EXECUTIVE SUMMARY OF DRAFT EIA EMP REPORT



PROPOSED NAR PAR GIRNA RIVER LINK PROJECT

Tal.: Surgana, Dist.: Nashik, State Maharashtra

Executive Engineer
Girna River Valley Project, Division: Nashik
Water Resources Department
Tapi Irrigation Development Corporation
Government of Maharashtra

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1. Introduction:

The **Nar–Par–Girna River Linking Project** is a major inter-basin water resources development project proposed by the Government of Maharashtra to transfer surplus water from the west-flowing river basins of Nar, Par, Auranga, and Ambika to the water-deficit Girna sub-basin of the Tapi River basin.

The project envisages the construction of nine dams in the Nar, Par, and Auranga river basins to divert 260.30 Mm^3 of surplus water to the Girna basin through a system of pump houses, rising mains, and tunnels. The diverted water will be conveyed to the Salboya Sump, from where it will be transferred through a 14.56 km long tunnel to the existing Chankapur Balancing Reservoir. From the Head Regulator (HR) of Chankapur Reservoir, the water will be released into the Chankapur Right Bank Canal (CRBC) to meet the irrigation, domestic, and industrial water demands of Nashik and Jalgaon districts.

The proposed project will create an irrigation potential of 49,516 ha across Nashik and Jalgaon districts. Of the total command area, 32,492 ha (approximately 65.6%) lies in Nashik district and 17,024 ha (approximately 34.4%) lies in Jalgaon district. Out of this 32492 ha, 3000 Ha. area is irrigated from Rameshwar LIS and a virgin command of 2922 ha beyond Zadi) which will be served by PDN is the proposed command area of the project.

Overall, the Nar–Par–Girna River Linking Project is envisaged to improve irrigation facilities, enhance agricultural productivity, augment groundwater recharge, and provide reliable water for domestic and industrial use in the water-scarce regions of Nashik and Jalgaon districts. By utilizing surplus water that would otherwise flow into the Arabian Sea, the project will promote efficient water resource management and contribute to the sustainable socio-economic development of the region.

2. Need of the Project

- The Girna River basin in Nashik and Jalgaon districts is a water-deficit region where the existing Girna Dam and Chankapur Dam primarily cater to irrigation and drinking water requirements. However, increasing water demand due to expanding irrigation, population growth, industrial development, and recurring drought conditions has placed significant stress on these reservoirs.

- The dependable yield from the existing storage infrastructure is insufficient to meet the projected water requirements, resulting in frequent water shortages, reduced irrigation intensity, and over-extraction of groundwater.

- The proposed Nar–Par–Girna River Link Project has therefore been conceived to augment water availability in the Girna basin by transferring surplus monsoon flows from the west-flowing Nar, Par, and Auranga river basins, which would otherwise discharge into the Arabian Sea.

- The additional water will supplement the existing storage in Girna and Chankapur reservoirs, enhance irrigation potential, ensure reliable domestic and industrial water supply, improve groundwater recharge, and strengthen drought resilience.

- Thus, the project provides a sustainable long-term solution for addressing the growing water demand in the Girna basin while promoting optimal utilization of available water resources.

- Nar–Par–Girna River Linking Project is a major inter-basin water resources development project proposed by the Government of Maharashtra to transfer surplus water from the west-flowing river basins of Nar, Par, Auranga, and Ambika to the water-deficit Girna sub-basin of the Tapi River basin.

3. Project Site

The project sites fall within Surgana Taluka of Nashik District, Maharashtra, approximately 90 km from Nashik city. The site is well connected by road, facilitating access for project construction and operation activities.

4. Brief Description and Nature of the Project

The proposed Nar–Par Girna River Link Project, located in Taluka Surgana, District Nashik, and District Jalgaon, Maharashtra, involves the diversion of surplus water from the Nar, Par, Auranga, and Ambika river basins to the water-deficit Girna sub-basin of the Tapi basin.

The project requires prior Environmental Clearance (EC) under the applicable provisions of the EIA Notification, 2006, issued by MoEF&CC vide S.O. 1533 dated 14 September 2006, as amended from time to time. As the Gujarat State boundary is located approximately 0.55 km from the proposed Umbarpada Dam site, the project attracts the General Condition under the EIA Notification, 2006, and falls under **Category A**, requiring appraisal by the Ministry of Environment, Forest and Climate Change (MoEF&CC). Accordingly, the project shall undergo the applicable environmental appraisal process, including public consultation/public hearing, as prescribed under the said Notification and its amendments.

Accordingly, Nar Par Girna River Link project has issued ToR on 14.09.2026 vide TOR identification number RO26A0502MH5303379N. Copy of ToR is enclosed with the draft EIA report.

5. Sailent features of Existing Project

Table 1.1 Salient Features of the Project

SN	Particulars	Details
1.	Name of the Project	Nar Par Girna River Link Project at Taluka Surgana, District Nashik and Jalgaon
2.	Scope of the scheme	The scope of the project is to divert the unused water from Nar, Par, Auranga and Ambika basin into the Girna and sub-basin of the Tapi basin.
3.	Administrative Approval	Administrative approval vide Marathi letter no. Govt. Order No. नजोयो2023(229 /2023)/जसंअ dated – 5th September 2024
4.	Components of Project	❖ Basins: Auranga, Nar, Par ❖ No. of dams: 9 Nos. (Earthen) ❖ Total Links: 3 Nos. (Having 3 Dams in each link)

<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td></td><td></td><td>✓ Link I: Umbarpada, Sarnya-awan, Pratapgadh
✓ Link II: Rakshas bhuwan, Milan Ghodi
✓ Link III: Ukhedmal, Sawarpada, Devmal
❖ Sumps: 2 Nos. Mankhed Sump and Salboya Sump
❖ Pump House: Umbarpada (3 Nos.), Sarnya–Awan (6 Nos.), Pratapgadh (5 Nos.), Rakhasbhuwan (4 Nos.), Milan (7 Nos.), Ghodi (10 Nos.), Ukhedmal (3 Nos.), Sawarpada (5 Nos.), Devmal (8 Nos.), Mankhed Sump (4 Nos.), Salboya Sump (10 Nos.), Rameshwar LIS (3 Nos.)
❖ Rising Mains : Total length : 43516 m
❖ Tunnel: 7 Nos. (Total length : 31.433 Km)</td></tr>
<tr><td>5.</td><td>Sources</td><td>Nar River basin, Par river basin, Auranga river basin (West flowing rivers)</td></tr>
<tr><td>6.</td><td>Location</td><td>46 K /15, 46 O /3, 46 O/7, 46 K /16, 46 O /4, 46 O / 8, 46 O/12, 46 P/1, 46 P/5, 46 P / 9, 46 H / 6, 46 H / 10, 46 H / 14, 46 L / 2, 46 L / 6, 46 L / 10, 46 L / 14, 46 P / 2, 46 P / 6, 46 P / 10, 46 H / 7, 46 H / 11, 46 H / 15, 46 L / 3, 46 L / 7, 46 L / 11, 46 L / 15, 46 P / 3
<table>
<tr><th>Link</th><th>Sr. No.</th><th>Dam name</th><th>Coordinates</th></tr>
<tr><td rowspan="3">Link I</td><td>1</td><td>Umbarpada</td><td>20°34'02.1"N, 73°29'03.706"E</td></tr>
<tr><td>2</td><td>Sarnya-Awan</td><td>20°35'10.5"N, 73°33'01.572"E</td></tr>
<tr><td>3</td><td>Pratapgad</td><td>20°31'54.6"N, 73°36'45.8"E</td></tr>
<tr><td rowspan="3">Link II</td><td>4</td><td>Rakshasbhavan</td><td>20°29'33.099"N, 73°28'59.879"E</td></tr>
<tr><td>5</td><td>Milan</td><td>20°31'43.182"N, 73°34'03.742"E</td></tr>
<tr><td>6</td><td>Ghodi</td><td>20°29'46.031"N, 73°37'49.531"E</td></tr>
<tr><td rowspan="6">Link III</td><td>7</td><td>Ukhedmal</td><td>20°21'11.258"N, 73°30'25.632"E</td></tr>
<tr><td>8</td><td>Sawarpada</td><td>20°24'17.004"N, 73°31'46.090"E</td></tr>
<tr><td>9</td><td>Devmal</td><td>20°28'08.007"N, 73°37'14.598"E</td></tr>
<tr><td>10</td><td>Mankhed Sump</td><td>20°25'34.590"N, 73°34'35.260"E</td></tr>
<tr><td>11</td><td>Salboya Sump</td><td>20°28'18.61"N, 73°39'1.71"E</td></tr>
<tr><td>12</td><td>Salboya IDC</td><td>20°08'21.310"N, 73°40'00.000"E</td></tr>
</table></td></tr>
<tr><td></td><td>State</td><td>Maharashtra</td></tr>
<tr><td></td><td>Region</td><td>Nashik</td></tr>
<tr><td></td><td>District</td><td>Nashik and Jalgaon</td></tr>
<tr><td></td><td>Taluka</td><td>Surgana, Pient, Deola</td></tr>
</table>

<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td>7.</td><td>Category of Project</td><td>Category A due to applicability of General Condition
The Gujarat State boundary is located at an aerial distance of 0.55 km from the proposed project site. Therefore, the project attracts the General Condition under the EIA Notification, 2006 (as amended), and falls under the appraisal jurisdiction of MoEF&CC.
0.55 km from Umbarpada Dam
0.89 km from Rakhasbhuvan Dam</td></tr>
<tr><td>8.</td><td>Command Area</td><td>The total command area of the Chankapur Dam and Girna dam in Nashik district is 32,492 ha, of which 26,570 ha is the existing command area. Under the proposed project, an additional 5,922 ha is proposed to be brought under irrigation as the proposed command area to stabilize and improve irrigation in the existing command area. In addition, an area of 17,024 ha in the existing command area of the Jamda Dam in Jalgaon district will be stabilized under the proposed project. Therefore, total command area is 49516 ha inclusive of existing (43594 ha of Nashik and Jalgaon District) and proposed (5922 ha in Nashik District).
<table>
<tr><th>Canal name</th><th>Area of profit (hectares)</th><th>Talukas that receive benefits</th></tr>
<tr><td colspan="3">Nashik District</td></tr>
<tr><td>Chankapur Right Canal (Disambiguation)</td><td>7874</td><td>Kalwan & Deola</td></tr>
<tr><td>Chankapur Right Extended Canal (disambiguation)</td><td>11522</td><td>Deola and Malegaon</td></tr>
<tr><td>Bush L.P. New enclosed canal (new irrigation area) from the lake</td><td>2922</td><td>Malegaon</td></tr>
<tr><td>Rameshwar L. P. Canal (new irrigation area) by removing high-level enclosed canal by lift irrigation method from the lake</td><td>3000</td><td>Devla</td></tr>
<tr><td>Area on Mausam Sal Canal, Ajang and Dahikute Lapa Scheme under Mausam Valley in Malegaon taluka</td><td>1775</td><td>Malegaon</td></tr>
<tr><td>Local Irrigation</td><td>5399</td><td>Surgana</td></tr>
<tr><td>Total Nashik district</td><td>32492</td><td></td></tr>
<tr><td>Jalgaon district (canals under Girna dam)</td><td>17024</td><td>Chalisgaon, Bhadgaon and Pachora</td></tr>
<tr><td>Total</td><td>49516</td><td></td></tr>
</table></td></tr>
<tr><td>9.</td><td>Relevant levels</td><td></td></tr>
<tr><td></td><td colspan="2">Following are the controlling levels of dam</td></tr>
</table>

SN	Particulars	Details

Link	Sr. No.	Storage	TBL (m)	MWL (m)	FRL (m)	MDDL (m)	TWL (m)	RBL (m)
Link I	1	Umbarpada	302.00	299.50	296.00	287.50	277.58	274.05
	2	Sarnyawan	372.90	370.40	368.00	356.50	343.715	341.50
	3	Pratapgad	466.60	465.60	461.60	417.00	406.61	403.60
Link II	4	Rakshas Bhuvan	309.25	306.75	300.75	276.00	270.47	265.50
	5	Milan	386.50	385.50	379.50	356.00	352.40	343.77
	6	Ghodi	499.40	496.90	495.00	475.50	463.39	460.83
Link III	7	Ukhedmal	371.40	368.90	366.50	345.50	330.22	327.35
	8	Sawarpada	386.00	385.00	379.00	348.50	333.33	323.93
	9	Devmal	511.00	510.00	508.00	490.50	476.87	474.91

10.	**Submergence.**	
	a) Submergence	1676.64 Ha (Total of 9 dams)
	b) No. of villages under submergence	Proposed Nar–Par–Girna River Link Project will affect 47 villages among in Peth and Surgana Tehsil of Nashik districts
	c) No. of Houses under Submergence	

Village name	Houses affected
Umbarpada	36
Sarnyaawan	47
Pratapgad	30
Rakshasbhuvan	175
Milan	65
Ghodi	56
Savarpada	55
Ukhedmal	31
Devmal	21
Total	**516**

	d) No. of Souls affected

Village name	Houses affected
Umbarpada	180
Sarnyaawan	235
Pratapgad	150
Rakshasbhuvan	875
Milan	325
Ghodi	280
Savarpada	275
Ukhedmal	155
Devmal	105
Total	**2580**

11.	**Type of Dam**	
	a) Type	Composite Dam
	c) Length of Dam. i) Earthen Dam. ii) Masonary Dam	

ink	Dam	Height (m)	Total Length (m)
I	Umbarpada	27.95	1747.50
I	Saranya Awan	31.40	1224.00

<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>I</td><td>Pratapgad</td><td>65.00</td><td>693.00</td></tr>
<tr><td>II</td><td>Rakshasbhuvan</td><td>43.50</td><td>993.50</td></tr>
<tr><td>II</td><td>Milan</td><td>43.23</td><td>414.00</td></tr>
<tr><td>II</td><td>Ghodi</td><td>38.57</td><td>982.00</td></tr>
<tr><td>III</td><td>Ukhedmal</td><td>44.05</td><td>559.00</td></tr>
<tr><td>III</td><td>Sawarpada</td><td>62.57</td><td>513.75</td></tr>
<tr><td>III</td><td>Devmal</td><td>36.59</td><td>443.00</td></tr>
</table>
</td></tr>
<tr><td></td><td>Quantity of cutting material in Cu.m.</td><td>3740925.29</td></tr>
<tr><td></td><td>Proposed utilization / dispose of cutting material</td><td>2103030</td></tr>
<tr><td></td><td>Quantity of filling material in Cu.m</td><td>2049265.62</td></tr>
<tr><td>12.</td><td>Waste weir</td><td>Each proposed storage shall be provided with an overflow spillway (waste weir) designed to safely pass the design flood. The hydraulic design of the overflow section has been carried out in accordance with applicable BIS standards. Standard Project Flood (SPF) has been considered for Umbarpada and Sarnyawan storages, while Probable Maximum Flood (PMF) has been adopted for the remaining seven storages.</td></tr>
<tr><td>13.</td><td>Irrigable Area</td><td>Nashik District – 32492 Ha
Jalgaon District – 17024 Ha
Total : 49516 Ha</td></tr>
<tr><td>14.</td><td>a) Taluka benefited & village benefited.</td><td>
<table>
<tr><th>Sr No</th><th>District</th><th>Tahsil</th><th>No of Villages</th><th>Irrigation Ha</th><th>Remark</th></tr>
<tr><td colspan="6">Command under CRBC 38.190 km</td></tr>
<tr><td rowspan="3">1</td><td rowspan="3">Nashik</td><td>Kalwan</td><td>8</td><td>4665.48</td><td rowspan="3">Existing Stabilized Command Area</td></tr>
<tr><td>Deola</td><td>4</td><td>3208.52</td></tr>
<tr><td>Total</td><td>12</td><td>7874.00</td></tr>
<tr><td>2</td><td>Nashik (Rameshwar LIS)</td><td>Deola</td><td>9</td><td>3000</td><td>Proposed Command Area</td></tr>
<tr><td colspan="6">Command under Extended CRBC 35.945 km</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">Nashik</td><td>Deola</td><td>17</td><td>5572.24</td><td rowspan="3">Existing Stabilized Command Area</td></tr>
<tr><td>Malegaon</td><td>13</td><td>5949.76</td></tr>
<tr><td>Total</td><td>30</td><td>11522</td></tr>
<tr><td colspan="6">Command Under PDN 15.67 km</td></tr>
<tr><td>3</td><td>Nashik</td><td>Malegaon</td><td>6</td><td>2922.00</td><td>Proposed Command Area</td></tr>
<tr><td colspan="3">Total</td><td>53</td><td>25318</td><td></td></tr>
</table>
</td></tr>
<tr><td></td><td>(a) Proposed crop pattern</td><td>Crop</td><td>% age</td></tr>
<tr><td></td><td>1. Perennial</td><td>i) Pomegranate</td><td>1</td></tr>
</table>

SN	Particulars	Details		
		ii) Lemon	1	
		iii) Custard apple	1	
		Total	**3**	
	2. Kharif	i) Kh. Onion	5	
		ii) Groundnut	3	
		iii) Bajara	32	
		iv) Pulses	5	
		v) Cotton (LS)	10	
		vi) Maize	42	
		Total	**97**	
	3. Rabbi (Follow on crops)	i) Bajara	10	
		ii) Fodder	3	
		iii) Maize	10	
		iv) Gram	5	
		v) Onion	30	
		vi) Sunflower	2	
		Total	**60**	
	4. Hot weather	i) Vegetables	8	
		ii) Ground nut	1	
		iii) Sunflower	1	
			10	
		Total	**170**	
	(b) Existing crop pattern	**Nashik District**	**CCA: 19396 Ha**	**Local Irrigation CCA 7174 Ha**
	1. Kharif	Jawar	0.12	Nagali – 13
		Bajara	32.02	Varai – 10
		Maize	47.5	Gram-1
		Tur	0.69	Paddy – 30
		Moong	0.83	Other oil seeds kevadi -2
		Udid	0.13	Fodder – 37
		Other pulses (Chana)	0.45	Pulses (Udid) - 7
		Ground Nut	2.04	
		Soyabean	0.04	
		Cotton	16.18	
		Total	**100**	**100**
	2. Rabi	Jawar	0.06	
		Wheat	3.68	
		Maize	0.77	
		Gram	3.48	
		Sun flower	0.01	
			8	
		Total	**108**	
		Jalgaon District		
	1. Perennial	Sugarcane	1.05	
		Other perennial	1.00	
		L.S. Cotton	18.60	
		Maize	3.20	

<table>
<tr><th>SN</th><th>Particulars</th><th colspan="2">Details</th></tr>
<tr><td></td><td></td><td>Kh. Jawar</td><td>30.00</td></tr>
<tr><td></td><td></td><td>Kh. Bajari</td><td>30.00</td></tr>
<tr><td></td><td></td><td>Kh. Paddy</td><td>8.00</td></tr>
<tr><td></td><td></td><td>Wheat</td><td>5.00</td></tr>
<tr><td></td><td></td><td>Gram</td><td>1.80</td></tr>
<tr><td></td><td></td><td>Hot Weather Vegetables</td><td>1.35</td></tr>
<tr><td></td><td></td><td>Total</td><td>100</td></tr>
<tr><td>15.</td><td>Water Consumption</td><td colspan="2">
<table>
<tr><th>Phase</th><th>Quantity in KLD</th><th>Method of water withdrawal</th><th>Distance form Source</th><th>Mode of transport</th></tr>
<tr><td>Construction Phase</td><td>105 (Construction)
45 (Domestic)</td><td>Tanker</td><td>500 m</td><td>Road</td></tr>
<tr><td>Operation Phase</td><td>30</td><td>Tanker</td><td>500 m</td><td>Road</td></tr>
</table>
<table>
<tr><th>Phase</th><th>Effluent Quantity in KLD</th><th>Treatment Method</th></tr>
<tr><td>Construction Phase</td><td>36 KLD</td><td>Proposed STP (4 STPs at each colony of 9 CMD)</td></tr>
<tr><td>Operation Phase</td><td>24 KLD</td><td>Proposed STP</td></tr>
</table>
</td></tr>
<tr><td>16.</td><td>Power Consumption</td><td colspan="2">The project proposes to draw 220 kV power supply from the nearest MSETCL substation at Surgana through approximately 15.41 km of transmission line. A 220/33 kV switchyard is proposed at Salboya Sump with two 100 MVA transformers to supply power to all pump houses. The total connected load is approximately 183 MVA, with an operational power requirement of about 90 MW and annual energy consumption of around 407.90 million units.</td></tr>
<tr><td>17.</td><td>Proposed DG Sets</td><td colspan="2">
<table>
<tr><th>Location</th><th>DG Set Capacity (kVA)</th><th>No. of DG Sets</th><th>Remarks</th></tr>
<tr><td>Pumping Station-1</td><td>1000</td><td>2</td><td>1 Working + 1 Standby</td></tr>
<tr><td>Pumping Station-2</td><td>1000</td><td>2</td><td>1 Working + 1 Standby</td></tr>
<tr><td>Pumping Station-3</td><td>1000</td><td>2</td><td>1 Working + 1 Standby</td></tr>
<tr><td>Pumping Station-4</td><td>750</td><td>2</td><td>1 Working + 1 Standby</td></tr>
<tr><td>Pumping Station-5</td><td>750</td><td>2</td><td>1 Working + 1 Standby</td></tr>
<tr><td>Main Control Centre</td><td>250</td><td>1</td><td>Emergency backup</td></tr>
</table>
</td></tr>
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<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Project Office</td><td>125</td><td>1</td><td>Emergency backup</td></tr>
<tr><td>Residential Colony</td><td>125</td><td>1</td><td>Emergency backup</td></tr>
<tr><td>Total DG Sets</td><td></td><td>13</td><td></td></tr>
</table>
</td></tr>
<tr><td>18.</td><td>Proposed Manpower</td><td>
<table>
<tr><th rowspan="2">SN</th><th colspan="2">Employment Generation</th><th rowspan="2">Total</th><th rowspan="2">Remark</th></tr>
<tr><th>Permanent</th><th>Temporary</th></tr>
<tr><td>A.</td><td colspan="3">During Construction Stage</td><td rowspan="4">• Period of Employment : 2555
• No. of mandays : 766500</td></tr>
<tr><td>1</td><td>200</td><td>300</td><td>500</td></tr>
<tr><td>B.</td><td colspan="3">During Operation Phase</td></tr>
<tr><td>2</td><td>500</td><td>500</td><td>1000</td></tr>
</table>
</td></tr>
<tr><td>19.</td><td>Solid Waste / Muck</td><td>Excavation Details:
<table>
<tr><th>Name of Waste</th><th>Qty (Ton/Annum)</th><th>Method of Disposal</th></tr>
<tr><td>Dry Waste</td><td>219</td><td>Sold to local authorities</td></tr>
<tr><td>Wet Waste</td><td>329</td><td>Composting</td></tr>
</table>
<table>
<tr><th>Name of Waste</th><th>Source</th><th>Qty (cu.m)</th><th>Method of Disposal</th></tr>
<tr><td>Top Soil</td><td>Dam and other structures</td><td>1586912.26</td><td rowspan="3">Will be used for backfilling and landscaping</td></tr>
<tr><td>Muck</td><td>Tunnel</td><td>858903.06</td></tr>
<tr><td>Hard Rock</td><td>Dam and other structures</td><td>3012916.09</td></tr>
</table>
</td></tr>
<tr><td>20.</td><td>Air Emissions</td><td>Emissions will be only during construction activities as DG Sets proposed for pumping are the ones which will be standby mode in case of power failure which would be provided by MSEB.</td></tr>
<tr><td>21.</td><td>Cost of the Project</td><td>Rs. 7465.29 Crores</td></tr>
</table>

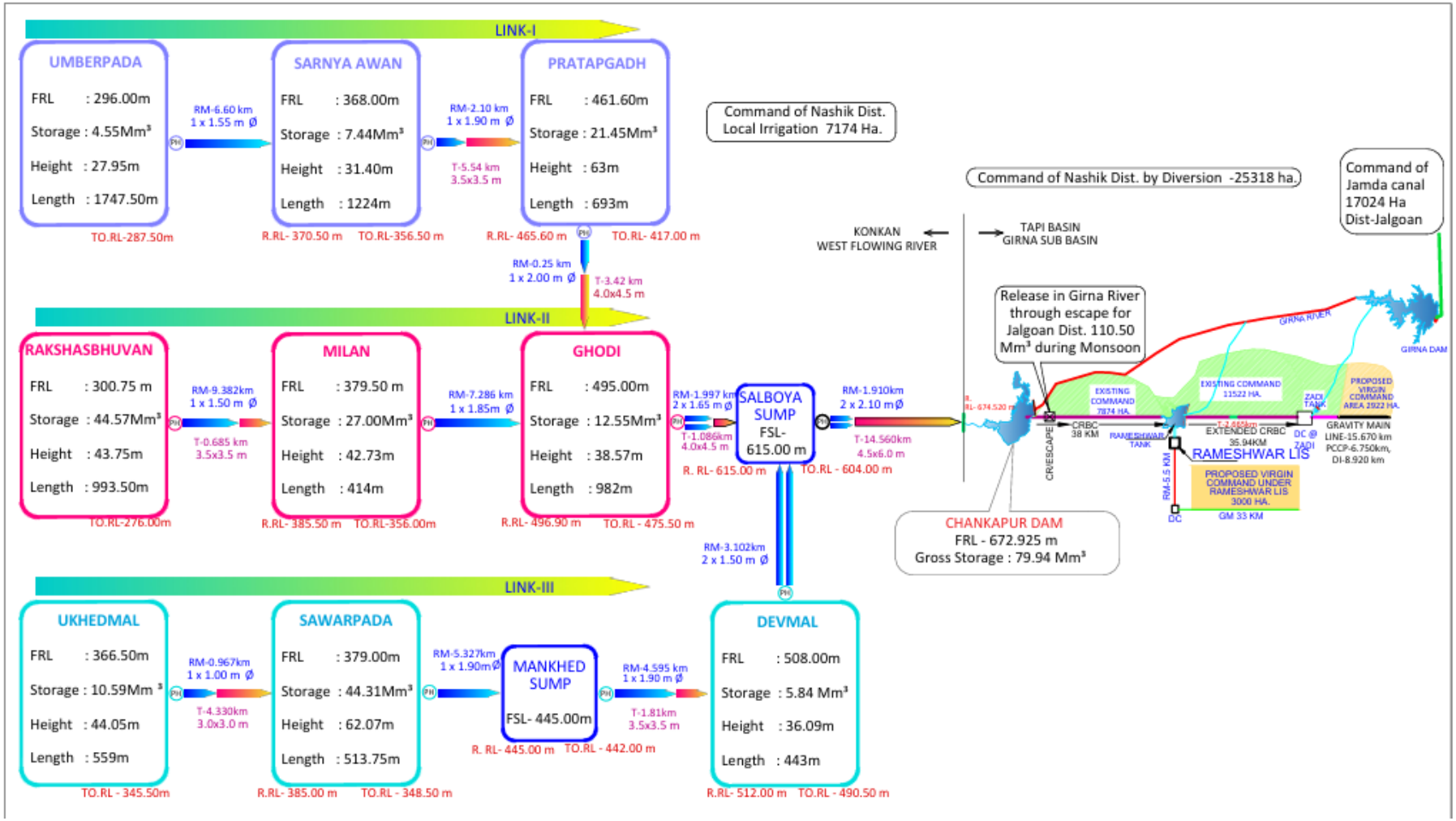

Figure 1. 1 Nar Par Girna River Link Scheme

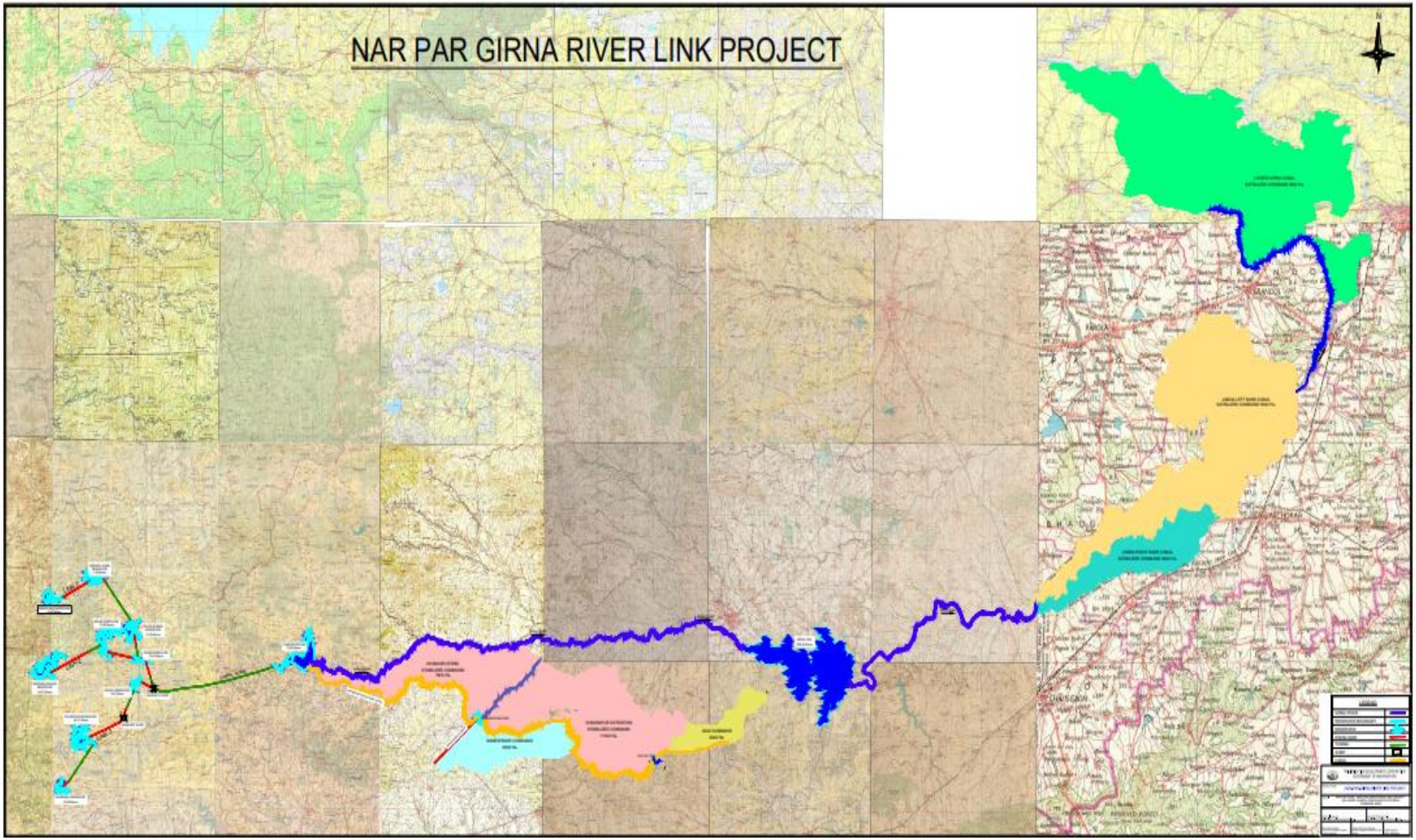

Figure 1. 2 Index Map of the Project

Table 1.2 Project Summary

A	**Basin**	**Auranga**		**Nar**	**Nar**			**Par**		**Nar**	**Par**	**Nar**	
B	**Name of Storage Dams**	**Umbarpada**	**Sarnya-Awan**	**Pratapgadh**	**Rakshasbhuwan**	**Milan**	**Ghodi**	**Ukhedmal**	**Sawarpada**	**Devmal**	**Mankhed Sump**	**Salboya**	**Rameshwar LIS**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C	**Link**	**I**			**II**			**III**					-
GENERAL													
1	**State**	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra	Maharashtra
2	**District**	Nashik	Nashik	Nashik	Nashik	Nashik	Nashik	Nashik	Nashik	Nashik	Nashik	Nashik	Nashik
3	**Tahsil**	Surgana	Surgana	Surgana	Surgana	Surgana	Surgana	Peint	Surgana	Surgana	Surgana	Surgana	Deola
4	**Village**	Umbarpada	Sarnya-Awan	Pratapgadh	Rakshasbhuwan	Milan	Ghodi	Ukhedmal	Sawarpada	Devmal	Mankhed	Salboya	Rameshwar
5	**Latitude**	20°34' 0.75" N	20° 35' 10.545" N	20° 31' 56.123" N	20° 29' 0.99" N	20° 31' 43.182" N	20° 29' 46.031" N	20° 21' 11.258" N	20° 24' 17.004" N	20° 28' 8.007" N	20^0 25 '34.59" N	20^0 27' 53.35" N	20^0 26' 8.21" N
6	**Longitude**	73°29' 3.706" E	73° 33' 1.572" E	73° 36' 40.18" E	73° 28' 59.879" E	73° 34' 3.742" E	73° 37' 49.531" E	73° 30' 25.632" E	73° 31' 46.092" E	73° 37' 14.598" E	73^0 34' 35.26" E	73^0 39' 25.00" E	74^0 09' 16.40" E
7	**River**	Man	Tan	Amti	Nar	Nar	Nar	sagara	Par	Dev	Vajri	-	-
YIELD AND FLOOD													
8	**Catchment (Km^2)**	50.860	31.240	53.950	102.610	52.850	24.730	19.450	107.42	14.990	-	-	-
9	**75 % Yield at Dam (Mm^3)**	31.57	17.03	36.29	72.87	31.88	16.39	14.83	73.68	6.98	-	-	-
10	**Design Flood (Cumecs)**	1424.44	686.33	1188.20	4185.20	3098.50	589.80	638.89	3678.80	524.65	-	-	-
11	**Routed Flood**	1347.74	604.56	1050.42	3882.92	2864.44	519.76	595.45	3349.10	517.84	-	-	-
CONTROLLING LEVELS OF DAM													
12	**Crest level**	296.00	368.00	461.60	300.75	379.50	495.00	366.50	379.00	508.00	-	-	608.700
13	**TBL(m)**	302.00	372.90	466.60	309.25	386.50	499.40	371.40	386.00	511.00	-	-	-

A	Basin	Auranga		Nar	Nar			Par		Nar	Par	Nar	
B	Name of Storage Dams	Umbarpada	Sarnya-Awan	Pratapgadh	Rakshasbhuwan	Milan	Ghodi	Ukhedmal	Sawarpada	Devmal	Mankhed Sump	Salboya	Rameshwar LIS
		1	2	3	4	5	6	7	8	9	10	11	12
C	Link	I			II			III					-
14	HFL/MWL(m)	299.50	370.40	465.60	306.75	385.50	496.90	368.90	385.00	510.00	-	-	609.200
15	FRL(m)	296.00	368.00	461.60	300.75	379.50	495.00	366.50	379.00	508.00	-	-	608.700
16	MDDL(m)	287.50	356.50	417.00	276.00	356.00	475.50	345.50	348.50	490.50	-	-	600.700
17	(NZE) RL in m	280.65	346.22	404.40	267.98	347.80	463.54	331.35	336.27	475.25	-	-	-
18	River Bed Level (m)	274.05	341.50	403.60	265.50	343.77	460.83	327.35	323.93	474.91	-	-	600.400
SUBMERGENCE													
	Unit I (Submergence)												
19	Forest Land (Ha)	18.08	113.90	84.82	50.18	199.42	128.10	45.52	80.79	53.23	0.00	0.00	-
20	Private Land (Ha)	108.16	16.31	68.82	333.14	40.17	11.01	29.26	290.81	2.92	1.00	1.00	-
21	Revenue Land (Ha)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Unit I (Other)													
22	Forest Land (Ha)	33.01	22.04	11.90	24.76	10.74	17.68	9.50	9.46	8.52	8.76	9.66	0.00
23	Private Land (Ha)	3.09	3.44	2.76	9.89	1.52	4.45	3.80	8.43	3.35	3.72	5.23	0.00
24	Revenue Land (Ha)	104.08	273.78	195.34	151.78	422.22	293.46	111.94	182.40	123.40	19.42	24.72	1.50
25	TOTAL	266.42	429.47	363.64	569.75	674.07	454.70	200.02	571.89	191.42	32.90	40.61	1.50
Unit II													
26	Revenue Land (Ha)	0.20											
27	Private Land (Ha)	4.50											
28	Total Unit-I &	3801.07											

A	**Basin**	**Auranga**		**Nar**	**Nar**			**Par**		**Nar**	**Par**	**Nar**	
B	**Name of Storage Dams**	**Umbarpada**	**Sarnya-Awan**	**Pratapgadh**	**Rakshasbhuwan**	**Milan**	**Ghodi**	**Ukhedmal**	**Sawarpada**	**Devmal**	**Mankhed Sump**	**Salboya**	**Rameshwar LIS**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
C	**Link**	**I**			**II**			**III**					-
	Unit-II (Ha)												
ANNUAL UTILIZATION													
29	**Irrigation (Mm^3)**	145.00											-
30	**Domestic (Mm^3)**	41.62											-
31	**Industrial (Mm^3)**	50.04											-
32	**Conveyance Losses (Mm^3)**	23.64											-
33	**Total Diversion Quantity (Mm^3)**	260.30											-
34	**Evaporation (Mm^3)**	14.00											-
35	**Local Utilization (Mm^3)**	27.23											-
36	**Total Utilization (Mm^3)**	301.53											-

	Basin	**Auranga**		**Nar**	**Nar**			**Par**		**Nar**	**Par**	**Nar**	
	Name of Storage Dams	**Umbarpada**	**Sarnya-Awan**	**Pratapgadh**	**Rakshasbhuwan**	**Milan**	**Ghodi**	**Ukhedmal**	**Sawarpada**	**Devmal**	**Mankhed Sump**	**Salboya**	**Rameshwar LIS**
	Link	**I**			**II**			**III**					-
IRRIGATION (ICA/CCA)													
37	**Local ICA (Ha)**	183	299	863	1793	1086	505	426	1783		236	-	-
38	**Nashik (Ha)**	25318											
39	**Jalgaon (Ha)**	17024											
40	**Total (Ha)**	49516											
PUMP HOUSE													
41	**No of Pumps**	3	6	5	4	7	10	3	5.00	8	4	10	3
42	**Total Discharge Cumec**	3.86	5.79	6.37	3.67	5.41	8.49	1.55	5.79	7.2	5.79	14.14	1.221
43	**Discharge per**	1.29	0.97	1.27	0.92	0.77	0.85	0.52	1.16	0.90	1.45	1.41	0.41

A	Basin	Auranga		Nar	Nar			Par		Nar	Par	Nar	
B	Name of Storage Dams	Umbarpada	Sarnya-Awan	Pratapgadh	Rakshasbhuwan	Milan	Ghodi	Ukhedmal	Sawarpada	Devmal	Mankhed Sump	Salboya	Rameshwar LIS
		1	2	3	4	5	6	7	8	9	10	11	12
C	Link	I			II			III					-
	pump in Cumec												
44	Efficiency of Pumps	85%	85%	85%	85%	85%	85%	85%	0.85	85%	88%	88%	85%
45	HP per pump	1950	1855	1715	1890	1860	1955	375	1930.00	1860	1830	1840	719
46	Static head	83.00	117.77	83.11	111.34	140.90	142.05	42.00	96.50	124.50	74.85	81.58	99.30
47	Frictional head for pumps	13.65	4.71	2.81	20.01	12.73	4.75	4.50	9.72	7.36	8.56	4.41	13.23
48	Total head (For Pumps) in m	96.65	122.48	85.92	131.35	153.63	146.80	46.50	106.22	131.86	83.41	85.99	112.53
49	Pump Operating Level (POL) (m)	287.50	356.50	417.00	276.00	356.00	475.50	345.50	348.50	490.50	442.00	604.00	600.70
50	Sump Bottom Level (m)	280.70	350.40	410.80	269.95	350.10	469.00	340.25	341.70	484.30	436.00	598.00	594.70
51	Pump / Valve Floor Level (m)	300.00	370.90	466.10	307.25	386.00	497.40	369.40	385.50	510.50	445.50	615.50	609.70
RISING MAIN													
52	Length of Rising main in m	6600	2100	250	9382	7286	1997	967	5327	3102	4595	1910	5500
53	Dia of Rising main in mm	1550	1900	2000	1500	1850	1650	1000	1900	1500	1900	2100	950
54	Thickness of Rising Main in (mm)	9	12	12	9	13	12	7	11	10	11	12	7
55	Rows of Rising mains	1	1	1	1	1	2	1	1	2	1	2	1
TUNNEL													
56	Size of Tunnel (m)	-	3.5 x 3.5	4.0 x 4.5	3.5 x 3.5	-	4.0 x 4.5	3.0 x 3.0	-	-	3.5 x 3.5	4.5 x 6.0	-
57	Length of Tunnel (km)	-	5.54	3.42	0.69	-	1.09	4.33	-		-	1.81	-

6. Description of Environment

Primary baseline environmental monitoring studies in 10 Km radius study area

6.1. Study Area

Study area includes 10 km radial distance from the project site.

Table 1.3 Environmental Setting of the Study Area

SI	Particulars	Description
1.	SoI Toposheet	46 K /15, 46 O /3, 46 O/7, 46 K /16, 46 O /4, 46 O / 8, 46 O/12, 46 P/1, 46 P/5, 46 P / 9, 46 H / 6, 46 H / 10, 46 H / 14, 46 L / 2, 46 L / 6, 46 L / 10, 46 L / 14, 46 P / 2, 46 P / 6, 46 P / 10, 46 H / 7, 46 H / 11, 46 H / 15, 46 L / 3, 46 L / 7, 46 L / 11, 46 L / 15, 46 P / 3
2.	Nearest Major Town	Nashik
3.	Nearest Railway station	Nashik Road Railway Station (approximately 55 km, depending on the tank location).
4.	Nearest airport	Nashik Airport (Ozar) (approximately 35 km from the project area).
5.	Nearest IMD station	IMD Nashik
6.	Ecological sensitive area / Reserve Biosphere within 10 km / Reserve Forest	❖ The nearest protected area, Gautala Autramghat Wildlife Sanctuary, is situated approximately 32.60 km from the command area boundary. ❖ The Gujarat State Boundary is located approximately 520 m from the proposed Umbarpada Dam site. ❖ The proposed dam sites at Ukhedmal, Rakshasbhuvan, Umbarpada, and Sarnya Aawan fall within villages notified under the Western Ghats Eco-Sensitive Zone (WG-ESZ). ❖ Link Canal 1, Link Canal 2, and Link Canal 3 traverse areas falling within the Western Ghats Eco-Sensitive Zone (WG-ESZ) and intersect Reserved Forest areas. ❖ A portion of the command area falls within the Western Ghats Eco-Sensitive Zone, particularly in Bhusani Village. ❖ All identified runnel lines/drainage channels associated with the project alignment pass through areas falling within the Western Ghats Eco-Sensitive Zone (WG-ESZ).
7.	Seismic Zone	III

Study Period:

The data collected was divided, for analytical convenience, in to the following 3 Seasons:

- Season 1 - December 2025 to February 2026
- Season 2 – March 2026 to May 2026
- Season 3 – June 2026 to August 2026

6.2. Meteorology

The meteorological data obtained from IMD, Nashik, have been considered for describing the climatic conditions of the project region. The key meteorological parameters are summarized below:

- Temperature: The average maximum and minimum temperatures are 31.8°C and 17.3°C, respectively.
- Relative Humidity: The annual average maximum and minimum relative humidity are 74% and 47%, respectively.
- Rainfall: The average annual rainfall recorded is 678.4 mm.
- Wind Speed: The average wind speed in the region ranges from 4.3 to 14.3 km/h.
- Seismology: As per the seismic zoning map of India published by the Bureau of Indian Standards (BIS), Nashik and Jalgaon districts of Maharashtra fall under Seismic Zone III, which indicates a moderate level of seismic hazard. Appropriate seismic design provisions will be considered for the project structures in accordance with applicable standards.

6.3. Ambient Air Environment:

Air quality study was conducted at 45 locations in the project area. The amount of dust PM10 and PM2.5 sulfur dioxide, oxides of nitrogen in the project area was found to be limited as per National Ambient Air Quality (NAAQ) standards.

Season 1: The ambient air quality monitoring results at 45 locations indicate that the average $PM_{2.5}$ concentrations ranged from 15.85 to 20.16 µg/m³, while PM_{10} concentrations ranged from 38.57 to 64.21 µg/m³. The average SO_2 and NO_x concentrations ranged from 7.13 to 16.51 µg/m³ and 7.39 to 19.48 µg/m³, respectively. The 98th percentile concentrations of $PM_{2.5}$, PM_{10}, SO_2 and NO_x were within the prescribed National Ambient Air Quality Standards (NAAQS) of 60, 100, 80 and 80 µg/m³, respectively, at all monitoring locations. Carbon monoxide (CO) was below the detection limit (BDL) at all locations. Overall, the monitored air quality parameters were within the applicable NAAQS limits during Season 1.

Season 2: During Season 2, the average $PM_{2.5}$ concentrations ranged from 18.54 to 26.23 µg/m³, whereas average PM_{10} concentrations ranged from 52.91 to 68.88 µg/m³. The average SO_2 and NO_x concentrations ranged from 6.91 to 11.43 µg/m³ and 16.10 to 25.34 µg/m³, respectively. The 98th percentile concentrations of $PM_{2.5}$, PM_{10}, SO_2 and NO_x remained within the prescribed NAAQS limits of 60, 100, 80 and 80 µg/m³, respectively, across all monitoring locations. Carbon monoxide (CO) was reported as below the detection limit (BDL) at all locations. Overall, the monitored ambient air quality parameters complied with the applicable NAAQS limits during Season 2.

6.4. Noise Environment

Noise levels were studied at 45 locations in the project area.

Season 1: The ambient noise monitoring results at 45 locations indicate that the daytime equivalent noise levels (Leq) ranged from 29.6 to 56.1 dB(A), while nighttime levels ranged from 29.6 to 45.2 dB(A). The daytime noise levels were generally within the CPCB-prescribed limit of 55 dB(A) for residential areas, except at Milanpada (55.6 dB(A), Devipada (55.1 dB(A)) and Bhadgaon (56.1 dB(A)). Nighttime noise levels exceeded the prescribed limit of 45

dB(A) at Hemadpada Village (45.2 dB(A)) and Tarde Kh (45.2 dB(A)). Overall, noise levels at most monitoring locations were within the prescribed standards during Season 1.

Season 2: During Season 2, the daytime equivalent noise levels ranged from 42.0 to 59.2 dB(A), whereas nighttime levels ranged from 34.3 to 48.2 dB(A). Daytime noise levels exceeded the residential limit of 55 dB(A) at Shirata (56.1 dB(A)), Umberde (59.2 dB(A)) and Kalwan (55.6 dB(A)). Nighttime noise levels exceeded the prescribed limit of 45 dB(A) at Hemadpada Village (48.2 dB(A)), Sadudne (46.1 dB(A)), Kelune Village (46.5 dB(A)) and Malegaon Village (46.1 dB(A)). The results indicate that noise levels at most locations were within the CPCB-prescribed limits during Season 2, with exceedances at a few locations.

Season 3: During Season 3, daytime equivalent noise levels ranged from 39.5 to 56.6 dB(A), while nighttime levels ranged from 29.6 to 48.2 dB(A). Daytime noise levels exceeded the residential limit of 55 dB(A) at Mani Village (55.1 dB(A)) and Nimbarpada (56.6 dB(A)). Nighttime noise levels exceeded the prescribed limit of 45 dB(A) at Hemadpada Village (46.9 dB(A)), Kelune Village (45.2 dB(A)), Salbhoye (45.1 dB(A)), Nandkhurde Kh (48.2 dB(A)) and Ringangaon (46.1 dB(A)). Overall, the noise monitoring results indicate that levels were within the prescribed standards at most locations, with some exceedances observed during daytime and nighttime monitoring.

6.5. Soil Environment:

The soil analysis results for the three monitoring seasons indicate that soil pH ranged from 7.42 to 8.57, indicating predominantly alkaline conditions. Electrical conductivity ranged from 351.25 to 901.40 µS/cm in Season 1, 402.8 to 848.20 µS/cm in Season 2, and 351.25 to 495.2 µS/cm in Season 3, indicating variations in soluble salt content across the sampling locations. Available nitrogen, phosphorus and potassium concentrations varied across the seasons, ranging from approximately 113.23 to 227.12 kg/ha, 2.08 to 15.2 kg/ha and 123.25 to 625.3 kg/ha, respectively. Organic carbon content ranged from 0.24% to 0.64%, indicating generally low to moderate organic carbon levels. The sodium absorption ratio (SAR) ranged from 0.345 to 1.34, suggesting a low sodicity concern based on the reported values. Calcium and magnesium concentrations ranged from 98.30 to 192.20 mg/kg and 43.2 to 112.32 mg/kg, respectively. Overall, the results indicate variations in soil properties and nutrient availability across the monitoring locations and seasons. The predominantly alkaline pH and relatively low organic carbon content suggest scope for improving soil fertility through suitable organic amendments and balanced nutrient management.

6.6. Surface Water Quality

The surface water quality monitoring was carried out at various locations during three seasons, corresponding to February, May and August 2026. The results indicate that the pH ranged from approximately 7.02 to 8.42, indicating neutral to alkaline conditions. Electrical conductivity varied considerably among sampling locations, with higher values observed at Ghotpada (SW9), ranging from 1,540 to 1,801 µS/cm, indicating relatively higher dissolved ionic content at this location. Total dissolved solids generally varied across locations, while turbidity was comparatively higher at Pratapgadh Dam (SW5), Tirhal (SW10), and the water bodies near Subhashnagar (SW19) and Pohali (SW20) during certain sampling periods. Total suspended solids were reported as below 5 mg/L across the listed samples.

Total alkalinity ranged from approximately 26.13 to 291.45 mg/L as $CaCO_3$, while total hardness varied across sampling locations. Nitrate, ammoniacal nitrogen, total Kjeldahl nitrogen, fluoride and total phosphorus were generally reported at low concentrations or below the respective analytical detection limits. The analysed heavy metals, including chromium, lead, cadmium, nickel, zinc, iron and copper, were also reported below their respective detection limits. Dissolved oxygen (DO) ranged from 1.8 to 6.9 mg/L, with notably low values at Subhashnagar (SW19) and Pohali (SW20) during August. Biochemical oxygen demand (BOD) and chemical oxygen demand (COD) were also elevated at certain locations and sampling periods. Total and faecal coliform counts showed considerable variation, with values reaching 1,600 at SW19 during August, indicating possible microbial contamination. Overall, the results indicate variable surface water quality across the study area, with comparatively better conditions at several locations but potential organic pollution and microbial contamination at specific sites.

6.7. Ground Water Quality

Groundwater quality monitoring was carried out at 53 locations during February, May and August 2026. The results indicate that groundwater was generally neutral to alkaline across all three seasons. Electrical conductivity ranged from approximately 190 to 1,978 µS/cm, while total dissolved solids (TDS) varied from 131 to 1,301 mg/L. Higher conductivity, TDS and total hardness were observed at Nimgaon (GW35), Umbrane (GW33), Khadkipada (GW20) and Umbarthan (GW21), indicating relatively higher dissolved mineral content at these locations. Turbidity was generally low, except at Bival (GW11), where elevated values were recorded during February and May.

Nitrate, ammoniacal nitrogen, total Kjeldahl nitrogen, fluoride and total phosphorus were generally reported below their respective analytical detection limits. The analysed heavy metals and phenol were also reported below detection limits. However, microbiological analysis revealed elevated total and faecal coliform counts at Bival (GW11), with counts reaching 1,600 MPN/100 mL during February and May. Although the counts decreased in August, microbial contamination persisted. Elevated coliform counts were also reported at Aalivpada (GW13).

Overall, groundwater quality was generally satisfactory in terms of physicochemical parameters, with seasonal and location-wise variations in TDS, hardness and turbidity. However, elevated total and faecal coliform counts at Bival (GW11) and Aalivpada (GW13) indicate microbial contamination; therefore, the water should be disinfected and tested before use for drinking purposes.

6.8. Ecology and Biodiversity:

During the ecological survey, a total of 200 floral species were recorded. The faunal diversity comprised 50 bird species, 11 mammal species, 25 freshwater fish species, 6 reptile species, and 22 butterfly species. As per the Wildlife (Protection) Act, 1972, as amended up to 2022, 17 faunal species recorded during the survey fall under Schedule I, indicating the presence of species requiring a high level of protection. The findings highlight the ecological significance of the study area and the need for appropriate conservation measures to minimize potential impacts on flora, fauna, and their habitats during the construction and operation phases of the proposed project.Land Use Land Cover Study.

6.9. Land Use

The land use and land cover (LULC) analysis of the study area, covering 9,516.38 ha (95.16 sq. km), indicates that agriculture is the predominant land-use category, accounting for 72.98% (6,944.91 ha) of the total area. Reserve Forest occupies 11.57% (1,101.10 ha), followed by scrubland at 8.58% (816.96 ha). Water bodies account for 3.52% (334.68 ha), while built-up areas constitute 3.35% (318.72 ha). The LULC pattern reflects the predominantly agricultural character of the study area, along with the presence of forest ecosystems, scrub vegetation, settlements, and water resources.

LULC Class	Area Ha	Area sq.km.	In %
Agriculture	6944.91	694491.24	72.98
Built up	318.72	31872.14	3.35
Reserve Forest	1101.10	110110.39	11.57
Scrub land	816.96	81695.55	8.58
Waterbody	334.68	33468.30	3.52
Grand Total	9516.38	951637.61	100.00

6.10. Socio-Economic Study

6.10.1. Socio Economic Overbiew 10 Km Study area

A socio-economic baseline across nine proposed dam sites, encompassing a total of **10,133 households** and a 45910 population (**"souls"**). The village Umberpada is the most heavily populated area, accounting **8,216 individuals & 1,824 households**. It is followed closely by Milan (7,208 individuals) and Savarpada (6,785 individuals). Conversely, Ghodi and Saranya Awan represent the smallest populated, though they still over 2,500 people each.

The overall gender distribution across the submergence area is highly balanced, with **22,948 males** and **22,962 females (i.e. approx. 1:1 ratio.** A total of **7,367 children below 6 years of age** reside in the submergence zones (roughly 16% of the total population)**.**

The submergence area exhibits an exceptionally high concentration of Indigenous populations. Out of 45,910 total populations, 45,257 belong to Scheduled Tribes (ST), representing over 98.5% of the entire cohort. Sites like Devmal, Ghodi, Milan, and Saranya Awan are almost exclusively tribal. In contrast, the Scheduled Caste (SC) population is marginal, totaling only 75 individuals.

6.10.2. Socio Economic Overview Villages falls under submergence area

A socio-economic baseline across nine proposed dam sites, encompassing a total of **10,133 households** and a 45910 population (**"souls"**). The village Umberpada is the most heavily populated area, accounting **8,216 individuals & 1,824 households**. It is followed closely by Milan (7,208 individuals) and Savarpada (6,785 individuals). Conversely, Ghodi and Saranya Awan represent the smallest populated, though they still over 2,500 people each.

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Table 1.4 Socio-Economic Overview of Villages falling under various Dams

Dam	Total Number of HH	Total Population	Male Population	Female Population	Total Population Below 6 Years	Total Scheduled Caste Population	Total Scheduled Tribe Population
Devmal	704	2891	1425	1466	486	2	2881
Ghodi	684	2592	1293	1299	457	0	2585
Milan	1748	7208	3571	3637	1302	2	7189
Pratapgad	1037	4327	2199	2128	710	2	4290
Rakshasbhuvan	893	4209	2123	2086	739	0	4184
Saranya Awan	675	3577	1804	1773	469	5	3540
Savarpada	1437	6785	3394	3391	1159	10	6716
Ukhedmal	1131	6105	3044	3061	889	39	6022
Umberpada	1824	8216	4095	4121	1156	15	7850
Grand Total	**10133**	**45910**	**22948**	**22962**	**7367**	**75**	**45257**

6.10.3. Primary Baseline Survey – Socio economic overbiew

This section presents the Socio-demographic profile surveyed project affected families. The profile is based on the data collected during the primary survey. The field investigators went from door to door for data collection along with community consultation. Refer Error! R eference source not found.

Family Profile: During the door to door survey, 187 project affected families were responded from 20 pada/villages and their responses were collected and analysed statistically as given below. The 187 families consist of 1030 persons.

Table 1.5 Village wise Number of Family Surveyed/Responded

Name of the Pada/ Village	HH responded
Bhintaghar	12
Chikadi	5
Devmal	3
Dolhare	17
Gulabgaon Bhintaghar	1
Jamundara	5
Kapurne	14
Kedari	1
Kelune	6
Krishnanagar	4
Malegaon keloli Pada	2
Malgavhan	17

Name of the Pada/ Village	HH responded
Pahuchibari	12
Pratapgad	19
Sabardara	10
Sayalpada	30
Shirata	11
Subhashnagar	4
Udaypur	4
Wanganpada	10
Grand Total	**187**

Gender Distribution : Among the 187 families surveyed, 499 were females and 531 were males. Male to female ratio is 51.6:48.4 %. The marital status observed among the families was Divorced, Married, Unmarried, Widowed, Widower, etc. 56.70 % of persons were Married, 40.19 % of persons were Unmarried, remaining 3.01 % were falls under category namely widowed/widower, one person was identified as Divorced.

Table 1.6 Gender & marital status of the surveyed family members

Gender	Divorced	Married	Unmarried	Widowed	Widower	Total	%
F/महिला	0	291	183	NA	25	**499**	48.4
M/पुरुष	1	293	231	6	NA	**531**	51.6
Total	1	584	414	6	25	**1030**	100
%	0.10	56.70	40.19	0.58	2.43	**100**	

Age Distribution: The age distribution of the population exhibited considerable variation across different age groups. The largest proportion of the population (26.70%) belonged to the 26–40 years age group, followed by 21.84% in the 7–18 years age group and 19.32% in the 41–60 years age group. Individuals aged 19–25 years accounted for 12.91% of the total population. Children below 6 years constituted 10.78%, while elderly persons above 60 years represented the smallest proportion, at 8.45%. Overall, the age profile indicates that the population was predominantly composed of individuals in the working-age groups, alongside a substantial proportion of children and adolescents.

Table 1.7 Age Group

Age Groups	Number of Members	%
Below six	111	10.78
Age 7-18	225	21.84
Age 19-25	133	12.91
Age 26-40	275	26.70
Age 41-60	199	19.32
Age above 60	87	8.45
Total	**1030**	**100**

Literacy Profile (Educational Attainment): An analysis of the **1,030 surveyed individuals** reveals that school-level education represents the largest verified portion of the community. **Class 8 to 10 (High School / Secondary)** stands out as the single largest tracked educational milestone, accounting for **210 individuals (20.39%)** of the total population. This is followed by Class 11 and 12 (Higher Secondary) at **153 individuals (14.85%)**, Class 5 to 7 (Middle School) at **121 individuals (11.75%)**, and Class 1 to 4 (Lower Primary) at **111 individuals (10.78%)**. Combined, traditional school-level education covers over half of the surveyed population.

Graduates (UG) students represent **8.93% (92 individuals)**, while only **1.46% (15 individuals)** have attained a **Post Graduate (PG)** degree. Specialized professional or vocational routes account for **1.94% (20 individuals)**. A **5.34% (55 individuals)** are children below six years old, **3.79% (39 individuals)** are enrolled in an Anganwadi pre-school, and **4.47% (46 individuals)** are categorized as illiterate. Total **168 individuals (16.31%)** listed under "Education Details not Provided,

Table 1.8 Education Qualifications of the Surveyed Families

Education Category	No of Individual	%
Below Six	55	5.34
Anganwadi (Pre-School)	39	3.77
Class 1 to 4 (Lower Primary)	111	10.78
Class 5 to 7 (Upper Primary / Middle School)	121	11.75
Class 8 to 10 (High School / Secondary)	210	20.39
Class 11 and 12 (Higher Secondary / Intermediate)	153	14.85
Graduate (Undergraduate / UG)	92	8.93
Post Graduate (PG)	15	1.46
Professional & Technical Qualifications	20	1.94
Education Details not Provided	168	16.31
Illiterate	46	4.47
Total	1030	100

Vulnerable Groups: Among the total families surveyed Kokana, Mahadev Koli and Warli were the three castes identified. Thus, all of these households come under the vulnerable category i.e. Scheduled Tribes (ST).

Occupation Details: Survey indicates that agriculture is a major source of occupation across the study area with 547 individuals (53.11 % of the surveyed population) engaged in farming. Students constitute second largest category accounting 266 individuals (25.83% followed by children below six years' age having 111 individuals (10.78%). Housewives represent 5.92% (61 individuals), while government employees comprise of 2.04% (21 individuals) and private sector employees comprised 1.26% (13 individuals). Daily wage workers account for 0.58% (6 individuals), business owners or merchants for 0.29% (3 individuals), and retired individuals for 0.19% (2 individuals). Overall, the data show that farming is the primary occupation as the primary livelihood source among the surveyed population.

Table 1.9 Occupational details of the surveyed families.

Occupation	Number of family members	Percentage
Below Six	111	10.78
Business / Merchant:	3	0.29
Daily Wage Worker/ Laborer	6	0.58
Farmer	547	53.11
Government Employee	21	2.04
Housewife	61	5.92
Private Employee / Salaried	13	1.26
Retired	2	0.19
Student	266	25.83
Total	**1030**	100.00

6.10.4. Lifestyle of Tribal Families

The western part of Nashik district is recognized as a tribal region. The predominantly tribal talukas include Surgana, Peth and Trimbakeshwar. Local people also refer to this region as Dang or Konkan. Nashik is an important district in Maharashtra in terms of its substantial tribal

population. The history of tribal communities in Nashik is rich in stories of courage and tradition.

Surgana has a notable princely-state history associated with the Konkana community. Historically, five princely states associated with the Konkana community were Surgana, Peth, Dharampur, Vasda and Jawhar. The community has lived in this region for thousands of years, as reflected in its folk stories, legends about deities and folk songs. Tribal residents are familiar with footpaths and hidden routes through hilly terrain, traditional weapons such as bows and arrows and slings, and the calls of birds and animals. Peth and Surgana also had independent tribal rule. Bhagwantrao Deshmukh was the ruler in the Peth Jagir, while Dhairyashilrao Pawar was the ruler of the Surgana princely state.

Konkana, Mahadev Koli and Warli are among the major tribal communities in the region. The Konkana community is a principal tribal group in Surgana taluka. To preserve their collective identity, many settlements are located in hilly and forested areas where modern facilities may be limited but daily life remains closely connected with nature. Festivals, traditions and communal living remain important. During festivals, an entire hamlet gathers for traditional dances, songs, rituals and shared meals. Children learn about the forest, food resources and traditions through practical experience; this is an important form of intergenerational learning.

The study area observed dispersed settlement also known as isolated settlements, which is characterized by units of small size, which may consist of a single house to a small group of houses.

These settlements are small in size and scattered in the areas of forest and hilly areas. These settlements have less connectivity due to rugged topography. In this region the houses are far from one another and the hamlets and villages are small. The maximum part is tribal therefore the primary economic activities such as agriculture, animal husbandry are dominated in these settlements.

Some settlements are small in size and they are located near cultivable land, bank of the river

During the discussion with community, we have gathered traditional knowledge of medicinal plants used by indigenous tribes highlighting their therapeutic uses, preparation methods, and cultural significance. It is observed that, community possess significant traditional medicinal knowledge and rely primarily on locally available forest resources for primary healthcare

7. Social Impact Assessment

7.1. Details of Villages in Submergence area

The submergence area comprising a total of 47 villages in Peth and Surgana Tehsil of Nashik districts. Among them 1Villages Fully Affected and 28 Villages partially affected and required rehabilitation

Table 1.10 List of villages whose Private & Forest land under submergence

Sr. No.	Name of Dam	Private Land Acquisition – Submergence Area (No. of Villages)	Forest Land Acquisition – Submergence Area (No. of Villages)	Private Land Acquisition – Dam Alignment (No. of Villages)	Forest Land Acquisition – Dam Alignment (No. of Villages)
1	Umberpada	4 (Umbarthan, Dodipada, Krishnanagar, Kanadipada)	0	3 (Umbarthan, Dodipada, Mhaiskhadak)	0

Sr. No.	Name of Dam	Private Land Acquisition – Submergence Area (No. of Villages)	Forest Land Acquisition – Submergence Area (No. of Villages)	Private Land Acquisition – Dam Alignment (No. of Villages)	Forest Land Acquisition – Dam Alignment (No. of Villages)
2	Sarnya-Awan	3 (Subhashnagar, Dolhare, Ambatha)	0	2 (Subhashnagar, Ambatha)	0
3	Pratapgad	3 (Pratapgad, Malgavan, Udaypur)	1 (Hanumantmal)	1 (Pratapgad)	1 (Hanumantmal)
4	Rakshas Bhuvan	7 (Bhavada, Dendvan, Avalkhad, Amba Palsan, Vavadi, Gahalhe)	2 (Kund, Palsan)	2 (Bhavada, Gahalhe)	0
5	Milan	3 (Umbarvihir, Khobramani, Khokari)	2 (Hatarsandi, Hanumantmal)	1 (Umbarvihir)	1 (Hatarsandi)
6	Ghodi	3 (Bibval, Savaradra, Bhintghar)	0	1 (Bibval)	0
7	Ukhedmal	1 (Kapurne)	3 (Ambe, Mhasrangan, Dhamodi)	1 (Kapurne)	1 (Ambe)
8	Sawarpada	6 (Kalamane, Bhegu, Vanganpada, Sayalpada, Pahuchibari, Toranmal)	3 (Diksal, Jahule, Karangkhed)	1 (Kalamane)	1 (Diksal)
9	Devmal	3 (Umbarde, Malegaon, Chikhadi)	0	1 (Umbarde)	0
10	Mankhed Sump	1 (Ambepada)	0	NA	NA
11	Salboya	1 (Salboya)	0	NA	NA
Total		**35**	**11**	**13**	**4**

7.2. Local Farmers' Suggestions on Water Diversion & Alternative Water Conservation

Local farmers and residents expressed their views on the proposed diversion of water. They stated that they do not oppose, in principle, the use of water available from nature for the common good. However, they are concerned about the effects on local farmers and residents if water from their region is diverted to other areas, particularly towards Jalgaon.

Farmers questioned whether it is fair to provide water to other regions by displacing farmers in the water-source area or adversely affecting their agricultural land.

Residents requested that decentralized water-conservation options be considered instead of large dams. These could include small bunds, check dams and water-storage structures in hilly areas and catchments; local storage of rainwater; and delivery of water to command areas, where necessary, using pumps and pipelines.

The farmers and villagers suggested that the dam sites should be redesigned to minimise the submergence of fertile agricultural land and forest areas. They recommended exploring alternatives such as cement-concrete structures and Kolhapur-type weirs to reduce the extent of land required for the proposed dams and minimise associated environmental and socio-economic impacts.

The villagers also suggested diverting water through suitable earthen structures and incorporating necessary design modifications in consultation with technical experts. They highlighted that approximately 25–30% of the population in Surgana Taluka migrates in search of employment, emphasising the need for improved local livelihood opportunities and water availability. Accordingly, they recommended constructing small water-storage structures and weirs to facilitate local water conservation, support agricultural activities and reduce dependence on seasonal migration

They also suggested promoting drip irrigation, micro-irrigation and numerous small water-storage structures. In their view, such measures could conserve water and reduce the need for extensive submergence and displacement.

7.3. Farmers' Concerns Regarding Dams and Compensation

Local farmers expressed serious concerns about the effects of earlier dams in the area on agricultural land and about compensation paid to affected landowners.

According to farmers, acquisition of agricultural land for dam construction affected household livelihoods, and some affected landowners in the area have reportedly still not received full compensation.

Farmers also stated that raising the height of an earlier dam increased waterlogging and submergence in surrounding agricultural areas, leaving some land infertile or unsuitable for cultivation. They seek fair and timely compensation for land acquisition, reduced agricultural productivity and damage caused by waterlogging. There is a demand for land-for-land compensation, including for forest land under recognised ownership or occupancy rights. In cases where such land is affected by submergence, the affected landholders are also demanding appropriate monetary compensation for the submerged land, in addition to the provision of equivalent alternative land. Some farmers alleged that the benefits of the projects would accrue to large industrial and corporate interests.

Affected farmers emphasised that their foremost concern is protecting agriculture-based livelihoods and ensuring the timely and fair resolution of legitimate claims relating to land acquisition, submergence, waterlogging and reduced agricultural productivity.

8. Land Acquisition, Rehabilitation and Resettlement

Land under Submergence: Areas under actual submergence are worked out for FRL. The forest areas are calculated by superimposing compartment wise forest maps obtained from the forest dept. Similarly, Non-forest areas are worked out from revenue maps.

Details of Land Acquisition for difference uses-

Table 1.11 Land Details

Sr. No.	Category	Forest	Govt.	Private	Total Ha
•	**Total land to be acquired**	**939.07**	**1905.24**	**956.86**	**3801.17**

Type of land	Land under submergence	Land for structures and afforestation	Total (Ha)
Revenue/Govt	0.00	1905.24	1905.24
Forest	774.04	165.03	939.07
Private	902.60	54.26	956.86
Total	**1676.64**	**2124.53**	**3801.17**

SN	Category	Forest	Govt.	Private	Total Ha
1	Submergence	774.04	0.00	902.60	1676.64
2	Earthen Dam seat / Sump	132.15	0.00	0.00	132.15
3	Offices	0.00	5.40	0.00	5.40
4	Switch Yard	0.00	8.50	0.00	8.50
5	Pump Houses 11 nos	0.00	13.00	0.00	13.00
6	Rising Main 43516m +disposal of muck from tunnels	24.89	0.00	23.84	48.73
7	Diversion Roads 36.56 km	7.99	0.00	18.68	26.67
8	Private land for material stacking of construction materials, Mechanical workshops, Departmental use etc.	0.00	0.00	5.50	5.50
9	Private land for Rehabilitation in Ha.	0.00	0.00	6.14	6.14
10	Revenue land for Afforestation	0.00	1878.14	0.00	1878.14
11	DC at Zadi	0.00	0.2	0.1	0.3
Total land to be acquired		**939.07**	**1905.24**	**956.86**	**3801.17**

9. Rehabilitation

Among the total 47 affected villages, 1 Village Fully Affected and 28 Villages partially affected and required rehabilitation

Table 1.12 List of affected villages

SI	Dam	Houses affected		Villages affected fully		Partially affected villages		Total	
		Houses	Population	villages	Population	Villages	Population	Villages	Population
1	Umberpada	36	180	0	0	2	180	2	180
2	Sarnyavan	47	235	0	0	3	235	3	235
3	Pratapgad	30	150	0	0	3	150	3	150
4	Rakshasbhuvan	175	875	1	505	3	370	4	875
5	Milan	65	325	0	0	3	325	3	325
6	Ghodi	56	280	0	0	2	280	2	280
7	Savarpada	55	275	0	0	5	275	5	275
8	Ukhedmal	31	155	0	0	3	155	3	155
9	Devmal	21	105	0	0	3	105	3	105
	TOTAL	**516**	**2580**	**1**	**505**	**28**	**2075**	**29**	**2580**

10. Environmental Impacts and Mitigation Measures

Table 1.13 Environmental Impacts and Mitigation Measures

SN	Environmental Parameters	Aspect / Attributes	Anticipated Impacts	Proposed Mitigation Measures
1.	Land Use and Land Acquisition	Land requirement for dams, reservoirs, tunnels, rising	Permanent land-use change and loss of	Private land acquisition and compensation shall be undertaken in

SN	Environmental Parameters	Aspect / Attributes	Anticipated Impacts	Proposed Mitigation Measures
		mains, pump houses, roads and associated facilities.	agricultural, forest and other land ➢ Forest land : 939.07 Ha ➢ Private land: 956.86 Ha ➢ Revenue/Govt. Land 1905.24 Ha Total Land: 3801.17 Ha	accordance with applicable statutory provisions and the approved Rehabilitation and Resettlement/Social Impact Assessment framework.
2.	Reservoir Submergence	Impoundment of nine reservoirs	Proposed project will affect 47 villages / pada One fully and 28 Gavthans are partially affected which requires rehabilitation of 2580 population/516 households.	Implementation of R&R and PESA measures, clear waste and hazardous materials before filling, demarcation of reservoir levels and maintain prescribed downstream releases.
3.	Forest Resources and Ecology	Diversion of 939.07 Ha forest land for project components Construction activities, noise, vehicular movement and human presence	Loss and fragmentation of vegetation, wildlife disturbance and reduction in ecosystem services Approx. >50,000 trees will be affected	Minimize forest diversion, obtain statutory Forest Clearance, implement compensatory afforestation and restore temporary work areas using native species. Implementation of the approved Wildlife Conservation Plan, prohibit hunting and vegetation burning, install wildlife-sensitive signage, regulate vehicle speeds and minimize night lighting.
4.	Topography and Geology	Excavation, tunnelling, drilling, blasting, cutting and filling	Changes in local topography, slope instability, erosion and generation of excavated material	Plan excavation in stages, stabilize slopes, reuse suitable excavated material and implement engineered muck disposal and drainage measures.
5.	Soil Environment	Excavation, construction debris, fuel spills and material storage	Soil compaction, disturbance of soil structure, reduced infiltration and	Preserve and reuse topsoil, prevent uncontrolled dumping, provide spill containment,

SN	Environmental Parameters	Aspect / Attributes	Anticipated Impacts	Proposed Mitigation Measures
			potential contamination	reuse suitable excavated material and restore disturbed land.
6.	Air Quality	Excavation, drilling, blasting, material handling and vehicle emissions	Temporary increase in fugitive dust and emissions of particulate matter, NOx, SO_2 and CO	Sprinkle water on exposed surfaces and haul roads, cover trucks and stockpiles, maintain equipment, use vehicles with valid PUC certificates and conduct ambient air monitoring.
7.	Noise and Vibration	Construction equipment, drilling, blasting, heavy vehicles and pumping machinery	Increased noise and vibration affecting workers, nearby settlements, livestock and wildlife	Schedule noisy activities during daytime near settlements, maintain equipment and silencers, provide hearing protection, use acoustic enclosures and conduct noise monitoring.
8.	Water Resources and Quality	Construction water abstraction, runoff, sewage, spills and reservoir operation	Potential contamination of surface water and groundwater, sedimentation and changes in downstream flows	Regulate water abstraction, treat sewage and wastewater, prevent spills, control sediment runoff, comply with environmental-flow requirements and monitor water quality.
9.	Groundwater	Reservoir storage, irrigation and seepage from conveyance systems	Potential groundwater recharge benefits, localized waterlogging and changes in groundwater quality	Monitor groundwater levels and quality, maintain conveyance systems, control leakage, promote efficient irrigation and provide adequate drainage.
10.	Waste and Muck Management	Excavated soil, rock, construction debris, domestic and hazardous waste	Land degradation, drainage obstruction and soil or water contamination due to improper disposal Muck quantity: 858903.06 Cu.m.	Implementation of muck management plan, reuse suitable material, use approved disposal sites, segregate waste and ensure authorized disposal of hazardous waste.
16	Occupational Health and Safety	Tunnelling, blasting, excavation, heavy machinery and construction work	Accidents, injuries, dust exposure, excessive noise exposure and	Implementation of site-specific health and safety plan, provide appropriate PPEs, conduct worker training and medical

SN	Environmental Parameters	Aspect / Attributes	Anticipated Impacts	Proposed Mitigation Measures
			other occupational hazards	examinations and maintain emergency response facilities.
17	Community Health	Labour camps, inadequate sanitation, stagnant water and construction emissions	Potential respiratory illnesses, waterborne diseases and mosquito-borne diseases; increased pressure on local health facilities	Provide safe drinking water, hygienic labour camps, toilets and wastewater treatment, prevent stagnant water, conduct health awareness programmes and coordinate with local health authorities.
11.	Traffic and Transportation	Movement of construction materials, muck and heavy equipment	Traffic congestion, road deterioration, dust emissions and increased accident risks	Designate haul routes, regulate vehicle speed and loads, cover transported materials, provide traffic signs and trained personnel and maintain affected roads.
12.	Fugitive Dust Emissions	Excavation, drilling, crushing, loading, unloading and material transport	Temporary deterioration of ambient air quality and potential respiratory impacts	Apply regular water sprinkling, cover stockpiles and vehicles, control vehicle speeds, stabilize exposed surfaces and provide respiratory protection to exposed workers.
13.	Employment Generation	Construction and operation of project facilities	Direct and indirect employment opportunities and increased demand for local goods and services Employment: 500 nos. during construction phase and 1000 nos. during operation phase.	Provision of transparent recruitment opportunities, prioritize qualified local workers and ensure fair working conditions and compliance with applicable labour laws will be done.
14.	Cumulative Environmental Management	Multiple dams, tunnels, pumping stations, roads and associated activities	Combined pressures on land, forests, water resources, biodiversity and local communities	Implementation of the approved EMP across all project components, coordinate contractors and departments, conduct environmental monitoring and compliance audits and implement corrective actions.

11. Social Impact Assessment Impacts and Measures

11.1. Village and Household Affected

Proposed Nar–Par–Girna River Link Project will affect 47 villages in Peth and Surgana Tehsil of Nashik districts

A total of 516 houses and 2,580 individuals ("souls") will be directly affected across the nine proposed dam sites. The scale of displacement varies considerably by location. Rakshasbhuvan bears the highest displacement, accounting for 175 affected houses and 875 affected individuals, which represents over one-third of the total project impact. This is followed by Sarnyaawan (235 individuals) and Milan (325 individuals). In contrast, Devmal features the smallest resettlement footprint, affecting only 21 houses and 105 individuals.

Table 1.14 Statutory Rights and Rehabilitation Entitlements for Affected Tribal Communities

Sr. No.	Identified Impacts	Action Mandatory under RFCTLARR 2013	Action Mandatory under PESA Act 1996
1	**Submersion of Tribal/ Ancestral Land**	• **Prior Consent:** Require consent from 80% of affected families for the project • **Land-for-Land:** Provide alternative agricultural land to ST families where land is acquired for irrigation projects.	• **Gram Sabha Consultation:** Mandatory consultation and consent of the *Gram Sabha* or Panchayats at the appropriate level **before** any land acquisition takes place.
2	**Mass Resettlement & Loss of Homesteads**	• **R&R Package:** Provide a free, constructed house (as per housing schemes) or equivalent value. • **Infrastructure:** Develop standard civic amenities (roads, schools, electricity, sanitation) at the resettlement site.	• **Cultural Safeguards:** The rehabilitation blueprint must actively safeguard and preserve the community's customary laws, traditional social structures, and community identity.
3	**Livelihood (Loss of Cultivation/ Labor)**	• **Subsistence & Livelihood Support:** Monthly subsistence allowance for 1 year, plus a one-time resettlement allowance (₹50,000). • **Annuity/Employment:** Provide a choice of annuity policies, an inflation-adjusted monthly payment, or a regular job.	• **Economic Self-Governance:** Ensure the tribal community retains control over local micro-plans, ensuring new livelihoods align with traditional skills.
4	**Loss of Common Property Resources (CPR) & Forests**	• **Acreage Compensation:** Factor in loss of grazing lands and community assets into the total compensation matrix. • **Compensation :** Pay a 100% compensation over the total asset market value (land, structures, trees).	• **Minor Forest Produce (MFP) Rights:** The *Gram Sabha* retains absolute ownership over minor forest resources and water bodies; access cannot be unilaterally severed without community-managed alternatives.
5	**Socio-Political Friction & Compensation Disputes**	• **Public Hearings:** Conduct formal public hearings in local languages	• **Conflict Resolution Authority:** Empower the *Gram Sabha* as the primary body to manage local disputes, ensuring external agencies do not bypass traditional dispute-resolution mechanisms.
6	**Vulnerability of Early Childhood & Marginal Cohorts**	• **Special Vulnerability R&R:** Provide an additional one-time financial package for ST families. • **Advanced R&R Schedule:** Hand over full compensation and R&R benefits	• **Targeted Social Audits:** The *Gram Sabha* must directly monitor the distribution of individual compensation to prevent the exploitation of vulnerable family members or tribal subgroups.

Sr. No.	Identified Impacts	Action Mandatory under RFCTLARR 2013	Action Mandatory under PESA Act 1996
		prior to any physical displacement or clearance.	
7	**Complete Loss of Habitat**	• **Advance Housing Provision:** Mandates a free constructed house (urban standard or rural scheme equivalent) for displaced families • **Pre-Displacement Timeline:** Physical possession of the land can *only* be taken after full compensation and housing units are handed over.	• **Village Layouts:** The *Gram Sabha* has the right to manage its village habitat. Resettlement colonies must be designed to mimic traditional tribal village structures rather than urban blocks. • **Preservation of Habitat:** Safeguards the spatial and natural habitat vital to tribal life.
8	**Loss of River-Dependent Income** *(Fisheries, sand-mining, ferry operators)*	• **Fishing Rights:** Affected families must be given fishing rights in the newly constructed reservoir/dam area. • **Alternative Livelihood Choice:** Provision of an inflation-indexed annuity policy, a one-time lump-sum grant, or a regular employment option.	• **Ownership of Water Bodies:** The *Gram Sabha* retains absolute statutory ownership and management rights over local minor water bodies, ensuring external commercial entities do not monopolies new reservoir access. • **Traditional Trade Protection:** Safeguards community access to riverine resources.
9	**Loss of Agricultural Livelihood** *(Cultivators & landless laborers)*	• **Land-for-Land:** For irrigation/dam projects, every affected ST family *must* be given alternative agricultural land (minimum 1 acre) or land equivalent to what was lost • **Subsistence Allowance:** Monthly subsistence allowance @ Rs 3000/- per family/month for one year, plus a one-time cattle shed/equipment grant	• **Anti-Alienation Controls:** The *Gram Sabha* acts as a legal barrier against the alienation of tribal agricultural land, requiring explicit community consent before any agrarian zone is converted or submerged. • **Livelihood Restructuring:** Local approval needed for crop transition plans.
10	**Disruption of Community Cohesion** *(Splitting of clans & social networks)*	• **Cluster Resettlement:** Mandates that affected communities, particularly Scheduled Tribes, must be resettled as a **compact community cluster** in a distinct zone to maintain their social unit • **Common Infrastructure:** Compulsory development of common community halls, grazing grounds, burial sites, and religious places.	• **Safeguarding Social Institutions:** Explicitly forbids the state from breaking up tribal clans. Customary laws, traditional community management systems, and religious practices must be legally protected during relocation. • **Communal Dispute Resolution:** Ensures the *Gram Sabha* handles internal resettlement disputes.

11.2. Provision of Infrastructural Amenities

The Third Schedule [See sections 32, 38(1) and 105(3)]

For resettlement of populations, the following infrastructural facilities and basic minimum amenities are to be provided at the cost of the Requisitioning Authority to ensure that the resettled population in the new village or colony can secure for themselves a reasonable standard of community life and can attempt to minimize the trauma involved in displacement.

1. Roads within the resettled villages and an all-weather road link to the nearest pucca road, passages and easement rights for all the resettled families be adequately arranged.
2. Proper drainage as well as sanitation plans executed before physical resettlement.

3. One or more assured sources of safe drinking water for each family as per the norms prescribed by the Government of India.
4. Provision of drinking water for cattle.
5. Grazing land as per proportion acceptable in the State.
6. A reasonable number of Fair Price Shops.
7. Panchayat Ghars, as appropriate.
8. Village level Post Offices, as appropriate, with facilities for opening saving accounts.
9. Appropriate seed-cum-fertilizer storage facility if needed.
10. Efforts must be made to provide basic irrigation facilities to the agricultural land allocated to the resettled families if not from the irrigation project, then by developing a cooperative or under some Government scheme or special assistance.
11. All new villages established for resettlement of the displaced persons shall be provided with suitable transport facility which must include public transport facilities through local bus services with the nearby growth centres/urban localities.
12. Burial or cremation ground, depending on the caste- communities at the site and their practices.
13. Facilities for sanitation, including individual toilet points.
14. Individual single electric connections (or connection through nonconventional sources of energy like solar energy), for each household and for public lighting.
15. Anganwadi‘s providing child and mother supplemental nutritional services.
16. School as per the provisions of the Right of Children to Free and Compulsory Education Act, 2009 (35 of 2009);
17. Sub-health centre within two kilometres range.
18. Primary Health Centre as prescribed by the Government of India.
19. Playground for children.
20. One community centre for every hundred families.
21. Places of worship and chowpal/tree platform for every fifty families for community assembly, of numbers and dimensions consonant with the affected area.
22. Separate land must be earmarked for traditional tribal institutions.
23. The forest dweller families must be provided, where possible, with their forest rights on non-timber forest produce and common property resources, if available close to the new place of settlement and, in case any such family can continue their access or entry to such forest or common property in the area close to the place of eviction, they must continue to enjoy their earlier rights to the aforesaid sources of livelihood.
24. Appropriate security arrangements must be provided for the settlement, if needed.
25. Veterinary service centre as per norms

The rehabilitation of villages/ houses is proposed at the nearest habitation

11.3. Community-Based Ecotourism and Livelihood Development

A tourism development plan for these Indigenous and tribal communities helps to improve local livelihoods, preserve cultural heritage, protect forests and biodiversity, and promote sustainable, community-led economic development. The detailed proposed plan tob be developed through consultation with tribal Gram Sabhas, women’s groups, youth, traditional leaders, and relevant government departments.

The tentative plan suggested based on survey is as below

1. Village-wise tourism products and livelihood opportunities: The following is a proposed menu of activities. There may be addition

- ✓ Community homestays and village hospitality
- ✓ Guided nature trails and landscape interpretation
- ✓ Local food, catering and traditional cuisine
- ✓ Handicrafts, local products and cultural experiences
- ✓ Agro-tourism and farm-based experiences
- ✓ Non-tourism livelihood enterprises

2. Training programme: Arrange Training following training program in local languages and practical demonstrations. Where appropriate, training certificates should be linked to recognised skill standards.

   - ✓ Hospitality, guest relations and homestay management
   - ✓ Nature guiding and interpretation
   - ✓ Food hygiene and safe food preparation
   - ✓ Craft quality, pricing, packaging and marketing
   - ✓ Entrepreneurship, bookkeeping and cash management
   - ✓ Digital booking, customer communication and payments
   - ✓ First aid, emergency response and visitor safety
   - ✓ Environmental safeguards and cultural protocols

3. Applicable government schemes and policy framework

Following are the various schemes

- ✓ Development of Homestays in Tribal Areas — Swadesh Darshan / PM-JUGA

The Ministry of Tourism issued guidelines for a tribal homestay sub-scheme under Pradhan Mantri Janjatiya Unnat Gram Abhiyan. Published scheme information describes assistance of up to ₹5 lakh for eligible village community requirements, up to ₹5 lakh for construction of two rooms per household and up to ₹3 lakh for renovation of existing rooms

- ✓ Maharashtra Tourism Policy 2024

The amended policy includes tribal, rural, agro, eco and experiential tourism among the state's tourism development themes. The Directorate of Tourism provides registration and eligibility-related processes for tourism entities

- ✓ Maharashtra Ecotourism Policy and Forest Department guidelines

Maharashtra's ecotourism policy and associated government guidance address community participation, site development and environmentally responsible tourism. The state's ecotourism portal lists national ecotourism strategies and sustainable tourism guidance for forest and wildlife areas

- ✓ Pradhan Mantri Janjatiya Vikas Mission (PMJVM)

The Ministry of Tribal Affairs identifies PMJVM as a tribal livelihood programme supporting the development and marketing of tribal products and produce, including relevant value-chain interventions

For assessing the applicability of tribal homestay development schemes, relevant government policies, eligibility criteria, funding provisions and application procedures.

11.4. Budgetary Provision for Rehabilitation:

Budgetary of rehabilitation is of Rs. 32450.13 Lakh including Private and Revenue Land Acquisition

Additional budget for Baseline, village plans and feasibility, Community institution development, skill training etc. will be of Rs. 200/- Lakh

12. Risk Assessment, Occupational Safety & Health Management

Risk assessment shall be carried out for the construction and operation of dams, reservoirs, tunnels, rising mains and pumping stations to identify potential hazards such as dam failure, flooding, slope instability, pipeline rupture and workplace accidents.

Dam Break Analysis shall be undertaken for the dams to assess potential downstream inundation, identify vulnerable villages and infrastructure, and support the preparation of inundation maps, early warning systems and evacuation plans.

Occupational safety measures shall include PPE, worker training, regular safety inspections, first-aid facilities and emergency response arrangements. A Disaster Management Plan shall be implemented in coordination with the concerned authorities to minimize risks to workers, nearby communities and the environment.

13. Post Project Environmental Monitoring Plan

Post-project environmental monitoring will be carried out to assess the effectiveness of the mitigation measures proposed in the EIA/EMP. The monitoring parameters, locations and frequency will be determined as per the conditions stipulated in the Environmental Clearance, Forest Clearance and other applicable statutory approvals, along with the guidelines issued by MoEFCC, CPCB, MPCB and other concerned authorities. Environmental monitoring will be undertaken through laboratories accredited by NABL and/or recognized by MoEFCC, as applicable. The monitoring results will be documented and submitted to the concerned authorities as per the applicable requirements.

14. Environmental Management Measures

The Environmental Management Plan (EMP) for the proposed Nar–Par–Girna River Linking Project will focus on minimizing adverse environmental and social impacts during construction and operation. The key measures will include dust and noise control, protection of surface and groundwater quality, proper muck and waste disposal, soil erosion prevention, biodiversity conservation, plantation using native species, occupational health and safety, and community safety. Adequate financial and institutional arrangements will be made for effective implementation and monitoring of all mitigation measures.

15. Budgetary Allocation for Environment Management

Table 1.15 Costing for Environment Management

Sr. No	Pollution Control & Other Environment Infrastructure	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
1.	Ambient Air Quality	-	50.00
2.	Noise Level	-	45.00
3.	Surface and Ground Water Quality	-	40.00
4.	Soil Quality	-	35.00
5.	Solid/ hazardous wastes	20.00	15.00
6.	Green Belt Development	404.360	50.00
7.	Fisheries Conservation & Management Plan	316.00	
8.	Labour Management Plan	40.00	
9.	Wildlife Conservation Plan	90.00	

Sr. No	Pollution Control & Other Environment Infrastructure	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
10.	Muck Management Plan	50.00	
11.	Health & Safety	-	25.00
12.	Command Area Development Plan	4166.580	
13.	Corporate Environmental Responsibility	3730.00	-
14.	Rehabilitation and Resettlement	32450.13	
15.	Catchment Area Treatment Plan	2000.00	
Summary of allocation of fund for EMP			
1.	EMPs: (eg.: Air Environment, Water Environment) (in Lakhs)	Rs. 43267.07	
2.	Capital Cost of the Project (in Cr.)	Rs.7465.29	
3.	Recurring Cost per annum (In Lakhs)	Rs. 260.00	

16. Corporate Environment Responsibility (CER)

Corporate Environment Responsibility (CER) activities for the proposed Nar–Par–Girna River Linking Project will be planned based on the needs of local communities in the project-affected areas of Nashik and Jalgaon districts. The activities will focus on healthcare, education, drinking water facilities, water conservation and harvesting, agricultural development, sanitation, infrastructure improvement, livelihood enhancement and environmental protection, considering the specific needs of the surrounding villages.

The project proponent will implement CER activities in accordance with applicable MoEFCC guidelines and directions. The proposed activities will be identified in consultation with the District Collector and other concerned authorities and will form part of the Environmental Management Plan (EMP). The identified CER activities will be completed within three years or by the end of the construction phase, whichever is earlier, subject to applicable requirements.

A CER budget of 0.5% of the project cost, amounting to **INR 37.30 Crore,** will be allocated for implementing need-based CER activities in the project area.