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Research Note

MARKETING OF MINOR IRRIGATION EQUIPMENT IN SOME SELECTED AREAS OF BANGLADESH

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ABSTRACT

The number of traders of minor irrigation equipment (MIE) were small but no single nor a few firms could enjoy preferential advantage over other firms. Capital was identified as a barrier to entry of new firms in the MIE market. About 71% of traders could not find scope for new entry. Various brands of MIE were dealt in by about 90% of traders. There was no system of quality control of MIE. Accessibility of farmers to MIE though improved, the scopes still exists for further improvement of the accessibility.

I. INTRODUCTION

Minor irrigation plays an important role as a leading input for the development of agriculture in Bangladesh, because the productivity of major agricultural inputs such as HYV seeds and fertilizers largely depend on the availability of ensured water supply in the crop fields.

After the introduction of MIE in early 1960s, many changes have been made over the period from 1960 to 1989 (BASR 1988, BBS 1990). In the Fourth Five Year plan, in order to achieve a sustained annual growth rate of 3.6%, it has been planned to bring 4.8 million hectares of land under irrigation by 1995. Considering 1989-90 as base year the plan requires 40% increase in DTWS mid 79.86% increase in STWs (Task Force Report 1990). This rapid expansion in supply and installation of irrigation equipment would exert tremendous pressure on its present distribution system and also demand additional servicing facilities. But there is no study on the present distribution system of minor irrigation equipment (MIE). Keeping this point in mind the present study was designed to attain the following objectives.

i) To analyse the distribution system of minor irrigation equipment.
ii) To evaluate the possibility of private service sector development.
iii) To evaluate some policy options for improving the distribution system of MIE.

The paper is organized into six sections. Apart from this Section, methods are explained in Section IL Section III deals with the distribution system of MIE. Section IV is devoted to evaluate the development of Service Centre. Problems and the suggested measures are discussed in Section V. Conclusions are given in the final Section.

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II. RESEARCH METHODS

Depending on the concentration of minor irrigation equipment, data for the present study were collected from two Thanas namely Jamalpur Sadar under Jamalpur District and Phulpur under Mymensingh district. Data were also collected from Mymcnsigh Town. The respondents were traders (wholesalers /retailers/agents), owner of the Service Centres, importers/manufacturers and owners-farmers of MIE.

A total of twenty one traders/agents were selected purposively taking 10 from Mymensingh Town, 8 from Jamalpur Sadar and 3 from Phulpur Thana. All tile owners of tile Service Centres from Jamalpur (10) and Phulpur (20) were selected. Moreover 3 importers/mantacturers were also selected randomly. Convenience sampling procedure was followed in selecting the farmer-owners of MIE. Based on the distribution of minor irrigation equipment in different areas, 30 DTW owners from 13 villages of Jarnalpur Sadar, 40 S1'W owners from 5 villages and 30 LLP owners from 8 villages of Phulpur Thana were selected. Data were collected from mid-December 1992 through mid-March 1993 (for details see, Raha and Akbar 1993).

III. MARKETING SYSTEM OF MINOR IRRIGATION EQUIPMENT

Marketing system is composed of three components i.e. marketing channels, functionaries and their activities (Khols and Uhl 1980). This Section deals with marketing channels of minor irrigation equipment, characteristics of the functionaries. and their conduct.

The present distribution channels as identified are pressented in Fig 1. Distribution channels are primary and the product is scondary, even the channels are often more crucial than the product itself (Drucker 1970).

The intermediaries involved in the distribution channels are importer, manufacturer, wholesaler, agent and retailer.

Characteristics of the MIE traders

Ownership pattern of the business : Out of 20 traders 75% owned the business individually while 25% owned the business jointly. The business of the importers was under single ownership as reported by the agent.
Source of capital : Table 1 presents the sources of capital and it is found that own source was the most important as it provided the highest share (47.62%) of capital followed by bank (28.57~I~) and partnership (23.81).

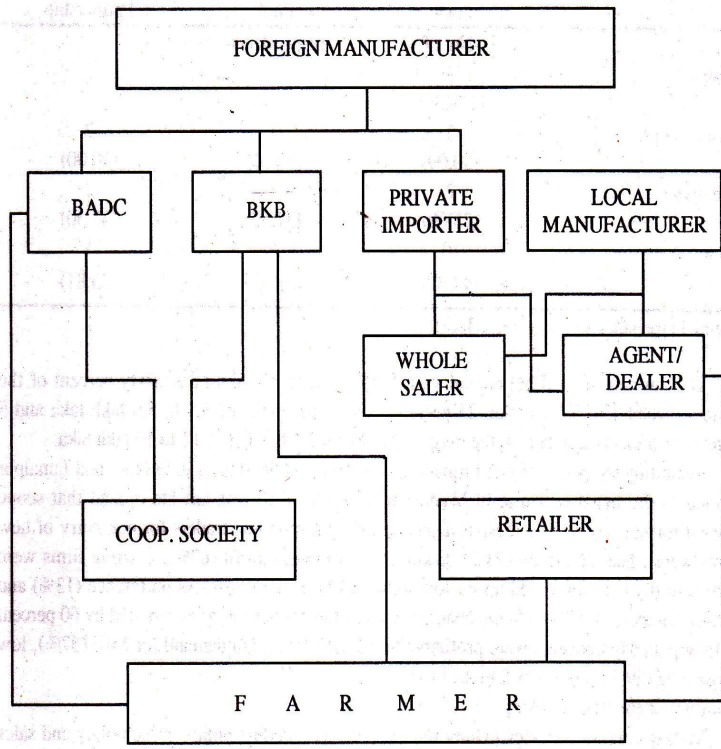

Fig. 1 Marketing Channel of MIF after Privatization

Table 1. Source of Capital of the Traders

Area	Source		
	own	Bank	Partnership
	-No. of	respondents-	
Phulpur	3 (100.00)	-	-
Mymensingh	5 (50.00)	3 (30.00)	2 (20.00)
Jamalpur	2 (25.00)	3 (37.50)	2 (37.50)
All areas	10 (47.62)	6 (28.57)	5 (23.81)

Figures in parentheses indicate percentages

The amount of working capital varied from one to 10 lakh taka. Sixty percent of the traders owned 1 to 3 lakh taka, 25 percent were in the range of 3.1 to 5.0 lakh taka and 5 percent of traders each were in the range of 5.1 to 7.0 7.1 to 9.0 and 9.1 to 10 lakh taka.

Regarding the possibility of further entry of firms, all the traders in Phulpur and Jamalpur replied in the negative while in Mymensingh 6 out of 10 respondents opined that scope existed for new entry. The reasons as perceived by responding traders for non entry of new firms were : lack of capital (73%), lower level of current profit (67%), existing firms were sufficient (67%), capital tied up for long time (20%), lack of business preference (13%) and intense competition (7%). On the contrary, the reasons for new entry as reported by 60 percent of traders in Mymensingh were profitable business (71%), high demand for MIE (57%), low bargaining (29%) and low risk in the business.

Conduct of the MIE traders

Market conduct includes mainly three aspects i.e. product policy, price policy and sales promotion policy.

Product policy : The traders usually dealt with many brands and there were about 11 brands with different horse power. Only 10 percent of traders and one agent of the importer used to sell single brand product. The traders opined that they would supply MIE in accordance with the demand of the farmers. But in practice, they imported only those brands of MIE which offered them higher returns.

Price policy : On the basis of discussions with three importers and the traders, it appears that generally they used to add a certain markup with the selling cost of the product but the amount was not disclosed. However, in the process of pricing their products they did not consult with each other.

Sales promotion policy : Regarding sales promotion policy, some manufacturers and importers used to advertise their product through different media. But the traders in the study areas adopted some measures for sales promotion (Table 2). Donation and entertainment which act as influecing factors accounted for about 12 percent, 11 percent and 5 percent of the monthly selling costs in Jamalpur, Phulpur and Mymensingh market respectively.

Table 2. Location wise Sales Promotion Activities

Promotional activities	Phulpur	Mymensingh	Jamalpur	All areas
Good dealings with customer	2 (66.67)	-	1 (12.50)	3 (14.29)
Supply of desired equipment	1 (33.33)	- -	- -	1 (4.76)
Supply of quality equipment	2 (66.67)	1 (10.00)	8 (100.00)	11 (52.38)
Advertising	-	4 (40.00)	-	4 (19.05)
Selling at relatively lower price	-	2 (20.00)	1 (12.50)	3 (14.29)
One year free service	-	9 (90.00)	2 (25.00)	11 (52.38)
Provision for returning defective pump	-	4 (40.00)	-	4 (19.05)

Figures in parentheses indicate percentages

IV. DEVELOPMENT OF SERVICE CENTRES

Privatization of MIE has led to the development of Service Centres which provide repairing facilities along with supply of few spare parts. Table 3 shows the areawise development of Service Centres according to year of establishment and number of workers employed.

Table 3. Areawise Development of Service Centre (1980-1992)

Year of establishment	No. of Service centre		No. of workers	
	Phulpur	Jamalpur	Phulpur	Jamalpur
1980-84	4	2	17	8
1985-88	7	6	28	22
1989-92	9	2	24	5
Total	20	10	69	35

The asset position of the Service Centres varied from taka 50 thousand to above 1 lakh. The amounts of capital were grouped into Tk. 70-78 thousand, Tk. 90-100 thousand and above Tk. 100 thousand. Out of 30 Service Centres, 40 percent belonged to the second category while 27 percent and 20 percent of the centres belonged to the categories of above Tk. 100 thousand and Tk. 90-100 thousand respectively (Table 4).

Table 4. Distribution of Service Centre owners according to capital

Amount of capital (000 Tk.)	No. of Service centre	% of responses
50-65	4	13
70-85	12	40
90-100	6	20
Above 100	8	27
Total	30	100

Operating area : The operating area covered by the Service Centres was about 30 miles. In both the areas 30 percent of the Service Centres covered about 26 to 30 miles of distance (Tables 5) for offering their services.

Table 5. Operating Area of the Service Centre

Distance (Mile)	Phulpur		Jamalpur	
	-responses-			
	No.	%	No.	%
10-15	5	25	-	
16-20	5	25	1	10
21-25	4	20	6	60
26-30	6	30	3	30
Total	20	100	10	100

Figures in parentheses indicate percentages

Extent of service provided : The Service Centre in the study area could provide upto 90 percent service to farmers. Table 6 reveals the extent of services offered by the Service Centres. It is indicated that the farmers owning various MIE could get most of their servicing requirement from locally developed Service Centres.

Table 6. Extent of Service Offered by the Service Centre

Extent of service (%)	Phulpur		Jamalpur	
	- responses-			
	No.	%	No.	%
50-60	6	30	3	30
61-70	7	35	4	40
71-80	6	30	2	20
81-90	1	5	1	10
Total	20	100	10	100

Figures in parenthees indicate percentages

Possibility of entry of new firms

The Service Centre owners were asked about the possibility of entry of new firms in this business. In this connection, about 70 percent respondents of Phulpur and 60 percent respondents of Jamalpur reported that there was no scope for entry while the remaining 30 percent and 40 percent of the respondents of Phulpur and Jamalpur respectively opined that there was scope for new firms to enter this business.

The barriers to entry of new firms as perceived by the respondents are presented in Table 7. The barriers were : existing numbers of firms were adequate (reported by 65%), lack of capital to establish a firm (reported by 40%), expectation of lower profit (reported by 30%) and lower relative current profit (reported by 20%).

Table 7. Barriers to entry of new firm

Barrier	Phulpur	Jamalpur	All areas
	-No.	of	respondents-
Existing firms	10	3	13
are adequate	(71.43)	(50.00)	(65.00)
Lack of capital	5	3	8
to establish a firm	(35.71)	(16.67)	(40.00)
Expectation of	5	1	6
lower profit	(35.71)	(16.67)	(30.00)
Lower relative	2	2	4
current profit	(14.29)	(23.33)	(20.00)

Figures in parenthses indicate percentages

On the contrary, those who replied in the affirmative indicated some factors as conducive to entry of new firms (Table 8). These were extensive use of MIE (100%), business profitability (70%) and availability of trained mechanics (10%).

Table 8. Reasons for entry of new firms

Reason	Phulpur		Jamalpur		All areas	
	- responses					
	No.	%	NO	%	No.	%
Wider use of MIE	6	100	4	100	10	100
Profitability of business	4	67	3	75	7	70
Availability of trained mechanic	-	-	1	25	1	10

Figures in parentheses indicate percentages

V. PROBLEMS AND SUGGESTED MEASURES

This section deals with problems and suggestions as perceived by the MIE traders, owners of the Service Centres and owners of MIE.

Problems faced by MIE traders

The nature and extent of problems faced by MIE traders in the study areas varied from one area to another. The traders' responses about the problems are presented in Table 9.

Table 9. Problems faced by traders during their trade

Problem	Phulpur		Mymensingh		Jamalpur		All areas	
	- No. of response-							
	No.	%	No.	%	No.	%	No.	%
Lack of capital	3	100.00	4	40.00	8	100.00	15	71.43
Supply of incomplete tool box	1	33.34	2	20.00	1	12.50	4	19.05
Capital tied up for long time	-	-	5	50.00	2	25.00	7	33.33
Seasonal trade	-	-	1	10.00	1	12.50	2	9.53
Supply of defective parts/equipment	-	-	1	10.00	-	-	1	4.76

Figures in parentheses indicate percentages

Although there were variations in the responses among the study areas, the most important problem was lack of capital.

Problems faced by owners of service Centres

The problems faced by the owners of the Service Centres are presented in Table 10. Non-availability of required machine was a serious problem reported by 90 percent of the respondents in both the areas.

Table 10. Prolems of the Service Centre

Limitation	Phulpur		Jamalpur	
	- - responses--			
	No.	%	No.	%
Non-availability of required machine	18	90	9	90
Lack of capital to instal the required machine	2	10	1	10
Lack of big lathe machine	1	5	1	10
Lack of training facility	1	5	-	-

Figures in parentheses indicate percentages

Problems faced by MIE owners

The problems faced by MIE owners were grouped into : (i) under utilization of MIE, (ii) mechanical problems of MIE and (iii) problems of spare parts.

Despite the increase in the number of Service Centres and traders, MIE owners were facing problems in buying spare parts. The intensity of the problems felt by MIE owners were ranked as high price, lack of capital non-availability and inferior quality of spare parts (Table 11).

Table 11. Problems faced by MIE owners in buying spare parts

Problem	Type of MIE			
	DTW	STW	LLP	ALL (%)
		-No. of responses-		
High price	18 (60.00)	30 (75.00)	13 (43.33)	61
Not easily available	12 (40.00)	10 (25.00)	5 (16.67)	27
Inferior quality	2 (6.67)	11 (27.50)	4 (13.33)	17
Lack of capital	12 (40.00)	22 (55.00)	10 (33.33)	34

Figures in parentheses indicate percentages

Suggested measures

Measures suggested by the traders and owners of the Service Centres for the solutions of the problems were not in unison. The measures suggested by traders also varied among the study areas. The traders of Phulpur and Jamalpur suggested only two and three measures respectively while those in Mymensigh market advocated six measures (Table 12).

Table 12. Measures suggested by MIE traders

Suggestion	Phulpur	Mymensingh	Jamalpur
		No. of responses-	
Provision for adequate credit in time	3 (100.00)	5 (50.00)	8 (100.00)
Demand in all seasons	-	2 (20.00)	3 (37.50)
Supply of complete tool box by agency	1 (33.33)	2 (20.00)	1 (12.50)
Provision for credit sale	-	1 (10.00)	-
Enhancement of farmers' purchasing/power	-	1 (10.00)	-
Transportation cost on repairing should be borne by agency	-	1 (10.00)	-

Figures in parentheses indicate percentages

The measures suggested by the owners of the Service Centres were installation of various machines and provision for bank loan.

VI. CONCLUSION

The importers / manufacturers of MIE used to sell directly from their store. With a few exceptions, there was no attempt to develop market for MIE. There was no control on quality of MIE available in the market. The present market conditions could not promote standardization. So, the situation demands recommendations for regulation about standardization of MIE. Accessibility of farmers to MIE has improved. Although the availability of servicing facilities and supply of spare parts imroved over the years but scope still exists for further improvement in the Service Centre sector. Technical capabilities of the retired mechanics of BADC may be utilized to improve the servicing facilities in the private sector. A training programme on operation and maintenance of MIE may be tagged. Concerted effort of the government, active participation of the middlemen and support from the financial institutions could bring success in implementing the suggested measures to solve the problems involved in the marketing system of minor irrigation equipment.

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