

EXECUTIVE SUMMARY

KUNDALIA MAJOR MULTIPURPOSE PROJECT

INTRODUCTION: The river Kalisindh is among three major rivers of lower Chambal basin which forms upper reach of lower Chambal sub basin. This is the biggest river of zone I of lower Chambal basin. The total C.A. of the river is 24,663.00 sqkm and this shares 18.60 % of the total C.A. of the main Chambal River. The C.A. of river up to proposed dam site is 4925.00 sqkm.

The river is basically an interstate river, and out of its total length of 351.00 kms the river in its first 180.00 km length right from its origin to the state boundary runs in the state of M.P and the remaining 171.00 km length lies in the state of Rajasthan. The river have a major tributary Lakhundar, which lies completely in the state of M.P.

The three rivers - Kalisindh, Newaj and Parwati – traverse through Rajgarh district and owing to their vast catchment area, the district frequently faces the wrath of the floods, endangering the life and property in the district. Construction of a major project will reduce the drastic impacts of floods during monsoon.

NECESSITY OF THE PROJECT:

- a) The surface and Ground water of the Kalisindh River basin drain out very fast due to its Geomorphology causes scarcity of water in the basin.
- b) No further development in the Agriculture, Industrial and other activities is possible without enriching the region with water.
- c) During dry summer, there is an acute problem of drinking water and in almost 70% of villages and towns; transportation of water is a common practice. Ground water level of area has gone below 40 m depth and the drinking water has excess fluoride causing health regards in humans. The situation is so critical that almost in every alternate year even the drinking water supply after March is to be planned once in three days or once in a week from most of the town situated in the Kalisindh sub basin.
- c) By constructing Major water storage the development of this presently backward area is possible.

SITE SELECTION CRITERIA:

a) Existing Infrastructure: The site is approachable from k.m. 42 of Zirapur – Pachor road by a 10.00 km long road and is 20 km away from nearest Zirapur town. The site can also be approached from western railway section of Guna to Maksi from

Biaora railway station, which is 76 km from the proposed dam site. The nearest air connection available from Indore and Bhopal, which is only 177 km and 197 Km from the proposed site.

The complete project area is well connected by a Communication network of NH-12, NH-3 and state highway together with network of railway line.

b) Environmental consideration (within 10 Km radius from proposed site):

No protected area under international conventions, national or local legislation for their ecological, landscape, cultural or other related value is falling.

680.27 ha of forest land are coming under submergence, but it needs to be explicitly mentioned that this is blank forest having cover less than 10 %. Secondly, being blank forest it does not have any vegetal stratification to support and nurture native and sensitive species of flora and fauna.

There is no densely polluted area and Industrial area coming under submergence. Also there is no Critically or severely polluted area as CPCB. Most of the land coming under submergence is barren & stony waste.

PROJECT IN BRIEF: Kundalia Major Multipurpose Project is proposed on River Kalisindh in Rajgarh and Shajapur Districts of Madhya Pradesh and can be located at Longitude 76°18'15" Latitude 23°55'41" on toposheet 55A/5 with a storage capacity of 582.75 MCM. The Project is conceived to have a culturable command area of 1,25,000 ha of land in Rajgarh and Agar-Malwa districts, presently under rain-fed agriculture with very low productivity. It will also provide safe drinking water to adjacent villages and command area. Presently, potable water sources are dependent on deep ground water, which are feeble and in many parts water is laced with excessive fluoride. Since there are no significant mineral or other natural resources in the command area, the creation of water body will also induce industrial development.

Details of main reservoir on river kalisindh are given below :-

1. MAIN RESERVOIR DATA	
✓ Gross storage capacity	582.75 mcm
✓ Dead storage capacity	30.00 mcm

✓ Live storage capacity	552.75 mcm
✓ Nalla bed level (N.B.L.)	360.50 m
✓ Lowest sill level (L.S.L.)	390.00 m
✓ Max. draw down level (MDDL)	380.00 m
✓ Full tank level (F.T.L.)	400.00 m
✓ Maximum water level (M.W.L.)	401.50 m
✓ Top bund level (T.B.L.)	405.00 m
✓ Water spread area at L.S.L.	2155 ha.
✓ Water spread area at F.T.L.	7476 ha.

1.1 SPILLWAY

✓ Type	Gate controlled ogee spillway
✓ Crest level	388.00 m
✓ Type of gate	Radial gate (17x12 m)
✓ No. of gate	11
✓ Length of spillway	225 m (including abutment)

2. IRRIGATION

✓ Gross command area	200000 ha
✓ Culturable command area	125000 ha
✓ Proposed irrigation	150400 ha
✓ No. of village to be benefitted	419

HYDROLOGY: The proposed dam is a composite dam of total length of 3100 m, with a maximum height of 44.50 m. The central overflow spillway is 225 m in length, with 11 radial gates of size 17 m x 12 m are proposed to cater PMF of 20747.50 cumecs of anticipated flood discharge. Left bank earthen dam will be 2487 m long, where as the right bank earthen dam will be 268 m long. The maximum height of earth dam will be 35.001 m. The project will facilitate irrigation to 125000 ha CCA, through a Pressure Irrigation system from the reservoir. The annual irrigation (Rabi + Kharif) from the project will cover 150400 ha, thus increasing irrigation intensity to 136%, against the present 89% approximately. In addition, the project on

completion will provide drinking water facility, water for industrial use and water release for environmental and ecological balance, as below –

Water for Drinking purpose	- 10 MCM
Water for Industrial Use	- 15 MCM
Water for Ecological Balance	- 497.75 MCM

COST OUTLAY OF PROJECT: The proposed financial outlay of the project as of today stands at Rs. 3448.00 crores.

Unit-I Headwork	1400.03crore.
Unit-II Canal	2047.97 crores.

DETAIL OF SUBMERGENCE:

The reservoir created will involve a submergence of 7476 ha of land, out of which 2204 ha of government land, 4592 ha of private land and 680.27 ha of forest land having cover less than 10 %. The private land falling under submergence is barren, stony waste and is under rain-fed cultivation. The forest coming under submergence is blank forest having cover less than 10 % and is largely devoid of flora and fauna. The alternate land for afforestation will be made available and compensatory reforestation will be accomplished.

The submergence zone has 50 villages coming under it and details of the submergence in Rajgarh and Agar-Malwa districts, both, are given below.

S. N.	Subject	Rajgarh	Agar-Malwa	Total
1.	Number of villages Population & land both	8	7	15
2.	Number of villages only land	18	17	35
	Total	26	24	50

R&R PLAN: Resettlement and Rehabilitation of oustees will be done in accordance with GoI R & R Policy. The resettlement colonies will be developed village-wise, to the extent possible, i.e., oustees from one village will be resettled at one site. A site

in command area of Chhapi, which is a medium irrigation project near Zirapur town where 54.02 ha land is identified for the resettlement & Resettlement, land is in the name of Madhya Pradesh Water Resources Department. The land is suitable and it is on Khilchipur- Zirapur State highway. A provision of Rs. 887.73 crores for Land acquisition and R-R is made in the project.

CAT & CAD PLAN: The Catchment of proposed site is 4,900 sq km and it is 30 % barren and 56% cultivated. It is under rain-fed agriculture and vulnerable to erosion and weathering. The present rate of siltation in catchment is 0.75 MAF/year/sq km. By suitable measures we expect to bring down rate of siltation by 50% such as construction of dykes, gully traps, farm bunding, check dams, slope stabilization, stone pitching, agronomical practices, crop rotation, and so on and so forth.

A provision of Rs. 50,000 per ha is proposed amounting to total Rs. 275.00 crores for Command area development and Water Management.

BIO DIVERSITY:

(A) **In Pre Phase:** The submergence zone of Kundalia Major Multipurpose project does not contain any endemic biodiversity. This is also corroborated in the detailed Work Plan of Rajgarh District (2005-2015), wherein the chapter on Biodiversity (page 67-68, Part 1, Work Plan of Rajgarh Forest Division, Department of Forest, Government of Madhya Pradesh), does not mention any sensitive flora or fauna species in the submergence zone and covers general importance of biodiversity.

(B) **In Post Phase:** After the completion of Kundalia water development scheme, the natural corollary will be initiation of vegetal growth since presence of waterbody will lead to sustained humidity in soil-moisture zone. This will gradually help in the compaction of loose soil as well as increase the humus content in the top-soil, thereby providing more conducive ground situations for natural vegetal growth. In the post- Kundalia phase, the quantum of water present in the reservoir will increase the water table in the nearby areas in general and more specifically to the root-zones of existing flora.

THE PROJECT AFTER COMPLETION WILL GIVE THE FOLLOWING BENEFITS -

Annual Irrigation	:	150400 ha
Drinking Water	:	Mitigations of excess fluoride
Ground Water	:	Rise in ground water table
Flood Protection	:	Decreasing adverse impacts of floods
Fish production	:	Additional source of livelihood

Livestock Rearing assisting	:	Supplementary source of income & increase in agriculture production
Micro Enterprise mass	:	Regular source of income for landless mass
Labour opportunity	:	Regular income for the women and minimizing migration.
Industrialization	:	Prosperity and employment in area.
Beneficiaries	:	Resident of DPAP Tehsils

In the light of the above, the Kundaliya Project is the best option for the overall development of the state in general and Rajgarh and Shajapur district in particular.

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