



EVALUATION STUDY SERIES NO. 27.

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**MINOR IRRIGATION IN MUZAFFAR NAGAR  
DISTRICT, U. P.**

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**AN EX-POST  
EVALUATION STUDY**

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**NATIONAL BANK FOR  
AGRICULTURE AND RURAL DEVELOPMENT**

**ECONOMIC ANALYSIS AND PUBLICATIONS DEPARTMENT**

**BOMBAY**

**1987**



The National Bank for Agriculture and Rural Development (NABARD) was established on July 12, 1982. The Agricultural Refinance & Development Corporation (ARDC) ceased to exist from that day and its functions were taken over by the NABARD. The subject-scheme was sanctioned by the erstwhile ARDC. For the sake of convenience, the report refers to ARDC although it does not exist any more.



## FOREWORD

This report presents the results of evaluation of a scheme sanctioned to the Uttar Pradesh State Co-operative Land Development Bank, Ltd., (UPSCCLDB) for financing investments in shallow tubewells.

The financial as well as physical performance under the reference scheme was found to be satisfactory. More than half of the beneficiaries financed under the scheme belonged to the category of small farmers. As the scheme area already had the benefit of canal irrigation, the investments in shallow tubewells financed under the scheme sought to improve the irrigation intensity and timeliness of irrigation.

The sample data showed that 78 per cent of diesel engines and 14 per cent of electric motors purchased by the scheme beneficiaries were oversized (higher hp), resulting in wasteful expenditure. This practice needs to be discouraged by banks and extension agencies.

A positive feature observed under the scheme was that many of the small farmers who were financed, got over the problem of limited viability imposed by small sized holdings by resorting to sale of water to neighbours.

The optimum use of the irrigation potential created, combined with adoption of improved agricultural practices also helped in improving farm incomes and ensuring good repayment performance.

NATIONAL BANK FOR AGRICULTURE  
AND RURAL DEVELOPMENT  
BOMBAY

**G.P. Bhawe**  
Managing Director

3 August, 1987



## **CREDIT LIST**

### **Overall Direction**

Dr. M.V. Gadgil, Chief General Manager

### **General Direction**

Shri C. Ramalingam, General Manager

Shri R.G. Shaligram, Manager

### **Processing, Analysis of Data and Drafting of Report**

Shri N.K. Gupta, Deputy Manager

### **Tabulation of Data**

Shri R.K. Malhotra, Asst. Development Officer

### **Field Investigations**

Shri N.K. Gupta, Deputy Manager





## **ABBREVIATIONS**

<b>ARDC</b>	:	Agricultural Refinance and Development Corporation
<b>DTW</b>	:	Diesel Tubewell
<b>DTW-SF</b>	:	Diesel Tubewell - Small Farmers
<b>DTW-OF</b>	:	Diesel Tubewell - Other Farmers
<b>DTW-All</b>	:	Diesel Tubewell - All (Sample beneficiaries)
<b>ETW</b>	:	Electric Tubewell
<b>ETW-SF</b>	:	Electric Tubewell - Small Farmers
<b>ETW-OF</b>	:	Electric Tubewell - Other Farmers
<b>ETW-All</b>	:	Electric Tubewell - All (Sample beneficiaries)
<b>FRR</b>	:	Financial Rate of Return
<b>hp</b>	:	Horse Power
<b>NABARD</b>	:	National Bank for Agriculture and Rural Development
<b>O&amp;M Cost</b>	:	Operation & Maintenance Cost
<b>PACS</b>	:	Primary Agricultural Credit Society
<b>UPSCCLDB</b>	:	Uttar Pradesh State Co-operative Land Development Bank Ltd.
<b>UPSEB</b>	:	Uttar Pradesh State Electricity Board



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### BASIC DATA SHEET

1. Scheme	:	Minor Irrigation (STW) in Muzaffar-nagar district, Uttar Pradesh					
2. Month/year of sanction	:	May 1976					
3. Month/year of closure	:	June 1978					
4. Implementation period	:	15 February 1976 - 30 June 1978					
5. Implementing bank	:	UPSCCLDB					
6. Reference year of the study	:	1981-82					
7. Total investment cost (historical)	:	Rs. 272.40 lakh					
8. Financial assistance estimated	:	Rs. 188.25 lakh					
9. Bank loan disbursed	:	Rs. 181.14 lakh					
10. Refinance disbursed	:	Rs. 144.23 lakh					
11. Unit cost of investment (at historical prices)				<b>DTW</b>		<b>ETW</b>	
i) Anticipated	:			Rs. 10,877		Rs. 7,785	
ii) Actual	:			Rs. 7,452		Rs. 11,283	
12. Unit cost of investment at reference year prices	:			Rs. 15,000		Rs. 15,000	
13. Small farmer coverage	:			54 per cent			
				<b>DTW- DTW- DTW- ETW- ETW- ETW-</b>			
				<b>SF OF ALL SF OF ALL</b>			
14. No. of scheme beneficiaries	:	841	672	1,513	572	841	1,413
15. No. of sample beneficiaries	:	25	20	45	17	25	42
16. Average size of holding (acres)	:	5.26	12.55	8.50	5.15	13.44	10.08
17. Average benefiting area (acres)	:	4.96	8.70	6.62	4.62	9.32	7.42
18. Average incremental income (Rs.)							
a) <b>On farm</b>							
i) Without imputation of cost to family labour		2,553	4,901	3,597	3,030	7,729	5,826
ii) With imputation of cost to family labour		1,659	4,302	2,835	1,908	7,055	4,971



	<u>DTW-</u> <u>SF</u>	<u>DTW-</u> <u>OF</u>	<u>DTW-</u> <u>ALL</u>	<u>ETW-</u> <u>SF</u>	<u>ETW-</u> <u>OF</u>	<u>ETW-</u> <u>ALL</u>
<b>b) Total*</b>						
i) Without imputation of cost to family labour	3,272	5,260	4,161	8,335	11,025	9,945
ii) With imputation of cost to family labour	2,378	4,661	3,389	7,213	10,351	9,090
<b>19. Financial Rate of Return(FRR)(%)</b>						
i) Without imputation of cost to family labour	26	49	36	> 50	> 50	> 50
ii) With imputation of cost to family labour	17	42	27	> 50	> 50	> 50
<b>20. Total scheme impact :</b>						
Net addition to						
i) Irrigated area (acres)			:	3,484		
ii) Gross cropped area (acres)			:	8,119		
iii) Crop output (Rs. lakh)			:	1,722.93		
iv) GDP of the scheme area (Rs. lakh)			:	203.25		
v) Employment generation (Man-years)						
(a) On own farm			:	3,230		
(b) Total**			:	4,412		
* Includes net income from sale of water, sale of gur, and thresher (custom hire).						
** Includes employment generation due to manufacture of gur and thresher (custom hire).						