केंद्रीय भूमि जल बोर्ड

जल संसाधन, नदी विकास और गंगा संरक्षण

विभाग, जल शक्ति मंत्रालय

भारत सरकार

Central Ground Water Board

Department of Water Resources, River Development and Ganga Rejuvenation,
Ministry of Jal Shakti
Government of India

AQUIFER MAPPING AND MANAGEMENT OF GROUND WATER RESOURCES

CHENGAM FIRKA, TIRUVANNAMALAI DISTRICT, TAMIL NADU

दक्षिण पूर्वी तटीय क्षेत्र, चेन्नई

South Eastern Coastal Region, Chennai

Management Plan Summary - Chengam Firka, Tiruvannamalai District.

Area:	**107.09 Sq.Km**
Monsoon Rainfall :	**882** mm
Stage of groundwater development :	**148.24 %**
Uncommitted surface runoff/flow :	**14.17 MCM.**
Total volume of Weathered zone available (Rechargeable) :	**12.85 MCM. (8.00m thickness)**
Total volume of weathered zone available (Rechargeable) :	**8.03 MCM (considering 5 m thickness).**
Area are suitable for recharge :	**55 % (As per integration studies)**
Quantity Rechargeable:	**11.84 MCM**
Effect on Water Level:	**1.11 m Rise**
Cost Involved:	**21.85 Crore**

Management Plan - Chengam Firka, Tiruvannamalai District.

Feasible Artificial Recharge & Water Conservation structures/ activities	Tentative Design	quantity (in nos. or area in sq. m)	Total volume (cu.m)	Tentative unit cost (in Rs lakh)	Total tentative cost (in Rs lakh)	Expected Annual GW recharge (cu.m)
Recharge Structures/ Activities						
Masonry Check dams (4 Fillings)	Crest- 10 -15 m; Height- 0.5 m to 1 m	13	300	30.0	390	15600
Nala bunds/ Gabion (4 Fillings)	Width: 5 to 15 m	42	150	2.0	84	25200
Recharge shaft (**ON ROAD SIDE**)	(1.5 m dia. with bore well up to 17 m)	40	77.2	4.0	12	3088
Revival, repair of water bodies (3 fillings)	(~250mx250mx3m)	49	175x175x 2.5x 3	25.0	1225	11254688
Recharge shaft with the pond /tanks	(1.5 m dia. with bore well up to 17 m)	49		4.0	196	
Water Conservation Activities						
Farm Pond (in ha) (4 filling)	(30 m x 30m x 1.5 m) 900 sq.m or 0.1 ha	100 unit	1350	1	100	540000
Sprinkler/ drip/ HDPE pipes for 300 ha select area	For 1 ha with 5 m interval HDPE pipe	100 ha		0.6 /ha	60	
				Sub total	**2067**	**11838576**
Impact assessment and O & M						
PiezometersUp to 50 m bgl – 25 nos. @ 0.6 lakh (Impact assessment to be carried out by the implementing agencies)					**15**	
O & M - 5 % of total cost of the scheme					**103.35**	
				TOTAL	**2185.35**	

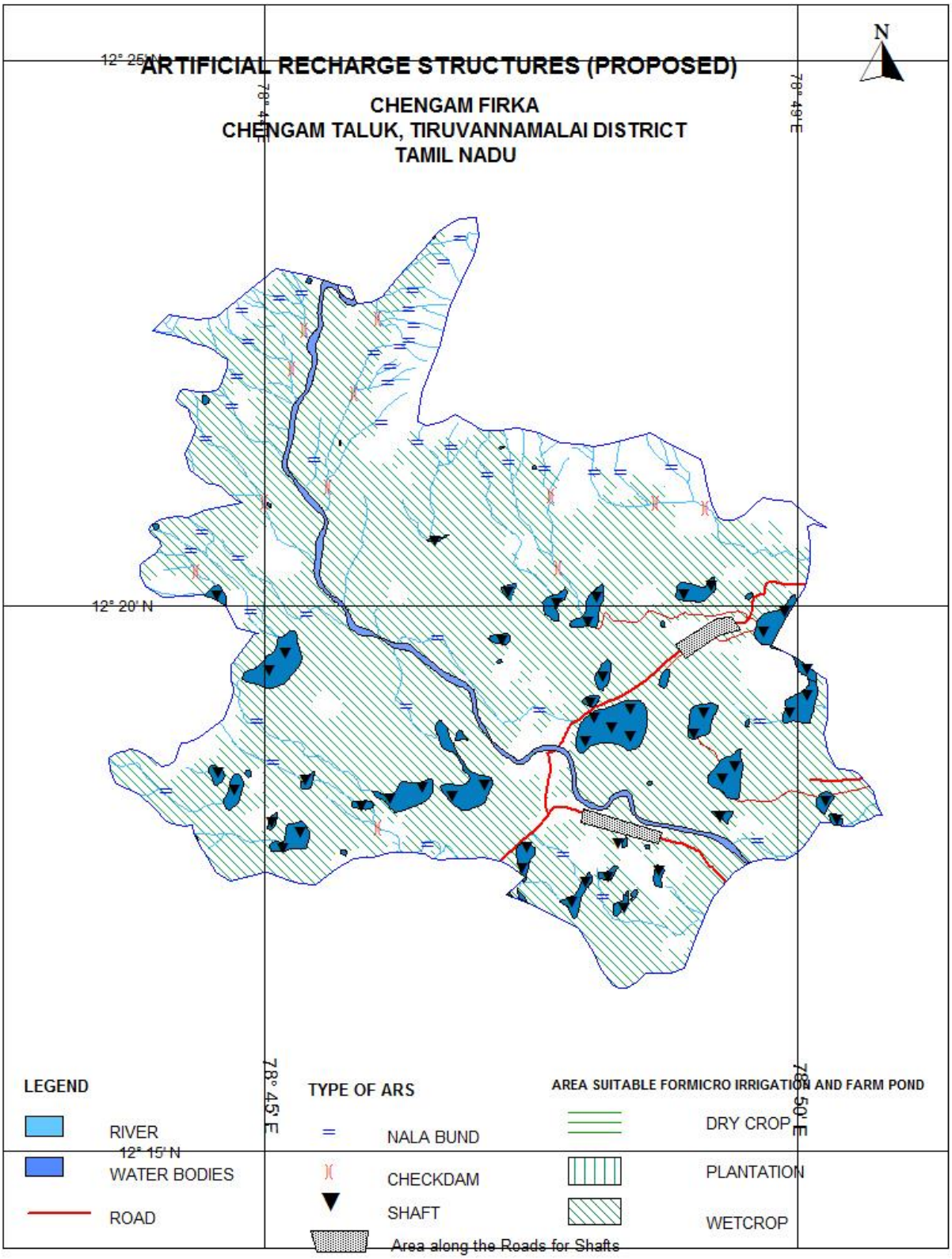
Tentative location of proposed 13 Check dam in Chengam firka

S. NO.	LONGITUDE	LATITUDE	TYPE OF ARS
1	78.76	12.33	Check Dam
2	78.76	12.35	Check Dam
3	78.82	12.35	Check Dam
4	78.75	12.37	Check Dam
5	78.76	12.38	Check Dam
6	78.75	12.35	Check Dam
7	78.74	12.34	Check Dam
8	78.79	12.35	Check Dam
9	78.80	12.34	Check Dam
10	78.77	12.30	Check Dam
11	78.81	12.35	Check Dam
12	78.76	12.37	Check Dam
13	78.77	12.38	Check Dam

Tentative location of proposed 42 Nalla bund in Chengam firka

SL.NO	LONGITUDE(D	LATITUDE	TYPE OF
1	78.83	12.30	Nala Bund
2	78.75	12.38	Nala Bund
3	78.75	12.37	Nala Bund
4	78.75	12.38	Nala Bund
5	78.76	12.38	Nala Bund
6	78.78	12.39	Nala Bund
7	78.78	12.39	Nala Bund
8	78.77	12.38	Nala Bund
9	78.77	12.38	Nala Bund
10	78.77	12.38	Nala Bund
11	78.77	12.37	Nala Bund
12	78.77	12.37	Nala Bund
13	78.77	12.37	Nala Bund
14	78.77	12.37	Nala Bund
15	78.77	12.37	Nala Bund
16	78.77	12.36	Nala Bund
17	78.77	12.36	Nala Bund
18	78.78	12.36	Nala Bund
19	78.78	12.35	Nala Bund
20	78.79	12.36	Nala Bund
22	78.79	12.35	Nala Bund

23	78.80	12.35	Nala Bund
24	78.81	12.35	Nala Bund
25	78.81	12.35	Nala Bund
26	78.75	12.37	Nala Bund
27	78.74	12.36	Nala Bund
28	78.74	12.36	Nala Bund
29	78.74	12.34	Nala Bund
30	78.74	12.34	Nala Bund
31	78.76	12.36	Nala Bund
32	78.75	12.34	Nala Bund
33	78.75	12.33	Nala Bund
34	78.83	12.32	Nala Bund
35	78.78	12.33	Nala Bund
36	78.77	12.32	Nala Bund
37	78.75	12.32	Nala Bund
38	78.75	12.31	Nala Bund
39	78.79	12.32	Nala Bund
40	78.73	12.30	Nala Bund
41	78.78	12.30	Nala Bund
42	78.80	12.30	Nala Bund


ARTIFICIAL RECHARGE STRUCTURES (PROPOSED)
CHENGAM FIRKA
CHENGAM TALUK, TIRUVANNAMALAI DISTRICT
TAMIL NADU
N
12° 25' N
78° 40' E
12° 20' N
78° 45' E
78° 50' E
12° 15' N
LEGEND
RIVER
WATER BODIES
ROAD
TYPE OF ARS
NALA BUND
CHECKDAM
SHAFT
Area along the Roads for Shafts
AREA SUITABLE FORMICRO IRRIGATION AND FARM POND
DRY CROP
PLANTATION
WETCROP