

Executive Summary
For
Chondhi Larger Minor Irrigation Project ,At
Chondhi, Tal: Sangrampur, Dist :Buldana



Buldana Irrigation Project Circle, Buldana
Vidarbha Irrigation Development Corporation, Nagpur

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1.0 Project Background

Vidarbha Irrigation Development Corporation VIDC, Nagpur, was formed by Govt. of Maharashtra having main objective to cater the need of water for irrigation in north Maharashtra region. VIDC has many experienced engineers who have completed projects successfully.

Tapi is a second largest west flowing river of peninsula which originates near multai in Baitul district of Madhya Pradesh at an elevation of 752 M. In the head reach of about 241 kms the river traverses through an open and partially cultivated plain before it is proposed to be plugged in to the rocky gorge in Satpuda hills. In the next reach of 290 kms the river enters in Jalgaon and Dhule district of Maharashtra state In this reach, it confluence with Purna and Girna the major tributaries on left bank. Waghur, Bori ponzara, Burai are also the left bank tributaries. These tributaries are comparatively of longer length with fairly exclusive individual drainage exerts Suki, Mor, Gul, Aner, Amarawati and Gomai are the tributaries on right bank of Tapi river having origin in Satpuda ranges and flowing generally south west. In the last transverse of 214 kms, the river passes though Gujarat state and finally confluencing in to the Arabian Sea near Surat. The Ukai Dam and Kakrapara weir are constructed on river Tapi in this reach of Gujarat.

1.1 Need of the Project

It is specially mentioned here that benefitted talukas of Buldhana district belong poor irrigation, also in every hot seasons there is a very much shortage for drinking water to people and animals. Sangrampur taluka falls in D.P.A.P zone. The average rain fall of this taluka is 28.46". To increase the agriculture produce in the irrigated area there is a very deep water table. The farmers of this area have to depend on rains, hence the project is proposed to fulfill the demand of farmers of this area

2.0 Present proposal

Chondhi L. M. I. project is located at 0.5 km U/S of village Chondhi, across Adach river in taluka Sangrampur, district Buldhana. An earthen rolled filled dam is proposed across Adach river to a length of 5370 m including the 120 m long Poondy type spill way to irrigate an area of 950 ha. This Adach river directly meets Purna, a major tributary of Tapi river.

2.1 SALIENT FEATURES OF CHONDI L.M.I. PROJECT

No.	Scope	Particulars	Unit
1	Name of the Project	Chondhi L.M.I. Project	
	State	Maharashtra	
	Region	Vidarbha	
	District	Buldhana	
	Taluka	Sangrampur	
	Village	Chondhi	
2	Location		
	Topo Sheet no.	55 C / 12, 55 D /9	
	Latitude	20° 58' 56"	N

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	Longitude	76° 37' 55"	E
3	River basin		
	Name of the River	Adach river	
	Basin	Tapi	
	Sub Basin	Purna	
4	Total Catchment area	90.625	km ²
	Free catchment	76.895	km ²
	Classification	Avarage	
5	Rain Fall		
	Rain Fall guage station	1] Sangrampur, 2] Jalgaon Jamod	
	50 % Dependable Monsoon run off	11.273	cm
6	Storage Capacity	Original Revised	
	Dead Storage	0.5397 0.5397	Mm ³
	Live Storage	7.8698 6.4850	Mm ³
	Gross Storage at F. R. L.	8.4095 7.0248	Mm ³
7	Details of Dam / Barrge		
	Type of Dam / Barrge	Rolled Filled Earthen Dam	
	Max. height of Dam / Barrge	16.10	M
	Length of Dam	5370	M
8	Canal		
	Total Length of main canal [R.B.C.]	5	km
9	Submergance		
	Total area under submergance	234.17	ha
	Private Land	234.17	ha
	Forest Land	Nil	
	Village affected	nil	
	Submergance Ratio	24.64	%
10	Details of Command		
	G.C.A.	1484	ha
	C.C.A .	1188	ha
	I.C.A.	950	ha
	Taluka Benefitted	1] Sangrampur 2] Jalgaon Jamod	
	Cost / Ha of Irrigable area	6.015	Lakh / ha
	B.C. Ratio	0.601	< 1.00

2.2 Location of the Project

Chondhi L. M. I. project is loated at 0.5 km U/S of village Chondhi across the Adach river in Sangrampur tahasil of Buldana district. The project site is approachable from Sangrampur tahasil place about 12 km away.

Geographic Location of Site

Topo sheet No. :- 55 C / 12 and 55 D / 9,

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Latitude 20° 58' 56" N

Longitude 76° 37' 55" E.

2.1 Access and Road ways

The proposed dam site of Chondhi L. m. I. project is approachable from Khamgaon , about 45 km via Jalamb Rly. Station. The project site is also approachable from Sangrampur which is 12 km from Chondhi village.

2.2 Villages in Command Area

No.	Name
1	Chondhi
2	Takaleshwar
3	Kauthal
4	Bhendwak bk.
5	Pesod
6	Madkhed bk.

2.3 Main Features Of The Project

1) Administrative approval

This scheme was administratively approved by Vidarbha Irrigation Development Corporation Nagpur vide Marathi letter no. VIDC/MD/PV/-I/New AD> Approval/15199 DT. 4/10/1999 for Rs.16185.52. As sufficient yield and favorable foundation condition for construction of water retaining structure tends to construct barrage on Adach river, tributary of Purna river near Chondhi, Taluka Sangrampur, Disrict Buldhana, Maharashtra according to drawing & design for the project report has been prepared.

Survey & investigation:-

The reconnaissance survey and toposheet study of Chondhi L. M. I. project was approved by Supt. Engineer, I. P. & W. R. I, circle, Amaravati vide letter no. 54 / ZTS – 2 / Chondhi dated 9/1/09. After that detailed survey and investigations were carried out by field officers.

G. T. S. Bench mark

Block counter survey of dam seat

The block counter survey of the dam seat have been carried out up to 0.5 km U/S and 0.5 km D/S from centre line with levels at 30 m interval.

Submergence survey

The submergence area have been surveyed comprising 60 x 30 m with levels extending up to R. L. 270.00 m i. e. 2.00 m above T. B. L. of proposed dam.

Foundation exploration

The trial bores are taken along the dam line. On the bore observation, survey and investigation, general lay out of the scheme is planned and a cross section of earthen dam is adopted.

Main canal survey

The length of present Right bank canal is 5.0 km.

Soil survey

Since this is a larger minor project, soil survey is not carried out at this stage.

Present and future upper and lower utilization At present, there is no major and medium project on this river.

Existing irrigation practice

At present in few & scattered wells is in practice in this area.

Keeness of farmers

The farmers of this area mostly depend on monsoon. The trend of cultivating cotton ordinary, Hy. Jowar, crop and using fertilizer is increasing day by day. An irrigation demand is thus already built up and as such irrigation project in this area.

2.4 Submergence

2.4.1 Acquisition of land

It is to acquire land up to F. R. L. 263.250 m. As per guide lines contained in circular issued by Govt. of Maharashtra, irrigation department no. MIP / 3762 / 71489 / IP [2] dated 17.01.75 and its corrigendum no. MIP / 2274 / 1977 / IP [3] dated 31.01.75. The total area to be acquired at this R. L. is 234.17 ha. This consists of total private land. This land rates for acquisition of private land are obtained from the Sub Registrar, Sangrampur.

Submergence ratio

Ratio of area likely to be submerged to area that would be irrigated is 24.64 %.

Submergence of existing road

No existing road is going under submergence.

Submergence of historical monuments, temples etc.

No monuments of historical or archeological importance of temples, mosque etc. are going under submergence.

Submergence of existing electric line

The provision for diversion of electric line is made on the lump sum basis.

Hydrology

The following discussion deals with method of estimation of yield on basis of present practice of Science of Hydrology. This needs the rain gauge data over a number of years, characteristics of drainage area, data of river gauging stations etc. The available data is used to arrive at the best estimation of yield on the basis of empirical methods and rain fall run off co-relation.

2.4.2 Gauging stations.

There are two influencing rain gauge stations.

2.4.3 Catchment area and its sub division in relation to rain fall

Total catchment area of the river up to proposed dam is 90.625 km². The average monsoon rain fall of the catchment area works out to 11.273 cm.

2.4.4 Water Planning

A) Water requirement for crop.

The crop water requirement has been worked out by modified penman method for 1000 ha. For working out this water requirement following assumptions are made.

E.T.O. values for Buldhana station are given in Govt. circular MNS / 1082 /625 / MIN dated 16 /5/ 1983.

For working out effective rain fall in command area rain fall data for Sangrampur and Jalgaon Jamod stations for the year 1969 to 2008 has been considered.

The overall efficiency has been considered as 41 % by flow.

2.4.5 Annual utilization and storage planning

The net yield available for planning this project is 9.605 Mm³. The water requirement for 1000 ha is worked out as 5.239 Mm³ as stated above. A working table for utilization of this yield has been prepared to arrive at the annual irrigation. Following points are considered while preparing working table.

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- 1] Inflow % are calculated on average basis of actual monthly inflow for the year 1969 to 2008.
- 2] The monthly evaporation depths are considered.
- 3] 0.973 Mm³ water is reserved for drinking purpose.

The working table prepared on the above considerations indicates that the area that can be irrigated is 950 ha.

Controlling levels [M. D. D. L.]

The M. D. D. L. of the reservoir is fixed at R. L. 258.00 m. Considering the new zero elevation of 256.7 m arrived at 60 years, after accounting for the silt load of 2.768 Mm³ at the rate of 6 ha / 100 km² / year. The silt distribution up to FRL level has been done by empirical area reduction method. The silt level of outlet 257.08 m is well above the zero elevation. The canal bed level at starting point is 256.8 m and F. S. D. at starting point is 0.06 m Thus there is sufficient driving head for the flow of water.

2.5 Earthen Dam

Cut Off Trench

The C. O. T. is kept as recommended in C. D. O. code of practice for earthen dam. Detailed investigations for deciding the permeability of the strata will have to be carried out at the time of preparation of the detailed estimates for technical sanction and actual execution. The bottom width of C.O.T. is kept 3.0 and 5.0 m as respect to height for both the flanks, side slopes for the different strata into the C. O. T. are kept as below.

H : V

- | | |
|----------------|----------|
| 1) Soil strats | 0.5 : 1 |
| 2) Hard strata | 0.5 : 1 |
| 3) Soft Rock | 0.25 : 1 |
| 4) Hard Rock | Vertical |

Drainage arrangement below dam seat

The dam seat is proposed to be striped for an average depth of 0.6 m throughout the length of dam to have a firm base.

The drainage arrangement below dam seat is provided as below.

- a) Longitudinal drain At the toe of hearting zone
- b) Cross drain 30 m interval at 45⁰ angle
- c) Collecting toe drain 8.0 m beyond D/S toe of dam.

Rock toe

A rock toe of height $H/6$ H being the height of dam at that place is proposed at the down stream of the dam. The inner slope of the rock toe is 1 : 1 and the D/S slope is corresponding to the D/S slope of dam at that place. An inverted filter is provided along the inner slope of rock toe.

Section of the dam

Section of the dam is adopted as per CDO code of practice.

- 1) The top width of the dam width of dam is kept at 4.5 m.
as per CDO code of practice
- 2) Slopes
D/S slope 2: 1
U/S slope 2.5: 1
- 3) Hearting zone
Top width of hearting is kept as 3.00 m
Top level of hearting is kept as 266.25 m
U/S & D/S slope for hearting zone are provided as 1 : 1
- 4) Inclined filter Inclined filter of 1.00m thickness is provided on the D/S slope
of the hearting zone

U/S slope protection

Stone pitching of 30 cm thick over a bedding of 0.15 m backing. The pitching is provided from T. B. L. to L. S. L.

D/S/ protection

Pitched drains and c gutter are provided along the D/S slope and berms to drain out the rain water.

Head regulator

The head regulator for regulating flow of water in the canal on right bank is located R.D. 2880 m in earthen dam section.

The irrigation proposed by this project is 950 ha. The discharge required at canal head to provide irrigation to the entire area is 0.670 Cumes as worked out on the basis of peak demand by modified Penman method.

Hydraulic Design

The hydraulic design of Head regulator has been done to pass the peak discharge at the lower water level with a minimum driving head that would be available. The broad details of the H. R. are as below

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1. D. S. L.	254.895 m
2. Normal depth of flow in conduit	0.90 m
3. Entrance and exit loss at sluice gate	0.095 m
4. Conduit gradient	1 :100
5. Outlet sill level at inlet	257.08 m
6. C. B. L. at starting point	256.8 m

The energy dissipation arrangements are provided to dissipate the energy generated due to high heads. These drawings are tentative and for estimate purpose only. Detailed designs and drawings will have to be prepared after in depth investigations at the time of actual execution.

2.6 Pandy type waste weir

Location

The Pandy type W. W. has been located from RD 1200 m to 1410 m.

Maximum Flood Discharge

The maximum flood discharge from the total catchment area 90.625 km² is worked out by English formula and it is 1110.74 Cumec.

The Pandy type W. W. is designed for discharge of 1110.74 Cumec.

Type of waste weir

Taking into consideration the maximum flood discharge of 1110.74 Cumec. The Pandy type W. W. of length 120 m is proposed.

Approach road to dam site

The dam site of Chondhi L. M. I. project is approachable from Khamgaon , about 45 km via Jalamb Rly. Station. The project site is also approachable from Sangrampur which is 12 km from Chondhi village.

2.7 Canal and Command

Irrigation practice in command area

There is no irrigation facility as such in command area of the project. However, irrigation on wells is in practice but percentage is very less. The water table generally meets at a depth more than 20 m onwards, resulting in shallow wells at site.

Reaches of canals

The command area is proposed on, right flank only.

The entire command area is sub divided into two reaches as below

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Reaches	From [km]	To [km]	I. C A.
First [Main canal]	0.00	5.0	950 ha
		Total	950 ha.

The cropping pattern proposed for the project has been assumed uniform throughout the length of the canal. The canal alignment and reaches have been shown on index plan attached. For each separate canal, section has been proposed to achieve economy.

Canal capacity

The reach wise discharge requirement at distributor head has been worked out. The transit losses in main canal and branches have been considered in water planning, by modified Penman method assuming overall project efficiency of 41 %

2.8 Design of canal section

The main canal section has been designed to carry out peak discharge at anal head. For design, side slope of 0.50 : 1 has been adopted and for execution it will vary according to strata. Other assumptions are as below

1	Value of 'N'	= 0.035
2	Bed slop 'S'	= 1 : 1500
3	Velocity	= 0.4572 m /sec.
4	Free board	= 0.6 m.

Service roads and inspection path sr. no. 1 to 3 have been adopted according to discharge as per Govt. circular.

2.9 Alignment of canal

The total length of R. B. C. is 5.0 km. The survey for distributary is not carried out. The final alignment is surveyed considering main canal as a counter canal throughout its length. The F. S. L. of canal is generally kept with G. L. except at the crossing of the nalla. At the crossing of nalla, slab culvert, nalla inlet have been proposed.

In all crossings, loss of head has been, proposed according to type of structure as per standard practice. Loss of head for CTF, in main canal is also assumed.

Distribution system

The entire distribution system would be done by [a] distributaries [b] minors [c] water courses.

Detailed estimate for head regulator has been made in the proposal. The alignment of minors has not been fixed at this stage.

Regulator

These are proposed to direct water from the main canal to minors.

Cross regulators

This is proposed across main canal for heading up the water levels U/S of the main canal and diverting the same into the off taking channel. Two cross regulators are proposed.

Outlets

These are proposed on main canal itself to divert water into water courses. In all direct outlets and tail outlet are proposed.

Cross drainage works

These are proposed to take care of the canal over the nalla having catchment area between 1.5 to 2.0 km² in general.

H. P. culverts

In general these are proposed for the drainage having catchment area below 10 km².

Road bridges

Road bridges have been proposed where the canal crosses the existing village cart tracks.

Escapes

These are meant to take out surplus water from the canal, when H. R. gets functioning disorderly.

In case of breaching of canal banks, two no. of escapes including tail escape have been proposed in the estimate.

Design of canal structure

Detailed design of canal structures has not been done at this stage.

This will be done at the time of sanction when sufficient details of foundation will be available.

3.0 Baseline Status of Environment

3.1 Geography

Buldhana, the head quarter of the district has Latitude 19° 58' 47.43" N and Longitude 76° 30' 37.81 " E, and has 528 m MSL.

Buldhana is the western most district of Vidarbha. It lies between 19°51' and 21°17' north latitudes and 75°57' to 76° 59' east longitudes and falls in Survey of India Topo sheets 55 / A, 55 / C, 55 / D and 55 / P. The district covers a total geographical area of 9661.00 km². Administrative divisions (as on 31/03/2007) cover 13 Talukas, Buldhana, Mohala, Malkapur,

Nandura, Jalgaon (Jamod), Sangrampur, Shegaon, Sindkhed Raja, Khamgaon, Chikhli, Mehkar, Lonar and Deulgaon Raja.

3.2 Micrometeorology

Being far away from the coast there are large variations in temperatures in the district. Skies are generally clear or lightly clouded except during the monsoon when heavily clouded to overcast conditions prevailed. Again, except during the monsoon, the air is generally dry, particularly in the afternoon. Summer is the driest part of the year.

The year may be divided into four seasons. December to February form cold season followed by the hot season from March to May. The monsoon season is from June to September while October and November form the post monsoon. December is the coldest month. The cold waves over Northern India sometimes affect the district and minimum temperature may drop to within a few degrees above 0° C. Temperature rises steadily from March to May, the hottest month of the year, the mean daily maximum temperature reaches 42.5 0° C.

3.2.1 Rain fall

Normal annual rain fall in this district is in between 700 to 900 mm. It is the minimum in the northern parts of the district around Malkapur (711 mm) and Jalgaon (Jamod) (719 mm). Normally annual rainy days are 40 to 48. The average annual rain fall of last ten years (1996-2005) in the district varied from 539 mm (Nandura) to 845 mm (Sindkhed Raja

The river gauging station is at Sangrampur and Jalgaon Jamod. For estimation of yield rain fall, run off, co-relation equation developed for Jigaon project.

3.3 AIR ENVIRONMENT

Air quality depends on concentration of Suspended Particulate Matter, Sulphur Dioxide and Oxides of Nitrogen present in air. A wide variety of sources change SPM in ambient air like industrial process emissions construction activities, vehicular emissions, dust, storms, stone crushing and screening activity etc.

Ambient air motoring was carried out 6 locations Chondhi, Takleshwar, Kauthal, Wadshingi, Niwana and Wanwat Khandere. within buffer zones of the proposed project during Dec 2012 to Nov 2013 representing entire year.

3.4 NOISE ENVIRONMENT

Noise level has been observed around 4 locations such as Project site, i.e Chondhi, Takleshwar, Kauthal, Wadshingi, Niwana and Wanwat Khandere., for three seasons. Noise level was observed in the range of 50 to 54 dBA, thus below CPCB standards.

3.5 LAND ENVIRONMENT

Land use pattern

It is a measure of effect of activities of men in the surrounding on land. More the damage, more is the effect. One of the most important aspects of EIA is the checking the land use pattern.

Land use pattern of the district in Ha. can be put forth as follows:

Geographical area 967, Cultivated area 740, Forest 54, land under non agricultural use 41, permanent pastures 29, cultivable waste land 32, land under miscellaneous tree crops and groves 10, barren and uncultivated land 42, current fallows 14, other fallows 17.

Land use pattern

Forest Area (2001-02) : 561 sq. km.

Net Area Sown (2000-01) : 6582 sq. km.

Cultivable Area (2000-01) : 7264 sq. km.

3.6 Soil Quality

There are mainly three types of soil observed in the district.

- 1) Shallow and gravelly reddish soil of Satpudas
- 2) Deep and clayey black soil of Purna Alluvium
- 3) Shallow and black, brown or reddish soils of Ajanta ranges

The Satpudas have shallow, gravelly and stony reddish soils. The soil over the piedmont deposits is coarse, highly friable and is locally known as Malli soil and is well suited for horticulture. To the south of the Satpuda piedmont, the Alluvial plains are covered by deep Alluvial soil, locally known as Bharkali soil, which are deep black, very fine in texture and highly retentive of moisture. Southwards away from the river, the soils are replaced by Kali regular soils, which are moderately deep. The soils of the plateau are Bhorandi or Khelk, a thin yellowish coarse soil, often less than half meter deep. The upper plateau is generally covered by shallow, black, brown or reddish soil. These are locally known as Barad soils.

3.7 Cropping Pattern

Nature of sub surface soil

The sub surface soil in the command area is generally black cotton medium soil. These types of soils are suitable for crops like Cotton, Hy. Jowar, pulses, chillies, Wheat, gram and oil seeds.

Existing cropping pattern

The existing cropping pattern has been compiled on the basis of Agricultural statistical data. The existing cropping pattern consists of ordinary Cotton, Hy Jowar, ground nut, vegetables, pulses, gram, sunflower etc. The existing cropping pattern is given below,

Proposed cropping pattern

The command area of the project is situated in agro climatic zone no. IV. The average monsoon rain fall in command area is 11.273 cm, as per rain fall figures of Sangrampur and Jalgaon Jamod rain guage stations from the year 1969 to 2008. The copy of approved crop pattern is adopted at nearby site in Sangrampur and Jalgaon Jamod tahasil which is by taluka

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Agricultural Officer, Jalgaon Jamod. Accordingly the crop water requirement for 1000 ha is worked out as 5.239 M m³ by flow.

Crop pattern [existing and proposed]

The copy of approved crop pattern is adopted at nearby site in Sangrampur and Jalgaon Jamod tahasil which is by taluka Agricultural Officer, Jalgaon Jamod.

3.8 WATER ENVIRONMENT

Surface water and Ground water resources have been studied for the project to study the quality of water to evaluate the impact on the water resource. A number of samples have been taken both for surface and ground water within study area covering three districts i.e Chondhi, Takleshwar, Kauthal, Wadshingi, Niwana and Wanwat Khandere. Sampling location and analysis was carried out.

3.9 ECOLOGY

Fauna and Flora

Some of the common flora in command area

Sr. No.	Common Name	Scientific Name
1	Amba	<i>Mangifera indica</i>
2	Sitaphal	<i>Annona squamosa L.</i>
3	Ashok	<i>Polyalthia longifolia</i>
4	Saptaparni	<i>Alstonia scholaris</i>
5	Kaner	<i>Nerium indicum</i>
6	Sadaphuli	<i>Vinca rosea</i>
7	Tad	<i>Borassus fabellifer</i>
8	Coconut	<i>Cocos nucifera</i>
9	Rui	<i>Calotropis gigantea</i>
10	Dagadipala	<i>Tridax procumbens</i>
11	Neel Gulmohor	<i>Jacaranda mimosefolia</i>
12	Shalmali	<i>Bombax ceiba</i>
13	Bahava	<i>Cassia fistula</i>
14	Cassia	<i>Cassia javanica</i>
15	Cassia	<i>Cassia siamea</i>
16	Takla	<i>Cassia tora</i>
17	Gulmohar	<i>Delonix regia</i>
18	Copper pod	<i>Peltophorum ferruginium</i>
19	Chinch	<i>Tamarindus indica</i>
20	Motha	<i>Cyperus spp.</i>
21	Palash	<i>Butea monosperma</i>
22	Gokarna	<i>Clitoria ternatea</i>
22	Karanj	<i>Pongamia pinnata</i>
23	Mehndi	<i>Lawsonia inermis</i>
24	Jaswand	<i>Hibiscus rosasinensis</i>
25	Bakan neem	<i>Melia azedarach</i>

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26	Australian babool	<i>Acacia auriculiformis</i>
27	Kala shirish	<i>Albizia lebbek</i>

B. FAUNA

a. Birds		
1	Sparrow hawk	<i>Accipiter nisus</i>
2	Pariah Kite	<i>Milvus migrans</i>
3	Common Blue Kingfisher	<i>Alcedo atthis</i>
4	White breasted Kingfisher	<i>Halcyon smyrnensis</i>
5	Little Egret	<i>Egretta garzetta</i>
6	Common Sandpiper	<i>Tringa hypoleucos</i>
7	Redwattled Lapwing	<i>Vanellus indicus</i>
8	Crimson breasted Barbet	<i>Megalaima haenacephala</i>
9	Indian Ring Dove	<i>Streptopelia decaocta</i>
10	Blue Rock Pigeon	<i>Columba livia</i>
11	House Crow	<i>Corvus splendens</i>
12	Crow pheasant	<i>Centropus sinensis</i>
13	Koel	<i>Eudynamys scolopacea</i>
14	Black Drongo	<i>Dicrurus adsimilis</i>
15	Swallow	<i>Hirundo rustica</i>
16	Yellow Wag Tail	<i>Motacilla flava</i>
17	Magpie robin	<i>Copsychus saularis</i>
18	Indian Robin	<i>Saxicoloides fulicata</i>
19	Purple Sunbird	<i>Nectarinia asiatica</i>
20	Purple rumped Sunbird	<i>Nectarinia zeylonica</i>
21	House Sparrow	<i>Passer domesticus</i>
22	Baya	<i>Ploceus philippinus</i>
23	Rose-ringed Parakeet	<i>Psittacula krameri</i>
24	Redvented Bulbul	<i>Pycnonotus cafer</i>
25	Common Myna	<i>Acridotheres tristis</i>
b. Mammals		
1	Common Langur	<i>Presbetis entellus</i>
2	stripped Squirrel	<i>Funambulus penanti</i>
3	Common Jackle	<i>Cannis aureus</i>
4	Wolf	<i>Cannis lypuspallipes</i>
5	Mongoose	Herpestes-
6	Indian Hare	Lepur-Nigricollis
7	Wild Pig	Sus-screfa
8	Fruit Eating Bat	

	c. Reptiles	
1	Common garden lizard	
2	Cobra	
3	Russel viper	
4	Rat Snake	

3.10 SOCIO-ECONOMIC

In an EIA study, assessment of Socio-economic environment effects plays a key role. Presence of Demography, Occupational Structure, Community Services such as Post Offices, Post & Telegraph Offices, Telephone, Educational and Health Care Facilities, Banks and Co – Operative institutes, social and Cultural Institutions are observed in command area.

4.0 IMPACT PREDICTION AND MITIGATION MEASURES

4.1 IMPACT DURING CONSTRUCTION PHASE

Main activities in construction phase for pump house, rising main, distribution chambers, canals involve demolishing, excavating, leveling, drilling, blasting will cause some impact on environment. An increase in the level of pollutants will be kept within CPCB limits.

4.2 IMPACT DURING OPERATION PHASE

Air Environment

Later to construction phase no operation will create any effect on air quality I pump house, rising main area. Impact will be solely due to any vehicular traffic on roads. It may be stated that no threat can be there to ecology.

Noise Environment

Working of pumps will lead to noise levels, it will be maintained in lower frequencies by keeping pumps in noise resistant cabins. Thus the said impact will be quite low. Thus noise levels will be at minimum level and will not affect in operational phase.

Water Environment

Pumped water shall be used to supply to farms. As local needs are fulfilled, it will show some positive impact.

Land Environment

Acquired land for pump, rising main, canal will bring about permanent alteration in topography of the region. A positive impact of the scheme will fetch hand some returns. Area under irrigation and cultivation will be more.

Biological Environment

In operational phase tree plantation program is proposed. It will raise vegetation, growth in ecology.

Socio Economic Impact

Availability of water for crops will raise crop yield resulting in both direct and indirect rise in employment. It will help initiation of agro based industry like cattle feed, dairy and linked products, fruit based products, fodders. Finally people will experience wealth and stability in life.

Irrigation Projects and Mitigation Measures

Impact	Mitigation
Deterioration of irrigated land	Match the demand of water how much and when
Salinization	Provide drainage including disposal of water to evaporation ponds if quality of river flow adversely affected by drainage water.
Alkalization	Prevent seepage through maintenance of channel, and reduce inefficiencies resulting from siltation and weeds
Water logging	No water logging will observed
Soil acidification	Analyze soils and monitor changes so that potential problems can be managed
Increased incidence of water related disease	Educate about causes of disease.
Weaker community infrastructure	Allow sufficient time and money for extensive public participation to ensure that plans are optimal, that all sections of affected society are considered and that local institutions are in place to sustain irrigated agriculture, particularly in respect of land and water rights.
	Consider markets, financial services and agricultural extension in conjunction with proposed irrigation and drainage changes.
	Ensure that agricultural intensification does not preclude other economic or subsistence activity, such as household vegetables, fodder or growing trees for firewood.
	Provide short-term support and/or skills for an alternative livelihood if irrigation removes existing livelihood
Reduction in irrigation water quality	Control waste disposal in water bodies
	Educate for pesticide or sewage contamination dangers.
	Monitor irrigation water quality
Ecological degradation	Define ecological requirements.
Ground water depletion	Define and enforce abstraction regulations.
Dry drinking & irrigation wells	Monitor ground water levels.

5.0 ENVIRONMENT MANAGEMENT PLAN

Insurance of an optimum EMP will definitely bring about the use of water supply to the region and people. It will make possible for the project proponents to distribute necessary funding to implement and create a needed socio-economic environment in improvement of life quality of the people.

5.1 DURING PRECONSTRUCTION PHASE

Tree cutting

It will occur on bare and unused part of land or cultivated land with no crop, tree cutting will hardly occur. In order to save existing trees circular iron cages will be arranged.

Baseline parameters

Air, water, soil and noise quality was checked, recorded. Optimum measures will be arranged to keep them as per norms.

Traffic arrangement

At respective location like rising main, pump house and canals, supply of construction material will be done. It covers regular survey, avoiding of crowd and traffic jam and chiefly safety of the hazardous materials in transit.

Material storage

At exact locations provision is made to store the construction material.

Labour houses

It proposed that no labour houses will be allowed. For this local labour will be preferred. They will be supplied with water and other facilities.

5.2 DURING CONSTRUCTION PHASE

All infrastructural items will be included in EMP with precise specifications. It will lessen the sensitivity of impact of each component. Thus EMP will be time specific, optimum to curtail both good and bad impacts.

The construction phase involves a preparatory phase during which the following activities have to be carried out

- Cleaning & Clearing of the site for construction of offices /residential quarters
- Clearing & cutting of forest in water spread area
- Transportation of heavy machinery & equipments & construction material
- Drilling, Blasting, Quarrying & transporting rock at the respective construction site

For mitigating the adverse impact during this phase, the following measures are suggested

- ❖ Provision of cut off drains and holding tanks, growing, different varieties of grass on the loose soil and on construction debris to prevent soil erosion and associated impacts
- ❖ Proper and adequate residential facilities with power, water supply and sanitation

Executive Summary for Chondhi LMI

- ❖ Proper supply of fuel needed by the labor to ensure that they do not cut trees in the region, treatment of domestic wastewater and garbage disposal
- ❖ Mobilization of local NGOs to generate environmental awareness among the local people with specific reference to the project activities and to achieve their participation in the developmental project

With a view to mitigate the adverse impacts due to air pollution arising from the project activities and to improve the aesthetics of the area the following measures are called for:

- ❖ Protection of workers and staff against dust emissions from drilling, blasting and transportation activities
- ❖ Suppression of dust by spraying water on haul roads, overburden, dumps, rocks and waste materials etc.
- ❖ Growing native plant species along the roads
- ❖ Proper design of green belt over the waste dumps
- ❖ Improved maintenance of machineries, vehicles etc. at quarry and construction sites

To minimize adverse impact due to noise, it is necessary to adopt the following measures:

- ❖ While procuring heavy machineries, equipment and vehicles proper care should be taken to check the measures taken by the manufactures to minimize noise generation
- ❖ Personal working near heavy machineries and blasting sites should be provided with well designed ear muffs/plugs
- ❖ Noise generating machineries and their platforms should be so maintained as to minimize vibrations
- ❖ The existing vegetation around the quarries and the construction sites should be well maintained to help in reduction of air pollutants and noise levels
- ❖ The depth, charge, matrix of holes and delay may be optimized to minimize vibrations caused by blasting operations
- ❖ Sound barriers essentially required to encircle the noisy zone of the main construction activity where drilling crushing preparation of concrete by rotary machines will be a continuous activity.
- ❖ Provision shall be made for sprinkling of water on loose soil to avoid dust generation
- ❖ The debris and unutilized construction material and earth from the construction site shall be removed immediately to recycle within the project so that no nuisance dust is generated due to wind
- ❖ The vehicles employed by the developers shall be checked for vehicular emissions.

The adverse impacts of soil erosion and sediment transport leading to turbidity in water, loss of top soil and reservoir sedimentation caused by the construction activities including quarrying, transport etc. can be considerably mitigated by taking appropriate measures as listed below:

- Identification of critically eroded areas in the catchment and undertaking soil conservation measures
- Restoration of construction sites, areas work places by leveling, filling borrow pits, landscaping of open areas planning of quick growing grasses, provision of cutoff drains and holding tanks etc.

Executive Summary for Chondhi LMI

- Cutting and removal of all vegetation including roots of plants, shrubs and trees in the reservoir submergence area to minimize deterioration in water quality due to decay of organic matter and depletion in oxygen content as a later date when the reservoir gets filled up
- Species of plants and trees tolerant to periodic inundation may be planted along the shoreline to improve the scenery, to mask unpleasant shore area and as protection against wind. Landing stages may be constructed and fitted into the reservoir landscape

5.3 DURING OPERATONA PHASE

There can be effect on creatures in water. This ecological scenario will be balanced by appropriate water levels at rising main, pump house and canals.

5.3.1 GREEN DEVELOPMENT PLAN

Implementation of plantation in the vicinity of the pump house, rising main and both banks of canals. Additional program of lawn, herb, shrub and tree plantation will make the area green.

Following Species will be planted :

	Botanical Name	Common Name
1	Aegle mameelos	Bel
2	Ailanthus exelsa	Maharukh
3	Albizzia lebbek	Shirish
4	Alstonia Scholaris	Satvin
5	Anthocephalous cadamba	Kadmb
6	Azadirachta Indica	Kadunimb
7	Bahunia purpuria	Rakta Kanchan
8	Butea monosperma	Palas
9	Cassia Fishula	Bahava
10	Cocus nucifera	Naral
11	Ficus bengalensis	Wad
12	Ficus glomera	Umber
13	Pongamia Pinnata	Karanj
14	Mangefera indica	Amba
15	Tectona Grandis	Teak
16	Nyctanthus arbortristis	Parijat
17	Casuarina equisetifolia	Suru

5.3.2 HEALTH ACTION PLAN

Correct irrigation of land is highly demanded and will be achieved by this project. Certain adverse effects on health may occur on them.

The change in environment equally effects the population living in the vicinity of the area. They are exposed to increased humidity, insects, and parasites. All these causes together are responsible for increased incidences of diseases and increased morbidity load on the area. It needs immediate effective actions through preventive, curative and primitive health services.

Objectives of Health Management

- To increase the coverage of prevention interventions for vector borne diseases amongst the population at risk
- To reduce morbidity due to malaria
- To prevent deaths due to malaria
- Industrial & Agricultural Development activities should not be affected due to malaria
- The gains achieved so far should be maintained.
- To enhance the access to early diagnosis and complete treatment
- To strengthen the technical and managerial capacity of the vector borne diseases control program and increase the leverage with private sector
- To increase the visibility of vector borne disease control program
- To undertake output based monitoring of the control program

5.3.3 Budget Provision for EMP

Adequate budgetary provisions have to be made by the Management of project for executing the Environmental Management Plan as delineated above. The details of project cost, annual recurring budget and capital investments to be earmarked for pollution control, operation/maintenance, social welfare measures, and for greenbelt development are as follows:

Sr. No.	Component	Cost Rs .in lakh
1	Lawn and garden	5.0
2	Sanitary Work	1.0
3	Plantation	20.0
4	Provision communication service	1.0
5	Environment Monitoring Program	3.0
	Total	30.0

6.0 Rehabilitation & Resettlement plan for Chondhi L. M. I. barrage project.

Action of proposal & in time completion of various size barrages & barrages on any river or tributaries results in multifold progress for people in down stream area of the river & barrage as increase in crops, water supply & irrigation needs, power generation etc. These are the goals in proposals & tried to achieve with some investment. Certainly it reflects in progress reports as rise in food grain capacity, power generation, rise in land in hectares for irrigated sector etc. Such public works are performed by PWD & Govt. bodies all over the world in past. Lacking to consider implications of the barrage site in many aspects has resulted in serious barrage to economic, socio-economic, environmental, psychological, cultural, family relation losses to the people in vicinity of the river & barrage taking place.

In all barrages the created water reservoir forms due to submergence of land near the upstream banks of the river and small canals as tributaries. Considering the extent of rain potential barrage sites are proposed. Mostly the catchment areas of rivers pass through hilly, rocky region. Due to existence near water body, land near the banks is fertile, yielding crops for generations. Farmers have deep relation with such lands for generations together and always resist displacing away. Such things are not considered while proposing barrage sites & thus apart from sacrifice such farmers are at a monetary loss for huge extent. It is part & parcel of the project that resettlement & rehabilitation of such people with exact due compensation. Always it said that people are affected due to barrage erection. ***The people who are forced to lose their lands & houses actually sacrifice for the same & thus can be termed as People Sacrificing For the Project, PSFP & not Project affected People, PAP.***

7.0 Disaster Management Plan

To be prepared in advance for any sort of disaster which may occur as a consequence of natural calamities is utmost important. Disaster control plan gives ideas to plan in advance to avoid & minimize to damage in all aspects. It is a team effort & remarkably pays if due attention is paid in time to plan & execute the action plan for disaster control. As the name suggests the team members in this plan are many & all must know their duties to perform their respective roles in least time, at positions asked & as per needs of the situation arises.

7.1 Main Committee Formation

As per details of the Chondhi L. M. I. project, Chief Engineer, Superintending Engineer, Executive Engineer of Vidarbha Irrigation Development Corporation, Buldhana & other officers in the same will jointly execute this disaster control plan (DCP) under capable guidance of Buldhana District Collector.

For most of the district administration & further contacts to State & Central Govt., District Collector holds a key & control position to enable him exact & in time efforts to avoid all types of losses, thus he will be ex officio Chairman of the Disaster Control Group for Chondhi L. M. I. project.

7.2 Following will be members of the EAP

1. District Collector, Buldhana Ex Officio Chairman
2. Chief Engineer, Vidarbha Irrigation Development Corporation, Nagpur
3. Executive Engineer, Projects, Amaravati.
4. Executive Engineer [Irrigation], Secretary.
5. Executive Engineer [Public works & Housing]
6. Executive Engineer Vidarbha Irrigation Development Corporation, Buldhana
7. Superintendent of the Police of District
8. Chief Executive Officer of Zilla Parishad
9. A representative of Post & Telegraph
10. A representative of Rail ways
11. A representative of State Transport Department
12. A representative of State Electricity Board
13. A representative of Civil Supplies Department
14. District Agriculture Officer
15. District Civil Surgen
16. District Publicity Officer
17. District Health Officer
18. Chief Fire Officer / Fire Station in charge of Corporation, Nagar parishad,
19. Chairman of sub committees of each village / town along Adach river on down stream.

8.0 Project Benefit

The benefits of irrigation projects now are well known worldwide. The irrigation projects benefits can be classed as Direct and Indirect Benefits

8.1 Direct Benefits include

- Production benefits i.e Increased Agriculture Yield.
- Increase Crop productivity
- Increase in crop area
- Increase in crop intensity
- Crop diversification
- More Commercial fish production
- Judicious use of water (25% water saving with use of micro irrigation)
- Use of Stored water for Industrial purpose
- Increased employment outside agriculture from increased crop output in related industries such as input industry (backward linkages) and output processing industries (forward linkages)
- Improvement in sanitation due to availability of more water

- Increased environmental benefits of water for in-stream flows, disposal of waste, wildlife, flora and fauna; increased farm forestry and vegetation in irrigated areas.
- Assurance of Food security
- Benefits of flood control from economic loss

8.2 Indirect Benefits include

- Increased employment in agriculture to increased cropping intensity, increased crop area and output from irrigation
- Increased employment outside agriculture from increased crop output in related industries such as input industry (backward linkages) and output processing industries (forward linkages)
- Positive impact on poverty reduction through increased productivity and increased employment opportunities
- Increased food security at national, regional and local levels
- Lower food prices for consumers, due to productivity gains and increased overall food supplies
- Improved nutrition, improved calorie intake and improved health

संक्षिप्त गोषवारा

चोंढी बृ.ल.पा प्रकल्प

१.० प्रस्तावना :

महाराष्ट्र राज्याने जास्तीत जास्त क्षेत्र लागवडीखाली आणण्यासाठी व धान्य उत्पादकता वाढविण्यासाठी सिंचन प्रकल्प हाती घेतले आहेत. राज्यातील शेतीचे क्षेत्र, जनतेची कृषीवरील निर्भरता आणि कृषीमालावर आधारित उद्योग पाहता प्रमुख्याने कृष्णा, भीमा, गोदावरी, तापी, वर्धा, वैनगंगा या नद्यांच्या खोऱ्यात लहान मोठ्या सिंचन योजना कार्यान्वित करण्यात आल्या आहेत. पाण्याचे योग्य प्रकारे नियोजन करून राज्यातील अधिकाधिक जमीन सिंचनाखाली आणणे हे यामागचे मुख्य उद्दिष्ट आहे. महाराष्ट्र सरकारने उत्तर महाराष्ट्राच्या पाण्याची गरज पूर्ण करण्यासाठी विदर्भ सिंचन विकास महामंडळाची निर्मिती केली. तापी नदी ही पश्चिम वाहिनी नदी भारताच्या मध्यप्रदेश, महाराष्ट्र व गुजरात या राज्यांमधून वाहते. तापी नदी मध्यप्रदेशातील बैतुल जिल्ह्यातील मुलताई जवळ उगम पावते. विदर्भ सिंचन विकास महामंडळाने संग्रामपूर व जळगाव जामोड तालुक्यातील लोकांच्या कल्याणासाठी प्रस्तावित चोंढी येथे बंधारा प्रकल्प योजिलेला आहे, त्यानुसार नापीक जमीन बंधारा बांधकामामुळे लागवडीयोग्य क्षेत्रात समाविष्ट होईल.

२.० प्रकल्पाची गरज :

संग्रामपूर तालुक्यात पिण्याच्या पाण्याचा प्रश्न गंभीर आहे. येथील लोक अनियमित मान्सूनच्या पावसावर अवलंबून असतात. म्हणून योग्य क्षमतेच्या जलसंधारणाची अत्यंत निकड आहे.

चोंढी बृ.ल. पा. प्रकल्प हा स्थानिक आडाच नदीवर प्रस्तावित आहे, ज्यावर मातीचे धरण बांधायचे आहे. ह्या धरणावर पुंडी प्रकारचा सांडवा अडाच नदीच्या उजव्या बाजूस प्रस्तावित आहे. अडाच नदी ही पूर्णा नदीची उपनदी आहे जी तापी नदीची प्रमुख उपनदी आहे. प्रकल्प स्थळ हे चोंढी गावाच्या उर्ध्व बाजूस ५०० मी. आहे. प्रकल्प स्थळी प्रामुख्याने दोन ठिकाणावरून पोहचता येते. खामगावरून जलंब रेलवे स्थानकामार्गे हे अंतर ४५ कि मी आहे व संग्रामपूर हे ठिकाण चोंढी हे गाव १२ कि.मी अंतरावर आहे. बुलडाणा जिल्हा हा कमी सिंचनक्षमता जिल्हा म्हणून ओळखला जातो. त्यामुळे अशा ठिकाणावर जास्तीत जास्त जागी पाणी अडवून सिंचनक्षमता वाढवण्याचा प्रयत्न केला गेला पाहिजे. चोंढी बृ.ल.पा.हा बुलडाणा जिल्ह्याची सिंचनक्षमता वाढवण्याचा असाच एक प्रयत्न आहे. सद्यस्थितीतील अहवालानुसार मातीच्या धरणाची लांबी ही ५३७० मी. व डाव्या बाजूला पुंडी प्रकारचा सांडवा. अहवालानुसार बुडीतक्षेत्राखाली येणारी जमीन ही २३४.१७ हे इतकी आहे. व त्यामध्ये एकाही गावाचा समावेश नाही. या प्रकल्पासाठी उपयोगात येणारे पाणी हे ७.०२४८ द.ल.घ.मी. आहे ज्यामुळे ९५० हे जमीन सिंचनाखाली येणार आहे. प्रकल्पासाठी उपयोगात येणाऱ्या पाण्यापैकी १.७६२० द.ल. घ. मी. इतके पाणी उद्योगाकरिता आणि पिण्यासाठी उपयोगात आणले जाणार आहे. या प्रकल्पाच्या पाणी साठ्याचा उपयोग हा ११८८ हे जमीन सिंचित करण्यासाठी उपयोगात आणला जाणार आहे.

चौंढी बृ.ल.पा प्रकल्प ता. संग्रामपूर, जि. बुलडाणा

ठळक वैशिष्टे

१	प्रकल्पाचे नाव	चौंढी बृ.ल.पा प्रकल्प		एकक
	राज्य	महाराष्ट्र		
	विभाग	विदर्भ		
	जिल्हा	बुलडाणा		
	तालुका	संग्रामपूर		
	गाव	चौंढी		
२	स्थान			
	मानचित्र क्र	५५ क/ १२,५५ ड /९		
	अक्षंश	२० ^० ५८' ५६" उ		
	रेखांश	७३ ^० ३७' ५५" पू		
३	नदीचे खोरे			
	नदीचे नाव	आडाच नदी		
	खोरे	तापी		
	उपखोरे	पूर्णा		
४	एकूण पाणलोट क्षेत्र	९०.६२५		चौ. किमी
	मुक्त पाणलोट क्षेत्र	७३.८९५		चौ. किमी
५	पर्जन्य			
	पर्जन्यमापक स्थान	संग्रामपूर		
		जळगाव जामोद		
	सतासरी पर्जन्यमान	११.२७६		सेमी.

६	साठवणक्षमता	मूळ	सुधारित	
	मृत साठा	०.५३९७	०.५३९७	मीमी ^३
	उपयुक्त साठा	७.८६९८	६.४८५०	मीमी ^३
	एकूण साठा	८.४०९५	७.०२४८	मीमी ^३
७	धरण तपशील			
	धरणाचा प्रकार	मातीचे धरण		
	महत्तम उंची	१६.१०		मीटर
	धरणाची लांबी	५३७०		मीटर
८	बुडीत क्षेत्र			
	पूर्णसंचय पातळीचे जलक्षेत्र	२३४.१७		हेक्टर
	खाजगी जमीन	२३४.१७		हेक्टर
	जंगल क्षेत्र	--		
	बाधित गावे	--		
	बुडीत गुणोत्तर	२४.६४		%
९	लाभक्षेत्र			
	सिंचन क्षेत्र	९५०		हेक्टर
	लागवडीलायक क्षेत्र	११८८		हेक्टर
	एकूण क्षेत्र	१४८४		हेक्टर
१०	प्रकल्पाचा लाभव्यय गुणोत्तर	०.६०१		

२.१ लाभक्षेत्रातील तालुके - संग्रामपूर, जळगाव जमोड

पर्यावरण आघात मूल्यांकन कायदा २००६ अन्वये चोंढी ब.ल.पा प्रकल्प ब १ वर्ग क(ii) या मध्ये समाविष्ट करण्यात आलेला आहे. या प्रकल्पासाठी राज्य पर्यावरण तपासणी समितीने त्यांच्या

फेब्रुवारी २०-२२, २०१४ मध्ये झालेल्या ७३ च्या बैठकीच्या इतिवृत्तांतानुसार टी. ओ. आर. ला मंजूरी दिली. त्यावर आधारित सद्यस्थितीतील पर्यावरणाचा अभ्यास करून पर्यावरण आघात अहवाल तयार करण्यात आला.

३.० सद्यस्थितीतील पर्यावरण :

पर्यावरण परिणाम अभ्यासासाठी बंधान्यापासून १० किमी त्रिज्येतील भूभाग व लाभक्षेत्र निवडले आहे. हा अभ्यास डिसेंबर २०१२ ते नोव्हेंबर २०१३ या काळात प्रत्यक्षरित्या त्याठिकाणी निरीक्षण करून माहिती व तक्ते तयार करण्यात आले. यामध्ये त्या भागातील वन व जनावरे इत्यादीचा अभ्यास केला. याखेरीज शासनाच्या जनगणना व सांख्यिकी विभागातून माहिती घेण्यात आली.

पर्यावरण परिणाम तपासणीसाठी प्रकल्पाचे स्थान व सभोवतालचा परिसर, प्रदेशवर्णन, भौगोलिक स्थिती, हवेची गुणवत्ता, हवामान, आवाजाची पातळी, पाण्याची गुणवत्ता, जंगल, वनस्पती व प्राणी यासर्वांचा अभ्यास करण्यात आला.

३.१ हवामान :

बुलडाणा येथील हवामान खात्यानुसार मासिक तापमानाची माहिती उपलब्ध झाली आहे. सर्व सामान्यतः संग्रामपूर तालुक्यातील हवामान उष्ण व कोरडे आहे. सर्वात जास्ती तापमान ४२.३ °C हे मे महिन्यात आढळते. तर सर्वात कमी तापमान डिसेंबर महिन्यात १२°C पर्यंत जाते. जिल्ह्यातील सरासरी पर्जन्यमान ७०० ते ९०० मी. मी. प्रतिवर्ष असते.

हवेची गुणवत्ता

केंद्रीय पर्यावरण मंत्रालयाच्या मार्गदर्शक तत्वानुसार बंधान्याचे स्थान चोंढी, टाकलेश्वर, कवठाळ, निवाना, वरवट खंडेराव व वाडशिंंगी या ठिकाणी डिसेंबर २०१२ ते नोव्हेंबर २०१३ या काळात हवेची गुणवत्ता तपासण्यात आली. त्यामध्ये हवेतील घन कण, सल्फर डायऑक्साईड व नायट्रोजन ऑक्साईड यांचे प्रमाण मोजण्यात आले. धुळी कणांचे (PM10u) प्रमाण ५८.५ ते ७५.६ PPM इतके आढळले, सल्फरडाय ऑक्साईड व नायट्रोजन ऑक्साईड यांचे प्रमाण १०.० PPM ते १८.३ PPM व १३.० ते २३.३ PPM इतके आढळले. धुलीकण व वायू चे प्रमाण हे केंद्रीय प्रदूषण नियंत्रण मंडळ यांनी घालून दिलेल्या मर्यादित आढळले.

३.२ पाण्याची गुणवत्ता

आडाच नदीचे पाणी व लाभक्षेत्रातील चोंढी, टाकलेश्वर, कवठाळ, निवाना, वरवट खंडेराव व वाडशिंंगी गावच्या भूगर्भातील पाण्याचे पृथःकरण करण्यात आले. आडाच नदीच्या पाण्याचे सामू ७.३ ते ७.८, तर जडपणा १०९ ते १३९ मि ग्र/लि आढळला व विद्राव्य ऑक्सिजन ५.० ते ५.८ मि ग्र/लि तर भूगर्भातील पाण्याचे सामू ६.७ ते ७.९ व जडपणा २६५ ते ५३२ मि ग्र/लि असा आढळला.

३.३ आवाजाची पातळी

प्रकल्पाचे स्थान व लाभक्षेत्रातील गावांमध्ये आवाजाची पातळी उन्हाळ्यात, पावसाळ्यात हिवाळ्यात अनुक्रमे ३६ ते ५२ dB, ३५ ते ५३ dB, ३९ ते ५४ dB इतकी दिवसा आढळली, तर रात्री ३० ते ३४ dB, ३१ ते ३५ dB ३३ ते ३५ dB होती.

३.४ जमिनीचा वापर

संग्रामपूर तालुक्यातील क्षेत्रामध्ये वन ०.६ %, बागायती १२.१ %, कोरडवाहू ६९.३ %, ओलिताखाली न येणारी शेतजमीन २.२% व नापीक ११.८% असा जमिनीचा वापर आढळतो.

३.५ मातीची गुणवत्ता

संग्रामपूर तालुक्यात गडद काळी व काही ठिकाणी मध्यम काळी माती आढळते.

३.६ पिके

या परिसरातील लागवडीखालील क्षेत्रामध्ये तृणधान्ये ४०.३० %, ०.५ % कडधान्ये, २४.३ % तेलबिया ९.१ % ऊस, १७.७ % फळबागायत आणि इतर अशी शतावरी आहे. ज्वारी व बाजरी ही मुख्य पिके असून कुळीथ, हरभरा, तूर या मुख्य डाळी आहेत.

३.७ जैवविविधता

प्रकल्पस्थानापासून १० कि.मी. त्रिज्येच्या तसेच लाभक्षेत्राच्या परिसरातील वनस्पती व वन्य जीवाचा अभ्यास करण्यात आला. त्यामध्ये दुर्मिळ व नाश पावणाऱ्या वन्यजीवांचा मागोवा घेण्यात आला. या परिसरात:

झाडे : ऐन, अळू, आंबा, आपटा, बाभूळ, बेहडा, बेल, बोन्द्रा, बोर, चिंच, चिंचोळा, धामण, धावडा, घेल, घोराड, हिवर, जांभूळ, काकड, करंज, खेर, कुसुम, मोहिनी, निम, पळस, पांगारा, साग, सलाई, शिसम, उंबर, वड.

झुडपे: आरती, आर्णी, मकाई, हेनकला, कदाम्हन व हिंगणबेट.

गवत : गवती चहा, बांबू, उन्हाळी गवत,

वन्यजीव: तरस, चित्ता, लांडगा, जंगली कुत्रा, अस्वल, सांबर, चितळ, भेकर व ससा तसेच नाग,

धामण, सर्पतोल सापडतात.

पक्षी: रानकोंबडा, तितर, बटेर, मोर, करकोचा, कबुतर, कोतवाल, पोपट, चिमणी, कावळा, कोकिळा, भारद्वाज, कापसी, वेडा राघू, सुगरण, मैना, घार, खंड्या, नीलकण्ठ.

३.८ सामाजिक - आर्थिक स्थिती

लोकसंख्या, एकूण जमीन, ऐतिहासिक वस्तूंचा समावेश, डाकघर, तारसेवा, दूरध्वनी, शिक्षण व आरोग्य सुविधा, बँक व सहकारी संस्था, सामाजिक व सांस्कृतिक संस्था, जनगणना इत्यादि बाबींचा आढावा घेण्यात आला

४.० पर्यावरण व्यवस्थापन योजना

विदर्भ सिंचन विकास महामंडळाच्या चोंढी बृ.ल.पा प्रकल्पासाठी पर्यावरण व्यवस्थापन योजना तयार केली आहे. यामध्ये कमीत कमी टाकाऊ पदार्थ निर्मिती, हवेची व पाण्याची गुणवत्ता राखणे, टाकाऊ मातीचा पुर्नवापर किंवा पुर्नरभरण करणे तसेच प्रकल्पाच्या परिसरात स्वच्छता ठेवणे व वृक्ष लागवड करणे होय.

४.१ प्रकल्प चालू असताना

प्रामुख्याने बंधान्याचे बांधकाम चालू असताना खालील बाबींवर लक्ष केंद्रित केले जाईल.

- वाहनांची वर्दळ वाढल्यामुळे हवेतील धुलीकणांचे प्रमाण वाढू नये म्हणून कच्च्या रस्त्यावर पाणी टाकणे
- वाहनामुळे ध्वनी प्रदूषणात वाढ होऊ नये म्हणून त्यांची नियमित निगा राखणे.
- रस्त्याच्या दुतर्फी झाडे लावणे.
- खोदाई केल्यामुळे निर्माण झालेल्या मातीचा योग्य ठिकाणी ढिगारा करणे.
- सर्व कामगारांना बांधकामावर जाताना बूट व हेल्मेट घालणे बंधनकारक करणे
- प्रकल्पस्थानावर राहणाऱ्या कामगाराकडून निर्माण होणारे सांडपाणी सेप्टिक टंक मधून शोष खड्ड्यात सोडले जाईल
- कामगारांच्या सुरक्षेसाठी आपातकालीन व्यवस्था आखलेली आहे. याबाबत कामगारांना प्रशिक्षण देण्यात येईल.

४.२ प्रकल्प पूर्ण झाल्यानंतर

प्रकल्प पूर्ण झाल्यानंतर खालील पर्यावरण व्यवस्थापन योजना आखलेली आहे.

- जलवनस्पती व जीव यांच्यासाठी कमीत कमी पाणी बंधान्यामधून सोडले जाईल.

- बंधान्याच्या दुतर्फा झाडे लावली जातील.
- सर्व शेतकऱ्यांना ठिबक सिंचन वापरण्याकरता प्रोत्साहित केले जाईल.
- पूरपरिस्थिती निर्माण झाल्यास ती हाताळण्यासाठी आपातकालीन व्यवस्थापन योजना आखलेली आहे.
- पाण्यामुळे होणारे रोग टाळण्यासाठी आरोग्य योजना आखली असून त्यामध्ये पाण्याची वेळोवेळी चाचणी घेतली जाईल.
- सर्व नदी काठावरील ग्रामपंचायतींना सांडपाण्यावर योग्य प्रक्रिया करण्यास सांगितले जाईल, जेणेकरून नदीचे प्रदूषण होणार नाही.

५.० पुनर्वसन आणि पुनर्स्थापन योजना

ज्या लोकांना अश्या प्रकल्पामुळे सक्तीने घरे आणि जमिनी गमवाव्या लागतात त्यांना प्रकल्पामुळे परिणाम होणारे लोक न म्हणता प्रकल्पासाठी योगदान देणारे लोक असे संबोधले जावे.

विकासाची उद्दिष्टे

१. विकासप्रेरीत विस्थापन कमी करणे व त्यासाठी पर्याय शोधणे.
२. जमीन वापरामुळे होणारा प्रत्यक्ष व अप्रत्यक्ष सामाजिक प्रभाव कमी करणे.
३. जर विस्थापनासाठी पर्याय नसल्यास तशी माहिती आधीच कळवणे.
४. विस्थापन व भूसंपादनात पूर्ण पारदर्शकता.
५. विस्थापित होणाऱ्या लोकांच्या मानवी विकासासाठी प्रयत्न करणे.
६. विस्थापित लोकांना होणारे फायदे व त्या प्रकल्पामुळे फायदा होणाऱ्या लोकांच्या बरोबरीचे असावी.
७. अनुसिचीत जाती, जमाती, आदिवासी, तसेच समाजातील कमकुवत भागातील लोकांच्या अधिकाराचे रक्षण करणे.

लोकांच्या अश्या प्रकारे फक्त विस्थापानेने त्या लोकांचे सामाजिक, आर्थिक, शारीरिक, मानसिक, सांस्कृतिक प्रश्न वाढण्यास वाव मिळेल.

६.० आपत्ती निवारण योजना :-

नैसर्गिक कारणांमुळे येणाऱ्या आपत्तीसाठी पूर्वतयारी ठेवणे हे अतिशय आवश्यक आहे आपत्ती व्यवस्थापन योजनेमुळे आपत्तीच्या वेळेची कल्पना येते व त्यासाठीच्या योजनेचे व्यवस्थापन करता येते. त्यामुळे अशा घटनांतून होणारे नुकसान रोखण्यासाठी खूप अंशी मदत होते आपत्ती व्यवस्थापन हा एक सांघिक प्रयत्न आहे आणि वेळच्यावेळी लक्ष्य दिल्यास खूप चांगला फायदा होऊ शकतो. आपत्ती निवारण योजनेत आपत्ती न घडणे, त्याची तीव्रता कमी करणे, निवारण तयारी, मदत कार्य, पुनर्वसन व सुरक्षा योजना तयार करणे यांचा समावेश होतो.