

**IMPACT ASSESSMENT OF
PARTICIPATORY IRRIGATION MANAGEMENT
(MAAN AND JOBAT PROJECTS)**

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EXECUTIVE SUMMARY

Development Support Centre (DSC) commissioned an impact assessment study of Participatory Irrigation Management (PIM) in Maan and Jobat projects, Dhar district, Madhya Pradesh. Since the year 2008, DSC has collaborated with the Narmada Valley Developmental Authority (NVDA), Government of Madhya Pradesh and Madhya Pradesh Rural Livelihoods Project (MPRLP) for promoting PIM in the Jobat and Maan irrigation projects with the objectives of capacity building of the Water Users Associations (WUA) so that they can manage canal irrigation with efficiency, equity and sustainability. Maan and Jobat projects are irrigation projects creating public infrastructure for the farmers to augment their livelihood systems. This focuses on strengthening PIM through WUAs in command areas of the projects.

MPRLP and NVDA initiated efforts for implementing PIM and strengthening WUAs in the command areas of Jobat and Maan irrigation projects completed in 2006 in the districts of Dhar and Jhabua respectively in western Madhya Pradesh. Funds were sourced from NVDA, MPRLP and National Rural Employment Guarantee Scheme to provide micro channel irrigation, awareness, capacity building and training of WUAs and exposure visits have been conducted. DSC was appointed as Technical Support Organization for PIM related activities and an agreement signed between DSC and MPRLP in November, 2008 for capacity building of stakeholders and strengthening of 16 Water Users Associations (WUAs) spread over 77 villages of Kukshi, Manavar, Gandhvani, Dahi and Nisapur blocks of Dhar district. There were 10 WUAs already formed in Maan and 6 WUAs in Jobat before the entry of DSC in year 2008-09. Each WUA has a general body of its canal beneficiary farmers and a management Committee that is constituted by 5-6 elected Territorial Committees from within the canal beneficiary farmers. MPRLP and NVDA initiated the project for strengthening and developing PIM in the command areas of Jobat and Maan medium and major irrigation projects in Dhar district of Madhya Pradesh. DSC, Ahmedabad was appointed as Technical Support Organization for facilitating PIM related activities in the projects through an agreement signed between DSC and MPRLP in November, 2008 for capacity building of stakeholders and strengthening of 16 Water Users Associations (WUAs).

DSC has been involved in a) motivation and mass awareness of canal beneficiary farmers in the command area through meetings, video shows, school programmes; b) capacity Building of WUA office bearers, members, paid staff of the WUAs (conducting in-house and on the spot training, project level workshops and exposure visits within and outside the state); c) hand holding support to WUAs to evolve systems of irrigation management, canal repair and maintenance and, irrigation service fee collection, irrigation assessment, and record keeping and administration of WUAs etc.; and d) facilitating Community Interface with NVDA and MPRLP.

This impact study has primary focus to assess the tangible benefits of the improved PIM through WUAs. The study team consist Prof. KV Raju and Prof. Hare Krishna Misra from Institute of Rural Management Anand, (IRMA). DSC and NVDA officers extended support to conduct the study including providing logistics, sharing information, and arranging meetings with WUAs during field visits. DSC and NVDA officers extended support to conduct the study including providing logistics, sharing information, and arranging meetings with WUAs during field visits.

Overall, the assessment study indicated increase in participation of water users through social mobilization and strengthening of WUAs. The study examined and traced availability of infrastructure, services and structures owned and operated through social organizations. One of the major indicators of the successful intervention of PIM is increase in irrigated areas vis-à-vis the CCA planned. It is evident that DSC interventions have positively impacted with considerable increase in number of farmers benefiting from PIM after DSC interventions. However, it is worth noting that there is substantial increase in number of farmers in non-command area benefiting from PIM without contributing to manage cost and maintenance of the assets. Though generally there is no adverse impact, it is likely to create disharmony and heartburn.

It was observed that government policy for free water supply for 5 years developed dependency syndrome and now becoming a barrier in service fee collection. This issue is more acute in some of the WUAs. It is observed that the net rabi crop sowing area is increasing year after year from last three rabi irrigations but the canals particularly minors and sub minors are not in good shape. The NVDA has taken up lining of main and distributor canals in both the projects. On its completion, the lining is expected to help in improving water deliveries. The WUAs are trying hard to provide water to all the farmers by rotation for water distribution in distributaries, minor canals and field channels. But this process is time consuming to internalize and farmers would take at least two-three years to evolve an effective “warabandi” system by learning from their experiences. Also, the poor physical condition of canals adds to the problem in regulating the flow in canals particularly during critical phases of irrigation. The progress of canal lining award process is slow. Farmers raised strong voice for improving quality of construction works. Only 213 kms (about 50%) out of 423 kms canal systems of both the projects is completed properly till March 2012. Seepage from unlined canals is causing water logging in nearby agriculture fields. Besides, there is rampant illegal pumping of water from the canals leading to deprivation in middle and tail ends. It is reported that there are about 450 pumps in Maan and 380 water pumps in Jobat projects. The NVDA has to approach to electricity supply department for controlling new power connections particularly in the out of command villages. The WUAs need to evolve rotational off and on system with the pump owners

It was also observed that WUAs are not receiving full annual grant under PIM. Despite this, some WUAs are able to improve expenditure on R&M by using funds mobilized through service fee collection. There is need to rationalize the WUA area so that governance, member interface, service fee collection, asset maintenance, managing tail ends and controlling non-command area can be

more effective. Strong leaders are able to promote the WUA both internally and externally. Unless there is effective participation, the leaders follow the rules and remain accountable to the general members; they will quickly lose the trust of the membership.

It is noted that there is considerable increase in non-command beneficiaries across head, middle and tail areas in Jobat project. Similar situation was also shared by the attendees in Maan project. This trend is cause of concern and suitable corrective measures are to be taken on priority. It was observed that there is often confusion or disagreement over roles and responsibilities of WUAs and the department. This also was prominent in the areas of communications among WUAs, members and department. WUAs need the authority and ability to make independent decisions, collect and manage sufficient resources, appoint staff, establish and enforce rules, resolve conflicts (in accordance with local norms), and act in their own interests etc, rather than depend on external sources or influences. They need to make and enforce their own decisions and rules so that they meet local requirements, but this process may need to be externally facilitated in order to avoid merely reproducing local power structures and relations. DSC is playing this role effectively, but its continued support is necessary at this juncture. WUAs are usually part of a joint management structure. In order to work in an autonomous way, they need to be given a predictable, planned water supply from the main system. At the moment, and although department may strive to achieve this, there is no formal obligation on the department to achieve a specified reliability of water delivery to the WUA. The WUA have no legal recourse against the department if they fail to provide water in accordance with their needs. Under existing arrangement, WUAs have limited authority to collect and manage resources. During the study it was found that WUAs are seeking greater authority for this task.

Keeping the observations in view, it is suggested that WUAs should be accountable to its members, with clear procedures and rights of appeal. WUAs have rarely participated in a fully accountable way even for management of rehabilitation, and WUA committee members have shown little commitment to taking up their full responsibilities. It could be noted that few active members are contributing to function of WUAs. More specifically, there is decline in fees collection, and increase in non-command beneficiaries. The biggest problem is that NVDA has not been able to demarcate the command and non command area to the WUAs. There was no record like list of farmers in the service area of designed command area and farmers received water from canal till 2008. The list voters of WUA was given to DSC but when the WUAs and the Kolaba sahayaks cross verified the list with the farmers through field to field walk through, it was noted that the list is not useful because the field realities were very different. Many farmers who can never access to canal water were included in the list while other who have already been getting water could not put in to the list. Therefore DSC has facilitated the WUAs to prepare list of farmers and their field that are being irrigated through flood and lift irrigation. The WUAs and NVDA should realign WUAs boundaries according to the workable modal and technical justification. There was a dilemma that out of many command farmers were ready to pay service fee on receiving of water but the WUAs refused to accept the fee because of legal obligations. The WUAs don't want to play with Govt. rules even if they don't see any problem in terms

of water distribution. Contrarily, the tribal farmers want more equity in water distribution; they want that some of their neighboring farmers should not be left aside as they understand that all of them can be benefited through lifting water from the canal or by arresting seepage water from canal rather than a situation where few benefited from flood irrigation. The undulated landscape of Maan and Jobat projects support the idea of conjunctive use of canal water and lifting of seepage/ sub surface water from the nearby water bodies. The farmers also want that the NVDA fills up their ponds and natural water bodies particularly wherever it is feasible that will help in reducing conveyance pressure on the canal and will also improve the overall water use efficiency. The farmers also ready to pay lift irrigation charges. The NVDA and WUAs have to take decision in this regards as early possible otherwise the situation will get worse after to three years.

The study strongly recommends enhancing competencies in WUAs to embrace value chain interventions (VCI) through collective enterprises to benefit from production and productivity gains due to this irrigation infrastructure. It is important to note that VCI approach aims to identify different stages in agriculture production system in which value can be identified and these include pre-collection, collection, local value-addition, post-collection and marketing. Having noted the principles of VCI, it is important that PIM has successfully helped the farmers to form WUAs, get access to water distribution systems resulting significant increase in production in the area. This scenario has paved the way for social cohesiveness and to appreciate the economic returns to their collective efforts. However, there is abundant scope to leverage these capabilities in forging forward and backward linkages in the value chain to improve their livelihoods. It is highly recommended that DSC and NVDA undertakes a comprehensive study of VCI for the major crops, identifying suitable market linkage and market integration in the forward and reverse paths of value chain.

IMPACT ASSESSMENT OF PARTICIPATORY IRRIGATION MANAGEMENT IN MAAN AND JOBAT PROJECTS

1. INTRODUCTION

Development Support Centre (DSC) commissioned an impact assessment study of Participatory Irrigation Management (PIM) in Maan and Jobat projects, Dhar district, Madhya Pradesh. Since the year 2008, DSC has collaborated with the Narmada Valley Developmental Authority (NVDA), Government of Madhya Pradesh and Madhya Pradesh Rural Livelihoods Project (MPRLP) for promoting PIM in the Jobat and Maan irrigation projects with the objectives of capacity building of the Water Users Associations (WUA) so that they can manage canal irrigation with efficiency, equity and sustainability. The project covers about 77 villages and 25,000 hectares cultivated land mainly in Kukshi, Gandhavani and Manavar blocks in MP.

2. TERMS OF REFERENCE

Maan and Jobat projects are irrigation projects creating public infrastructure for the farmers to augment their livelihood systems. This focuses on strengthening PIM through WUAs in command areas of the projects. The impact study has primary focus to assess the tangible benefits of the improved PIM through WUAs.

3. STUDY TEAM

The study team consist Prof. KV Raju and Prof. Hare Krishna Misra from Institute of Rural Management Anand, (IRMA). DSC and NVDA officers extended support to conduct the study including providing logistics, sharing information, and arranging meetings with WUAs during field visits.

4. IMPACT ASSESSMENT STUDY METHODS

Table 1 Assessment Methods

Approaches	Action Taken	Reference in the Report
Visiting field offices of DSC, NVDA and MPRLP to understand context and nature of intervention	Discussions with field teams of DSC, Executive Engineer (NVDA) and his team	Section 5
Analyzing secondary data related to irrigation and crops	Collation of data from various sources including and discussions with the CEO and Director (Programmes), DSC, Ahmadabad	Section 6
Interacting with members and office bearers of select WUAs in workshop mode	a. Workshop at Maan Irrigation Project Guest House at Manavar reservoir site b. Workshop for Jobat Irrigation project at Nanpur Jobat Dam	Section 6

Approaches	Action Taken	Reference in the Report
	Guest House near Kukshi	
Visiting a cross-section of WUAs for validation of the workshop findings and for insights	a. Maan Project Villages Visited : Andiyav, Mohal, khadaki, Balipur b. Jobat Project Villages Visited: Haldi, Padiyal, Ali	Section 6

5. PIM INTERVENTION

Since 1985 Ministry of Water Resources has been inspiring farmers' participation in water distribution and management of tertiary system in the projects covered under the Centrally Sponsored Command Area Development Programme. The concept of involvement of farmers in management of the irrigation system has been accepted as a policy of the Government of India and has been included in the National Water Policy adopted in 1987. Ministry of Water Resources has been organizing National level training programmes on PIM in various parts of the country for CAD functionaries. In addition, matching grant is also being provided to States for organizing State and project level training programmes for farmers and field functionaries. Provisions made in the National Water Policy of 1987 were as under:

“Efforts should be made to involve farmers progressively in various aspects of management of irrigation systems, particularly in water distribution and collection of water rates. Assistance of voluntary agencies should be enlisted in educating the farmers in efficient water-use and water management.”

And “PIM is a process for improving productivity and sustainability of irrigation systems”

(National Water Policy of 1987)

The World Bank (1996) defines Participatory Irrigation Management (PIM) as “the involvement of irrigation users in all aspects and all levels of irrigation management.” “Involvement” is flexible, ranging from light involvement like information sharing, consultation, and joint assessment of problems to real involvement like shared decision-making, collaboration, and full say by the water users. Some of the experienced benefits of PIM include:

- Improvements in the equity of distribution of irrigation water,
- Greater participation of farmers in management decisions,
- Greater water use efficiency— because of improved cropping and management decisions,
- Greater participation of farmers in operation and maintenance of the irrigation system,
- Better productivity per water unit,
- Communication networks that draws on traditional management systems. Through allowing devolution of decision making about irrigation management to the local level, farmers can mitigate disputes and design management solutions to water variation over time.

In India, state level Acts are enacted to implement the programme. In Table 2 details of these Acts as available among many states are presented (Source: wrmin.nic.in/writereaddata/mainlinkFile/File421.pdf accessed on 25.11.2013).

Table 2: State-wise Position of Enactment of New Act / Amendment of existing Acts

Sl. No.	Name of State	Position of issue / amendment of Irrigation Act
1.	Andhra Pradesh	Enacted "Andhra Pradesh Farmers' Management of Irrigation Systems Act, March, 1997"
2.	Assam	The Assam Irrigation Water Users Act 2004
3.	Bihar	"The Bihar Irrigation, Flood Management and Drainage Rules, 2003" under the Bihar irrigation Act, 1997
4.	Chhattisgarh	Enacted "Chhattisgarh Sinchai Prabandhan Me Krishkon Ki Bhagidari Adhiniyam, 2006"
5.	Goa	Enacted "Goa Command Area Development Act 1997 (Goa Act 27 of 1997)"
6.	Gujarat	Gujarat Water Users Participation Management Act, 2007
7.	Karnataka	Promulgated an Ordinance on 7 th June 2000 for amendment of the existing Karnataka Irrigation Act 1957.
8.	Kerala	Enacted "The Kerala Irrigation and Water Conservation Act 2003".
9.	Madhya Pradesh	Enacted "Madhya Pradesh Sinchai Prabandhan Me Krishkon Ki Bhagidari Adhiniyam, 1999" during September 1999.
10.	Maharashtra	"The Maharashtra Management of Irrigation Systems by Farmers Act, 2005"
11.	Orissa	Enacted "The Orissa Pani Panchayat Act, 2002".
12.	Rajasthan	Passed the "Rajasthan Sinchai Pranali Ke Prabandh Me Krishkon Ki Sahabhagita Adhiniyam, 2000".
13.	Sikkim	"Sikkim Irrigation Water Tax 2002" and "Sikkim Irrigation Water Tax (Amendment) Act 2008"
14.	Tamil Nadu	Enacted the "Tamil Nadu Farmers' Management of Irrigation Systems Act, 2000".
15.	Uttar Pradesh	Enacted the "Uttar Pradesh Irrigation Management Act, 2009"

In Table 3 number of water users associations (WUAs) formed in states is presented (Source: wrmin.nic.in/writereaddata/mainlinkFile/File421.pdf accessed on 25.11.2013).

Table 3: State-wise Number of Water Users' Associations (WUAs) and Area covered

Sl. No	Name of State	Number of WUAs formed	Area covered ('000 ha)
1.	Andhra Pradesh	10800	4169.00
2.	Arunachal Pradesh	39	9.02
3.	Assam	720	47.04
4.	Bihar	67	182.36
5.	Chattisgarh	1324	1244.56
6.	Goa	57	7.01
7.	Gujarat	576	96.68
8.	Haryana	2800	200.00
9.	Himachal Pradesh	876	35.00
10.	J&K	39	2.758
11.	Jharkhand	0	0
12.	Karnataka	2557	1318.93
13.	Kerala	4163	174.89
14.	Madhya Pradesh	1687	1691.88
15.	Maharashtra	1539	667.00
16.	Manipur	73	49.27
17.	Meghalaya	123	16.45
18.	Mizoram	110	14.00
19.	Nagaland	23	3.15
20.	Orissa	16196	1537.92
21.	Punjab	957	116.95
22.	Rajasthan	506	619.65
23.	Sikkim	0	0
24.	Tamil Nadu	1457	1176.21
25.	Tripura	0	0
26.	Uttar Pradesh	245	121.21
27.	Uttaranchal	0	0
28.	West Bengal	10000	37.00
Total		56934	13537.94

5.1 PIM in Madhya Pradesh

Madhya Pradesh is the second state of India after Andhra Pradesh to enact “Madhya Pradesh Sinchai Prabandhan Me Krishkon Ki Bhagidari Adhiniyam, 1999” to create legal provisions for PIM. The Act facilitates formation of farmers’ organization by delineating every command area under each of the irrigation systems on a hydraulic basis. The objectives of the farmers’ organization shall be to promote and secure distribution of water among its users, adequate maintenance of the irrigation system, efficient and economical utilization of water to optimize agricultural production, to protect the environment, and to ensure ecological balance by involving the farmers. The Act envisages creation of farmer’s Institutions such as water users association, distributaries committee and project committee in irrigation project area as shown in Figure 1 below.

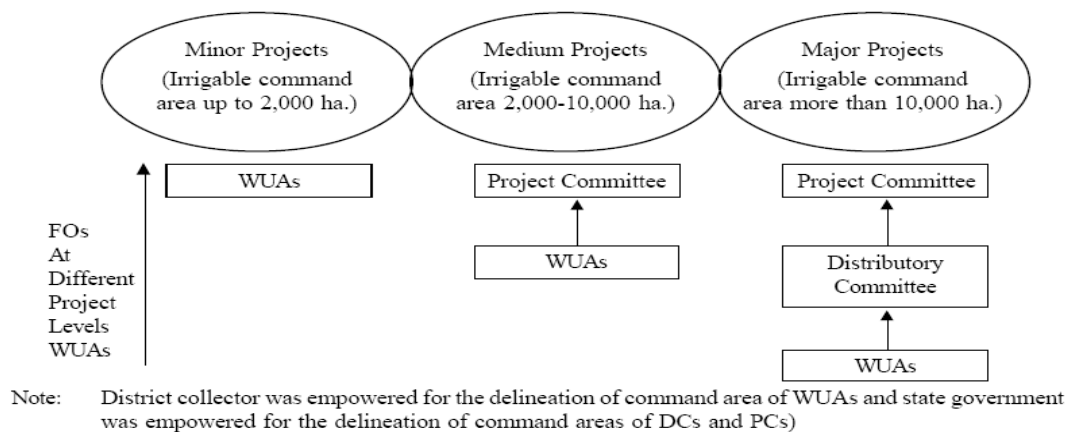


Figure 1: Tier Structure of PIM

It may be noted that WUAs are organized in single, two or three tier structure depending on the local needs. The WUAs shall perform the following functions:

- to prepare and implement a warabandi schedule for each irrigation season, consistent with the operational plan based upon the entitlement, area, soil and cropping pattern as approved by the Distributory committee, or as the case may be, the Project Committee;
- to prepare a plan for the maintenance of irrigation system in the area of its operation at the end of each crop season and carry out the maintenance works of both distributory system and minor and field drains in its area of operation.
- to regulate the use of water among the various pipe outlet under its area of operation according to the warabandi schedule of the system; to promote economy in the use of water allocated;
- to prepare and maintain an inventory of the irrigation system within the area of operation;
- to monitor flow of water for irrigation,
- to resolve the disputes, if any between the members and water users in its area of operation;
- to conduct regular water budgeting and also to conduct periodical social audit in such manner as may be prescribed.

Table 4: WUAs in MP

	In 2000-01 Total number of farmers' organization (FOs ¹)	Total elected Person	Area under FOs (million ha.)	Total Members (in lac)	In 2006* Total number of farmers' organization (FOs ¹)	Total elected Person	Area under FOs (million ha.)	Total members (in lac)
W U A s								
Minor	850				936			
Medium	153				209			
Major	467				542			
Sub-Total	1470	11752			1687	12877		
Distributory Committees (for major Projects only)	90	300	1.5	11.75	90	300	1.69	Not available (NA)
Project Committees								
Medium	57	398			57	398		
Major	19	151			19	151		
Sub-Total	76	549			76	549		
Total	1636	12601	1.5	11.75	1853	13726	1.69	NA

* Only elections for WUAs are held, figures for DCs and PCs are of 2000-01 elections only

Growth in WUAs and number of elected members is presented in Table 4. Figure as in the year 2006 indicates that there are 1687 WUAs, 90 Distributaries Committees and 76 Project Committees under the minor, medium and major irrigation projects covering an area of 16.92 lakh ha.

5.2 PIM in Maan and Jobat Irrigation Projects

MPRLP and NVDA initiated efforts for implementing PIM and strengthening WUAs in the command areas of Jobat and Maan irrigation projects completed in 2006 in the districts of Dhar and Jhabua respectively in western Madhya Pradesh as shown in Figure 2. Funds were sourced from NVDA, MPRLP and National Rural Employment Guarantee Scheme to provide micro channel irrigation, awareness, capacity building and training of WUAs and exposure visits have been conducted. DSC was appointed as Technical Support Organization for PIM related activities and an agreement signed between DSC and MPRLP in November, 2008 for capacity building of stakeholders and strengthening of 16 Water Users Associations (WUAs) spread over 77 villages of Kukshi, Manavar, Gandhvani, Dahi and Nisapur blocks of Dhar district. DSC activities commenced in January 2009 and continued till September 2012. After discontinuance of funding support from MPRLP in January 2012, NVDA decided to extend the financial support thereafter within the broad framework of the agreement signed between MPRLP and DSC.

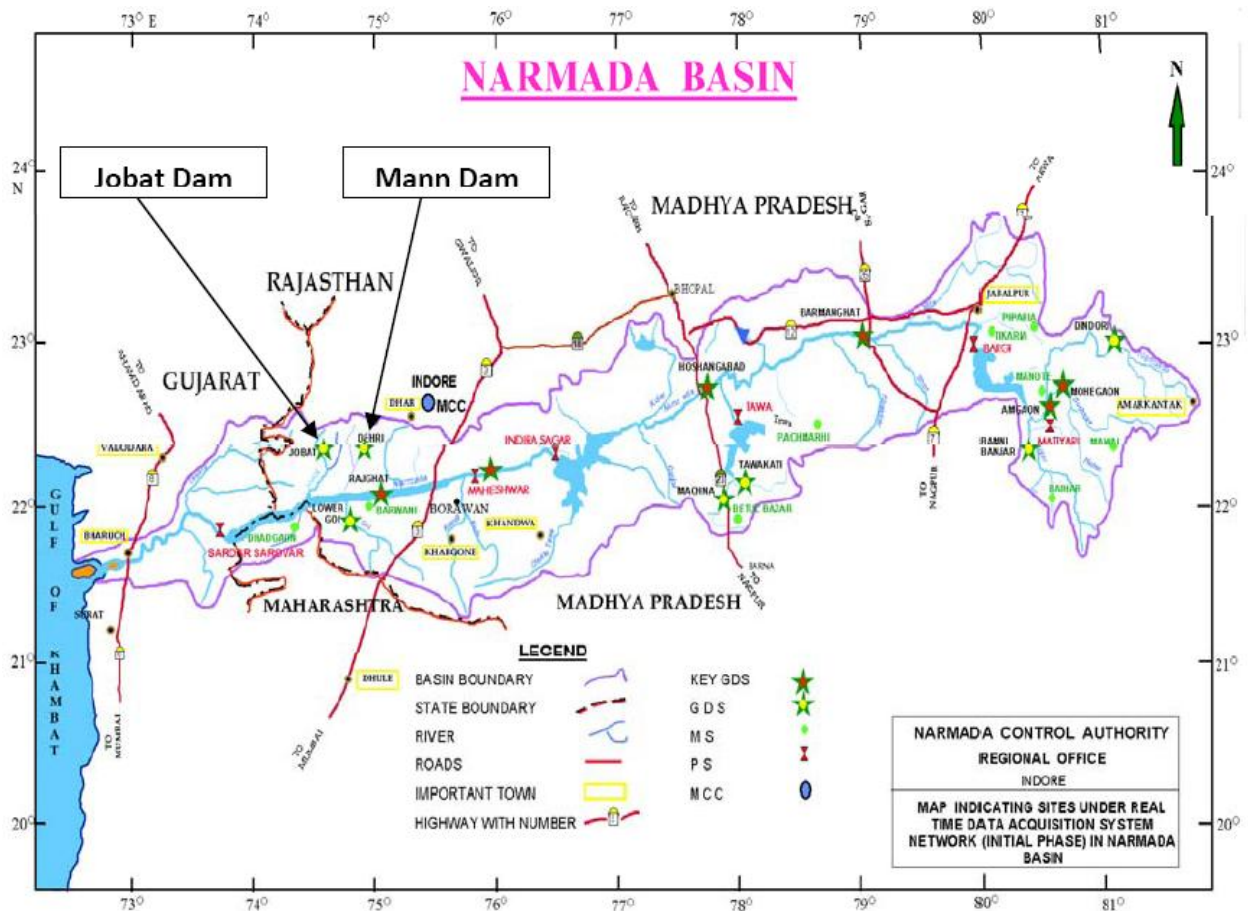


Figure 2: Maan and Jobat Irrigation Projects in MP

5.2.1 Maan Project

The Mann dam is one of the 30 large dams that had been planned as part of the Narmada Valley Development Project (NVDP). It is constructed on the river Maan (that drains into the Narmada River) near village Jeerabad of Manawar Tehsil of District Dhar of Madhya Pradesh as an irrigation project. It has an irrigation capacity of 15,000 hectares. The length of its left canal is 16.27 km while that of its right canal is 10.82-km long. Fish production of Rs 3.50 corers is expected annually in the reservoir (Figure 3).

19 villages are under Left bank Main canal (LBMC) and 34 villages are under Right Bank Main Canal (RBMC). The canals have been designed to irrigate 19,200 hectare area annually with 128% irrigation intensity. It was estimated that about 7,910 rural families will be benefited through direct interventions out of which about 6880 (87%) belong the tribal communities.

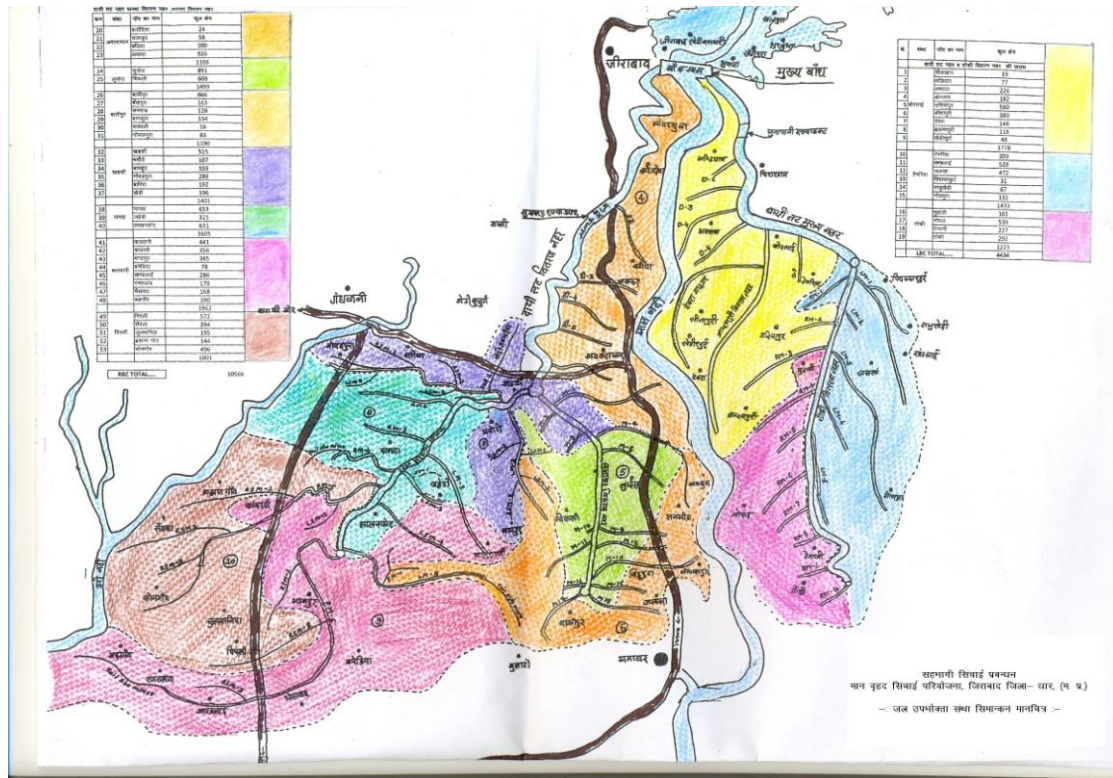


Figure 3: Maan Project Area

First time, the reservoir filled with 125.343 million cubic meters water in 2007-08. Indeed in most of subsequent years, it has been overflow due to good rains in the catchments areas. Total 366.145 million cubic meter water has been released from the head regulator to the main canals in last four years including 72.178 Mcum in 2010, 43.281 Mcum in 2009 and 125.343 Mcum in each of 2008 and 2007 according to NVDA (Table 5).

Table 5: Year wise live Storage of reservoir and irrigation achieved in Maan project

Year	Live Storage (Mill. Cum.)	Canal Water Released (Mill. Cum.)	Canal Operated in Days	Area Irrigated (In Hectares)
2011-12	125.87	114.87	140	15,000
2010-11	125.87	91.34	130	15,000
2009-10	103.202	72.178	150	15,000
2008-09	43.281	43.281	150	10,000
2007-08	125.343	125.343	150	5,000
2006-07	125.343	125.343	150	3,000
2006-07	125.343	125.343	150	3,000

Source: NVDA

The topography of the command area is such that the seepage water from the main, distributaries and minor canal helps in recharging the sub surface and ground water tables. It is estimated that about 19,527 hectare area is additionally irrigated through lift irrigation from open wells, tube wells and natural drainage channels since 2007-08. The farmers used to arrest 50% seepage water through individual lift irrigation according to FGD discussions.

5.2.2 Jobat Project

The Jobat dam also constructed as part of the Narmada Valley Development Project (NVDP) at village Waskal, tehsil Kuksi of district Dhar in Madhya Pradesh across the river Hathni - a tributary of the Narmada. This dam is also one of the 30 major dams build in the Narmada Valley. The main canal of length 29.73 km is on the left bank. The irrigation capacity area is 9848 ha. About 24 villages should be benefited from irrigation facilities including about 2480 rural families out of which about 1,323 (54%) families belong to tribal caste.

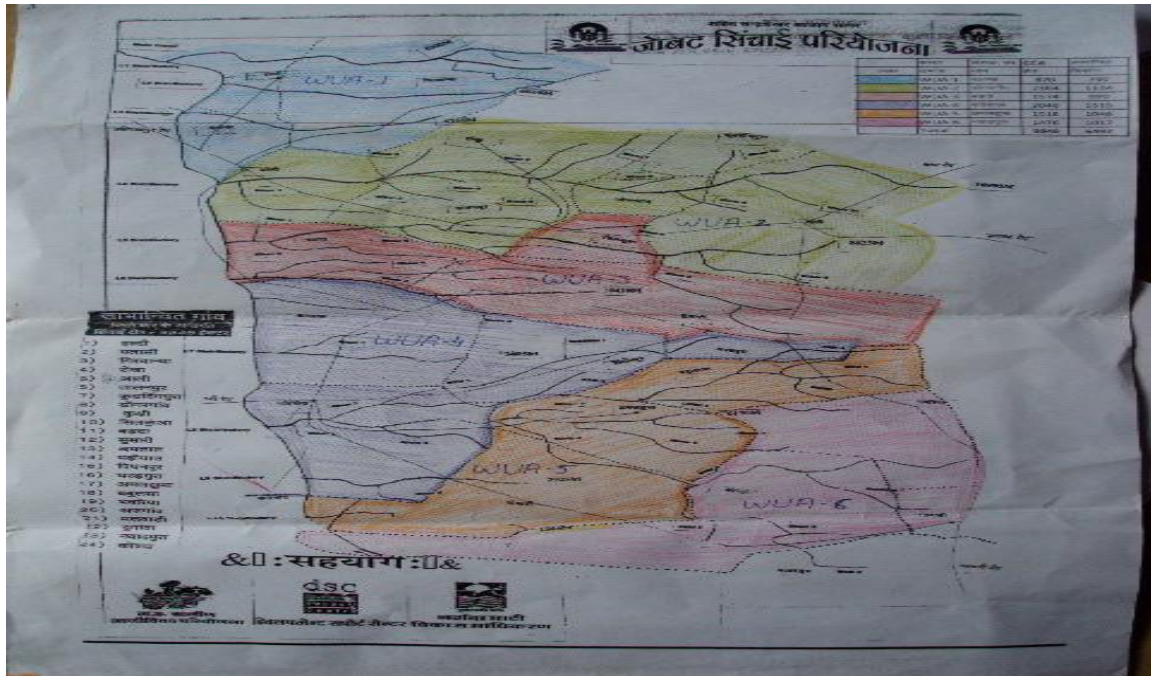


Figure 4: Jobat Project Area

The construction of project was completed in 2004-05 and first time the water was released in the main canal in year 2007-08. First time, the reservoir filled with 67.57 million cubic meter water in 2007-08. Indeed in most of subsequent years, it has been overflow due to good rains in the catchments area. Cumulatively, about 71.801 million cubic meter water has been released from the head regulator to the main canals in last three years including 25.858 Mcum in 2010, and 20.085 Mcum in each 2009 and 2008 (Figure 4).

The topography of the command area is such that the seepage water from the main, distributaries and minor canal helps in recharging the sub surface and ground water tables. Hence It is estimated that an additional 2,000 hectare area could be irrigated by arresting 20% of 30% efficiency losses through ground water recharge attributing lift irrigation from open wells and tube wells totaling to 17,000 hectares (Table 6)

Table 6: Year wise live Storage and irrigation achieved in Jobat project

Year	Live Storage (Mill. Cum.)	Canal Water Released (Mill. Cum.)	Canal Operated in Days	Area Irrigated (In Hectares)
2011-12	70.04	41.768	130	10,000
2010-11	68.866	27.098	120	10,000
2009-10	68.866	25.858	120	10,000
2008-09	67.573	20.085	90	7,000
2007-08	65.573	25.858	90	5,000
2006-07				

Source: NVDA

6. DSC INTERVENTIONS

There were 10 WUAs already formed in Maan and 6 WUAs in Jobat before the entry of DSC in year 2008-09. These WUAs have been constituted as per PIM Act 1998 of Government of MP in the year of 2006-07. Each WUA has a general body of its canal beneficiary farmers and a management Committee that is constituted by 5-6 elected Territorial Committees from within the canal beneficiary farmers. MPRLP and NVDA initiated the project for strengthening and developing PIM in the command areas of Jobat and Maan medium and major irrigation projects in Dhar district of Madhya Pradesh. DSC, Ahmedabad was appointed as Technical Support Organization for facilitating PIM related activities in the projects through an agreement signed between DSC and MPRLP in November, 2008 for capacity building of stakeholders and strengthening of 16 Water Users Associations (WUAs) covering 77 villages of Kukshi, Manavar, Gandhvani, Dahi and Nisapur blocks of Dhar district. The project activities commenced in January 09 and continued till September 2012.

DSC has been involved in following activities during the project period;

- 1) Motivation and mass awareness of canal beneficiary farmers in the command area through meetings, video shows, school programmes,
- 2) Developing and distribution of multi-media (print and audio visual) materials, wall painting etc for community awareness
- 3) Capacity Building of WUA office bearers, members, paid staff of the WUAs (conducting in - house and on the spot training, project level workshops and exposure visits within and outside the state)
- 4) Hand holding support to WUAs to evolve systems of irrigation management, canal repair and maintenance and, irrigation service fee collection, irrigation assessment, record keeping and administration of WUAs etc.
- 5) Facilitating Community Interface with NVDA and MPRLP

6.1. Mass Awareness and Capacity Building

The mass awareness programmes like video shows, Sangoshthi, baithaks, Walk Through, on the spot technical trainings were conducted in the field/ villages while module based 2-3 days training were

conducted on training centres at Indore, Mandu, Ahmedabad, Mandleshvar, Maheshvar and Dhar etc. Besides, about 201 Canal Walk Through including 85 in Maan and 116 in Jobat project have been carried out cumulatively covering total 3264 participant days which were very helpful in creating sense of ownership and building technical knowledge of farmers.

The major subjects covered under mass awareness, and capacity building programmes were as follows;

- Concept of PIM and benefits of farmers participation to primary stakeholders
- Major provisions of MP PIM Act and Rules, for WUAs and their sub committees
- Sustainable WUA and process of developing a sustainable WUA by farmers
- Effective administration system of a WUA, record and account keeping etc
- Joint survey and carrying out differed and regular maintenance of canals and quality control
- Water distribution planning & management, regulation of water flow in canals, and evolving warabandhi (rotational supply of water)
- Canal operators training
- Budget preparation of WUA, resource mobilizing through irrigation services fee and audit etc
- Priority to women for canal water use and their participation in the WUA and agriculture. Formation and strengthening of Women Committees and Kisan clubs
- MNREGS programme implementation and community organizing
- Formation of Sub-Committees by WUAs especially women sub committees, norms for saving credit activity by SHGs
- Irrigation survey and data collection
- Roles and responsibilities of WUA functionaries including chairman, TC members, Kolaba Sahayaks etc

Capacity building of WUAs is major activity of DSC in the project. During the reporting period, DSC and NVDA jointly organized 126 programmes including 70 in Maan and 56 in Jobat project covering total 1210 participants. The project wise details of motivation-awareness and capacity building activities are given in the subsequent tables. Most of these programmes were conducted at village level, while 11 major module based training and exposure programmes were conducted covering 832 participant days at district/ state level during the reporting quarter. The proceedings of the meetings have been recorded by the respective WUAs. A list of major agenda discussed in various programmes is given below;

- Procurement of furniture for WUA offices
- Formation of Sub-Committees by WUAs especially women sub committees, norms for saving credit activity by SHGs
- Training for Mahila Nahar Vikaas Samittees
- Collection of service fee and WUA membership fee from the farmers
- Accounts of WUA

- Gujarat Exposure visits for women groups and Maharashtra visit of WUA office bearers and Kolaba Sahayaks
- Irrigation survey and data collection

DSC conducted 3 days training on gender and PIM at DSC Ahmedabad from 17-19th May 2012. DSC conducted participatory Walk Through of canals during irrigation season with following objectives;

- Irrigation patrolling
- Identifying the repairing requirements of the canal system and sensitizing farmers for its rehabilitation and their contribution
- Providing a platform to Tail reach and Head reach farmers for initiating dialogues for equitable sharing of water

About 201 Canal Walk Through including 85 in Maan and 116 in Jobat project have been carried out cumulatively covering total 3264 participant days. These Walk Through were very helpful in creating sense of ownership and building technical knowledge of farmers.

Table 7: Awareness and capacity building in Maan and Jobat Projects

Programmes	Details	Maan			Jobat		
		No	Participants	Participant Days	No	Participants	Participant Days
Awareness	Project/ Village levels meetings and video shows	612	21963	21963	394	17942	17942
	Campaign Jagruti yatra	23	12542	12542	11	6673	6673
	Exposure visits to successful sites of Gujarat / MP/ others	33	1013	2259	15	572	1396
Capacity Building	Training/ special workshops to WUA office bearers	78	4981	5093	44	2634	2817
Strengthening Institutions	Counseling visits of DSC team	-	-	2226	-	-	1911
	PRA	48	772	772	50	1034	1034
	Baseline Survey	01	132(HH)	132	1	67 (HH)	12

Cumulatively, 1210 capacity building and awareness generating programmes have been conducted so in both the projects covering 70685 participant days including 170 major training/ exposure programmes benefiting 11568 participant days. 746 programmes have been conducted in Maan covering 41857 participant days including 111 major training/ exposure programmes. Total, 464 programmes have been conducted in Jobat covering 28828 participant days including 59 major training/ exposure programmes in Maan Project Area (Table 7 and Table 8).

Every year, joint Rabi irrigation planning and review workshops were conducted for smooth irrigation management in both the projects. These workshops were attended by NVDA engineers and the WUA office bearers. The workshops were very useful to develop common strategies of water distribution in a particular year according to demand of the command area farmers, available resources and

technical plans of the NVDA engineers. Several bottlenecks were resolved in the workshops as a result of better planning, step by step actions, coordination and mutual roles and responsibilities of farmers, WUA leaders and the NVDA engineers.

Table 8: Features of WUAs in Maan and Jobat Projects

S. No.	Particular	Cumulative	
		Maan	Jobat
1	WUAs	10	06
2	Sub committees Formed	82	54
3	Subcommittee Members	738	569
4	Women Sub committees	15	20
5	Women Subcommittee Members	178	280
6	Savings of Women Subcommittee (Rs.)	187000	320331
7	Internal Lending (Rs.)	116525	119405

6.2 Multi-Media for IEC - material Development and distribution

- 15,000 copies leaflet titled “ Maan va Jobat Ki Naharen Maang Rahee Hai AAPakaa Sahayog”, 20 sets of panels-posters on WUA Annual Management Cycle, 15000 copies of Ek Chithhi Aapke Naam, were distributed to farmers during various phases of the project.. The leaflets and posters aimed at bringing in awareness among farmers, WUA office bearers, NVDA officers and DSC team on technical works and fostering community participation and maintaining quality of works. Wall paintings and PIM slogan writing completed in about 60 villages.
- Two PIM video films namely “Kiyadar Ki Baat” and “Khud Nahar Sambhalenge” were developed and video shows were organized at the village level. Agriculture films like “Krishi Panchamrut”, “Scientific Cultivation of Wheat” and “Safed Sona Kapas” were used in the extension programme.
- DSC has developed four-color Jal Upbhogta Sadasyataa Pustika for the WUA members. More than 10,000 copies have been handed over to the 16 WUAs for distribution to their member farmers. The book will help in keeping track record of individual member farmers’ participation in irrigation, financial transactions between member and the respective WUA etc.

6.3 Exposure Visits

Series of exposure visits have been organized to successful WUAs i.e. Dharoi, Guhai and Mazum irrigation projects of Gujarat, Ozar and Waghad irrigation projects of Maharashtra, and Satak irrigation projects of MP throughout the four year project in order to learn the best practices of successful projects. Almost all the NVDA engineers, MPRLP field teams, WUA office bearers, Kola Sahayaks, Women Sub Committee members etc benefited from exposure visits. The WUA chairmen also participated in the national PIM workshop at WALMI Anand in year 2010. Special visits were

organized for women members to agri business market yards in Mehsana district and Anand Diary Gujarat. The Maan and Jobat projects hosted two exposure visits of WUA leaders and farmers from Avantibai Lodhi Sagar dam project on 12th and 22th June 2012. About 58 farmers and NVDA engineers visited dam, canal sites and villages for interaction with local WUA leaders, canal operators, farmers, DSC team and NVDA engineers in order to learn from their PIM experiences in Maan and Jobat . The visiting group was impressed by service fee collection by WUAs and use of MNREGS funds for canal repairing. Earlier similar farmers' delegations were visited from Indira Sagar and Bargi dam command areas.

a. Exposure visit of women members to PIM and agriculture projects in Gujarat

Two women groups from Maan project villages and Jobat project villages paid 2 exposure visit to Gujarat. 67 women of Jobat project visited during 3-5th June 2012 while 66 women of Manavar visited during 28-30th May. The exposure visits provided them opportunity to see WUA managed canals, vermi compost production units, bio pesticide production unit, spice production units and dairy in Mehsana, Sabarkantha and Ahmedabad districts. The visiting women were very impressed with the good working of women producer and cooperative groups of Gujarat. They came to know that all the women are earning regular incomes from these group entrepreneur activities. DSC had supported the women groups initially for fund mobilizing and training. Over the years, the groups have become independent gradually. The women SHGs of man and Jobat have started spice production and vermi compost production after returning from the visit. DSC is preparing a proposal for diary and other value chain development in man and Jobat project.

The command area villages of left Bank main canal of Man project have good vegetation cover in both cultivated land, waste land and nearby forest area. DSC had invited the experts from "The Under The Mango tree organization Mumbai for feasibility assessment for Honey Bee Keeping project in the villages. The agency has found the area very feasible for the activity. In this connection, DSC conducted exposure visit of about 10 persons to BAIF centre Valsad district Gujarat on 11-13th June 2012. The farmers will start honey bee rearing from September onwards provided that some funding support is given to them by Govt. line departments. DSC is exploring funding support.

b. Exposure visit to Maharashtra

About 90 TC members and Kolaba Sahayaks including 27 from Jobat and 63 from Man project were taken on a 3 days exposure cum training programme to Nasik district Maharashtra from 28-30th June 2012. The farmers group visited Waghad irrigation project and Rahuri Agriculture University. The farmers learnt about volumetric supply of canal water and its pricing from the Maharashtra WUAs. The scientists of Rahuri Agriculture University demonstrated improved low cost farm equipments and machineries to the delegation.

7. CONVERGENCE OF MGNREGS FUNDS

Convergence among policies and schemes for augmenting livelihoods of rural India is gaining importance. This convergence approach aims to provide support structure for the rural livelihood systems by judicious allocation and use of resources and their mobilization. State of Madhya Pradesh has embarked on this approach during planning and execution of PIM activities. For example, Irrigation schemes of Water Resource Department are designed to supply water up to the outlets of minor canals to irrigate up to 40 hectares of land. Absence of field channel below 40 hectares to convey water up to the last field results in inequitable distribution of water; causes disputes among farmers and sub-optimal agricultural production. Under convergence Madhya Pradesh has undertaken construction of water courses & field channels ('SAHASRADHARA' sub-scheme) for 1) operation & maintenance of irrigation canals, 2) repairs, maintenance and renovation (including desilting) of minor irrigation tanks, 3) catchment area treatment. The scheme also includes farmers' Participation in action research programme. Under the scheme farmers contributed 10% cost; saved 30% of water use resulting in an increase in agriculture productivity by 40%.

a. Repairing of minor canals

The WUAs restarted canal repairing work in the reporting period after completion of rabi irrigation. Cumulatively 12 WUAs including 10 of Maan and 2 of Jobat executed minor canal repair works under MGNREGS programme. The NVDA Kukshi division has prepared 206 estimates of worth Rs. 254.45 lakhs out of which 200 estimates have been sanctioned with a budget of Rs. 177.30 lakhs. The government has cumulatively released Rs. 197 lakhs to 14 WUAs. The funds have been deposited in the WUA accounts and the respective WUAs are carrying out physical work including earthen works and some minor repair works on the minor canals under technical supervision of NVDA engineers and DSC team at Maan and Kukshi. The 14 WUAs have executed 184 works of Rs. 101.19 lakhs till March 2011 including Rs. 10.52 lakhs in the reporting quarter according to report provided by NVDA. More than 1.38 lakh person days have been generated so far. The Chairmen and the TC members of the WUA are managing the physical works. DSC, MPRLP & NVDA persons help them in liaison with Panchayati Raaj Institutions for smooth implementation of works. The 10 WUAs of Maan have surrendered un-utilised funds of Rs. 32.61 lakhs to the Panchayat Department according to instructions issued by the Govt.

b. Construction of field channels and water course

The Kukshi field unit has reported that 319 estimates of Rs. 278 lakhs have been prepared by NVDA and out of them 293 of Rs. 248.58 lakhs have been sanctioned so far. Cumulatively The government cumulatively released Rs. 107.84 lakhs to 6 WUAs for carrying out 183 works. The funds were deposited in the WUA accounts. The 6 WUAs of Kukshi have executed 62 works of Rs. 9.45 lakhs till March. More than 10,432 person days generated so far (Table 9).

Table 9: Use of MGNREGS Fund in Maan Project

NAME OF WUA	ICA in ha	MAN DAYS	MUSTER ROLL	AMOUNT in Rs. Lakhs
BORLAI	1778	14291	80	18.68
TEMRIYA	1433	6372	38	8.3
TONKEY	1223	7218	43	9.08
AWALDA	1108	20129	124	20.43
LUNHERA	1499	1850	19	2.15
BALIPUR	1190	3281	23	3.58
KHADKI	1401	10708	62	9.87
PANAWA	1605	2290	14	2.69
KALWANI	1962	4070	27	5.18
PIPALI	1801	3865	21	3.76
TOTAL	15000	74074	451	83.72

Table 10: Use of MGNREGS Fund in Jobat Project

NAME OF WUA	ICA in ha	AMOUNT in Rs. Lakhs
PALASI	548	37.45
DONGARGOAN	1480	11.47
BARDA	1461	51.74
PADIYAL	3346	53.92
AMALZUMA	1550	0
NAVADPURA	1463	0
TOTAL	9848	154.58

Tables 9 and 10 indicate use of MGNREGS funds in Maan and Jobat projects respectively.

8. IMPACT ANALYSES

As explained earlier, assessment of DSC interventions aims at increase in participation of water users through social mobilization and strengthening of WUAs. Such interventions are well examined through availability of infrastructure, services and structures owned and operated through social organizations. Thus it was imperative to assess these parameters during the evaluation process.

8.1 Irrigation Infrastructure Use by WUAs in Maan Project

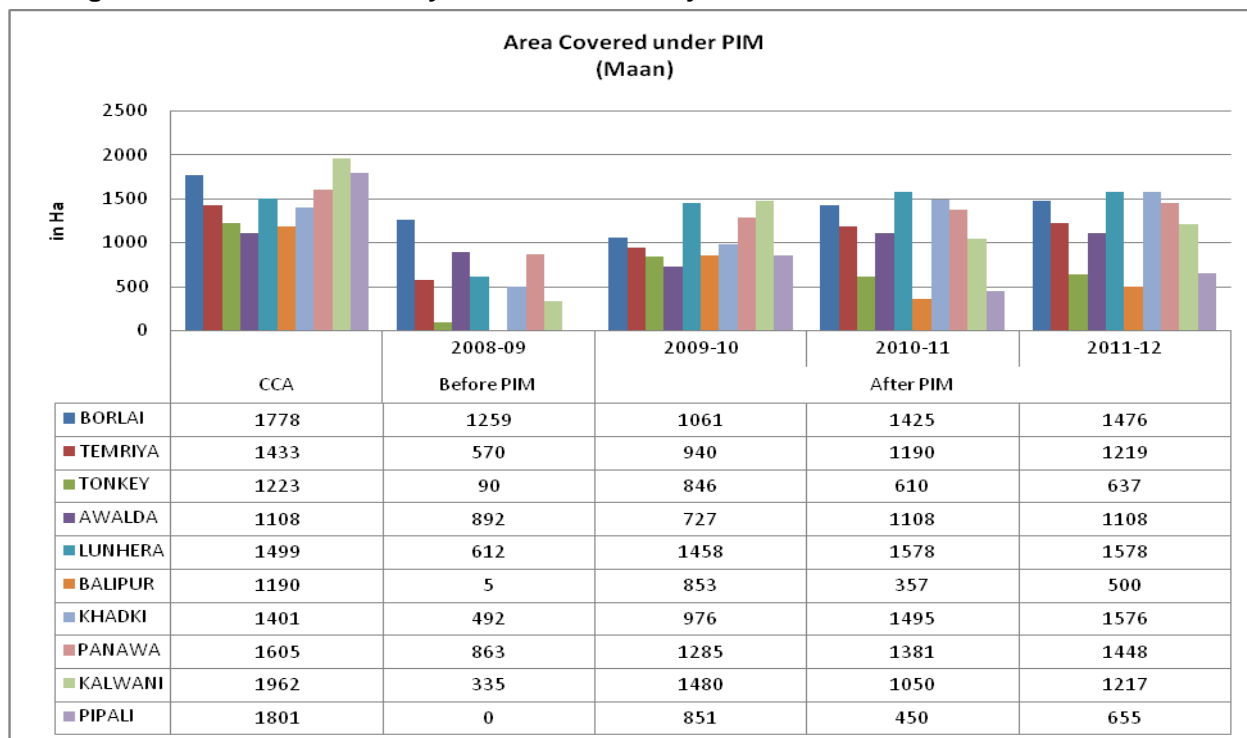


Figure 5: Actual area covered under PIM across all WUAs

One of the major indicators of the successful intervention of PIM is increase in irrigated areas vis-à-vis the CCA planned. In Figure 5 actual area covered under PIM across all WUAs is presented. Data indicates the impact of interventions to strengthen PIM. It is evident that DSC interventions have positively impacted.

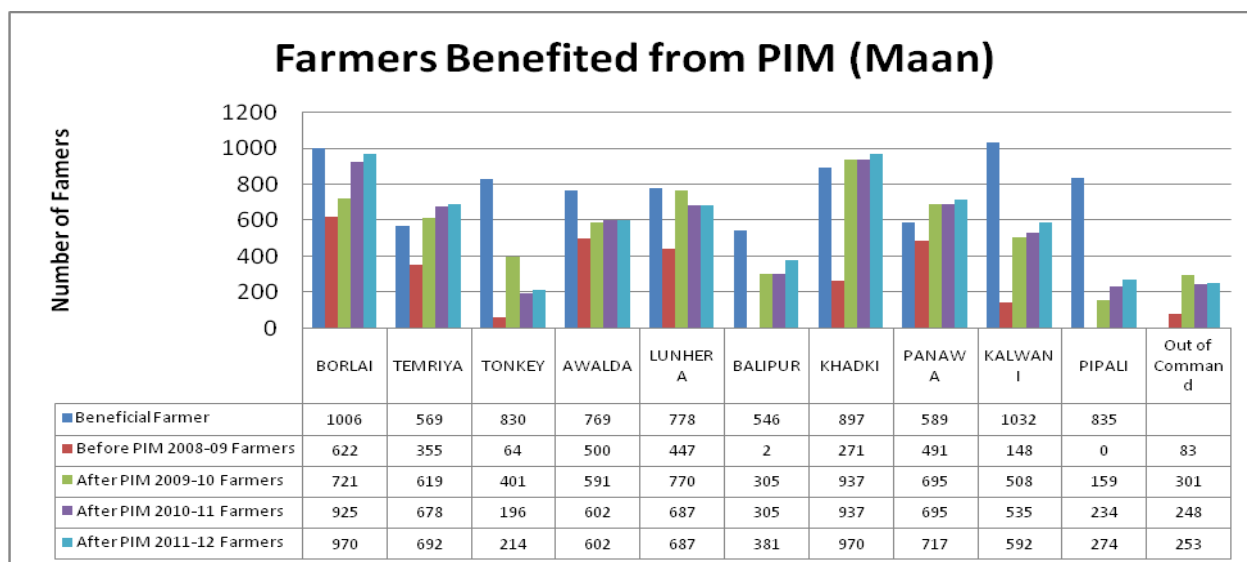


Figure 6: Farmers Benefited under PIM across all WUAs

In Figure 6 reveals considerable increase in number of farmers benefiting from PIM after DSC interventions. However, it is worth noting that there is substantial increase in number of farmers in non-command area benefiting from PIM without contributing to manage cost and maintenance of the assets. Though generally there is no adverse impact, it is likely to create disharmony and heartburn.

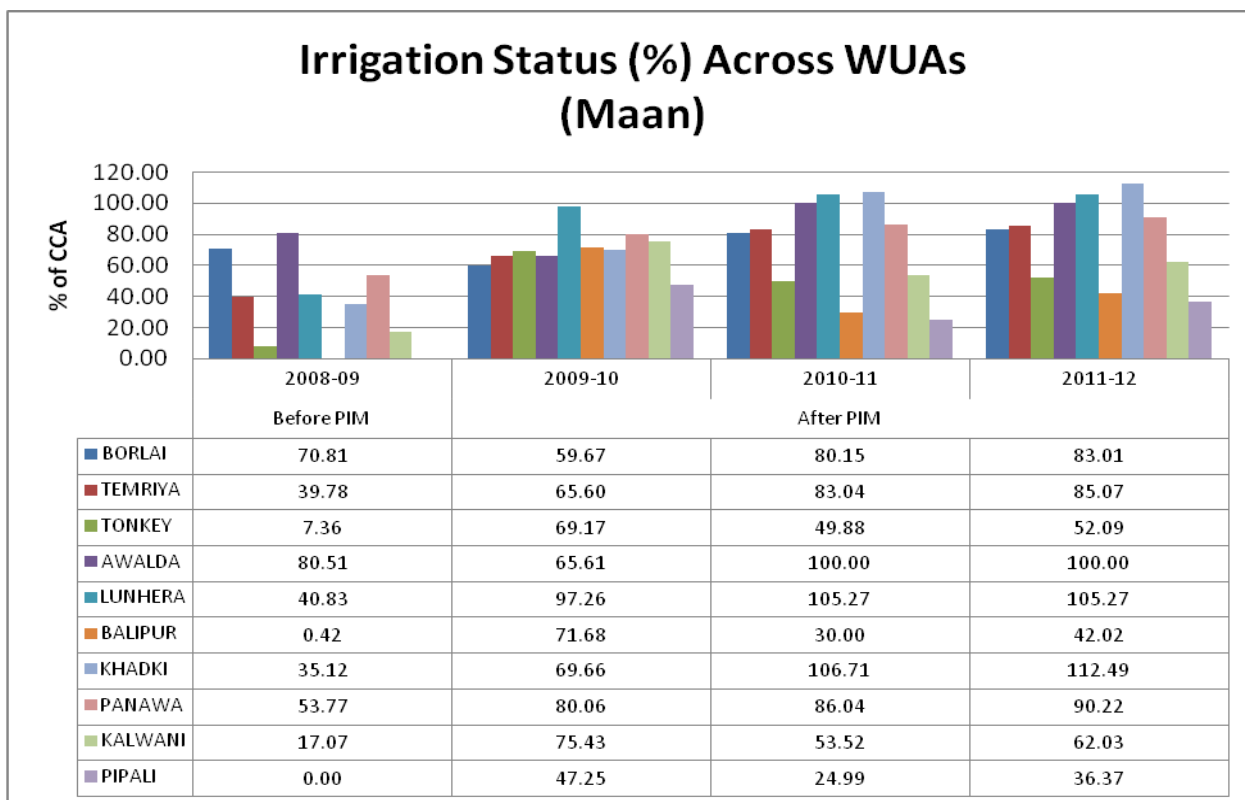


Figure 7: Irrigation Status (% of ICA) in Maan Project – WUA Wise

As shown in Figure 7 Maan project indicates varied results across WUAs. Seven of ten WUAs could show increase in irrigated area whereas four WUAs namely Pipli, Kalwani, Balipur and Tonki have shown reduction in irrigated area. It may be noted that Awalda, Lunhera and Khadki WUAs have exceeded their ICA planned.

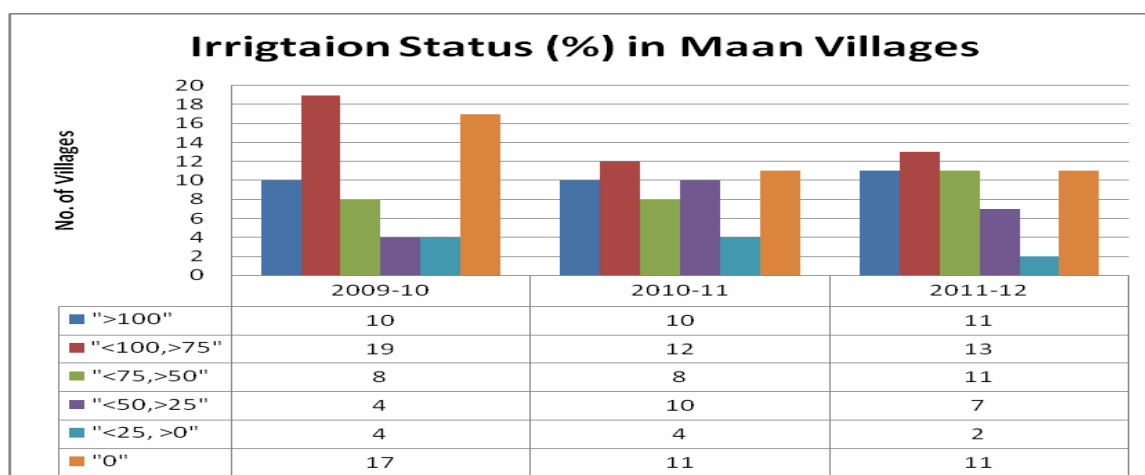


Figure 8: Irrigation Status (% of ICA) in Maan Project Villages

Under PIM scheme, ten WUAs are formed covering 55 villages. It may be noted that 11 villages have not received any benefit of the project so far whereas 10-11 villages have shown excess coverage than the ICA planned. Around nine villages have received water less than 50% of the ICA and remaining 24 villages have coverage between 50-100% of the ICA (Figure 8).

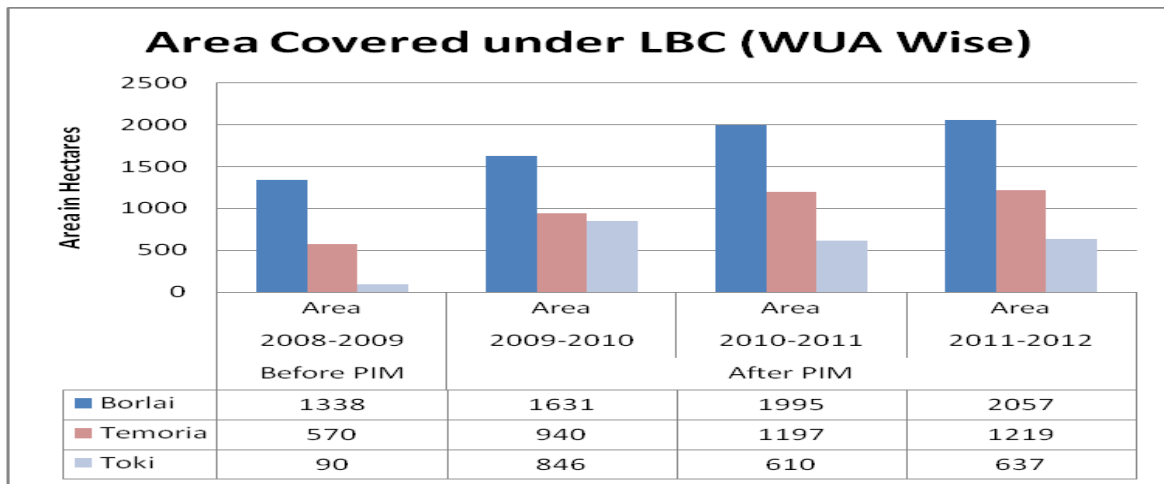


Figure 9: Irrigation Status in Maan Project – LBC WUAs

Maan project area has 19 villages are under Left bank Main canal (LBMC) and 34 villages are under Right Bank Main Canal (RBMC). Under LBC there are 3 WUAs whereas RBC has 7 WUAs. In Figure 9 and 10 irrigation area covered and farmers benefited in each WUAs over three year period are presented Figure 9 indicates substantial increase in irrigated areas in all WUAs. Tonki WUA though showed significant increase in the year 2008-09, there is marginal reduction during the period 2010-2012.

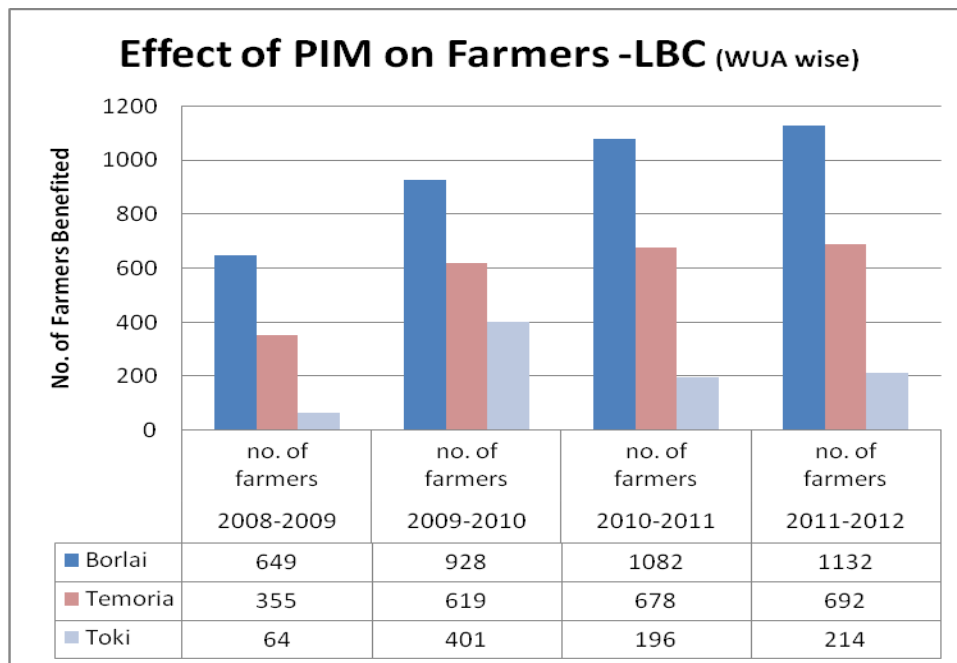


Figure 10: Farmers Benefited in Maan Project – LBC WUAs

Similar trends are visible in the case number of farmers benefited during the period of assessment as shown in Figure 10.

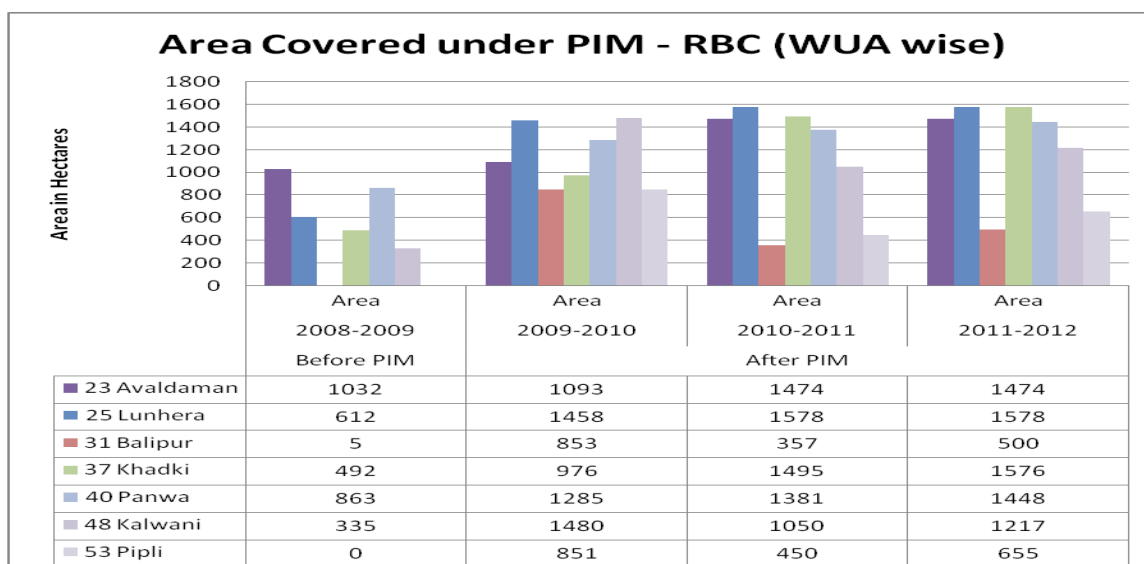


Figure 11: Irrigation Status in Maan Project – RBC WUAs

In RBC areas, WUAs could show increase in irrigated areas in post interventions of DSC as shown in Figure 11. However, Avaldaman WUA showed marginal effect whereas in all other WUAs the effect was quite significant. It may be noted that Balipur, Kalwani and Pipli showed increase in irrigated area initially and thereafter it got reduced.

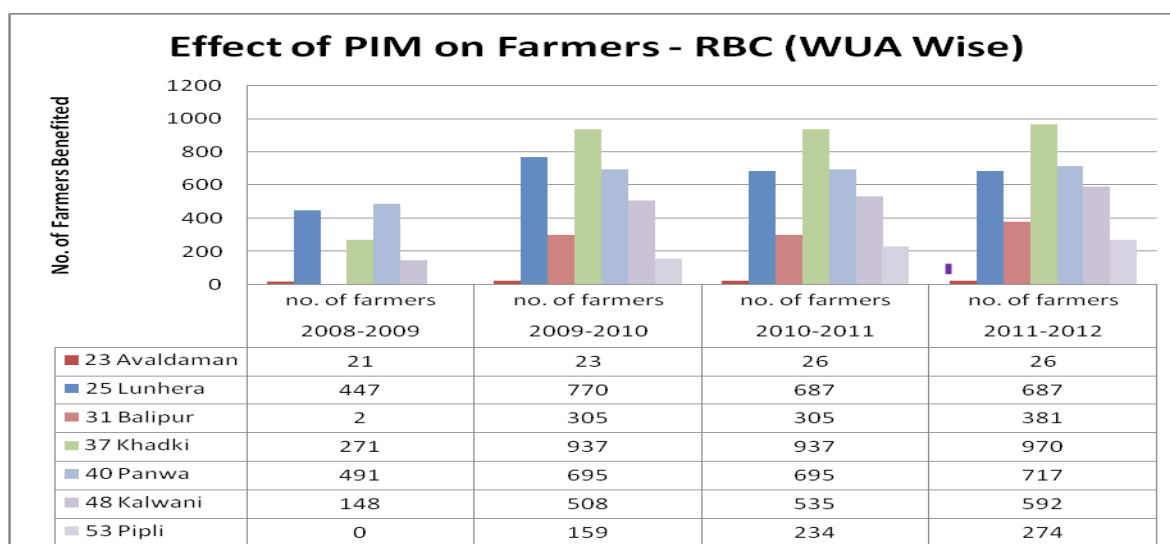


Figure 12: Number of farmers benefited in Maan Project – RBC WUAs

Effect of interventions of DSC, significant number of farmers reaped the benefits in all WUAs except in Avaldaman vide Figure 12.

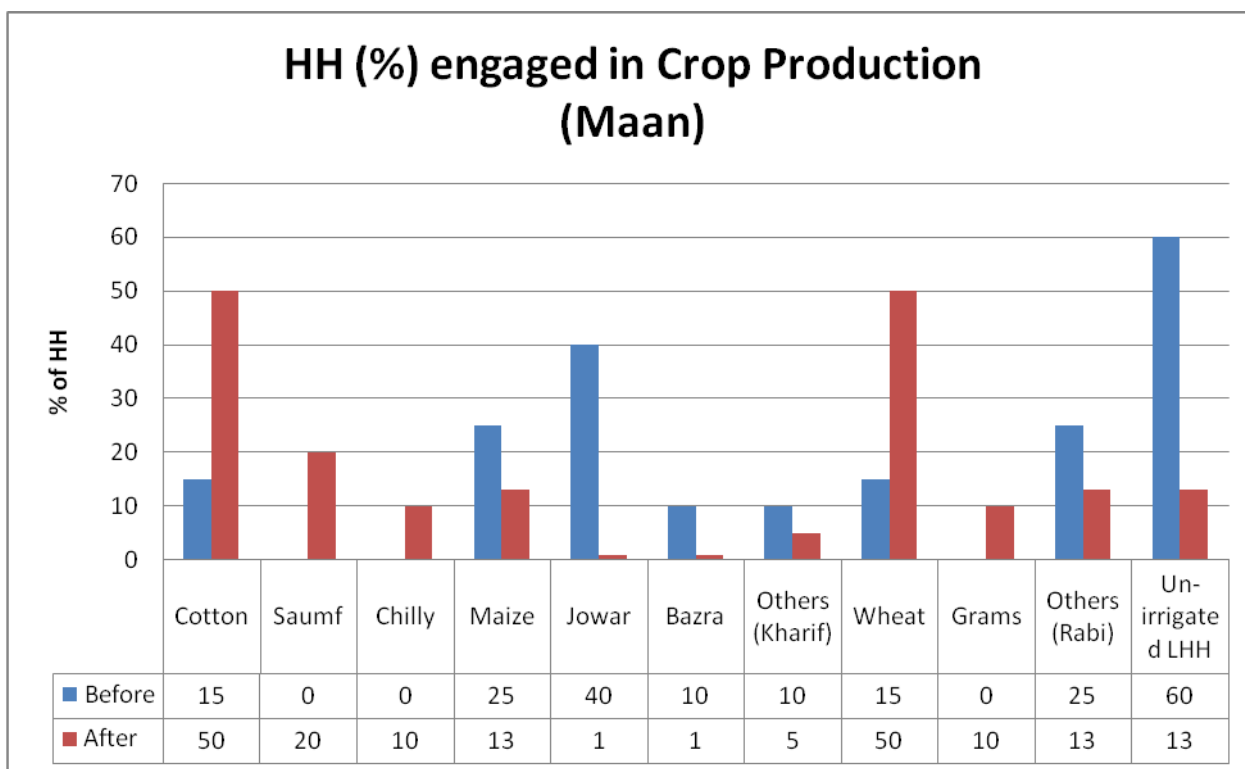


Figure 13: Change in HH engagement in Crop Production

One of the objectives of PIM interventions is to provide irrigation opportunity to each household. It is noted that there has been significant decrease in number of households without access to irrigation. PIM intervention also brought in change in crop production across the households (Figure 13). Significantly, number of households introduced chilly, saumf and grams. More number of households undertook cotton and wheat production after the interventions. However, there is drop in maize and other crops whereas jowar and bazra cultivation are negligible.

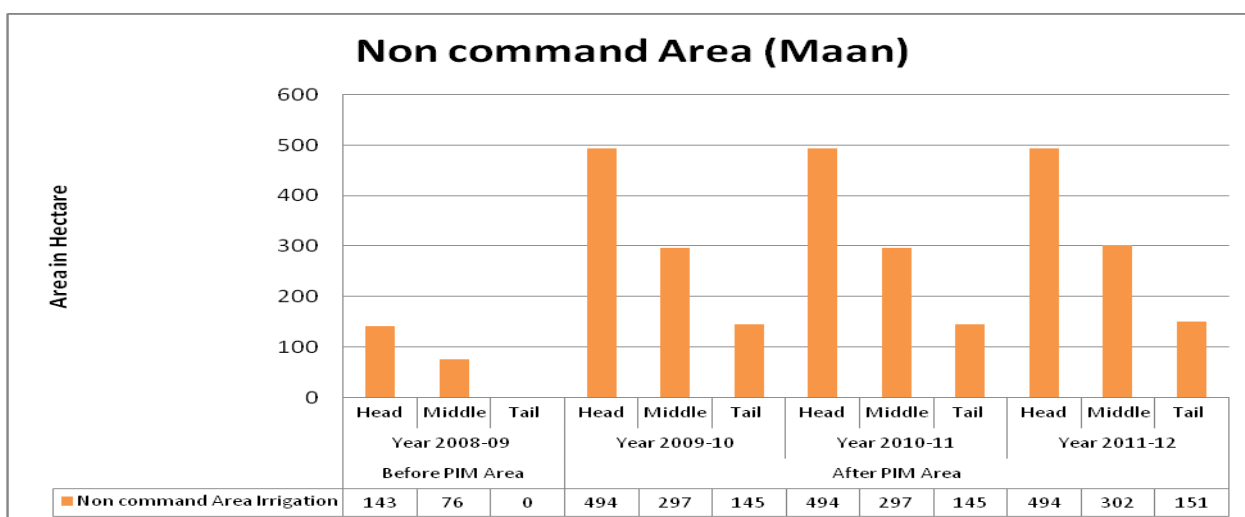


Figure 14: Change in Non-Command Area (Maan)

In Figure 14 change in non-command area irrigated. It may be noticed that there is significant increase in the non-command area after 2008-09. This increase is likely to affect the sustainability of the WUAs if proper action is not taken to bring these areas under WUAs.

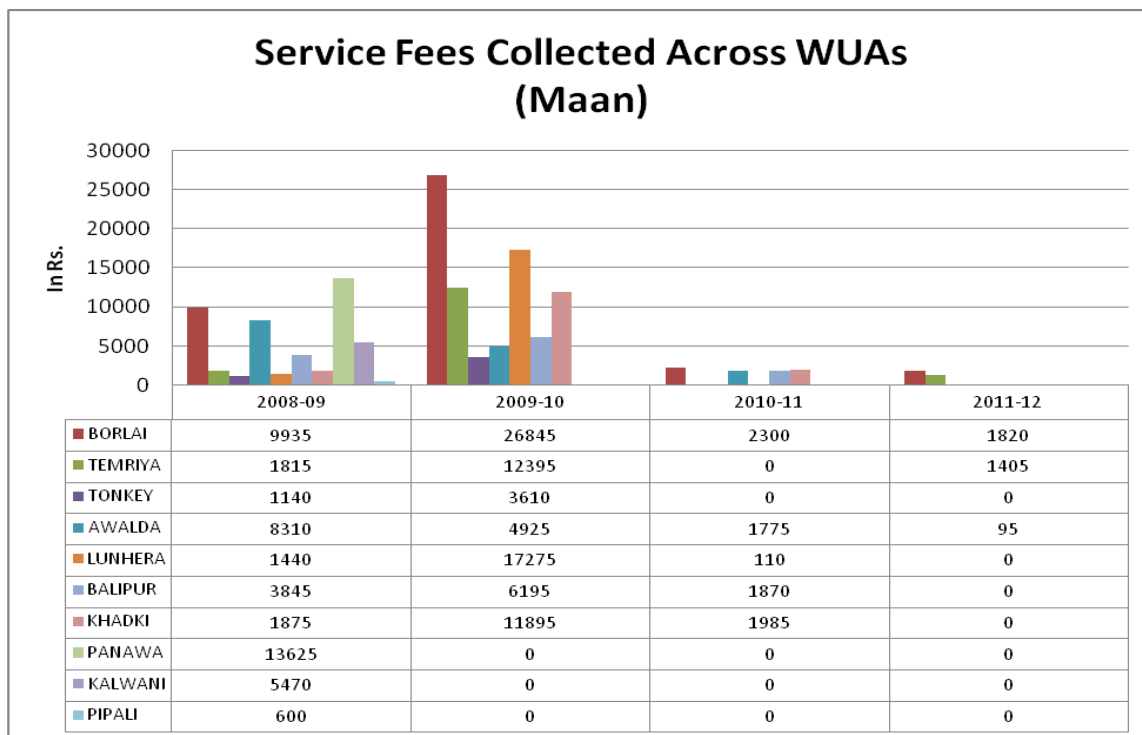


Figure 15: Service Fees Collected Across WUAs (Maan)

Collection of service fees is an important contributor for sustainable WUAs. It is noted that WUAs like Tonkey, Lunhera, Balipur, Khadki, Panawa, Kalwani and Pipali have either are not collecting or have stopped collecting service fees. But it is interesting to indicate that during the year 2008-09 all WUAs were collecting service fees. Therefore, critical analysis of DSC interventions is needed to correct this phenomenon.

8.1.2 Irrigation Status in WUAs in Jobat Project

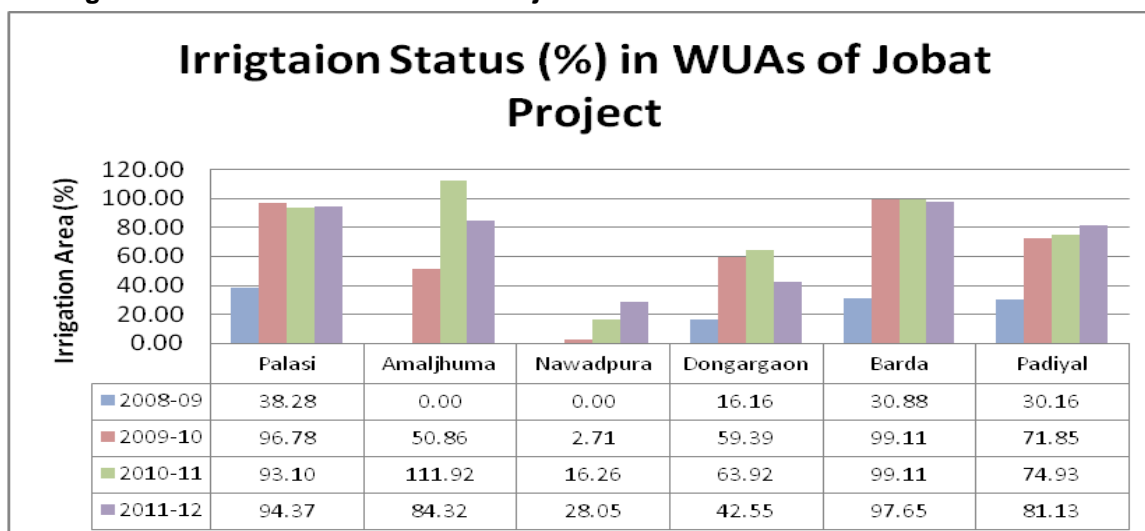


Figure 16: Irrigation Status (% of ICA) in Jobat Project – WUA Wise

As shown in Figure 16 Jobat project indicates varied results across WUAs. Four of six WUAs could show substantial increase in irrigated area whereas Nawadpura and Dongargaon WUAs have shown marginal increase. It may be noted that Amaljuma WUA showed more irrigated area in the year 2010-11 than the ICA planned.

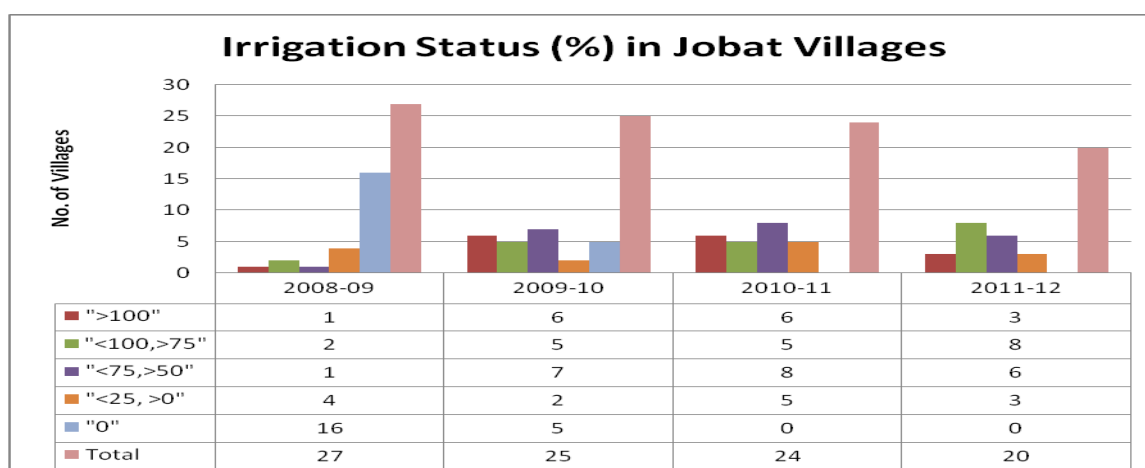


Figure 17: Irrigation Status (% of ICA) in Jobat Project – Villages

Under PIM scheme, six WUAs are formed covering 24 villages. It may be worth noting that in post intervention periods, all villages have benefited from irrigation. Three villages have shown excess coverage than the ICA planned. Around fourteen villages have received water for more than 50% of ICA planned leaving only three villages having coverage less than 25% of the ICA (Figure 17).

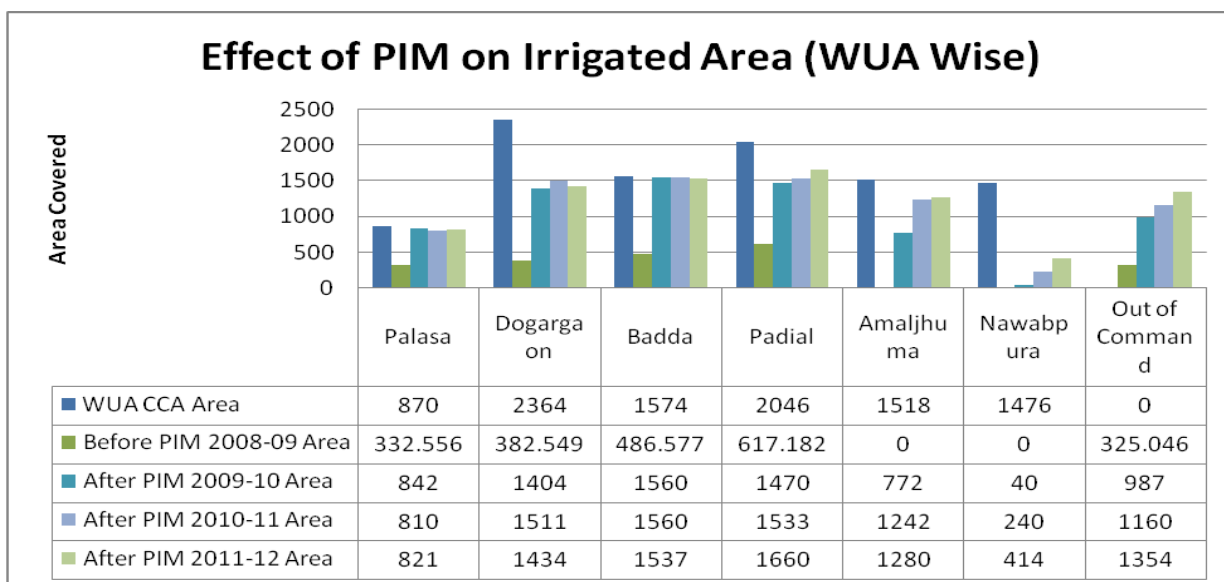


Figure 18: Area Irrigated in Jobat Project – WUAs

The project has shown considerable use of water by the farmers in the out-of-command areas. This category of farmers is often drawing water illegally which is affecting the command area farmers adversely. From Figure 18 it is evident that the out-of-command area is increasing over the years. Notably, the area coverage in the case of Dongargaon, Padial and Nawabpura is substantially less than the ICA planned.

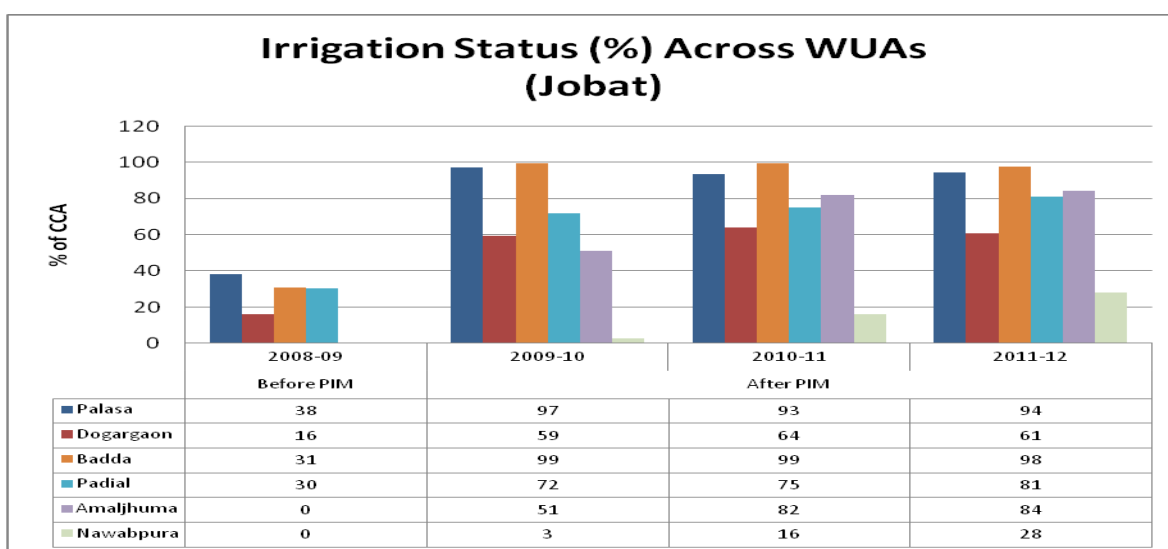


Figure 19: Increase in Area Irrigated in Jobat Project – WUAs

In Figure 20, area irrigated in the respective WUAs as percentage of CCA is presented. It may be noted that Nawabpura WUA has not shown any significant improvement.

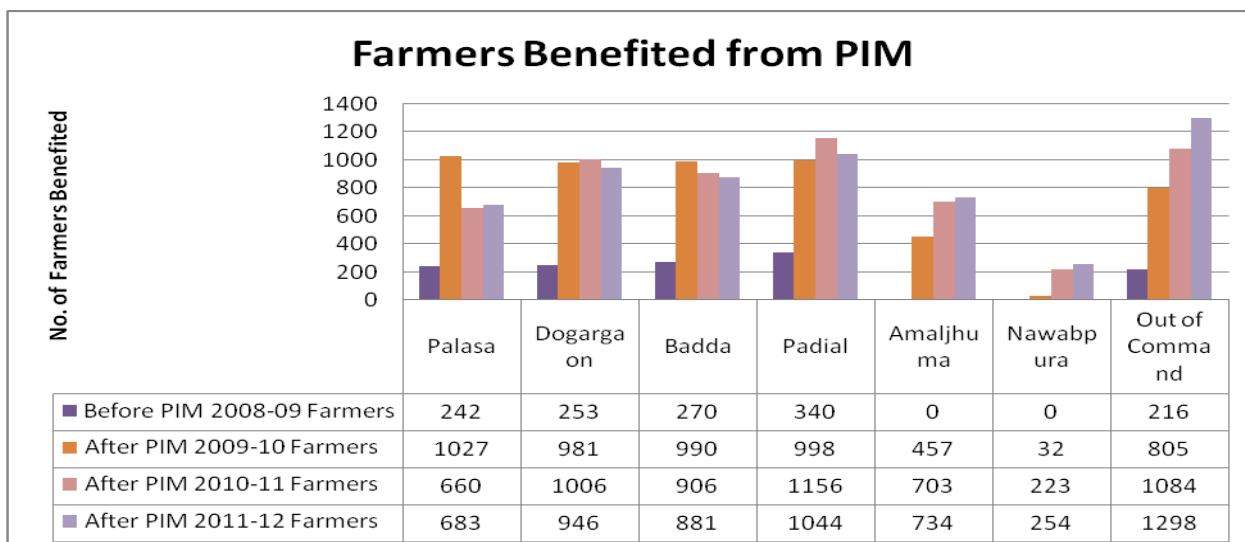


Figure 20: Farmers Benefited in Jobat Project – WUAs

Figure 20 indicates significant increase in number of out-of-command farmers drawing water illegally.

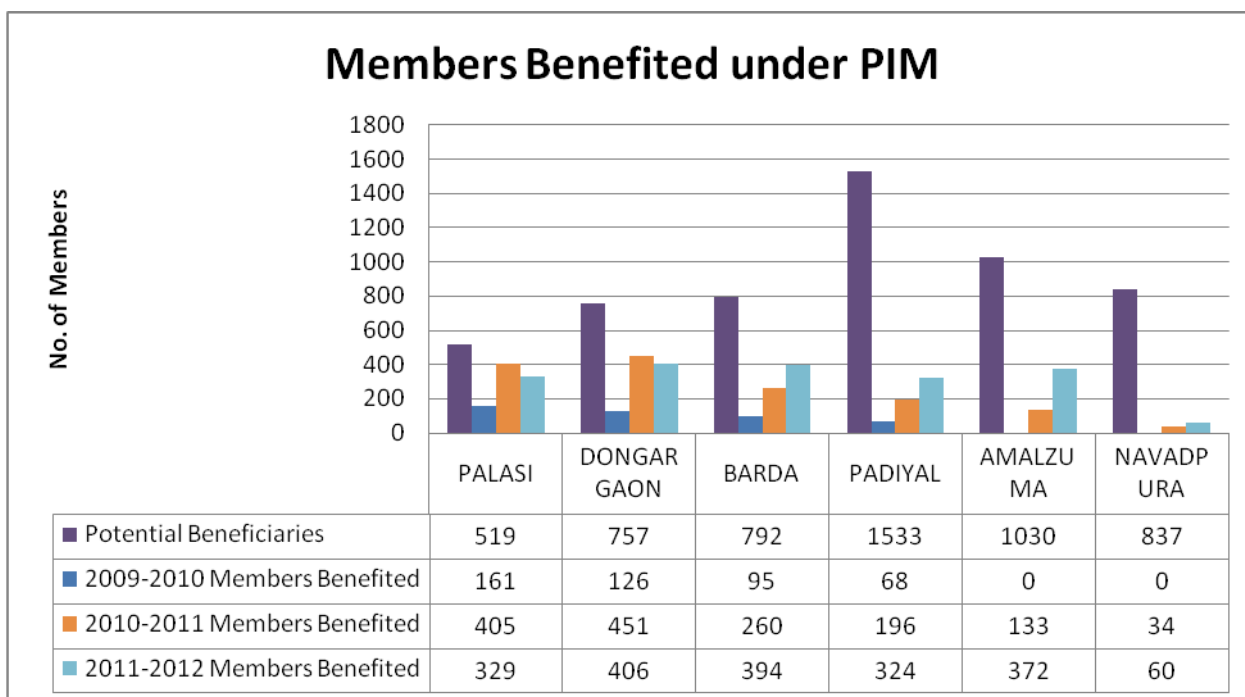


Figure 21: Members Benefited in Jobat Project – WUAs

It is evident from Figure 21 that there is substantial gap between potential and actual beneficiaries despite improvements in post intervention period.

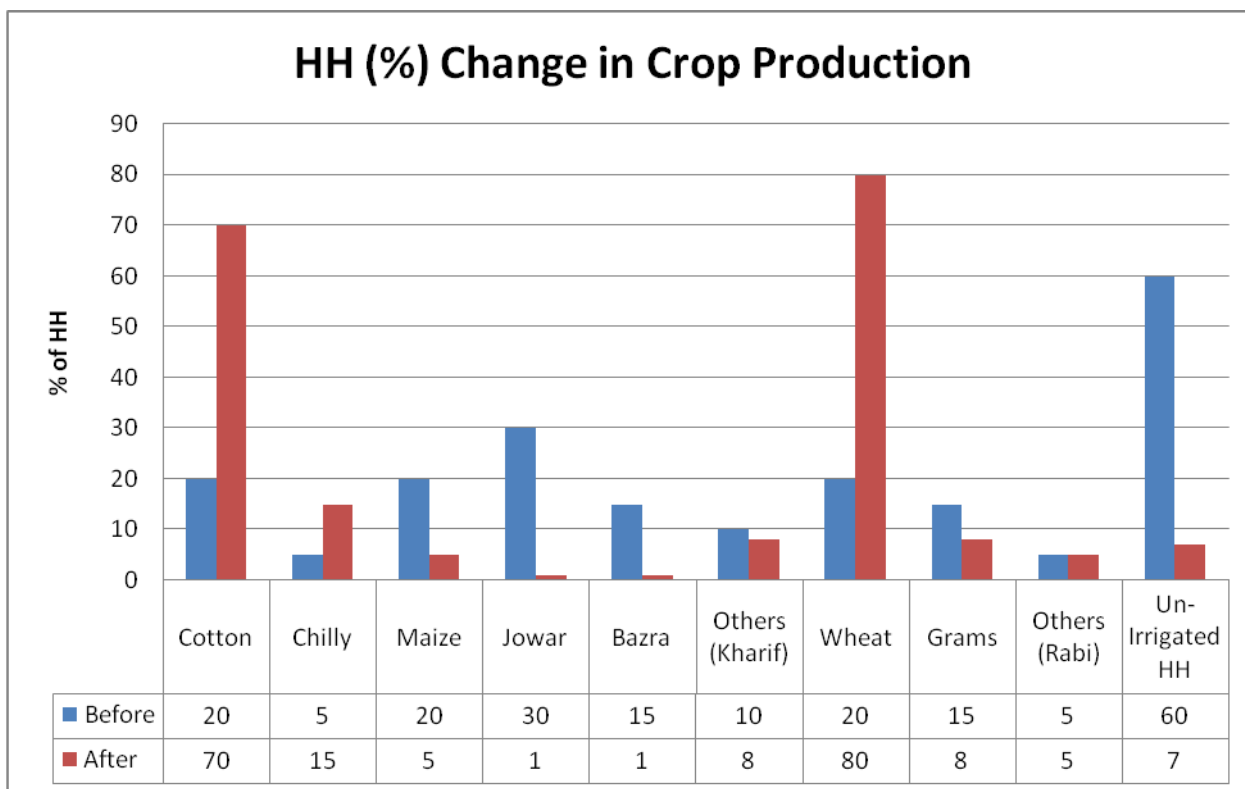


Figure 22: Change in HH engagement in Crop Production

It is noted that there has been significant decrease in number of households without access to irrigation. PIM intervention also brought in changes in crops produced across the households. More number of households undertook cotton, chilly and wheat production after the interventions. However, there is drop in maize and other crops whereas Jowar and Bazra cultivation are negligible (Figure 22).

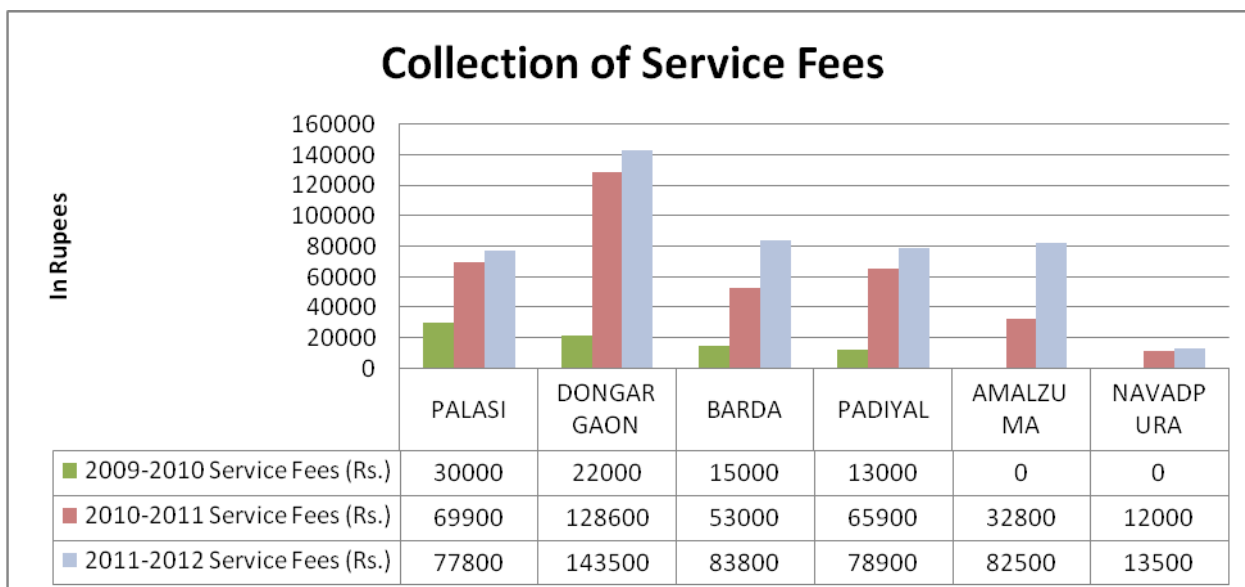


Figure 23: Collection of Service Fees (Jobat)

PIM emphasizes on sustainable WUAs and fees collection contributes to meet the expenditure. It is noted from Figure 22 that all WUAs are collecting service fees leading to their self reliance progressively.

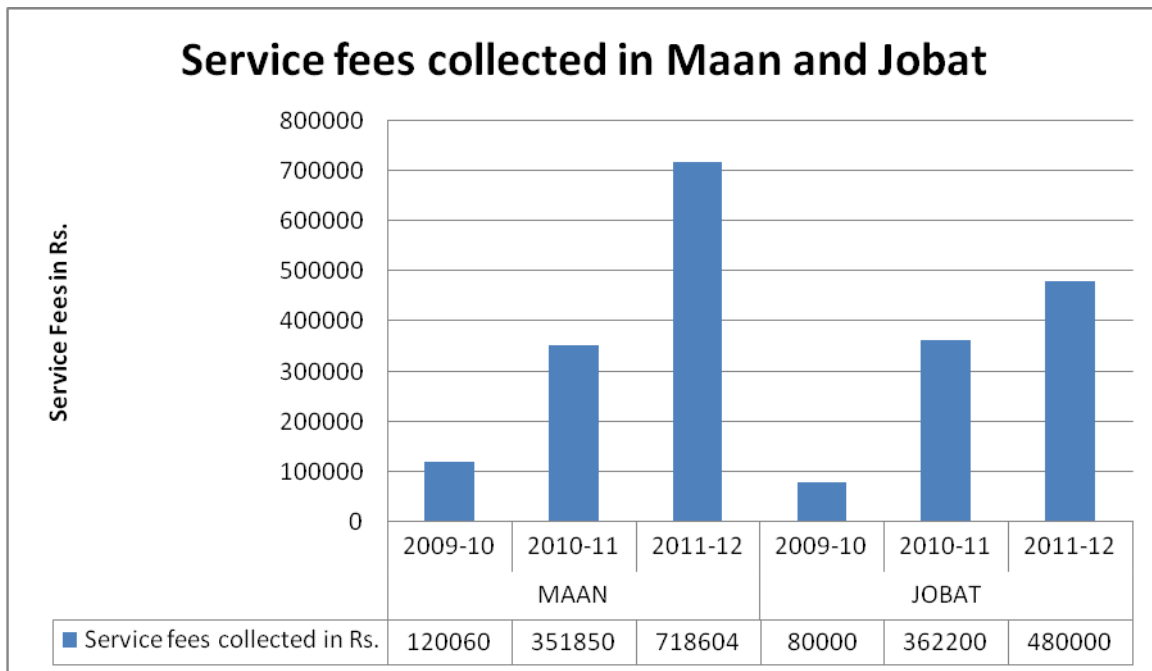


Figure 24: Service Fees Collection

Comparative assessment of WUAs in Maan and Jobat projects in terms of collection of fees (Figure 23).

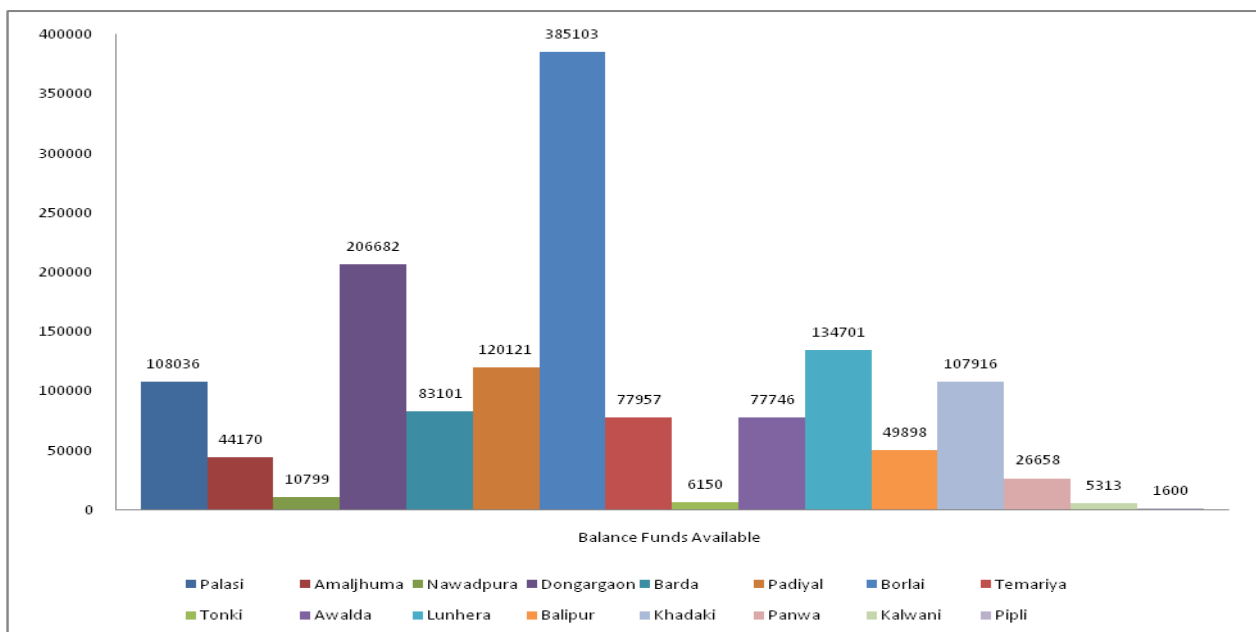


Figure 25: Fund Availability

Funds availability (Figure 24) is presented. Though absolute figures show growth in fee collection in both the areas, it is to be noted that some WUAs in Mann project do not perform better. Some WUAs in Maan project are yet to start collecting service fees. It could be observed that there is direct relationship of service fee and the irrigation service delivery, like the irrigation scenario of Jobat is better (all the villages getting water) then the man project (where more than 11 villages are still to

receive canal water) so it is evident that farmers who are getting irrigation services pay the service fee. So service delivery needs to be improved by WUA for increasing the service fee collection and this is only possible with financial and technical inputs from NVDA. Rehabilitation of main, distributory and minor canals needs to be completed for improving service deliveries.

Table 11: Categorization of WUAs in Maan Project

WUA	A	B	C	D
Borlai	√			
Temoria		√		
Tonki			√	
Awalada	√			
Lunhera		√		
Balipur			√	
Khadaki		√		
Panwa		√		
Kalwani				√
Pipli				√
Total	02	04	02	02

Table 12: Categorization of WUAs in Jobat Project

WUA	A	B	C	D
Palasi	√			
Dongargaon	√			
Badda		√	√	
Padiyal	√			
Amaljhuma		√		
Nawadpura			√	
Total	03	02	01	00

Tables 11, and 12 present performance of WUAs based on parametric evaluations. It is noticed that Maan project has two out of ten WUAs are in category A, whereas in Jobat project three out of six WUAs are in category A.

8.2 Workshop based Assessment

Two workshops were held; one at Maan Irrigation Project Guest House at Manavar reservoir site and the other at Nanpur Jobat Dam Guest House. These two workshops were conducted with active participations of WUA members, project and DSC officials.

a. Issue and Challenges

In the workshop, participants shared the following issues and challenges:

- Govt. policy for free water supply for 5 years developed dependency syndrome and now becoming a barrier in service fee collection. This issue is more acute in some of the WUAs.
- It is observed that the net rabi crop sowing area is increasing year after year from last three rabi irrigations but the canals particularly minors and sub minors are not in good shape. The NVDA has taken up lining of main and distributor canals in both the projects. On its completion, the lining is expected to help in improving water deliveries.
- The WUAs are trying hard to provide water to all the farmers by rotation for water distribution in distributaries, minor canals and field channels. But this process is time consuming to internalize and farmers would take at least two-three years to evolve an effective “warabandhi” system by learning from their experiences. Also, the poor physical condition of canal add the problem in regulating the flow in canals particularly during critical phases of irrigation.
- The progress of canal lining award process is slow. Farmers raised strong voice for improving quality of construction works. Only 213 kms (about 50%) out of 423 kms canal systems of both the projects is completed properly till March 2012.
- Seepage from unlined canals is causing water logging in nearby agriculture fields. Besides, there is rampant illegal pumping of water from the canals leading to deprivation in middle and tail ends. It is reported that there are about 450 pumps in Maan and 380 water pumps in Jobat projects. The NVDA has to approach to electricity supply department for controlling new power connections particularly in the out of command villages. The WUAs need to evolve rotational off and on system with the pump owners
- WUAs are not receiving full annual grant under PIM. Some WUAs will be able to improve their expenditure on R&M by using funds mobilized through service fee collection.

b. Appropriate structure and area for the WUA.

It is argued that geographical area is an effective indicator for governance of WUAs.

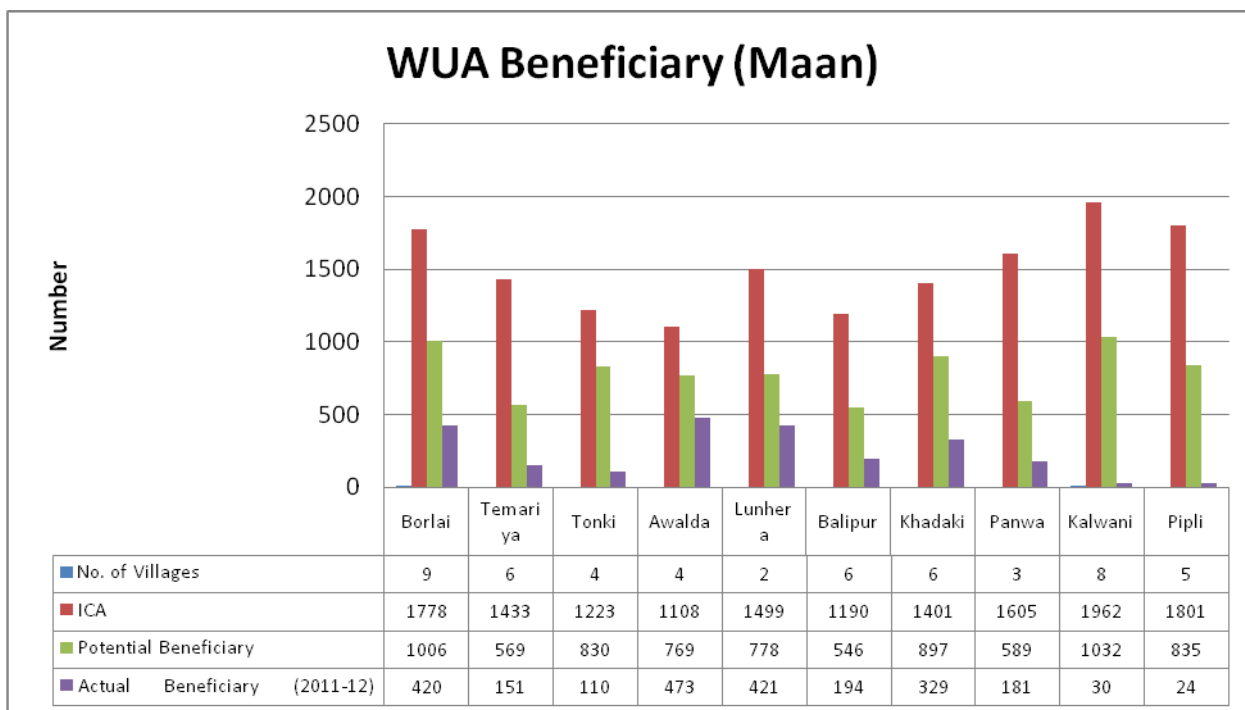


Figure 26: WUA Beneficiary (Maan)

In Figure 25 and 26, it may be noticed that number of villages, number of beneficiaries (potential and actual) and the command area vary substantially in Maan and Jobat projects.

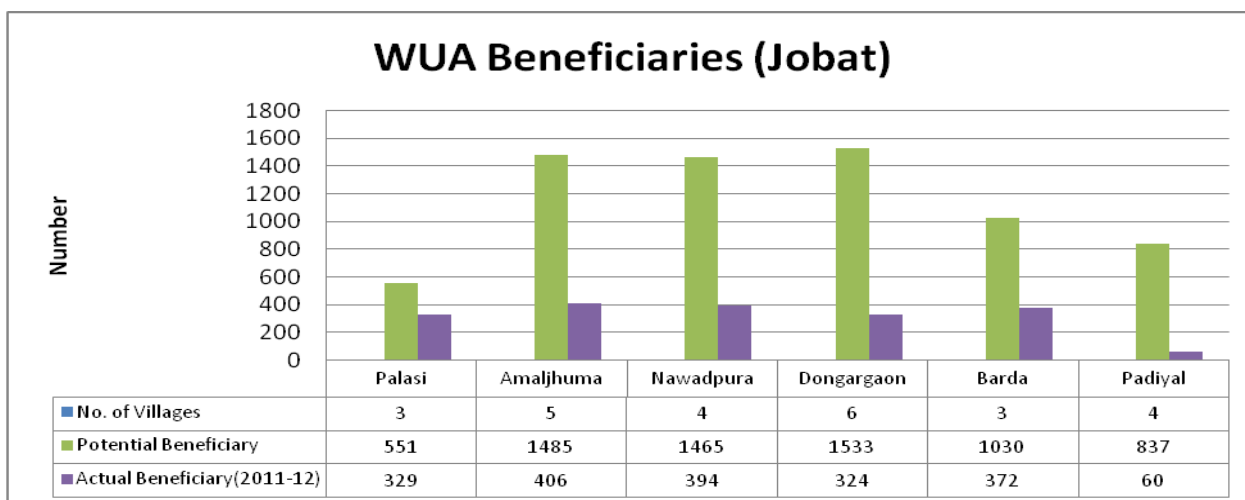


Figure 27: WUA Beneficiaries (Jobat)

There is need to rationalize the WUA area so that governance, member interface, service fee collection, asset maintenance, managing tail ends and controlling non-command area can be more effective.

c. Leadership and Participation.

Strong leaders are able to promote the WUA both internally and externally. Unless there is effective participation, the leaders follow the rules and remain accountable to the general members; they will quickly lose the trust of the membership.

Members in Committees Across WUAs (Maan)

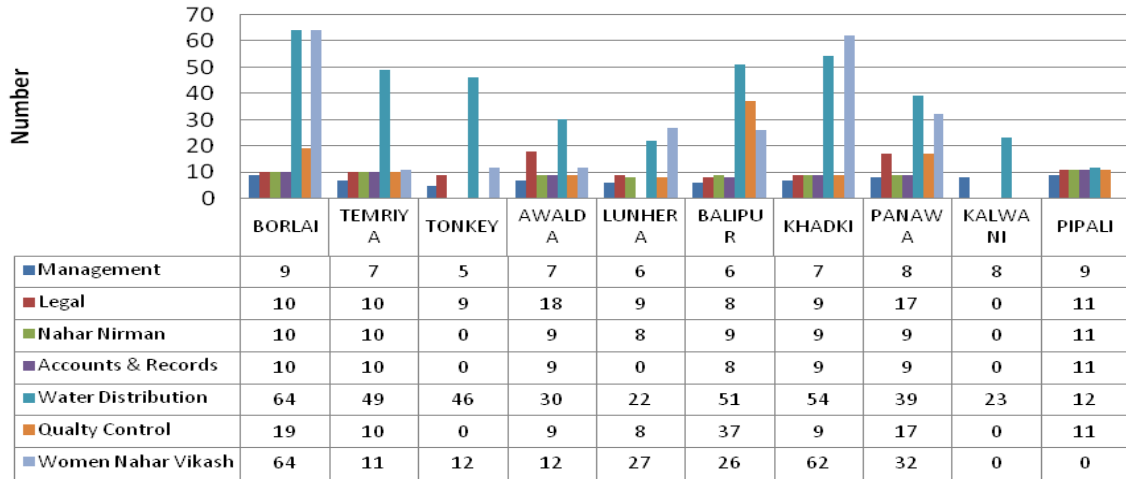


Figure 28: Membership in Committees across WUAs – Maan

Representation in Committees (Maan)

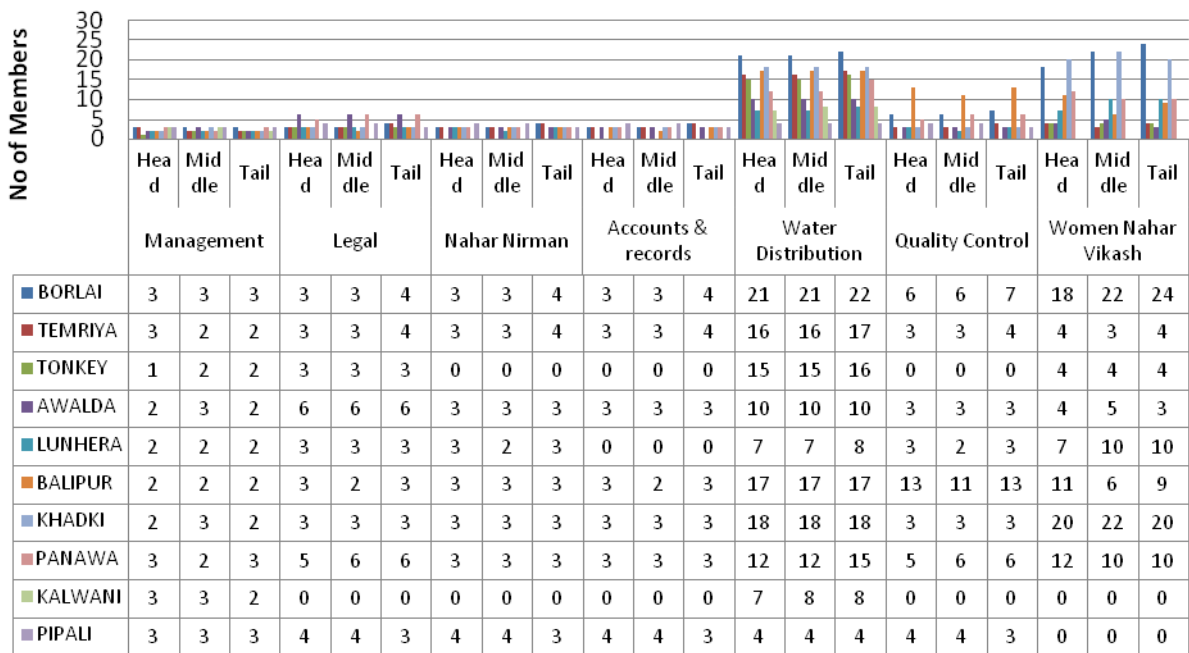


Figure 29: Representation in Committees across WUAs HMT Wise break up- Maan

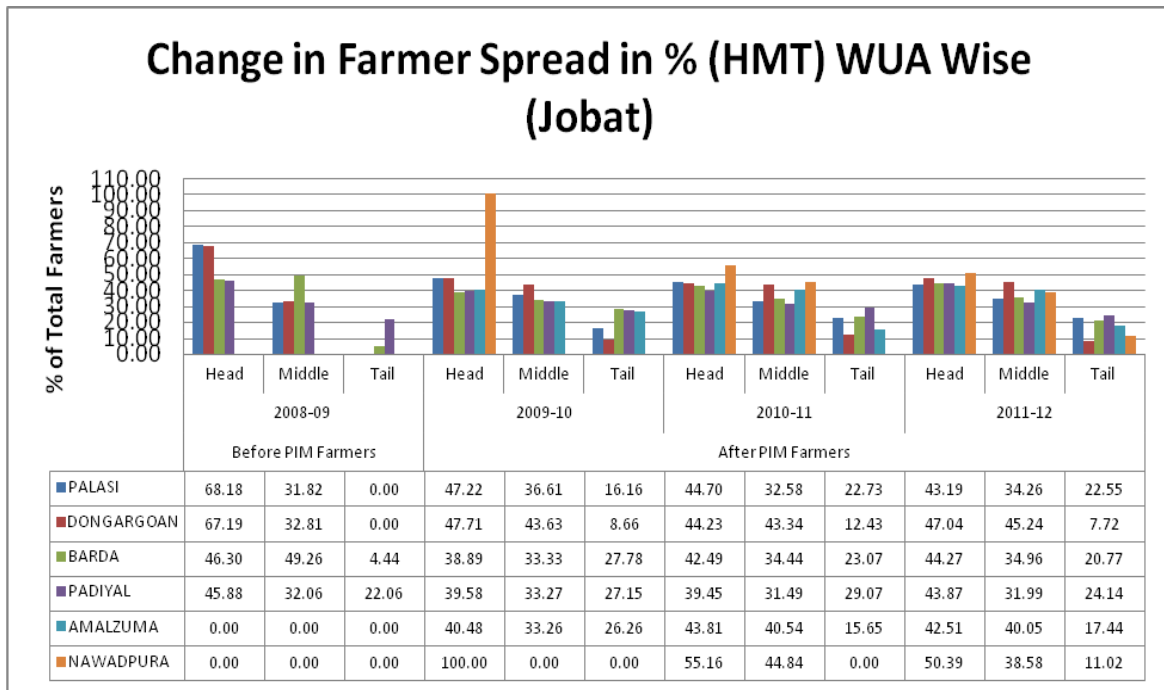


Figure 30: Farmer Spread in % WUA Wise break-up (HMT) -Jobat

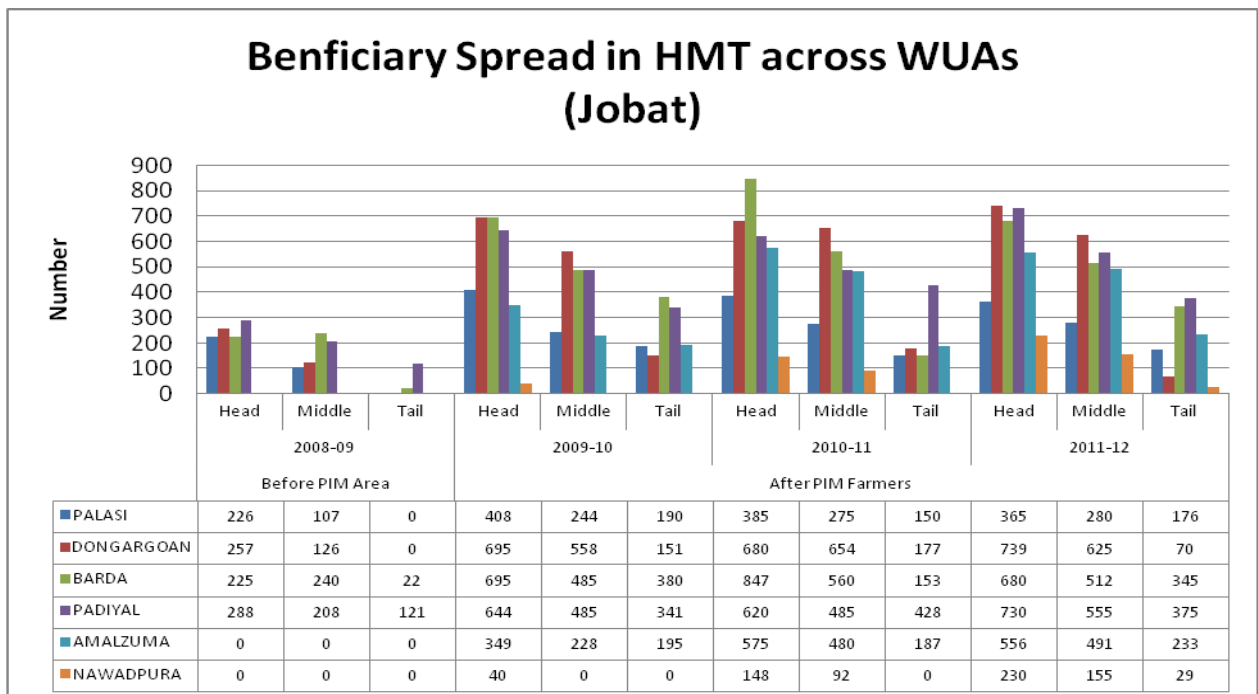


Figure 31: Beneficiary Spread (Head, Middle and Tail Areas)

Figures 27 to 30 present the information on the memberships and their representation in various committees. It is noticed that there is considerable representation of members across head, middle and tail ends of WUAs in the various committees.

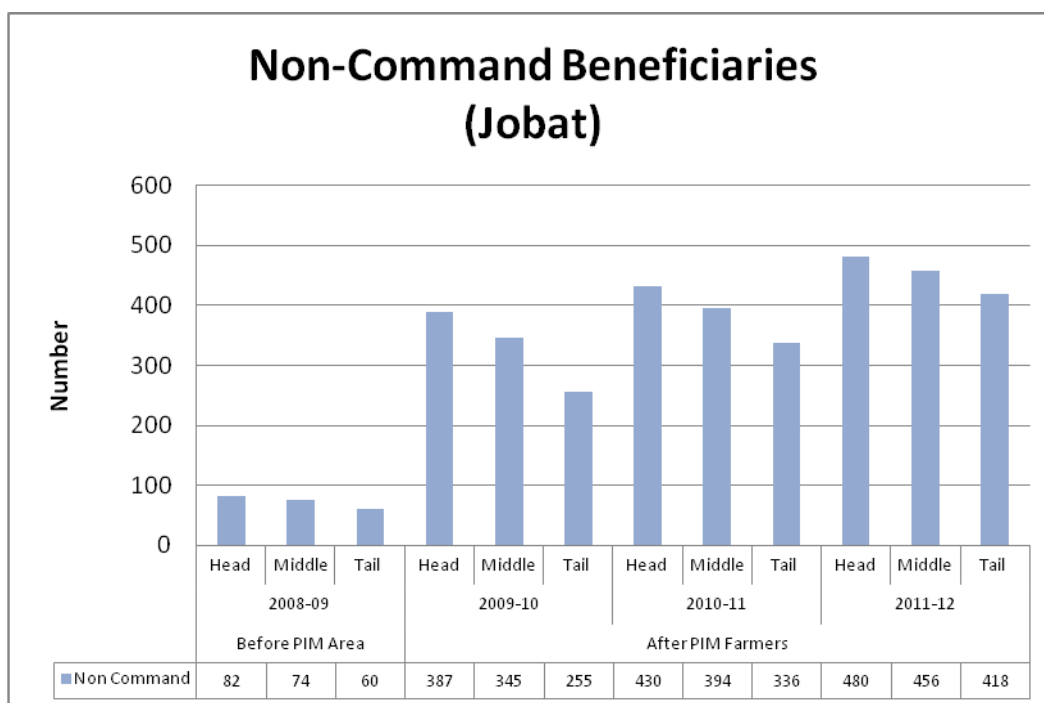


Figure 32: Non-Command Beneficiary Spread (Head, Middle and Tail Areas)

Figure 31 indicates considerable increase in non-command beneficiaries across head, middle and tail areas in Jobat project. Similar situation was also shared by the attendees in Maan project. This trend is cause of concern and suitable corrective measures are to be taken on priority.

d. Clarity of Roles

In the workshops, it was observed that there is often confusion or disagreement over roles and responsibilities of WUAs and the department. This also was prominent in the areas of communications among WUAs, members and department.

e. Autonomy

WUAs need the authority and ability to make independent decisions, collect and manage sufficient resources, appoint staff, establish and enforce rules, resolve conflicts (in accordance with local norms), and act in their own interests etc, rather than depend on external sources or influences. They need to make and enforce their own decisions and rules so that they meet local requirements, but this process may need to be externally facilitated in order to avoid merely reproducing local power structures and relations. DSC is playing this role effectively, but its continued support is necessary at this juncture.

WUAs are usually part of a joint management structure. In order to work in an autonomous way, they need to be given a predictable, planned water supply from the main system. At the moment, and although department may strive to achieve this, there is no formal obligation on the department to achieve a specified reliability of water delivery to the WUA. The WUA have no legal recourse against the department if they fail to provide water in accordance with their needs. Under existing

arrangement, WUAs have limited authority to collect and manage resources. In the workshop, it was revealed that WUAs are seeking greater authority for this task.

f. Accountability

The WUA should be accountable to its members, with clear procedures and rights of appeal. WUAs have rarely participated in a fully accountable way even for management of rehabilitation, and WUA committee members have shown little commitment to taking up their full responsibilities. During the workshop, it could be noted that few active members are contributing to function of WUAs. More specifically, there is decline in fees collection, and increase in non-command beneficiaries. The biggest problem is that NVDA has not been able to demarcate the command and non command area to the WUAs. There was no record like list of farmers in the service area of designed command area and farmers received water from canal till 2008. The list voters of WUA was given to DSC but when the WUAs and the Kolaba sahayaks cross verified the list with the farmers through field to field walk through, it was noted that the list is not useful because the field realities were very different. Many farmers who can never access to canal water were included in the list while other who have already been getting water could not put in to the list. Therefore DSC has facilitated the WUAs to prepare list of farmers and their field that are being irrigated through flood and lift irrigation. The WUAs and NVDA should realign WUAs boundaries according to the workable modal and technical justification. There was a dilemma that out of many command farmers were ready to pay service fee on receiving of water but the WUAs refused to accept the fee because of legal obligations. The WUAs don't want to play with Govt. rules even if they don't see any problem in terms of water distribution. Contrarily, the tribal farmers want more equity in water distribution; they want that some of their neighboring farmers should not be left aside as they understand that all of them can be benefited through lifting water from the canal or by arresting seepage water from canal rather than a situation where few benefited from flood irrigation. The undulated landscape of Maan and Jobat projects support the idea of conjunctive use of canal water and lifting of seepage/ sub surface water from the nearby water bodies. The farmers also want that the NVDA fills up their ponds and natural water bodies particularly wherever it is feasible that will help in reducing conveyance pressure on the canal and will also improve the overall water use efficiency. The farmers also ready to pay lift irrigation charges. The NVDA and WUAs have to take decision in this regards as early possible otherwise the situation will get worse after to three years.

9. PIM AND VALUE CHAIN INTERVENTIONS (VCI)

VCI is done to understand the entire cycle of the produce/product/service from the preproduction stage till the time it reaches the consumer. This kind of analysis helps in identifying the gaps and opportunities in the value-chain of the produce/product/service in each stage. Each stage has a set of activities, technology and cost involved and value is distributed among the actors of the value chain. It is important to note that there are different stages in an agriculture production system in which value can be identified and these include pre-collection, collection, local value-addition, post-collection and marketing stages and the activities are designed according to that produce. The products reach the

end consumer in various forms. For example, paddy reaches the end consumers in many forms. It can be in the form of rice, flour, rice husk, etc. In fact, value-chain template could vary from product to product, within the broad template -inputs, pre-production, production, post-production, value-addition and marketing.

Having noted the principles of VCI, it is important that PIM has successfully helped the farmers to form WUAs, get access to water distribution systems resulting significant increase in production in the area. This scenario has paved the way for social cohesiveness and to appreciate the economic returns to their collective efforts. However, there is abundant scope to leverage these capabilities in forging forward and backward linkages in the value chain to improve their livelihoods. This phenomenon can be illustrated in a three step process as presented in Figure 32.

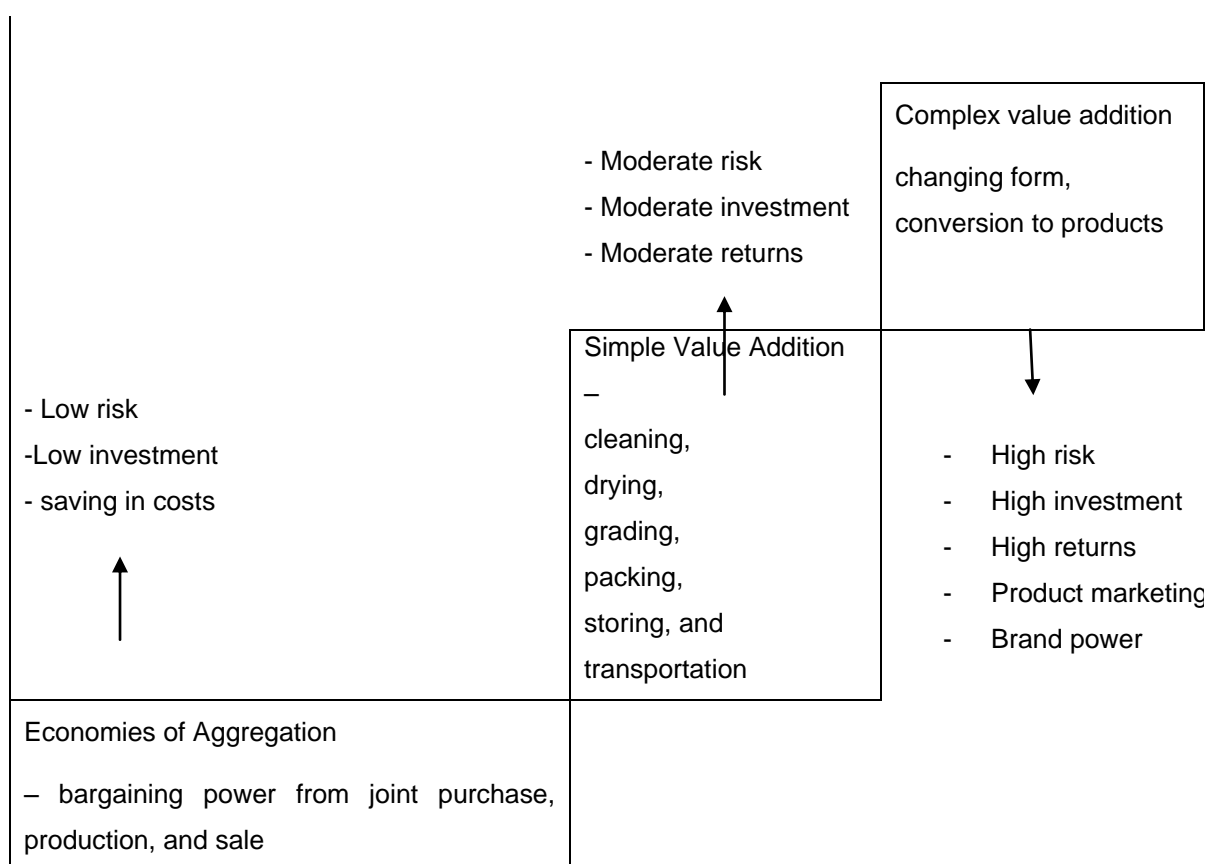


Figure 33: Three Steps in Value Addition Process

In order to explain the rationale for embracing VCI, an example on paddy VCI is discussed. Paddy production requires inputs like water, seeds, fertilizers, pesticides, raw materials and machinery, investment and electricity according to the type of product or service and its' cultivation method. Some inputs like seeds and fertilizers the producers may prepare or purchase from the market. Quality and other details of the inputs need to be noted. Mapping all types of inputs purchased or prepared and

the processes, costs, time, place etc., would be useful. All the steps presented in Figure 8.1 would be applicable in each of the phases in VCI. These phases are discussed below:

Pre-production Phase: It includes all the varieties of pre-production activities for crops cultivation. Economies of aggregation in this phase may benefit the farmer groups through collective purchase of inputs, engaging suitable farm equipments and machinery and leveraging support schemes of government, business and NGOs etc. Simple and complex value additions in this phase may include seed production, nursery, feed manufacturing, organic inputs and joint farming etc.

Post-production Phase: In post-production stages, the activities like drying, cleaning, grading, and storing etc. Economies of aggregation in this phase may help in reducing costs and increase bargaining power of the farmers for better realization.

Value Added Marketing: Marketing stage is one of the key stages after production phase. In this phase valued added product marketing may offer significant advantages as opposed to commodity marketing. It includes branding, quality certification and standardization apart from developing logistic networks and distribution channels.

A generic template for paddy VCI is presented in Annexure-II for illustration purpose. During our visits to WUAs it was ascertained that augmentation of agriculture production is evident due to PIM. However, there is growing concerns among farmers and WUAs about adverse terms of exchange in their pre- and post- production market interfaces. Thus VCI proves to be the way to mitigate this exploitative situation by promoting producers collective enterprises. This proposition is well supported by the fact that WUAs have been instrumental in increasing production volumes manifold as discussed in section 6. It is important to note that DSC was invited to associate itself in awareness building on PIM, capacity building of WUAs for canal rehabilitation, and water distribution management. DSC with admirable support of NVDA officials (Maan and Jobat Projects) has been largely successful in achieving the objectives. It is therefore, strongly recommended that DSC and NVDA should leverage this social capital to build collective enterprises for reaping benefits of VCI.

10. THE WAY FORWARD

The project has been closed on 30th June 2012 according to the MOU signed with the MPRLP. All the 16 WUAs have resolved to continue WUA strengthening activities for at least three year till the WUAs achieve financial viability and also to take up PIM Plus activities with the support of DSC and NVDA. The WUAs have sent the resolutions to the honorable Chief Minister, Madhya Pradesh. DSC has continued its field teams till September 2012. It is expected that the NVDA will also be able to scrutinize the proposal of second phase proposal on PIM Plus that has been submitted by DSC to

NVDA. Meanwhile DSC will also try to mobilize matching funds from other donor agencies to initiate PIM plus activities in the region on the demand of farming community.

It may be concluded that WUAs have shown continued interest in managing their resources, adopting measures for augmenting production systems and significant increase in production of existing and new crops. This has led to new challenges in terms of access to credit, inputs, advisory services, logistics including warehouse and market linkages. These issues can be well addressed through formation of collective enterprises and continued support of enabling agencies including NVDA and DSC apart from others like financial institutions, and agriculture extension.

a. Detailed VCI Plan:

It is highly recommended that DSC undertakes a comprehensive study of VCI for the major crops, identifying suitable market linkage and market integration in the forward and reverse paths of value chain.

b. Capacity Building Activities for Promoting Farmer Producer Organizations:

Capacity building consists of two elements, capacity and building. Capacity concerns the ability of a society to respond adequately to changing conditions. Capacity building is the process of gaining technical, managerial and institutional knowledge and insight in relation to the socio-economic structure, cultural standards and values of the society concerned. It aims to increase the flexibility of institutions and the society to adapt to the changing circumstances. A learning process is an approach in organizational development which uses lessons learned to continually improve the program of building strong local organizations where members have complete ownership. Policy and process guidelines for farmer producer organizations issued by Ministry of Agriculture (Government of India) may be referred for formulating project proposals to undertake promotion of collective enterprises to support the value chains.

Annexure –I

Paddy Value Chain Analysis									
	Inputs	Pre Production /collection	Production / collection	Post Production / collection	Local value-addition	Local market / Shandy	Mandal/Block market	District/ State level market	End Users
Activity	Land, Seeds Fertilizers Pesticides Electricity Labour Ploughing tools	Ploughing and Weeding Seedling Applying fertilizers and pesticides Using water, labour.	Weeding, Applying Fertilizers and pesticides supply of water.	Labour for after harvesting drying Separating paddy from the paddy grass	Drying and segregating paddy Filling in to bags	Some farmers are selling paddy to middlemen directly in the village Sells paddy at field 30 quintals X Rs 800= Rs 24000 Paddy grass = Rs 7000/-	Some farmers are taking the paddy to block/ mandal level market Sell paddy Rs 1000 per quintal 30 quintals X Rs. 1000 = Rs. 30000	Taking paddy to the district level market Sells paddy Rs. 1200 per quintal 30 quintals X Rs. 1200 = Rs. 36000	Paddy is converting into rice in the mills Traders are selling rice to the consumers or end users at Rs. 3300 per quintal
Risks involved	Substandard seeds, fertilizers and pesticides.	Rain deficiency damage the crop	Diseases problem. Low productivity	Heavy rains spoil the crops	Heavy rains cause crop damage	Price down in the market.	Price down in the market.	Price down in the market.	
Gender	Men involve in inputs purchasing	Men engage in ploughing, applying pesticides activities, Women involve in seeding and weeding activities	Women do weeding and men apply fertilizers and pesticides	Both involve in harvesting, drying	Men involve in filling to bags transporting the paddy to home or market	Men do the marketing	Men do the marketing	Men do the marketing	
Input cost	1. Seeds 10 kg X Rs. 50= Rs. 500 2. DAP 2bags x 600 =1200 3. Urea & Fertilizers= Rs. 3000								
Labour cost		Ploughing and land developing land per acre Rs. 2000 Seedling Labour charge: Rs. 15 members x 100 = Rs. 1500 Labour charges for spraying - 3 times x 3 members x Rs. 150 = Rs. 450	labour charge: Rs. 1500 weeding 3 times Production per acre: 30 quintals	Cutting and separating paddy from the paddy grass with machine Rs. 900 Separating grass: Rs. 400filling the bags Rs. 500		Middle man is purchasing paddy directly in the field. So, he is spending the labour cost	Paddy filling in the bags cost Rs. 500 Transport charges to mandal/block market Rs. 2000 Other costs in the market Rs. 500	Transport charges to mandal/ block market Rs. 3500 Other costs in the market Rs. 750	
Total Cost	Rs. 4700	Rs. 3950	Rs. 1500	Rs. 1400			Rs. 500	Rs. 4250	
Total income	Rs. 36000+ Rs. 7000= Rs. 43000/-								
Profit/ Loss in Rs.	43000 – 16300 = 26700/-								
Limitations	Unable to access credit, Getting seeds and fertilizers in time	Water availability depends on rains or electricity Labours scarcity	Environment impact on crop productivity Sale productivity decides crops productivity	Rain situation Labours scarcity Un availability of drying places	Un availability of sufficient sun heat to dry paddy Un availability of sufficient wind to separation paddy	Prices fluctuation in the market Scarcity of transport facilities Improper infrastructure facilities to transport crop to the market			