कार्यालय कार्यपालन यंत्री, जल संसाधन संभाग, खरगोन (म.प्र.)

e-mail ID : wrdkhargone@gmail.com दूरभाष नम्बर– 07282–241220

पत्र कं. 6088/कार्य/दामखेड़ा ता./2024 खरगोन, दिनांक 26 /12/2024

प्रति,

वनमण्डलाधिकारी,
सामान्य वन मण्डल,
खरगोन (म.प्र.)

विषयः– जिला खरगोन के अंतर्गत दामखेड़ा तालाब सिंचाई योजना निर्माण हेतु 74.30 हें. वनभूमि जल संसाधन विभाग को उपयोग पर देने बाबद।

संदर्भः– 1. आपका पत्र क./तकनीकी/2024/9034 खरगोन दि. 10.10.2024
2. प्रधान मुख्य वन संरक्षक (कक्ष भु–प्रबंध) वन भवन म.प्र. भोपाल के पत्र कं. एफ–3/114/2019/10–11/10/2836/दिनांक 30.05.2024

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उपरोक्त संदर्भित पत्र द्वारा बिन्दुवार जानकारी निम्नानुसार है–

स.कं.	चाही गई बिन्दुवार जानकारी	निराकरण
1	2	3
(i)	The component wise KML file of the proposed forest land for diversion along with the DGPS/Geo-referenced map showing the purpose wise utilization of forest land for diversion shall be uploaded on PARIVESH portal.	कम्पोनेन्ट अनुसार KML फाईल परिवेश पोर्टल पर ऑनलाईन अपलोड कर दी गई है।
(ii)	The complete KML file of the forest land as well as the Non-forest land involved in the project shall be submitted.	प्रभावित वन भुमि एवं गैर वनभुमि की KML फाईल परिवेश पोर्टल पर ऑनलाईन अपलोड कर दी गई है।
(iii)	The basic details of proposed Dam like its height, length, command area, technical approval, hydrological assessment etc. shall be submitted.	बांध के Salient feature, तकनीकी स्वीकृत आदेश एवं hydrological assessment की जानकारी संलग्न है। (पेज न.01 से 08 तक)
(iv)	The copy of approved Catchment Area Treatment (CAT) Plan as per Para 9.2 & 9.3 of the consolidated guidelines and clarifications issued under Van (Sanrakshan Evam Samvardhan), Adhiniyam, 1980 shall be submitted.	संलग्न प्रस्तुत है। (पेज न. 09 से 20 तक)
(v)	A copy of approved R&R plan for the 31 number of families dependent on the proposed forest land which are going to be affected due to instant project shall be submitted.	दामखेड़ा तालाब एक लघु योजना है। इस योजनांतर्गत R&R की आवश्यकता नही है। इस योजना से निजि भूमि प्रभावित हो रही है, जिसका भू–अर्जन प्रकरण तैयार किया जा रहा है, अवार्ड पश्चात् कृषको को मुआवजा प्रदान किया जायेगा।

स.क्रं.	चाही गई बिन्दुवार जानकारी	निराकरण
1	2	3
(vi)	In case of rehabilitation of people, necessary correction in the Cost-Benefit Analysis is required to be made. Therefore revised cost benefit analysis keeping in view of all the listed parameters shall be submitted.	प्रश्नांक (v) के परिपेक्ष्य में निरंक
(vii)	The details of distribution network like canals and pipelines, which may further have required diversion of forest land etc. has not been given. A holistic proposal is required to be submitted as forest land may be required for laying of underground pipelines as well. The State Govt. shall therefore 8-06/2024-FC I/73026/2024 provide the complete lay out plan indicating all the components like canal, pipelines etc. The detail of the area requirement for these components shall also be submitted keeping in view Para 9.1 of Chapter-9 of the consolidated guidelines and clarifications issued under Van (Sanrakshan Evam Samvardhan), Adhiniyam, 1980.	यह एक लघु योजना है, जिसमे नहर से 10.02 हेक्टर वन भुमि प्रभावित हो रही है, एवं KML परिवेश पोर्टल पर अपलोड कर दी गई है। यह एक ओपन केनाल है।
(viii)	The State shall submit the status of Cumulative Impact Study and the Carrying Capacity Study as stipulated in the Para 9.3(i) and 9.3(ii) of the Chapter-9 of the consolidated guidelines and clarifications dated 29.12.2023 issued under Van (Sanrakshan Evam Samvardhan), Adhiniyam, 1980.	प्रमाण पत्र संलग्न। (पेज न. 21)
(ix)	The details about the command area, irrigation potential, present cropping pattern, total population of the villages to be benefited and the likely impact of the project on cropping pattern in future is essential for evaluating the socioeconomic benefits of the project. The State shall submit a detailed report on these aspects.	command area, irrigation potential, present cropping pattern सलंग्न है इस योजना से चार गांव क्रमशः दामखेड़ा, नरवट, नहालदारी एवं बोन्दरानिया के कुल 536 कृषक लाभान्वित होंगे। (पेज न. 22 से 25)
(x)	The State Govt. has not submitted the copy of revenue documents indicating that the area proposed for CA is Non-forest land and free from all encumbrances.	जानकारी संलग्न है। (पेज न. 26)
(xi)	As per DSS analysis of the KML file of the proposed forest area it has been observed that the waste weir is crossing the Canal feature. Moreover, the proposed Road (0.95 ha) is not found connected with the proposed Dam because it appears from the KML file that diversion of an existing road is proposed through instant proposal. Therefore, the State Govt. shall re-check the KML file of proposed layout and also inform about involvement of an additional forest land if so required for the construction of an approach to Dam	नहर वेस्ट वियर को क्रास कर रही है। उक्त स्थान पर सायफन निर्माण कार्य किया जावेगा एवं दामखेड़ा तालाब के प्रस्तावित वेस्ट वियर से वर्तमान रोड़ प्रभावित हो रहा है। आवागमन की सुविधा हेतु उक्त रोड़ को प्रस्तावित वेस्ट वियर के राईट साईड से प्रस्तावित किया गया है एवं मेन रोड़ से जोड़ दिया गया है।
(xii)	Satellite imagery shows the presence of Agricultural lands, Road, Settlements in Submergence area as well as in the area earmarked for Canal. This needs clarification.	दामखेडा तालाब योजना से रबी सिंचाई क्षमता 1200 हे. क्षेत्र में प्रस्तावित है। योजना से 50.46 हे. वन भुमि एवं 32.54 हे. गैरवनभुमि डूब प्रभावित है। नहर से 10.02 हे. वेस्ट वियर से 13 हे. एवं रोड़ से 0.95 हे. वनभुमि प्रभावित है। गैरवन भुमि अंतर्गत 22.113 हे. निजि

स.कं.	चाही गई बिन्दुवार जानकारी	निराकरण
1	2	3
		भूमि है, जिसका भु–अर्जन अवार्ड तैयार किया जा रहा है। प्रस्तावित वेस्ट वियर से वर्तमान रोड़ प्रभावित हो रहा है। जिसका प्रस्तावित वेस्ट वियर के राइट साइड प्रस्तावित किया गया है।
(xiii)	Some earthen check dams and pre-plantation work are visible within the proposed CA land. Moreover, the proposed CA site are located near the Bhikarkhedi Dam. Therefore, the State Govt. shall verify that the preplantation work as visible in the proposed CA land is not part of any forest diversion proposal.	तहसील सेगांव जिला खरगोन की भूमि खसरा नं. 195 पेकी रकबा 31.270 हें., खसरा नं. 209 पेकी रकबा 43.160 हें. किसी अन्य योजना के लिये आवंटित नही की गई है। यह भूमि दामखेड़ा तालाब हेतु क्षतिपूर्ति वनीकरण के लिये वन विभाग को ग्राम खामखेड़ा में आवंटित की गई है। (पत्र संलग्न)(पेज न.26)

(नीलम मेड़ा)
कार्यपालन यंत्री,
जल संसाधन संभाग, खरगोन

पृ. कं. 6089 /कार्य/दामखेड़ा ता./2024 खरगोन, दिनांक 26 /12/2024

प्रतिलिपिः–

1. मुख्य वन संरक्षक खण्डवा वृत्त खण्डवा की ओर आवश्यक कार्यवाही हेतु सूचनार्थ प्रेषित।
2. वन संरक्षक सामान्य वन मण्डल खण्डवा की ओर आवश्यक कार्यवाही हेतु सूचनार्थ प्रेषित।

(नीलम मेड़ा)
कार्यपालन यंत्री,
जल संसाधन संभाग, खरगोन

(1)

DAMKHEDA TANK PROJECT

BLOCK ZIRANYA DISTRICT KHARGONE

SALIENT DATA OF IRRIGATION PROJECT

Name of Project		Damkheda Tank Project
I	**GENERAL DATA :**	
(i)	District	Khargone
(ii)	Block / Gram Panchayat	Ziranya / Damkheda
(iii)	River or Nalla	Local River
(iv)	Location of Dam	Near village Damkheda
(v)	Name of River Basin	Narmda Tapti Basin
(vi)	Longitude of Dam site	: 75° 53' 51"
	Latitude of Dam site	: 21° 35' 21"
	Topo sheet No.	: 46 O / 14
(vii)	(A) Year of Start	: To be started after sanction
	(B) Year of Completion.	: 1 year after approval of project

II HYDROLOGICAL DATA :

1 Mean rainfall (over 48 years - 1969 to 2016)

(a)	Annual	: 704.00 mm
(b)	Mansoon	: Not applicable

2 Mean/Mansoon runoff

(Calculated from Binnies Table)	mm	Mcum/sqkm
(a) Average	837.06	0.2506
(b) Maximum	1306.00	0.5806
(c) Minimum	455.00	0.0678
(d) 75% dependable	704.00	0.1740

3. **FLOOD :**

(a)	Maximum observed	: Not observed
(b)	Maximum adopted (Farmula be given)	: 426 16 cumecs By Dicken's Formula ($Q=CM^{3/4}$)

III RESERVOIR DATA

1	[illegible]			[illegible]
2	Whether [illegible] partly [illegible]			[illegible]
3	Mean monsoon yield			
4	Gross storage capacity			7.6682 Mcum
5	Dead storage capacity			1.1675 Mcum
6	Live storage capacity			6.5007 Mcum
7	Percentage of dead storage to gross capacity			15.22 %
8	Full tank level i.e	F.T.L.	:	R.L. 442.50 M
9	Maximum water level i.e	M.W.L.	:	R.L. 443.70 M
10	Top Bund level i.e	T.B.L.	:	R.L. 445.70 M
11	Lowest Supply level i.e.	L.S.L.	:	R.L. 433.01 M
12	Nalla bed level i.e.	N.B.L.	:	R.L. 420.80 M
13	Water spread area at F.T.L.		:	102.64 Ha..
14	Water spread area at M.W.L.		:	116.35 Ha.

DAM DATA :

			Main dam	Subsidairy dam
1.	Length of Dam			
	(a) Earth	:	1770.00 M	-
	(b) Masonry	:	-	
2.	Maximum height of Dam			
	(a) Earth	:	24.90 M	-
	(b) Masonry	:	-	
3.	Top width of Dam			
	(a) Earth	:	5.00 M	-
	(b) Masonry	:	-	
4	Quantity of Earth Work in Main Dam			
	(a) Earth Dam	:	747899.68 cum	
	(b) Masonry Dam	:	-	

(3)

6 Subsidiary Dam
(a) Earth Dam
(b) Masonry Dam

7 Width of waste weir : 235.00 M

8 Maximum Discharge over waste weir : 426.16 cumecs

IV CANALS :

1. i) Length of main canal (RBC) : 10020 m
(a) Head Discharge : 1.439 Cumec

ii) Length of main canal (LBC) : 1500 m
(a) Head Discharge : 0.016 Cumec

iii) Delta (at the field)
(a) Wheat (Hy.) : 600 mm
(b) Wheat (ordi.) : 450 mm
(c) Gram : 150 mm

v) (a) Number of village to be surved : 4 Nos.
(b) Total culturable area : ~~1352~~ Ha. 1205
(c) Total area commanded : ~~1352~~ Ha. 1205
(d) Total area under cultivation (Existing)
(i) Kharif : 0 Ha.
(ii) Rabi : ~~1352~~ Ha. 1205
(iii) Vegetable : - Ha.
(iv) Other crops : - Ha.
Total ~~1352~~ **Ha.** 1205
(e) Double cropped area : - Ha.
(f) Net cropped area : ~~1352~~ Ha. 1205
(g) Irrigation area (Existing) : - Ha.
(h) Designed Irrigation area : ~~1352~~ Ha. 1205

(i) Rabi :
Wheat (Hy.) : 7~~00~~ ~~782~~.00 Ha.
Wheat (Ordi) : — Ha.
Gram : 5~~08~~ ~~388~~.00 Ha.
By lift : 182.00 Ha.
Total Rabi : 12~~00~~ **~~1352~~.00 Ha.**

FINANCIAL

1	Estimated cost including establishment charges	Rs	4 [illegible] Lacs
	Unit I Head work	Rs	3432.34 Lacs
	Unit II Canal	Rs.	585.71
2	Cost per Ha of irrigation (in terms of surface area)	Rs	3,40,177/- 25895/-
3	Percentage return (at the end of 10th 15th, 20th year after compeltion of the Project		Not required
4	Cost per Mcum of live storage impounded	:	Rs. 662.82Lacs / Mcum
5	Quantity of earth work per Mcum of live storage imponded	:	115049.10 cum / Mcum

Details of water rates inforce during period stated :-

S No	Name of crops	Agreement		Demand
		Long term	Annual	
		As fixed by the state Government		
1.	Kharif	---- " ----		
2	Rabi			

Sub Engineer
W.R. Sub Div. No.1
Bhikangaon

Sub Divisional Officer
W.R. Sub Div. No.1
Bhikangaon

Executive Engineer
W.R. Division
Khargone [M.P.]

(5)

OFFICE OF THE SUPERINTENDING ENGINEER
WATER RESOURCES CIRCLE KHARGONE

Order No. 1327 /W/2024-25 Khargone, Dated 23/8/24

OFFICE-ORDER

In Exercise of powers delegated to me vide Govt. of M.P. Book of financial powers 1995, Part-II, S.No. 74, Revised **Technical Sanction** is hereby accorded for construction of Unit- II Canal of Damkheda Tank Project Tehsil Zirniya Distt. Khargone an amounting to Rs. 841.10 (Rs. Eighty Crore, Forty One Lakhs, Ten Thousand only) as per enclosed abstract.

The expenditure will be chargeable under the head of 41/4702 capital outlay on minor Irrigation Scheme of Damkheda Tank Project

The technical sanction is accorded subject to following condition:

1. Expenditure should not exceed the amount of technical sanction and allotment.
2. Any addition, alteration or modification is required during execution, prior approval in writing should be obtained from the competent authority.
3. Expenditure should not be done till receiving Revised administrative approval.

Encl. General Abstract.

Superintending Engineer
Water Resources Circle
Khargone

Khargone, Dated

Endt. No. .. /W/2024-25

Copy is forwarded to the :-

1. Chief Engineer, Narmada Tapti Basin W.R Deptt. Indore for information.
2. Accountant General, M.P. Bhopal, for information.
3. General Section of this office, for information & necessary action.
4- Executive Engineer, W.R. Division, Khargone for information and Necessary action.

Superintending Engineer
Water Resources Circle
Khargone

OFFICE OF THE CHIEF ENGINEER
NARMADA TAPTI BASIN, WATER RESOURCES DEPARTMENT, INDORE
0731 2497661, 0731 2490496, e mail ce ntb wrd ind@mp.gov.in

(6)

Memo No. 918 /W-12/855/Dam Kheda Tank/NTB/24 Indore Date 04 /10/2024

:: REVISED TECHNICAL SANCTION ORDER ::

In the exercise of the powers delegated to me vide Govt. of M.P. Book of financial powers 1995 vide order no. 6/12/1/95/C/iv/ dated 05.10.1995 item no 18 Revised Technical Sanction to the estimate for work of **Dam Kheda Tank** Distt. Khargone based on U.S.R. of M.P.W.R.D. inforce from 15/07/2024 amounting to **Rs. 2851.43** Lakhs (Rs. Twenty Eight Crore Fifty One Lakhs and Fourty three thousand only) is hereby accorded as per general abstract enclosed. The Technical Sanction accorded by this office vide order No. 416/W-12/855/ Dam Kheda Tank/N.T Basin Indore Dated 25-10-2017 amounting to **Rs. 1917.27 Lakhs** is hereby cancelled

The Technical Sanction is subjected to the following conditions:

(i) The expenditure should be debited to Head of account 41/4702 construction work of Dam Kheda Tank Unit-1 Head works.

(ii) In case any addition, alterations or Modification is required during execution. Prior approval in writing should be obtained from competent authority.

(iii) Expenditure should not exceed the amount of Technical sanction and allotment.

(iv) Where ever design mix is used grading of coarse and fine aggregates will be maintained as per design mix. Testing should be done as per quality control norms at specified intervals.

(v) Cut off shall be approved by competent authority.

(vi) 100% utilizable & suitable material obtain from excavation shall be used for earth work & masonry works.

(vii) Stability analysis from recognized institute shall be got done for dam section and accordingly if required sanction for revised X-section will be obtained before giving layout from competent authority.

The above estimate Design & Drawing are prepared for Administrative approval purpose by Executive Engineer, khargone as per site conditions, Which is recommended by Superintending Engineer, Water Resources Circle, Khargone. Based on suggested field conditions and recommendation, the estimate is here by approved, further this approval does not relive the Executive Engineer, khargone and Superintending Engineer, Khargone from their responsibilities of adequacy, Safety of structure, accuracy, correctness etc

The Technical Sanction is registered at C.E. S.E.R. No. 17 of /2024-25.

04/10/24

(Vinod Kumar Dewada)
Chief Engineer
Narmada Tapti Basin
Water Resources Department, Indore

Endt No. 919 /W-12/855/Dam Kheda Tank/NTB/24 Indore Date 04 /10 / 2024

Copy forwarded to:-

1- The Engineer-in-Chief Water Resources Department, Bhopal.
2- The Accountant General M.P. Bhopal
3- The Superintending Engineer, Water Resources Circle, Khargone for information
4- The Executive Engineer, Water Resources Division, Khargone information and necessary action
5- Budget Section, Narmada Tapti Basin, Indore for Information.

04/10/24

Chief Engineer
Narmada Tapti Basin
Water Resources Department, Indore

DAMKHI DA TANK PROJECT

(7)

Block Zipanya

District Khargone

RAINFALL STATEMENT OF RAINGAUGE STATION ZIPANYA w.e.f 1968 to 2015

S No	Year	Annual Rainfall in mm	Year	Rainfall in Decending Order	Remark
1	1968-69	851.00	1970-71	1306.00	
2	1969-70	997.00	1973-74	1173.00	
3	1970-71	1306.00	1998-99	1163.00	
4	1971-72	625.00	2014-15	1152.00	
5	1972-73	812.00	1990-91	1122.00	
6	1973-74	1173.00	1981-82	1100.00	
7	1974-75	595.00	2010-11	1088.00	
8	1975-76	1069.00	1988-89	1075.00	
9	1976-77	933.00	1975-76	1069.00	
10	1977-78	796.00	1994-95	1057.00	
11	1978-79	885.00	2000-01	1018.00	
12	1979-80	773.00	2001-02	1015.00	
13	1980-81	731.00	1969-70	997.00	
14	1981-82	1100.00	2006-07	977.00	
15	1982-83	575.00	1996-97	937.00	
16	1983-84	863.00	1976-77	933.00	
17	1984-85	702.00	1989-90	932.00	
18	1985-86	593.00	1993-94	895.00	
19	1986-87	715.00	2007-08	886.00	
20	1987-88	562.00	1978-79	885.00	
21	1988-89	1075.00	1983-84	863.00	
22	1989-90	932.00	1968-69	851.00	
23	1990-91	1122.00	2003-04	826.00	
24	1991-92	602.00	2011-12	817.00	
25	1992-93	538.00	1972-73	812.00	
26	1993-94	895.00	2009-10	807.00	
27	1994-95	1057.00	1977-78	796.00	
28	1995-96	585.00	2012-13	780.00	
29	1996-97	937.00	1979-80	773.00	
30	1997-98	726.00	2004-05	767.00	
31	1998-99	1163.00	2015-16	767.00	
32	1999-00	518.00	2013-14	766.00	

S No	Year	Annual Rainfall in mm	Year	Rainfall in Decending Order	Remark
33	2000-01	1018.00	1980-81	731.00	
34	2001-02	1015.00	1997-98	726.00	
35	2002-03	704.00	1986-87	715.00	
36	2003-04	826.00	2002-03	**704.00**	**75% Dependable yield**
37	2004-05	767.00	1984-85	702.00	= 0.174 Mcum/Sqkm
38	2005-06	553.00	1971-72	625.00	
39	2006-07	977.00	1991-92	602.00	
40	2007-08	886.00	1974-75	595.00	
41	2008-09	455.00	1985-86	593.00	
42	2009-10	807.00	1995-96	585.00	
43	2010-11	1088.00	1982-83	575.00	
44	2011-12	817.00	1987-88	562.00	
45	2012-13	780.00	2005-06	553.00	
46	2013-14	766.00	1992-93	538.00	
47	2014-15	1152.00	1999-00	513.00	
48	2015-16	767.00	2008-09	455.00	

	Rainfall in mm	Rainfall in Inch	Yield in Mcum/sqkm
Maximum Rainfall	1306.00	51.42	0.5806
Minimum Rainfall	455.00	17.91	0.0678
Mean Rainfall	880.50	34.67	0.2787
Average Rainfall	837.06	32.96	0.2506
75% dependable Rainfall	704.00	27.72	0.1740

Sub Engineer

Sub Divisional Officer
W. R. Sub Division No.1
Bhikangaon

Executive Engineer
W. R. Division
Khargone [M.P.]

GOVERNMENT OF MADHYA PRADESH

CAT - PLAN OF DAMKHEDA MINOR IRRIGATION PROJECT

TEHSIL :- JHIRNIYA **DISTRICT :- KHARGONE**

ESTIMATED COST	:	**RS. 36.09 LAKHS**
PROPOSED IRRIGATION	:	**RS. 1200 HACT.**

Executive Engineer
Water Resources Division
Khargone District Khargone
(M.P.)

DAMKHEDA MINOR TANK PROJECT

Teh. Jhirniya **Dist. Khargone**

CATCHMENT AREA TREATMENT PLAN FOR FOREST AREA

1.1 NEED FOR CATCHEMENT AREA TREATMENT

It is a well-established fact that reservoirs formed by dams on rivers areasubjected to sedimentation. The process of sedimentation embodies the sequential processes of erosion. Entrainment, transportation, deposition and compaction of sediment. The study of erosion and sediment yield from catchment is of almostimportance as the deposition of sediment in reservoir reduces its capacity, and thus affecting the water availability for the designated use. The eroded sediment fromcatchment when deposited on streambeds and banks causes braiding of river reach. The removal of top fertile soil from catchment adversely affects the grow plants thus,a well - designed catchment area treatment (CAT) Plan is essential to ameliorate the above mentioned adverse process of soil erosion.

Soil erosion may be defined as the detachment and transportation of soil.Water is the major agent responsible for this erosion in many locations, winds; glaciers, etc. also cause soil erosion. In a hilly catchment area as in the present case erosion due to water is a common phenomenon and the same has been studied as a part of the catchment area treatment (CAT) plan.

The catchment area treatment (CAT) plan highlights the management techniques to control erosion in the catchment area life span of a reservoir in case ofa seasonal storage dams is greatly reduced due to erosion in the catchment area.The catchment area considered for treatment of DAMKHEDA MINOR IRRIGATION project is

49.03 Sq.km. The sub watersheds in the catchment area of considered for the present study is given in Figure -A

In the present study Silt Yield Index' (SYI) method has been used. In this method, the terrain is subdivided into various watersheds and the credibility is determined on relative basis. SYI provides a comparative credibility criteria of catchment (low, moderate, high, etc.) and do not provide the absolute silt yield. SYI method is widely used mainly because of the fact that it is easy to use and has lesser data requirement Moreover, it can be applied to larger areas like sub watersheds, etc.

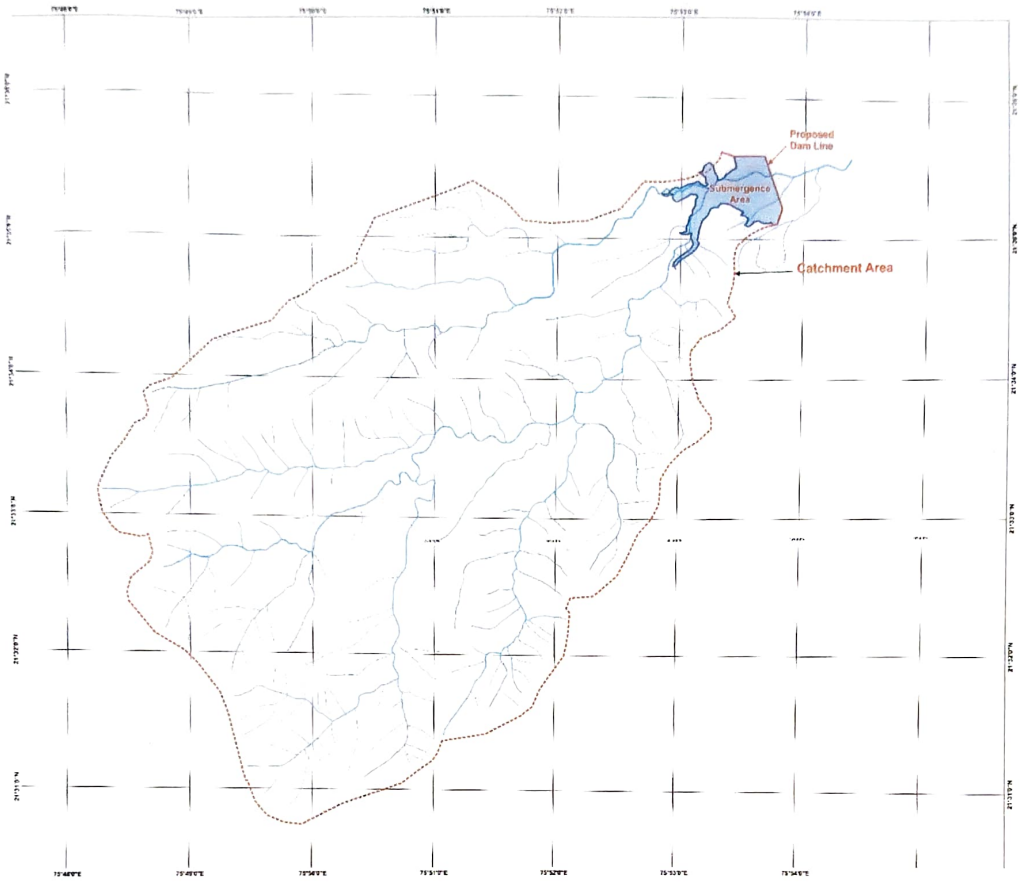


Figure 1.1 Drainage Map for DAMKHEDA Tank

1.2 APPROACHES FOR THE STUDY

Various thematic maps have been used in preparation of the CAT plan. Due tothe spatial variability of site parameters such as soils, topography land use andrainfall, not all areas contribute equally to the erosion problem. Several techniqueslike manual overlay of spatially index-mapped data have been used to estimate soil Erosion in complex landscape.

Geographic information System (GIS) is a computerized resource data base system, which is referenced some geographic coordinate system. In the present study real coordinate system has been used. The GIS is a tool to store, analyse and display various spatial date. In addition, GIS because of its special hardware and software characteristics. Has a capacityto perform numerous function and operations on the various spatial data layers residing in the database. GIS provides the capability to analyse large amounts of data in relation to a setof established criteria. In order to ensure that latest and accurate data is used for the analysis, satellite data has been used for deriving land use data and ground truth studies toohave been conducted.

The various steps covered in the study are as follows:

- Data acquisition
- Data preparation
- Output presentation

The above mentioned steps are briefly described in the following paragraphs,

1.2.1 DATA ACQUISTION

The requirement of the study was first defined and the outputs expected were noted. The various data layers of the catchment area used for the study are as follows:

- Slope Map
- Soil Map
- Land use Classification Map
- Current Management Practices
- Catchment Area Map.

1.2.2 DATA PREPARATION

The data available from various sources was collected. The ground maps, contour information etc. were scanned, digitized and registered as per the requirement. Data was prepared depending on the level of. Accuracy required and any corrections required were made. All the layers were geo-referenced brought to a common scale (real coordinates) so that overlay could be performed. A computer programmed was used to estimate the soil loss. The formats of outputs from each layer were firmed up to match the formats of inputs in the program. The gird size to be used was also decided to match the level of accuracy required the data availability and the software and time limitations. The format of output was finalized. Ground frothing and data collection was also included in the procedure.

For the present study IRS IC-LISS III digital satellite data was used for interpretation & classification the classified land use map of the catchment area of various dams considered for the study are shown in Figure-B. The land use pattern of the catchment area issummarized in Table-13.1.

TABLE- 1.1:- LAND USE PATTERN OF THE CATCHMENT AREA

Category	Area (ha)	Area (%)
Vegetation	1058.52	21.59
Scrubs/ Grass Land	792.36	16.16
Agricultural Land	2338.26	47.69
Barren Land	499.06	10.18
River	61.43	1.25
Settlements	153.39	3.13
Total	**4903.00**	**100**

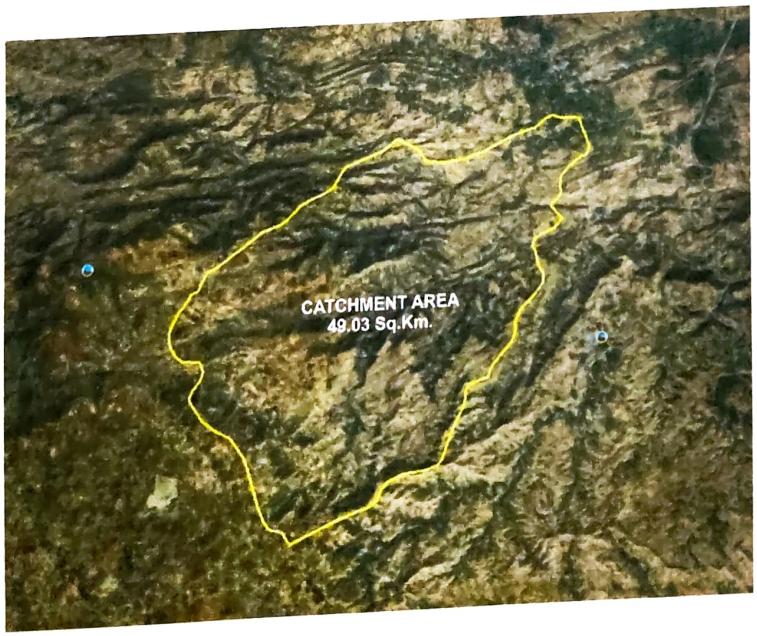
Digitized contours from toposheets were used for preparation of Digital Elevation Model (DEM) of the catchment area and to prepare a slope map. The first step in generation of slope map is to create surface using the elevation values stored in the form of contours or points. After marking the catchment area, all the contours on the toposheets were digitized (100 m interval). The output of the digitization procedure was the contours as well as points contours in form of x, y & z points (x,y location and their elevation) All this information was in real world coordinates (latitude, longitude and height in meters above sea level.)

A Digital Terrain Model (DTM) of the area was then prepared, which was used to derive a slope map.

Various layers thus prepared were used for modelling Software was prepared to calculate the soil loss using input from all the layers.

1.2.3 OUTPUT PRESENTATION

The result of the modelling was interpreted in pictorial form to identify the areas with high soilerosion rates. The primary and secondary data collected as a part of the field studies were used as an input for the model.



1.3 ESTIMATION OF SOIL LOSS USING SILT YIELD INDEX (SYI) METHOD.

The Silt Yield Index Model (SYI), considering sedimentation as product of erosivity, credibility and arial extent was conceptualized in the All India Soil and Land Use Survey (AISLUS) as early as 1969 and has been in operational use since then to meet the requirement of prioritization of smaller hydrologic units.

The erosivity determinants are the climatic have direct or reciprocal bearing on the relationship can be expressed as factors and soil and land attributes that unit of the detached soil material. The relationship can be expressed as :

Soil erosivity = 1(Climate, physiographic, Slope, soil parameters, land use / land cover, soil management)

The Silt Yield Index (SYI) is defined as the Yield per unit area and SYI value for hydrologic unit is obtained by taking the weighted arithmetic mean over the entire area of the hydrologic unit by using suitable empirical equation.

Prioritization of Watersheds / Sub water heads:

The prioritization of smaller hydrologic units within the vast catchments are based on the Silt Yield Indices (SYI) of the smaller units, the boundary values or range of SYI values for different priority categories are arrived at by studying the frequency distribution of SYI values and locating the suitable breaking points. The watersheds/ Sub-watersheds are subsequently rated into various categories corresponding to their respective SYI values.

The application of SYI model of prioritization of sub watersheds in the catchmentareas involves the evaluation of :

a) Climatic factors comprising total precipitation, its frequency and intensity.
b) Geomorphic, factors comprising land forms, physiographic, slope and drainage characteristics.
c) Surface cover factors governing the flow hydraulics and
d) Management factors.

The data on climatic factors can be obtained for different locations in the catchment area from the meteorological stations whereas the field investigations area required for estimating the other attributes.

The various steps involved in the application of model are :

- Preparation of a framework of sub-watershed through systematic delineation.
- Rapid reconnaissance surveys on 1:50,000 scale leading to the generation of a mapindicating erosion - intensity mapping units'
- Assignment of weight age value of various mapping units based on relative silt yieldpotential.
- Computing Silt Yield index for individual watersheds / Sub watersheds.
- Grading of watersheds/ sub watersheds into very high, high medium. low and very lowpriority categories.

The area of each of the mapping units is computed and silt yield indices of individual sub watersheds area calculated using the following equations.

a Silt Yield Index

$$SYI = \frac{X(Ai \times Wi) \times 100 \text{ where } i=L \text{ to } n}{Aw}$$

Ai = Area of ith unit (EIMU)

Wi = Weightage Value of ith mapping

unitn = No. of mapping units

Aw = Total area of sub watershed.

The SYI values for classification of various categories of erosion intensity rates are given in.

TABLE - 1.2 CRITERIA FOR EROSION INTENSITY RATE

Priority Categories	SYI Values
Very high	>1300
High	1200-1299
Medium	1100-1199
Low	1000-1099
Very Low	<1000

1.4 WATERSHED MANAGEMENT - AVAILABLE TECHNIQUES

Watershed management is the optimal use of soil and water resources within a given geographical area so as to enable sustainable production. It implies changes in land use, vegetative cover, and other structural and non-structural action that are taken in a watershed to achieve specific watershed management objectives. The overall objectives of watershed management programme are to:

- increase infiltration into soil
- Control excessive runoff;
- Manage & utilize runoff for useful purpose

Following Engineering and Biological measures have been suggested for the catchment areatreatment .

1. Engineering measures

- Nallah Bunding
- Contour Bunding
- Angle iron barbed wire fencing

2. Biological measures

- Development of nurseries
- Plantation / afforestation
- Pasture development
- Social forestry

The basis of site selection for different biological and engineering treatment measures underCAT are given in Table-13.3.

TABLE - 1.3: BASIS FOR SELECTION OF CATCHMENT AREA TREATMENT MEASURES

Treatment measure	Basis for selection
Social forestry, fuel wood and fodder grass development	Near settlements to control tree felling
Contour Bunding	Control of soil erosion from agricultural fields.
Pasture Development	Open canopy, barren land, degraded surface
Afforestation	Open canopy, degraded surface, high soil erosion, gentle to moderate slope
Barbed wire fencing	In the vicinity of afforestation work to protectis from grazing etc.
Nallah Bunding	Nalla bonding work consists of constructing bunds of suitable dimensions across thenalla or gullies to hold the maximum runoffwater to create flooding of the upstream areatemporarily for some days or weeks, withSurplusing arrangements at suitable intervals to drain the water.
Nursery	Centrally located points for better supervision of proposed afforestation minimize cost of transportation of seedling and ensure better survival.

1.5 CATCHMENT AREA TREATMENT METASURES

The erosion category of sub-watersheds in the catchment area as per a SYI index is given in Table-13.4. The details are shown in Figure-C. The area under different erosion categories is given in Table-13.5.

TABLE-1.4: EROSION INTENSITY CATEGORIZATION AS PER SYI CLASSIFICATION

SWS	Area (ha)	SYI	Erosion Category
W1	452	1230	High
W2	502	1150	Medium
W3	334	1160	Medium
W4	383	1180	High
W5	334	1150	Medium
W6	491	1210	High
W7	531	1230	High
W8	265	1150	Medium
W9	457	1160	Medium
W10	408	1180	High
W11	309	1150	Medium
W12	437	1210	High
Total :-	**4903**		

TABLE - 1.5 : AREA UNDER DIFFERENT EROSION CATEGORIES

Category	Area (ha)	Percentage
Very low	-	-
Low	-	-
Medium	2201	44.90
High	2702	55.10
Very High	-	-
Total :-	**4930**	**100.00**

The objective of the SYI method is to prioritize sub- watersheds in a catchment area for treatment. The total area under high erosion category in various dams is to be treated as a part of the project cost. The various measures suggested for catchment area treatment are depicted in Figure -D.

1.6 COST ESTIMATE FOR CAT PLAN

The cost required for Catchment Area Treatment is Rs. 3.6085 million. The details are given inTables - 1.6 and 1.7

TABLE. 1.6: COST ESTIMATE FOR CATCHMENT AREA TREATMENT OF DAMKHEDA DAM . BIOLOGICAL MEASURES

S.No.	Item	Rate/Unit (Rs.) (including maintenance cost)	Target	
			Physical	Financial (Rs. millions)
1	Gap Plantation	186800/ha	6.00 ha	1.1208
2	Pasture Development	97500/ ha	6.00 ha	0.5850
3	Social forestry	70000/ha	2.00 ha	0.1400
4	Nursery development	30000 /No.	1.00 No.	0.0300
5	Maintenance of nursery	27000/ No.	1.00 No.	0.0270
6	Barbed wire fencing	100000/km	5.48	0.2480
7	Watch and ward for 3years for 2 persons	7500/ man-month	6 man- month	0.5400
	Total (A)			**2.6908**

TABTE = 1.7 : COST ESTIMATE FOR CATCHMENT AREA TREATMENT OF DAMKHEDA DAM - ENGINEERING MEASURES

S.No.	Item	Rate (Rs.)	Unit	Target	
				Physical	Financial (Rs. millions)
1	Contour Bunding	15000/ha	Ha.	18.00 Ha.	0.2700
2	Nallah Bunding	10,000	No.	15.00 No.	0.1500
	Total :-				**0.4200**

Total cost for Biological and Engineering measures = Rs. 3.1108 million (A)

administrative expenditure.

-	Governme`nt Expenditure 3% of A (including O&M)	Rs. 0.0933 million
-	Establishment cost 8% of A	Rs. 0.2489 million
-	Contingency 5% of A	Rs. 0.1555 million
	Total :-	**Rs. 0.4977 million**

1.5 (B) COST ESTTMATES OF CAT PLAN FOR FOREST AREA

The Total Catchment Area of DAMKHEDA TANK is 4903.00 l-hectares out of this 4903.00 Hectares ForestLand. The cost required for Catchment Area treatment of Forest is Rs. 3.6085 million. The details are given in Tables-7 and 8.

TABLE-7 : COST ESTIMATE FOR TREATMENT OF CATCHMENT AREA IN FOREST AREA OF DAMKHEDA DAM.BIOLOGICAL MEASURES

S.No.	Item	Rate/Unit (Rs.) (including maintenance cost)	Target	
			Physical	Financial (Rs. millions)
1	Gap Plantation	186800/ha	6.00 ha	1.1208
2	Pasture Development	97500/ ha	6.00 ha	0.5850
3	Social forestry	70000/ha	2.00 ha	0.1400
4	Nursery development	30000 /No.	1.00 No.	0.0300
5	Maintenance of nursery	27000/ No.	1.00 No.	0.0270
6	Barbed wire fencing	100000/km	5.48	0.2480
7	Watch and ward for 3 years for 2 persons	7500/ man-month	6 man- month	0.5400
	Total (A)			**2.6908**

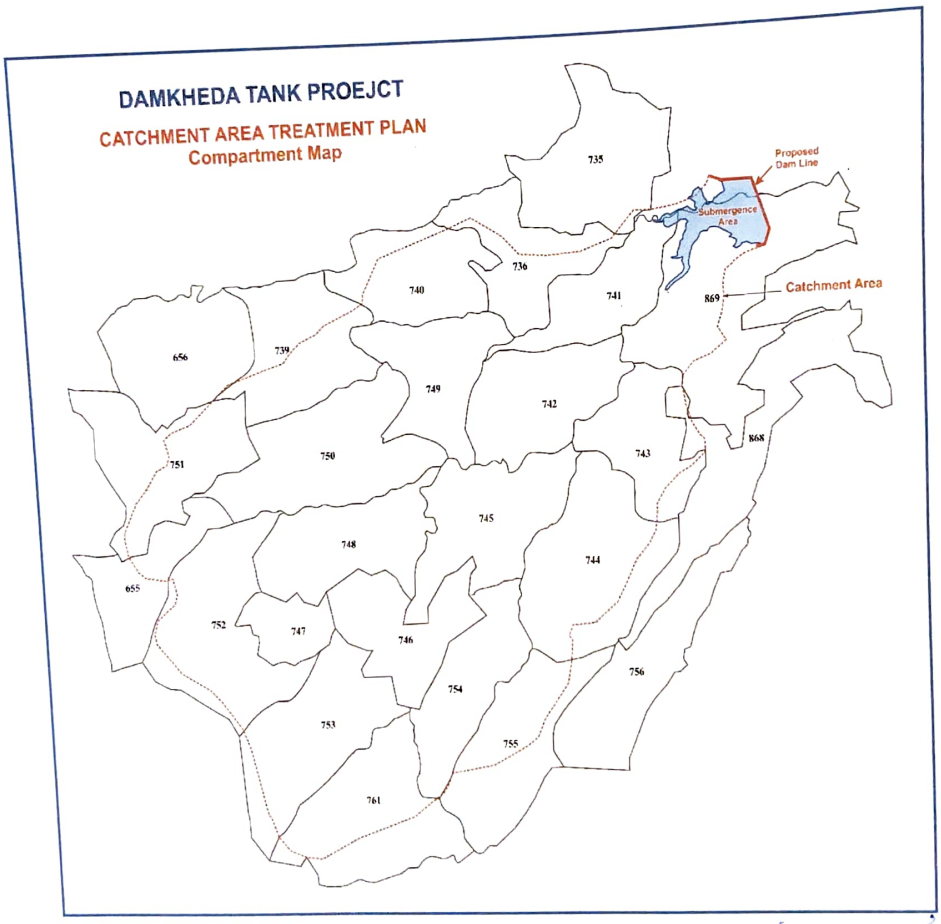
TABLE.8 : COST ESTIMATE FOR TREATMENT OF CATCHMENT AREA IN FOREST AREA OF DAMKHEDA DAM ENGTNEERING MEASURES

S. No.	Item	Rate (Rs.)	Unit	Target	
				Physical	Financial (Rs. millions)
1	Contour Bunding	15000/ha	Ha.	18.00 Ha.	0.2700
2	Nallah Bunding	10,000	No.	15.00 No.	0.1500
	Total :-				**0.4200**

Total cost for Biological and Engineering measures = Rs. 3.1108 million (A) administrative expenditure.

-	Governme`nt Expenditure 3% of A (including O&M)	Rs. 0.0933 million
-	Establishment cost 8% of A	Rs. 0.2489 million
-	Contingency 5% of A	Rs. 0.1555 million
	Total :-	**Rs. 0.4977 million**

Total Cost for Catchment Area Treatment for Forest Area of DAMKHEDA DAM = Rs. 3.6085 million.



Sub Divisional Officer
Water Resources Sub Division
Bhikangaon

Executive Engineer
Water Resources Division
Khargone

Office of The Executive Engineer,
Water Resources Division Khargone, District Khargone
(M.P.)

Certificate

Damkheda Tank Project, a minor irrigation scheme of MPWRD is proposed to be built across a local river. This project is first and a single purpose (irrigation) project on the river .

As per chapter 09 Irrigation and Hydro- Electric Projects, we would like to emphasize that para 9.3(i) and 9.3(ii) are applicable only for multipurpose/hydro power projects in this basin.

Hence it can be taken into consideration that there is no requirement for a Cummulative Impact study and Carrying capacity study for this specific project.

Sub Divisional Officer
W.R. Sub Division Bhikangaon
Division Khargone

Executive Engineer
Water Resources Division
Khargone

(22)

कार्यालय उप संचालक, किसान कल्याण तथा कृषि विकास जिला खरगोन (म.प्र.)

Emil-ddagrikhr@mp.gov.in
T.N- 07282-466865

क्र./फ.च./रबी/2024–25/6037
खरगोन, दिनांक 26/11/2024

प्रति,

कार्यपालन यंत्री,
जल संसाधन संभाग, खरगोन (म.प्र.)

विषयः– दामखेड़ा तालाब योजना विकासखण्ड झिरन्या का फसल चक्र अनुमोदन करने बावत्।

––00––

उपरोक्त विषयान्तर्गत दामखेड़ा तालाब योजना विकासखण्ड़ झिरन्या का फसल चक्र अनुमोदन हेतु निम्नानुसार तैयार कर आवश्यक कार्यवाही हेतु आपकी ओर प्रेषित है।

क्र.		फसल का नाम	रकबा (हेक्टेयर में.)	डेल्टा (एम.एम)	रिमार्क
1	मौसम रबी वर्ष 2024–25	गेहूँ (उन्नत)	700	600	
		गेहूँ (साधारण)	-	450	
		चना	500	150	
	योगः–		1200		

नोटः– पानी की कमी आती है तो पानी की उपलब्धता अनुसार फसल चक्र में परिवर्तन किया जा सकता है।

उप संचालक,
किसान कल्याण तथा कृषि विकास
जिला खरगोन

DAMKHEDA TANK PROJECT

(23)

Tehsil - Zirniya

Distt Khargone

STATEMENT SHOWING THE MONTH WISE WATER REQUIRMENT AND PROPOSED CROPPING PATTERN

S No	Name of Crop	Area propsed for irrigation Ha.	Delta adopted in mm	Month wise water requirment water in Ha. Mm												Total requirment
				July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	
	RABI															
1	Wheat (Hy.)	782	600	-	-	-	-	150 117300	150 117300	150 117300	150 117300	-	-	-	-	4[illegible]
2	Gram	388	150	-	-	-	-	75 29100	75 29100	-	-	-	-	-	-	58[illegible]
		1170		-	-	-	-	146400	146400	117300	117300	-	-	-	-	52[illegible]
	Add 10% Evoporation losses							14640	14640	11730	11730					52[illegible]
	Total							161040	161040	129030	129030					
	Total water requirment in Ha mm							161.04	161.04	129.03	129.03					
	or in Mcum							1.6104	1.6104	1.2903	1.2903					58[illegible] 5.8014

1 Rabi requirement 5.8014 Mcum

Total 5.8014 Mcum

Sub Engineer

(V.S.Chouhan)
Sub Divisional Officer
W.R.Sub Division No.1
Bhikangoan

(N.L.Ahirwar)
Executive Engineer
W.R.Division
Khargone

District : Khargone.

[illegible] TANK PROJECT

Gross Tank capacity 7.6682 Mcum
Live storage capacity 6.5007 Mcum
Dead storage capacity 1.1675 Mcum

Proposed Rabi irrigation - 1170.00 Ha.

WORKING TABLE

Sr. No.	Year	Annual Rainfall in (mm)	Annual Runoff yield (Mcum)	Balance from previous year (Mcum)	Total Water (4 + 5)	Gross tank capacity in (Mcum)	Surplus water (7 - 6)	Replanishment at the rate of 20% of surplus water limited to 1/3 kharif demands which ever is less	Draw off in kharif July to October			Balance at the end of kharif (7+9-12)	Draw off in Rabi Nov. to Feb.		Total (14+15)	Balance at the end of Rabi season (13-16)	Draw off in summer Evaporation losses @0.90m	Balance to be carried over for next year (17-18)	Capacity at L.S.L. (Mcum)	Remark
									Actual supply for irrigation at sluice	Evaporation losses @0.30m	Total (10+11)		Actual supply for irrigation from sluice (Mcum)	Evaporation losses @0.60m						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	2003-3	704.00	7.6781	0.9104	8.5885	7.6682	-	0.00	0.00	0.3050	0.3050	7.3632	5.7998	0.3947	6.1945	1.1687	0.2583	0.9104	1.1675	Hence OK

Sub Engineer

Sub Divisional Officer
W. R. Sub Division No.1
Bhikangaon

Executive Engineer
W. R. Division
Khargone [M.P.]

DAMKHEDA TANK PROJECT

Tehsil : Zirnya

Distt : Khargone

ESTIMATED VALUE OF PRODUCED BEFORE IRRIGATION

Pre Development

S No	Name of crop	Area under cultivation Ha	Cost of cultivation per Ha. (Rs)	Total cost of cultivation (in Rs)	Yield Qtl/Ha	Total yield Qtl.	Rates per Qtl. (In Rs)	Value of Total produce (in Rs)
1	2	3	4	5	6	7	8	9
	Kharif							
1	Juwar	120.00	23689.00	2842680.00	18.50	2220	1812.00	4022640.00
2	Maize	300.00	29641.00	8892300.00	25.00	7500	1448.00	10860000.00
3	Soyabeen	600.00	37585.00	22551000.00	15.00	9000	2842.00	25578000.00
4	Mung	50.00	21318.00	1065900.00	6.00	300	5308.00	1592400.00
5	Cotton	75.00	55066.00	4129950.00	15.00	1125	4360.00	4905000.00
6	Urad	25.00	21154.00	528850.00	6.00	150	5083.00	762450.00
	Total	1170.00	-	40010680.00	-			47720490.00

Net benefit before irrigation 47720490 - 40010680

Rs. 7709810

Post Development

S. No.	Name of crop	Area under cultivation Ha.	Cost of cultivation per Ha. (Rs)	Total cost of cultivation (In Rs)	Yield Qtl/Ha.	Total yield Qtl.	Rates per Qtl. (In Rs)	Value of Total produce (in Rs)
1	2	3	4	5	6	7	8	9
	Rabi							
1	Wheat	782.00	41680.00	32593760.00	35	27370	1900.00	52003000.00
2	Gram	388.00	30001.00	11640388.00	16	6208	8500.00	52768000.00
	Total	1170.00		44234148.00				104771000.00

Net benefit after irrigation 104771000 - 44234148

Rs. 60536852

(V.S Chouhan)
Sub Divisional Officer
Water Resources Sub Division No. 1
Bhikangoan

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Executive Engineer
Water Resources Division
Khargone

न्यायालय तहसीलदार तहसील सेगांव जिला खरगोन म.प्र.

(26)

क्रमांक 1375/री–1/2024 सेगॉव दिनांक 24.12.2024

प्रति,

अनुविभागीय अधिकारी
जल संसाधन उप संभाग भीकनगॉव

विषयः– दामखेडा तालाब योजना से प्रभावित वन भूमि के बदले क्षतिपूर्ति वनिकरण हेतु आबंटित खसरा नं.195 एवं खसरा नंबर 209 अतिक्रमण रहित होने का प्रमाण पत्र उपलब्ध कराने के संबध मे ।

संदर्भः– आपका का पत्र क्रमांक 446/कार्य/24 भीकनगॉव,दिनांक 19.12.24

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उपरोक्त विषयान्तर्गत संदर्भित पत्र से क्षतिपूर्ति वनीकरण हेतु आबंटित भूमि ग्राम खामखेडा खसरा नम्बर 195 व खसरा नम्बर 209 वन भूमि नही एवं अतिक्रमणमुक्त है एवं अन्य योजना हेतु आबंटित नही की गई जानकारी चाही गई है ।

प्राप्त पत्र के संबध मे हल्का पटवारी से जॉच करवाई गई । जॉच मे पाया गया कि ग्राम खामखेडा की भूमि खसरा क्रमांक 195 रकबा 244.360 हे. नाकाबिल चरनोई खसरा क्रमांक 209 रकबा 107.443 हेक्टर निस्तार चरनोई मद की होकर खसरा क्रमांक 195 पैकि रकबा 31.270 हेक्टर एवं खसरा क्रमांक 209 पैकि रकबा 43.160 हेक्टर कुल भूमि 74.430 हेक्टर भूमि किसी अन्य योजना हेतु आबंटित नही की गई है । यह भूमि दामखेडा तालाब योजना से प्रभावित वन भूमि के बदले क्षतिपूर्ति वनीकरण हेतु वन विभाग को आबंटित की गई है । उक्त भूमि अतिक्रमण मुक्त है ।

अतःचाही गई जानकारी आगामी आवश्यक कार्यवाही हेतु प्रेषित है ।

तहसीलदार
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