



GOVERNMENT OF KERALA

**“REPORT ON EVALUATION
STUDY OF AYACUT VERIFI-
CATION OF MINOR IRRIGA-
TION PROJECTS IN
TRIVANDRUM DISTRICT”**

**AGRICULTURE DIVISION
DEPARTMENT OF
ECONOMICS & STATISTICS
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REPORT ON THE EVALUATION SURVEY ON MINOR IRRIGATION PROJECTS IN TRIVANDRUM DISTRICT.

I. Introduction

As decided by the Committee to review the progress of Ayacut verification and collection of accurate data relating to Minor Irrigation works, 49 Minor Irrigation Schemes (45 class II & 4 class I) have been selected in Trivandrum District for the collection of area irrigated and other basic details such as the origin of the scheme and date, original cost and date of completion, type of construction etc.

Minor Irrigation works costing above Rs 2 lakhs and up to Rs 35 lakhs are classified under class I, and works costing up to Rs 2 lakhs are classified under class II. Prior to 1976, Minor Irrigation Class II works were executed by the Irrigation wing of the P.W.D. But State Government during 1976 have ordered that new Class II works should be taken up only with people's participation. Such works are executed by the District collectors and the Irrigation Department will render necessary technical assistance. From the current year this system has been dispensed with and all Minor Irrigation class II works are executed with Government funds by the P.W.D. The maintenance of Minor Irrigation Class I works are done by the Irrigation Department. The present maintenance of Minor Irrigation grant for class I works is Rs 500/- per hectare of benefitted area. The maintenance of Minor Irrigation class II works are attended to by the concerned Panchayats for which a grant of Rs 25/- per hectare of benefitted area is given to the Panchayats as maintenance grant.

II. Sample Design and Method of Selection:-

49 Minor Irrigation works (4 Class I and 45 class II) covering an area of approximately 10% of the Ayacut of the Minor Irrigation works in Trivandrum District have been selected according to Prof. Labri's method, giving probability proportional to size of the works and their number. Data on area irrigated and other particulars were collected by the TRS investigator after on the spot verification in each survey numbers falling in the ayacut region of the Minor irrigation project.

Minor Irrigation class 1 and different categories of class II works viz. Chira, Kulam, Tank, deepening of Thodu and Channels, Cross bar etc. are included in the sample survey conducted in Trivandrum District.

The Details of selection are furnished below:-

Category	Total No. in the District	Total Area irrigated in the dist. (in hect.)	Total No. in each category selected for the Sy.	Total Area irrigated by the selected category (in hectares)
1	2	3	4	5
M.I. (Class I)	8	1314.00	44	322
<u>M.I. (Class II)</u>				
1. Chira, Kulam and Tank	267	2733.02	27	266.17
2. Thodu	133	1316.06	12	137.83
3. Cross-bar	31	464.84	3	48.08
4. Others	11	208.95	3	24.63
Total (M.I. Class II)	442	4725.87	45	476.71

III. Schedules and Questionnaire:

The proforma for collection of details of crops grown and area irrigated in the Ayacut of the selected works are appended. Two proforma have been generally used for collection of data. Schedule I is used mainly for canvassing basic details relating to each Minor Irrigation Project viz. data of commissioning of the project, number of beneficiaries, original cost, yearly maintenance expenditure etc. In schedule II area irrigated from each survey numbers falling in the Ayacut region of each project is collected. Irrigation particulars are collected crop-wise viz. seasonal, perennial and annual crops separately for the latest one year viz. 1981-82. The data are collected by the field staff of this Department.

IV. The Results of the Survey.

The results of the survey are analysed according to the different categories under which Minor Irrigation works have been

classified viz. (1) Chira, Kulam, Tank etc. (2) Thodu, (3) Cross-bar (4) Others. These four categories of works come under class II works and Minor Irrigation class 1 works are also separately dealt with. The area benefitted according to this survey includes area irrigated as well as area protected from floods.

(A) Class 1 works: The following 4 class 1 Minor Irrigation works have been selected for the survey.

1. Constructing a regulator at para Chira in Killiar, Trivandrum.
2. Vellayanikayal - Providing Irrigation facilities to Vellayani Agricultural lands.
3. Improvement to Karaduvettaiyam canal in Vilappil Panchayat.
4. Improvements to Kulathur Neduthodu in Neyyattinkara Taluk.

For the first scheme viz. Constructing a regulator at Parachira, the Survey numbers falling in the Ayacut area could not be obtained either from the P.W.D. or from the village office. Hence the details relating to the scheme could not be collected.

The second scheme falling in Trivandrum Taluk namely Vellayani Kayal is mainly intended for dewatering the Kayal Water for cultivation. The Scheme works mainly during the summer season. The details collected relating to the scheme reveal that nearly 90% of the area reported by the P.W.D. is benefitted by this project.

The remaining 2 class 1 works are situated in Neyyattinkara taluk and the area irrigated by these two projects as revealed from the survey is furnished below.

NET AREA IRRIGATED BY MINOR IRRIGATION CLASS I WORKS

(Area in Hectare)

	<u>Irrigated</u>	<u>Unirrigated</u>
1. Paddy	94.71	0.69
2. Tapioca & other sesonal crops	-	3.80
3. Annual & Perennial crops	4.76	16.86

The above data obtained from the survey reveal that nearly 55% of the area reported by the P.W.D. is actually benefitted by irrigation.

(B) Minor Irrigation class II works: 45 Class II Minor Irrigation works were selected for this survey. For proper representation of different categories of Minor Irrigation class II works, selection was done mainly from 4 categories viz. Chira, Kulam and Tank, Thodu

Cross-bar and others.

The area benefitted from irrigation by the different categories as revealed from the survey is presented in table 1. Data reveal that for the first category viz. Chira, Kulan, Tank etc. only 26% of the area irrigated as reported by the P.W.D. is actually benefitted by irrigation. Many of these projects are not functioning satisfactorily and hence fall in the area irrigated under this category.

Regarding the next category, Thodu, the survey data reveal that nearly 50% of the area reported by the P.W.D. is benefitted. For other categories of Minor Irrigation works, more than 75% of the area irrigated as reported in the Ayacut register is benefitted by actual irrigation. When all the categories of works are combined, the total area irrigated as obtained from the survey is only 50% of the area reported in the Ayacut register.

In Table 2, crop wise breakup of the gross area irrigated is presented. Area irrigated crop wise by different categories of Minor Irrigation works is also revealed from this table. Regarding the first category viz. Chira, Kulan, Tank, bulk of the irrigation goes for the winter crop of paddy. Nearly 60% of the area under winter paddy is irrigated by this source. Annual and perennial crops get little facility for irrigation from this source (13%).

Regarding the second category Thodu, nearly 40% of the area under Autumn crop of Paddy is irrigated from this source. More than 50% of the area under winter paddy is also irrigated from this source. Nearly 30% of the area under Annual and Perennial Crops are also irrigated by this category of Minor Irrigation works.

Cross-bar and other categories of Minor Irrigation works irrigate a sizable portion of the area under Autumn and Winter paddy. Annual and perennial crops do not get much facility for irrigation from this source.

Table 3 presents season-wise gross area irrigated under paddy crop. It is seen that the first category ie. Chira, Kulan, Tank etc. irrigates a larger gross area of Paddy crop than other category of works. Bulk of the irrigation facilities are found to be available for Autumn and Winter seasons separately and for these two seasons combined. For summer season especially, Minor irrigation class II works do not provide any facility for irrigation.

Crop-wise net area irrigated as obtained from the survey is presented in table 4. The data reveal that for the total area under paddy, Cross-bay and other Minor Irrigation works provide irrigation facilities for more than 80% of the area. For annual and perennial crops, when compared to the area under these crops, the irrigation facilities obtained from Minor Irrigation class II works are negligible.

(C) Maintenance of Minor Irrigation Works: The maintenance of M. I. class II works are attended to by the concerned Panchayats, for which a grant of Rs. 25/- per hectare of the benefitted area is given to the Panchayats as maintenance grant. Since this amount is too meagre for effective maintenance, majority of the Minor-Irrigation class II works are either defunct or not working satisfactorily. The first category of Minor Irrigation work viz. Chira, Kulan, Tank etc. are worst hit by the ~~drastic~~ lack of timely maintenance by the Panchayats. This is revealed by the drastic fall in the area irrigated by this category during the reference period of the survey. The opinion of the beneficiaries canvassed in this survey also highlight the non-availability of pumpsets and also the poor working condition of the existing pumpset. The number of Minor irrigation works which undertook maintenance for the last 3 years is shown in table 5. Out of Rs. 45 minor irrigation class II works selected for the survey, only 4 works undertook maintenance for the last 3 years.

V. Survey and conclusion: The results presented in this report are based on a survey conducted in 4 class I works and 45 class II works located in different taluks of Trivandrum District. The area irrigated by different categories of Minor Irrigation works show that only 50% of the area reported in the Ayacut register is actually benefitted by irrigation. This fall in area is mainly due to lack of maintenance of Minor Irrigation class II works by the Panchayats. The opinion of the beneficiaries canvassed along with the survey also highlight this drawback on the working of the Minor Irrigation class II works. At present there is no proper arrangement for the maintenance of Minor Irrigation class II works by the Panchayats. It is suggested that a committee should be constituted at panchayat level for each project including the representatives of the beneficiaries of the projects and the Panchayat officials for the effective maintenance and upkeep of the projects. For meeting the maintenance expenditure of Minor Irrigation works, apart from the grant from Government (which is too meagre for the purpose), the beneficiaries contribution may also be thought of as a prospective source.

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Table 1.

NET AREA IRRIGATED BY M.I. (CLASS II) WORKS IN TRIVANDRUM DISTRICT (Area in Hect.)

Category of works	Total No. in the District (PWD)	Total No. selected for the survey	Total area irrigated according to P.W.D.	Total area irrigated (including F.P) as estimated from the survey	Percentage of col.5 to col.4.
	2	3	4	5	6
1. Chira, Kulam, Tank	267	27	2733.02	704.20	26
2. Thodu	133	12	1316.06	624.53	47
3. Cross bar	31	3	464.84	876.62	188
4. Others	11	3	203.93	153.03	73
Total	442	45	4722.87	2358.38	50

Table 2.

Name of work	GROSS AREA IRRIGATED - CROP WISE AS OBTAINED FROM THE SURVEY. (Area in hect.)												
	I	2	3	4	5	6	7	8	9	10	11	12	13
	Autumn F.P.	U.I.	Winter F.P.	U.I.	Summer F.P.	U.I.	Annual & Perennial F.P.	U.I.					
Chinnai, Kulam, tank Paddy	358.97	(29%)* 860.52 (20%)*	676.20	(56%)* 538.32 (14%)*	7.57	9.70	11.30	22.31	(34%)* 16.70	171.98	(13%)* 171.98		
Cassia & Other seasonal crops	0.95	3.82	1.58	9.70	11.30								
Paddy	129.86	(38%)* 529.47	371.51	(51%)* 431.30 (6%)*						47.05	(28%)* 138.17		7.12
Cassia and other seasonal crops	0.08	9.83	0.81	11.61						13.26			
Gross bar Paddy	292.75	(86%)* 99.59	537.27	(72%)* 205.63								115.91	
Cassia & other seasonal crops		16.95 (83%)* 23.76		5.02 (84%)* 23.76					6.36		(3%)* 176.78		
Others : Paddy	142.96	4.00	128.54	4.00					6.06				
Cassia & Other seasonal crops		18.61		0.34									
Total	925.57	541.39	1562.55	1715.91	80.78	1225.58	18.87	54.62	69.81	542.84	7.12		

Gross area irrigated as % to total cropped area - 54
Paddy area irrigated as % to total gross area irrigated - 97
* % are irrigated to total area under the crop during the season.

Table - 3

Seasonwise Gross Area Irrigated - Paddy
(Area in hectare)

Season	Chirva, Kulan Tanks		Thodu		Gross bar		Others	
	I	F.P.	I	F.P.	1	F.P.	1	F.P.
Autumn	300.74	-	11.95	127.27	-	339.36	4.78	-
Winter	320.15	-	241.14	-	244.54	-	-	-
Summer	7.57	-	-	-	-	-	-	-
A + W	414.28	-	235.84	159.99	589.83	-	274.72	-
A + S	-	-	-	-	-	-	-	-
W + S	-	-	-	-	-	-	-	-
A + S + S	-	-	-	-	-	-	-	-
Total	1042.74	-	488.93	287.26	828.37	339.006	279.50	-

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Table 4.

Net area irrigated - Crop-wise as obtained from the Survey.

Type of work	Paddy		Tapioca		Other seasonal crops						Annual crops			Perennial crops		
	I	U.I	F.P.	I	U.I.	F.P.	I	U.P.	F.P.	I	U.I	F.P.	I	U.I	F.P.	
1. Coira, Kulam, Tank	676.20	860.52	-	11.30	22.31	-	7.09	15.61	-	9.61	96.37	-	-	-	-	-
2. Thodu	371.51	329.47	198.04	0.81	13.26	-	33.51	49.15	2.12	13.54	89.02	5.00	-	-	-	-
3. Cross bar	537.27	205.63	339.35	-	16.95	-	-	54.02	-	-	61.89	-	-	-	-	-
4. Others	142.96	23.76	4.00	-	18.61	-	-	93.99	-	6.07	82.78	-	-	-	-	-
Total	1727.94	1619.38	541.40	12.11	71.13	-	40.60	212.77	2.12	29.21	530.06	5.00	-	-	-	-

% of Net area irrigated to total net area under the crop - 51

% of net area irrigated under paddy to total net area irrigated - 96.

Table - 5

Number of class II - Minor Irrigation works incurred maintenance expenditure during the last 3 years

Year	Chira, Kulan, tank		Thodu		Cross- bar		Others	
	No.	Expendi- ture (Rs.)	No.	Expen- diture (Rs.)	No.	Expen- diture (Rs.)	No.	Expen- diture
1979-80	-	-	-	-	-	-	1	17573
1980-81	-	-	1	10401	-	-	-	-
1981-82	1	2530	-	-	-	-	1	4800
Total	1	2530	1	10401	-	-	2	22373
Works selected in each category	27	-	12	-	3	-	3	-

Total No. of works which undertook maintenance - 4

Total Expenditure - Rs 35,304/-

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