

Ad-hoc Study No.34

SUPPLY OF IRRIGATION PUMPS
IN
INDORE DISTRICT
OF
MADHYA PRADESH

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CHAPTER I

INTRODUCTION

Agriculture in Madhya Pradesh is dependent mainly on monsoon as only 8.2 per cent of the cropped area is irrigated. Irrigation water is very important for kharif crops in the pre-harvesting stages and for rabi and summer crops. Moreover, for the success of the high yielding varieties and other crash programmes assured irrigation is the chief input. Vigorous attempts are, therefore, under way to increase the area under irrigation by sinking wells, increasing the existing capacity of tanks, damming and small rivers of nallahs and digging canals.

After tapping various sources of irrigation water, the next important step is that of lifting it to the farmers' fields. And in this task an important role is played by diesel and electric pumps besides the traditional mot and other human and bullock operated equipments. In the absence of supply of timely, adequate and good quality pumpsets, serious bottlenecks are likely to develop in the production programmes.

1.1 Objective

The present study attempts to elaborate the supply system of electric and diesel pumps in Indore district.

1.2 Selection of District

Indore district is selected for this study because it has the largest number of pumps per thousand

cultivated hectares. In other words, the command area per pump is smallest in Indore district among all the districts of the state .

1.3 Selection of Sample Users

To know the views of the equipment users regarding the supply system a sample of 15 users from each of the 4 tehsils was drawn. Thus the total number of users in the sample was 60.

It may be mentioned here that the response of private dealers to this investigation was not satisfactory and therefore the sample users include only those who had purchased the equipments from the M.P. State Marketing Federation.

1.4 Reference Period

The study was conducted in 1975-76 with 1974-75 as the reference year.

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Table 2.1 Land Utilization 1974-75

Particulars	Area ('000 hectares)	Percentage
Forest	52	13.58
Land put to non-agric. uses	26	6.79
Barren and uncultivated land	3	0.78
Permanent pastures	37	9.66
Culturable waste land	7	1.83
Fallow land	3	0.78
Net area sown	255	66.58
Geographical area	383	100.00

2.3 Irrigation

The district had a slightly higher percentage (9.69) of gross irrigated area to gross cropped area than the state. An important feature about irrigation was that as high as 74.54 per cent area was irrigated by wells- the assured source of irrigation, another 17.71 per cent was irrigated by rivers and nallahs. (Table 2.2)

per cent was irrigated by sources, 1974-75

Source	Area ('000 hectares)	Percentage to total
Wells	29.2	74.54
Rivers & Nallahs	4.8	17.71
Tanks	1.1	4.06
Canals	1.0	3.69
Total	27.1	100.00

The rivers of the district fall into one main system viz. that of the Chambal with its affluents, the Gambhir and the Kshipra with its tributaries like the Khan and the Saraswati. These offer excellent sources of irrigation water.

2.4 Crops Grown

The important crops of the district were wheat, gram and jowar and accounted for 19.22, 19.19 and 18.25 per cent of the gross cropped area respectively in 1974-75. Other important crops were tur (6.50 per cent) and linseed (5.10 per cent).

Dairy farming was an important enterprise in the district and therefore a considerable proportion of area (11.78 per cent) was under fodder crops (Table 2.3).

Table 2.3 Cropping pattern and irrigation, 1974-75

Crop	Area '000 hect.	Percentage Irrigated area '000 hect.	Percentage Irrigated area '000 hect.	Percentage of irrigated area to area of the crop
Wheat	53.5	19.22	11.3	41.85
Jowar	50.8	18.25	-	-
Maize	8.4	3.02	0.1	0.37
Other cereals	1.3	0.46	0.1	0.37
Total cereals	114.0	40.95	11.5	42.59
				10.09

Table 2.3 Contd.....

Crop	area '000 hect.	Peren- tage	Irrigated area '000 hect.	Peren- tage	Percentage of Irrigated area to area of the crop
Gram	53.4	19.19	2.9	10.74	5.43
Tur	18.1	6.50	-	-	-
Moong & Moth	8.1	2.91	-	-	-
Soybean	7.1	2.55	-	-	-
Other pulses	9.8	3.51	0.6	2.22	-
Total pulses	96.5	34.66	3.5	12.96	3.63
Linseed	14.2	5.10	Negligible	-	-
Groundnut	3.0	1.08	-	-	-
Other oilseeds	0.3	0.11	-	-	-
Total Oilseeds	17.5	6.29	0.1	0.37	0.57
Sugarcane	4.7	1.69	4.7	17.41	100.00
Cotton	3.3	1.18	Negligible	-	-
Fodder crops	32.8	11.78	0.2	0.74	0.61
Total Fruits & vegetables	6.6	2.37	5.3	19.63	80.30
Spices	3.0	1.08	1.7	6.30	56.66
Total	278.4	100.00	27.0	100.00	9.69

2.5 Irrigated Crops

Wheat, gram, sugarcane, fruits and vegetables,
and spices were the irrigated crops. Wheat accounted for

41.85 per cent of the gross irrigated area and was irrigated to the extent of 21.12 per cent. Gram occupied 10.74 per cent of the gross irrigated area but was irrigated to the extent of 5.43 per cent only. The entire area under sugarcane was irrigated and it formed 17.41 per cent of the gross irrigated area. Percentage of irrigated area to total cropped area in the case of fruits and vegetables was 80.30 (Table 2.3)

2.6 Rural Electrification

In the matter of rural electrification Indore district is in the forefront. By the end of the year 1974-75, 345 villages out of the total of 644 had been electrified. Thus the percentage of villages electrified came to 53.6: highest among all the districts of the state. Similarly, a total number of 10,294 pumps had been energised till the year 1974-75. The number of pumps energised per hectare of area sown was highest among all the districts of the state (Table 2.4)

Table 2.4 Rural electrification, Indore district

Year	Number of villages electrified during the year	Number of pumps energised during the year
Upto 1969-70	198	4,992
1970-71	38	1,106
1971-72	25	1,621
1972-73	72	981
1973-74	9	912
1974-75	3	682
Total	345	10,294

CHAPTER III

SUPPLY OF PUMPS

Because of the high potential of underground water and intensive rural electrification programme there is a considerable demand of pumps in the district. In the year 1974-75 the number of diesel pumps was 934 and that of the electric pumps was 8,227 in the district.

The demand of pumps was subject to the availability of credit from Banks and supply of electricity. Between diesel pumps and electric pumps farmers preferred the latter because of the lesser initial and running costs.

3.1 Availability of Pumps

About 25 makes of diesel pumps and 12 makes of electric pumps were in vogue in the district. During the investigation period, supply exceeded the demand. Actually, the stocks were piling up with some of the manufacturers and dealers and it was literally the buyers' market. Due to this situation the suppliers were offering cash and other incentives like payment in instalments etc.

3.2 Transportation

As regards transportation of equipments there was no problem. Indore being on Bombay-Agra main road, supplies from Bombay, Poona, Delhi and Agra, reached Indore city very conveniently.

3.3 Supplying Agencies

These can be grouped into two. In the first one are all the dealers/retailers of different makes having

their show rooms and shops in Indore city and other important towns of the district. Almost all the important manufacturers had their dealers in Indore-city (Table 3.1)

Table 3.1 Dealership of pumps in Indore district

S.No.	Manufacturer	Trade Mark		Supplying Agency at Indore
		Diesel pump	electric pump	
1.	Batilibo & Co.Ltd.	Ajeet	Batilibo	Batilibo & Co. 368, Jawahar Marg
2.	Bharat Electricals	Bharat-shakti	-	-
3.	Greaves Cotton & Co. Ltd.	Mayur Ruston	Greaves	R.R. Contractors, Telgali
4.	Crompton Greaves Ltd.	-	Crompton	Crompton Greaves Ltd. Ravindra Nath Tagore Marg
5.	General Electric Co.	-	G.E.C. & A.E.I.	United Engineers & Co. 1, Gas House Road
6.	H.T.C. Diesel Engines Pvt. Ltd.	H.T.C.	-	-
7.	Charminar Asbestos Cement Corporation	Menon	-	13, Nasia Road
8.	Hyderabad Iron & Steel works Ltd.	Hisco	-	-
9.	British Electrical & Pumps Private Ltd.	Vishwas Leader	Beacon	Industrial stores, Jawahar Marg
10.	Jyoti Ltd. Baroda	-	Jyoti	-
11.	Taipee Industries	Ganesh	-	-
12.	Shankar Traders	Jawahar	-	-
13.	Khandelwal Engineering Corporation	New Indra-shakti	-	-
14.	Laxmi Engineering Works	Laxmi	-	34, Siyaganj
15.	Satya Trading Corporation	-	P.S.G.	24, Shastri Market
16.	Siemens India Ltd.	-	Siemens	Rekha Agencies, 26, Jawahar Marg
17.	Sigil (India) Services	Dipco	-	88, Siyaganj
18.	Sterling Machine Tools Agra	Bharat	-	-

Table 3.1 Contd.....

S.No.	Manufacturer	Trade Mark		Supplying Agency at Indore
		Diesel	Electric	
19.	Orient General Industries	-	Orient	Orient Sales Corporation Jawahar Marg
20.	Porwal Udyog	Field-Master	-	Kanti Mansion, Murai Nagar
21.	India Casting Co.	Wilson	-	-
22.	Jay Engineering works	Usha	Usha	Indore Machinery Stores, Siyaguni
23.	Kirloskar Oil Engines Ltd.	Kirloskar	-	15, Maharani Road
24.	Kirloskar Electric Co. Ltd.	-	Kirloskar	15, Maharani Road
25.	Cooper Engineering Ltd.	Cooper	-	Nutan Hardware Stores Siyaganj, Gali No.2
26.	Indra Marshall Oil Engines	Indra Marshall	-	13-A Industrial Area

3.4 M.P. State Cooperative Marketing Federation

The second agency was the M.P. State Cooperative Marketing Federation. The Federation supplied the pumps to the Marketing Societies located at all the four tehsils, headquarters of Indore, Depalpur, Sawer and Mhow. In addition to these, there were 5 branches of the Marketing Societies viz. Khudel and Row in Indore tehsil, Betma in Depalpur tehsil, Kshipra in Sawer tehsil and Manpur in Mhow tehsil.

The marketing societies could also obtain the pumps directly from the manufacturers and get the same discount and benefits as enjoyed by the Federation.

However, for obtaining the pumps directly from the manufacturers, the permission of the Federation was essential.

Marketing Societies purchasing the pumps from Federation were entitled to get the discount after the Federation retained the part of it at the rates shown in Table 3.2.

Table 3.2 Discount retainable by the Marketing Federation

Discount given by the manufacturers to the Federation	Discount retained by the Federation	
	Electric Pumps %	Diesel pumps %
upto 12.5 per cent	1	2
12.5 per cent to 15.0 per cent	2	3
Above 15.0 per cent	3	4

The Marketing Societies could also act as agents of the Federation if they lacked in capital required for the business. In such cases the Federation would give them the discount at the rates indicated in table 3.3.

Table 3.3 Discount obtainable by the societies from the Federation.

Discount given by the manufacturers to the Federation	Discount obtainable by the societies	
	Electric pumps %	Diesel Pumps %
Upto 12.5 per cent	1	2
12.5 per cent to 15.0 per cent	2	3
Above 15.0 per cent	3	4

3.5 Quality of Pumps

The makes listed in Table 3.1 were on the approved Rate Contract List of the Marketing Federation. The Central Cooperative Banks and the Land Development Banks advanced loans only for those pumps which were included in the Rate Contract List. In order to further safeguard the interests of the farmers the Federation had instructed all the manufacturers on the Rate Contract List to get their product ISI marked failing which the product might be deleted from the List.

Also, the Federation might at its own discretion, at any time, get the pumpsets tested by any of the following Test Houses.

1. National Test House, Alipore
2. Government Test House, Bangalore
3. Victoria Jubilee Technical Institute, Bombay
4. Central Tractor Training Institute, Budni

3.6 Supply of Pumps & Cooperative Credit

Land Development Banks and Central Cooperative Banks played a vital role in the supply of pumps. The Banks extended long term credit for the purpose and the payment of the loan amount was made to the marketing societies directly to avoid the misutilisation by the farmers. The procedure laid down for obtaining pumps on credit was as follows:

The farmer submitted the application in the prescribed form mentioning therein the details regarding

the make, type, horse power etc. of the pump needed. The application, along with the necessary papers, was put up before the Board of Directors of the Bank. The approval of the Board was communicated to the District Marketing Officer or the concerned marketing society for the supply of pump. After the pump was supplied to the farmer the D.M.O. or the concerned marketing society official sent the bill for payment to the Bank. The Bank was expected to make the payment to the extent of 90 per cent of the bill amount within a week from bill. The payment of the remaining 10 per cent of the amount was made after the receipt of the certificate of the farmer regarding the proper fitting of the pump.

3.7 Installation and After Sales Service

The arrangement for the fitting of pumps was made by the Federation and the Marketing Societies. Approved mechanics or contractors did the job and an amount Rs. 40/- per pump was charged for it. After sales service was generally the responsibility of the dealer or the manufacturer. The Federation had also appointed one mechanic in the district and proposes to increase the number to eleven in the next few months.

3.8 Supply during 1974-75

During 1974-75, 266 pumps were sold by the Federation in the district. The number of pumps sold by the private dealers was not available. Of the 266 pumps, 51 (19.18 per cent) were diesel pumps and the

remaining 215 (80.82 per cent) were electric pumps. All the diesel pumps were of 5 horse power. Among electric pumps majority (54.51 per cent) were of 3 horse power each and 23.68 per cent were of 5 horse-power. For 93.61 per cent of the pumps finance was provided by Land Development Banks. The Central Cooperative Banks financed for 6.39 per cent of the pumps.

(Table 3.4)

Table 3.4 Supply of pumps during 1974-75

Type & horse power	Financed by		Total	
	Land Development Bank	Central Cooperative Bank	Number	Percentage
Diesel pump				
5 H.P.	49	2	51	19.18
Electric pump				
a. 3 H.P.	137	8	145	54.51
b. 5 H.P.	57	6	63	23.68
c. 7.5 H.P.	2	1	3	1.13
d. 10. H.P.	4	-	4	1.50
Total Number	249	17	266	100.00
Percentage	93.61	6.39	100.00	

3.9 Prices

The prices varied according to type, make and horse-power. During 1974-75, price of a 5 horse-power diesel pump ranged between Rs. 3,900 and Rs. 4,300. The price of a 3 horse-power electric pump varied from Rs. 2,100 to 2,600 and that of a 5 horse-power electric pump from Rs. 2,600 to 3,100. A 7.5 horse-power electric pump was priced between Rs. 3,500 and 3,800 and a 10 horse power electric pump, between Rs. 4,300 and 4,500.

3.10 Price Spread

The price spread is the lag between the producer's price and the price which the consumer pays. In the case of irrigation pumps the items of the price spread are excise duty, transportation and handling charges, M.P. Sales tax, turn over tax, tax upon tax and the dealers margin.

It was observed that the manufacturer's share in the total amount paid by the pump user was 72.65 per cent. The excise duty formed 7.51 per cent of the pump users rupee and transportation charges, 1.60 per cent. The taxes together accounted for 4.21 per cent and the dealers margin, 14.03 per cent in the price paid by the pump user. (Table 3.5)

Table 3.5 Price spread of irrigation pump

Item	Percentage of pump user's rupee
Manufacturers' price	72.65
Excise duty	7.51
Transportation, handling etc.	1.60
M.P. sales tax, turn over tax, tax upon tax etc.	4.21
Dealer's margin	14.03
Total	100.00

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CHAPTER IV

SUPPLY TO THE SELECTED USERS

As mentioned earlier a sample of 60 users was selected to study the various aspects of supply. The selected 60 users were spread over 29 villages. Thirteen villages had only one user each and 8 villages had 2 users each. Two villages had 5 and 6 users individually (Table 4.1).The general procedure of supply has been detailed in paragraph 3.6

4.1 Loan Application

At the time of submitting an application every user deposited fee for the following purposes.

- i) Form Fee
- ii) Application Fee
- iii) Valuation Fee
- iv) Share value

Form fee was Rs. 3.00 per form and application fee was Rs. 5.00 per application. Valuation fee and share value varied with the amount of loan applied for. The selected users deposited a total amount of Rs. 4,371.40 or Rs. 72.85 per user as fee and share value. Of the total amount 65.35 per cent was valuation fee and 23.80 per cent accounted for value of shares. The application fee constituted 6.75 per cent and the form fee 4.10 per cent (Table 4.2)

Table 4.1 Distribution of selected users by villages

: 27 :

Number of users per Village	Debalpur	Indore	Mhow	Sawar	Total
Number of Total	Number of Total	Number of Total	Number of Total	Number of Total	Number of Total
Villages users	Villages users	Villages users	Villages users	Villages users	Villages users
Percentage Total	Percentage Total	Percentage Total	Percentage Total	Percentage Total	Percentage Total
users	users	users	users	users	users
Village	Village	Village	Village	Village	Village

Table 4.2 Details of fee remitted with application

Tehsil	Form fee	Application fee	Valuation fee	Share value	Total
Indore	45.00	75.00	812.50	280.00	1,212.50
Sawer	45.00	74.00	590.40	240.00	949.40
Depalpur	45.00	74.00	795.00	300.00	1,214.00
Mhow	45.00	73.00	657.50	220.00	995.50
Total	180.00	296.00	2,855.40	1,040.00	4,371.40
Average	3.00	4.90	47.60	17.35	72.85
percentage to total	4.10	6.75	65.35	23.80	100.00

For getting the loan from the banks the selected users mortgaged a total land of 346.596 hectares. It was estimated that an area of 187.340 hectares would be benefitted thereby generating an additional income of Rs. 2,27,399. (Table 4.3)

Table 4.3 Land mortgaged and estimated benefits

Tehsil	Land Mortgaged (Hectares)	Land not mortgaged (Hectares)	Land to be benefitted (Hectares)	Estimated additional income (Rs.)
Indore	74.521	15.419	57.732	47,742
Sawer	124.080	-	50.958	61,800
Depalpur	92.348	20.276	47.685	81,927
Mhow	55.647	-	30.965	35,930
Total	346.596	35.695	187.340	2,27,399

The users were not free from debt at the time of application. They owed Rs. 24,378.51 to the cooperative Societies and Rs. 12,951.09 to the Government (Taccavi). Other outstanding loans amounted to Rs. 4,750.00. Thus the total loan amount outstanding was Rs. 42,079.60 or Rs. 701.33 per user. (Table 4.4)

Table 4.4 Indebtedness of the selected users

Tehsil	Cooperative Govt.			Total
	Society	(Taccavi)	Others	
Indore	9,390.95	6,500.00	-	15,890.95
Sawer	10,796.04	5,394.42	-	16,190.46
Depalpur	2,213.60	1,003.06	-	3,216.66
Mhow	1,977.92	53.61	4,750.00	6,781.53
Total	24,378.51	12,951.09	4,750.00	42,079.60

4.2 Loan Demand

The selected users desired loans amounting to Rs. 5,56,350. needed for various purposes such as electric motor, oil engine, sinking of well, repairs of well, purchase of pipe line, land development and fencing. The most important purpose for which loan was desired was sinking of wells and formed 54.77 per cent of the total demand. Loan amount needed for the purchase of electric motors constituted 28.39 per cent of the total demand. (Table 4.5).

Table 4.5
Details of loans applied by purposes

: 20 :

Item	Electric motor	Oil engine	Sinking of wells	Repairs of wells	Pipe line	Wire fencing	Land development	Total
Indore	43,000	-	1,00,500	4,500	3,850	-	2,000	1,53,850
Sawer	35,950	13,700	46,000	3,550	13,300	1,000	1,000	1,14,500
Deopalpur	40,500	9,300	85,200	4,500	13,500	-	1,500	1,54,500
Mhow	38,500	10,000	73,000	9,000	2,500	-	500	1,33,500
Total	1,57,950	33,000	3,04,700	21,550	33,150	1,000	5,000	5,56,350
Percentage to total	28.39	5.93	54.77	3.87	5.96	0.18	0.90	100.00

4.3 Loan: Sanctioned

Against the desired amount of Rs.5,56,350 the selected users were sanctioned a total amount of Rs.4,72,537. Thus the percentage of amount sanctioned to the amount desired came to 85.93 . The main purpose of loan was sinking of wells as 53.67 per cent of the total amount was sanctioned for it. The amount sanctioned for the purchase of electric motors was 31.22 per cent. (Table 4.6)

4.4 Period required for the Process

The process for the supply of pumps started with the submission of application by the user and ended with the payment of the loan amount by the bank to the marketing federation. Although no rigid limits for the various processes are fixed lesser the period taken more is the efficiency of the system.

Moreover, the marketing federation had launched a scheme of incentive rebate. The pump user was entitled to a rebate at the rates shown in the table below if the cooperative bank paid 90% of the bill amount within the prescribed time limit.

Table 4.7 Rates of Incentive Rebate

Period taken by the bank for the payment of the bill from the date of its receipt	Cash rebate	
	per diesel pump	electric pump
1. 7 days	Rs. 60	Rs. 35
2. 7-21 days	Rs. 45	Rs. 25
3. 21-45 days	Rs. 30	Rs. 15

Table 4.6 Details of the loans sanctioned by purposes

: 22 :

Tehsil	Electric motor	Oil engine	Sinking of well	Repairs of well	Pipe line	Wire fencing	Land development	Total
Indore	40,950	-	84,750	3,825	658	-	1,625	1,31,808
Sawer	32,400	13,250	34,000	4,500	8,675	900	-	93,725
Deopur	37,275	9,050	73,700	3,800	12,113	-	-	1,35,938
Mhow	36,925	4,750	61,200	6,975	1,316	-	-	1,11,166
Total	1,47,550	27,050	2,53,650	19,100	22,762	900	1,625	4,72,637
Percentage to total	31.22	5.72	53.67	4.04	4.82	0.19	0.34	100.00

If the bank failed to remit 90% of the amount within 45 days the pump user was not entitled to get any rebate.

In view of this an investigation was made regarding the period required for different processes for obtaining a pump in the cases of selected users. It is heartening to note that as high as 91.67 per cent of the users got the benefit of varying degree from the incentive rebate scheme. (Table 4.8)

Table 4.8 Beneficiaries of the incentive rebate scheme

Period taken by the bank for the payment of the bill from the date of its receipt	No. of users	Percentage
Less than 7 days	13	21.67
7 - 21 days	30	50.00
21- 45 days	12	20.00
More than 45 days	5	8.33
Total	60	100.00

The average period between the date of application and the date of sanction was 37 days. Similarly the period between the date of sanction and the date of supply of pump averaged 139 days. The average period between the date of supply of pump and the date of payment by the bank to the marketing Federation came to 24 days (Table 4.9).

Table 4.9 Period required for various processes of supply of pumps

Tehsil	Period between the date of application and the date of sanction	Period between date of sanction and the date of supply of pump	Period between the date of supply of pump and the date of payment by the bank to the marketing Federation
	(Days)	(Days)	(Days)
Indore	47	186	14
Sawer	21	132	38
Depalpur	44	100	31
Mhow	34	138	14
Average	37	139	24

4.5 Details of Pumps

The details regarding the make, type (electricity/diesel), and horse power were mentioned by the users in the applications. However, some changes as regards the make were either suggested by the users or by the marketing federation at the time of supply. Such cases were 21 out of 60 or 35.00 per cent. No change in the type was either asked by the users or suggested by the Federation. As regards the horse power only two changes occurred. In both the cases 3 H.P. electric motors were substituted by 5 H.P. motors.

Electric pumps were far more popular than the diesel pumps. Only 10 per cent of the users had diesel pumps. Among the electric pumps 3 H.P. pumps (42) outnumbered the others. Only one user had 10 H.P. electric pump. The average price of 5 H.P. diesel pump;

3 H.P. electric pump, 5 H.P. electric pump and 10 H.P. electric pump was Rs. 4,475.98 Rs. 2,638.10 Rs.3028.51 & Rs.3823.65 respectively. (Table 4.10)

Table 4.10 Pumps of the selected users

Type & Horse Power	No.of Pumps	Value	Value per pump
Diesel pump			
5.H.P.	6	26855.90	4475.98
Electric Pump			
a. 3 H.P.	42	110800.33	2638.10
b. 5 H.P.	11	33313.62	3028.51
c. 10 H.P.	1	3823.65	3823.65
Total	60	174793.50	2913.23

In the following paragraphs the experience, opinions and suggestions of the selected users have been narrated.

4.6 Opinions and Suggestions of the Users

The choice of the pump as regards make, horse power and type depended mainly on the advice of the neighbours and relatives as 44 out of 60 users have indicated so. Experience of neighbours was the reason in the case of 9 users. The users' estimate about his requirement and availability of irrigation water formed bases of choice in 7 cases.

The availability of additional irrigation facilities has encouraged the users to change from single to double cropping system. This has also made it possible for the users to include certain new crops and cash crops like jowar, maize groundnut, wheat, sugarcane, gram and vegetables on sizable area. Some users expressed that with more off take of water from the existing wells, the deepening of wells and their repairs have been necessitated.

Among the difficulties narrated the principal was regarding the non-availability of electricity connection. This was attributed by the users to the lack of coordination between the Land Development Bank and the Madhya Pradesh Electricity Board. Due to non-availability of electricity connection the motors of some of the users were lying idle. Further, it was alleged by some users that the price of a pump purchased from marketing federation was more than that purchased from the open market. This evidently happened due to sale of pumps at lower prices than the suggested prices by the local dealers as a part of the unhealthy competition. Another reason was that during the investigation period supply exceeded the demand. The users suggested that the electricity supply should precede the supply of electric motors and this can be accomplished by the proper coordination between the L.D. Bank and MPEDB.
