Wheat ,	7	5	26
40		Barley	/	5	11	Wheat	/	5	20
41	Rangji/Rupa	Gram	10	1	10	maize	10	5	30
		Barley,				Wheat,			
42	Laxman/Pula	Gram	8	2	8	maize	8	5	20
_	Dhheraj	Wheat,		_		Wheat,			
43	mal/Parta	Gram	7	2	6	maize	7	5	15
11	Palma /Parta	Barley,	7	2	7	Wheat ,	7	F	10
44	Nakilid/ Fai la	Wheat	/		/	Wheat	/	3	10
45	Mani lal/Gautam	Gram	5	3	6	maize	5	4	15
		Wheat,	-				-		
46	Kalu/Gautam	Gram	5	3	6	Wheat	5	4	16

47	Aanii /Kaushal	Barley,	F	1	2	Wheat,	F	F	15
47	Aar ji/Kaushai	wheat	5	1	Z	maize	5	5	15
48	Mania/Kaushal	Barley, Wheat	5	1	2	Wheat	5	5	16
		Barley,				Wheat,			
49	Mohan/Pulia	Gram	6	2	10	maize	6	6	20
		Barley,				Wheat,			
50	Ramesh/Dhulyia	Gram	6	2	10	maize	6	6	20
		Wheat,				Wheat ,			
51	Prabhu/Dhuliya	Gram	4	2	6	maize	7	5	25
		Wheat,				Wheat ,			
52	Vimal/Dhuliya	Gram	4	2	6	maize	7	5	24
		Wheat,				Wheat ,			
53	Bapu lal/Dhuliya	Gram	4	2	8	maize	6	5	24
		Wheat,				Wheat ,			
54	Dhuliya/Ragaliya	Gram	6	2	12	maize	12	5	36
		Wheat,				Wheat ,			
55	Ramesh/Kachru	Gram	5	3	10	maize	7	5	21
		Wheat,				Wheat ,			
56	Nanu/Pulia	Gram	5	3	10	maize	8	5	25
		Wheat,				Wheat ,			
57	Sagji/Gangaji	Gram	5	3	10	maize	7	5	23
		Wheat,				Wheat ,			
58	Mania/Lasia	Gram	7	2	12	maize	10	4	30
		Barley,				Wheat ,			
59	Manji/Nathu	Wheat	10	2	25	maize	15	4	45
		Wheat,				Wheat ,			
60	Laxman/Phuliya	Gram	3	2	10	maize	8	4	15
		Wheat,				Wheat ,			
61	Birji/Ganga ram	Gram	5	2	10	maize	7	4	25

S.No	Name of Farmer	Before				After			
				No of					
		Name of	Ar	irriga				No of	
		crop	ea	tion	Yield	Name of crop	Area	irrigation	Yield
1	Gautam/Rakma			0		moong	4	5	3
2	Rajmal/Gautam			0					
3	Lalu/Heera			0		moong	2	4	1.5
4	Narayan Heera			0		moong	2	5	2
5	Kanti/Bela			0		moong	1	4	1
6	Mani lal/Bela			0		moong	1	4	1
7	Babu lal/Rajesh								
8	Surya /Rajesh								
9	Bhan Ji/Keshiya								
10	Gattu Lal/Laxman								
11	Narsa/Laxman								
12	Meera/Raman					moong	1	4	1.5
13	Manishankar/Khomji								
14	Rao ji/Khom ji								
15	Prabhu /Khomji								
16	Dhanji/Khom ji					moong	1	4	1
17	Hakriya /Khom ji								
18	Bapu/Keshiya								
19	Onkar/Phatiya					moong	2	4	2
20	Mohan/Onkar					moong	1	5	1.5
21	Ramesh/Onkar					moong	1	5	1.5
22	Prabhu /Onkar					moong	2	4	1.5
23	Shankar/Dhiriya								
24	Deo ji/Hur ji					moong	1	5	2
25	Alu/NARIYA					moong	1	4	1.5
26	dHAnji/Udiya								
27	Surajmal/Viriya								
28	Kalia/Heriya								
29	Rama/Punjia	moong	2	4	2	moong	2	5	5
30	Ramchandra/Bhanji								
31	Kanti lal/Bhanji								
32	Laxman/Khom ji								
33	Maniya/Nag ji								
34	Tolaram/Nagji	moong	1	2	2	moong	2	5	3
35	Kripa/Vikram								
36	Hakriya /Jeeva	moong	2	3	2	moong	4	5	6
37	Virchand/Punjia	moong	1	2	1	moong	2	4	4
38	Khomji/Rajesh								
39	Mangi lal/Nag ji								

·									r
40	Lalu/Kam ji	moong	1	1	0.5	moong	2	4	3
41	Rangji/Rupa	moong	2	1	1	moong	2	4	3
42	Laxman/Pula	moong	2	2	3	moong	2	4	3
43	Dhheraj mal/Parta	moong	1	2	2	moong	2	4	3.5
44	Rakma/Parta	moong	1	2	2	moong	2	5	3.5
45	Mani lal/Gautam	moong	1	1	2	moong	2	5	3.5
46	Kalu/Gautam	moong	1	1	1	moong	2	4	3
47	Aar ji/Kaushal	moong	1	2	1	moong	2	4	3
48	Mania/Kaushal	moong	1	2	1	moong	2	5	3.5
49	Mohan/Pulia	moong	2	2	2	moong	2	5	3.5
50	Ramesh/Dhulyia	moong	2	1	2	moong	2	5	3.5
51	Prabhu/Dhuliya	moong	1	2	0.8	moong	3	4	3
52	Vimal/Dhuliya					moong	3	4	3
53	Bapu lal/Dhuliya					moong	2	4	3
54	Dhuliya/Ragaliya	moong	2	2	1.5	moong	3	4	4
55	Ramesh/Kachru					moong	3	5	3.5
56	Nanu/Pulia					moong	4	5	4
57	Sagji/Gangaji	moong	2	2	2	moong	3	5	3
58	Mania/Lasia					moong	5	5	4
59	Manji/Nathu					moong	5	5	4
60	Laxman/Phuliya	moong	1	2	0.5	moong	2	4	2
61	Birji/Ganga ram	moong	1	2	0.6	moong	2	4	2