OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (HEAD OF FOREST FORCE), MAHARASHTRA STATE, NAGPUR
ADDITIONAL PRINCIPAL CHIEF CONSERVATOR OF FORESTS AND NODAL OFFICER, MAHARASHTRA STATE, NAGPUR,
First Floor, 'B' Wing, Van Bhavan, Civil Lines, Nagpur-440001.
Tel no. (0712) 2530166, 2556916, Fax no. (0712) 2550675 E-mail- apccfnodal@mahaforest.gov.in

No. Desk-17/Nodal/S1/PID- 39591/Chandrapur/2733/2023-24
Nagpur – 440 001, Date : 19/12/2023

To,

The Assistant Inspector General of Forests (FC),
Government of India,
Ministry of Environment, Forest and Climate Change
(Forest Conservation Division),
Indira Paryavant Bhawan, New Delhi-110003.

Sub :- Diversion of 315.74 ha. forest land under Forest (Conservation) Act, 1980 for Renovation of Asolamendha Irrigation Project in Division Bramhapuri, Central Chanda and Chandrapur Forest Division, Saoli, Mul and Pombhurna takukas of Chandrapur District in the State of Maharashtra (Online No.FP/MH/IRRIG/39591/2019)-reg.

Ref- 1) Government of India, MoEF&CC, New Delhi vide letter No. File No. 8-33/2022-FC, dated 10/10/2023

2) The Chief Conservator of Forests (T), Chandrapur letter No.Desk-3(1)/land/Sr.No.570/2023-24/1165, dated 28/11/2023 and No.1273, dated 15/12/2023

Sir,

The Government of India, Ministry of Environment, Forest and Climate Change, New Delhi vide letter under reference No.1 has sought compliance on 06 points. Accordingly, the Chief Conservator of Forests (T), Chandrapur vide letter under reference No. 2 has submitted the compliance of shortcoming in this regard to this office. The compliance report as desired by Government of India vide letter dt.10/10/2023 is submitted as under:-

No.	Points	Compliance
i.	The detailed tree enumeration list for all three forest divisions involved in the proposal has not been submitted which is required to be done.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The detailed tree enumeration for all three forest divisions involved in the proposal is uploaded on Part-II of Parivesh Portal. As per the final enumeration total number of trees are 117224 out of which, 109723 are in submergence area and 7501 are along the canals. All trees in submergence area are above FRL-4 and therefore only 7501 trees are required to felled. **(Annexure No.1)**
ii.	The present proposal of 315.74 ha forest land involves 71.99 ha reserved forest managed by Forest Development Corporation of Maharashtra Limited. The copy of NoC from FDCM was asked which has not been submitted.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The NOC for 71.99 ha reserved forest managed by Forest Development Corporation of Maharashtra Limited has been issued by Managing Director, Nagpur. is submitted herewith along with the English Translation. **(Annexure No. 2)**

iii.	The user agency informed that the CAT plan is not required in the instant proposal, however the proposal involves increase in the height of the dam which will bring more area under submergence. Therefore, the approved copy of Catchment Area Treatment Plan as per provisions contained in Handbook of guidelines dated 28.03.2019 shall submitted.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The copy of the approved CAT plan is enclosed herewith **(Annexure No. 3)**
iv.	The revenue documents of CA land as submitted are in regional language and not legible. Therefore the State Govt. needs to submit certified translated and legible copies of revenue documents indicating that the area proposed for CA is Non- forest land and free from all encumbrances.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The certified translated and legible copies of revenue documents in English language indicating that the area proposed for CA is Non- forest land and free from all encumbrances is submitted here with. **(Annexure No.4)**
v.	As per DSS analysis, the following has been observed.	
a.	The user agency has still not uploaded correct KML file of proposed forest land for diversion on the PARIVESH portal and the total area of KML file as submitted has been found to be 329.530 ha instead of 315.74 ha.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The revised KML for 315.74 ha land is verified, submitted and uploaded on Parivesh portal herewith **(Annexure No.5)**
b.	As per the revised KML file of forest land proposed for diversion now submitted by the State, the Roads Agriculture land and Plantation activities are still visible in Bramhapuri, Chandrapur and Central Chanda Forest Division. However the State Govt. has not submitted report on Roads. Agriculture land and Plantation activities within the proposed forest area which was asked earlier.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The Divisional Forests Officer, Chandrapur vide letter dated 23/11/2023 has mentioned in its compliance letter which is shown as under:- **Plantation:** The plantation within diversion land were raised and managed by the FDCM and the NOC regarding the same is submitted along with point No. 2. **Road:** The Roads within the proposed diversion land in Bramhapuri and Chandrapur Division are under control of the Forest Department and these roads are being used for patrolling and surveillance purpose. **Agriculture land:** Agriculture practices are going on in the Zudpi jungle land because these lands are under control of the revenue department but now these areas

		have been incorporated in the present diversion proposal. **(Annexure No. 5B)**
c.	As per the revised KML file, the widening of the canal is visible along the proposed forest patches for diversion under the Chandrapur Forest Division. Therefore, the State Govt. needs to provide the copies of approval under FCA, 1980 if so obtained by the user agency for the renovation/up gradation of the existing canal on the forest land.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The Divisional Forests Officer, Chandrapur vide letter dated 23/11/2023 has mentioned in its compliance letter which is shown as under:- As the Asolamendha Project was constructed in British Era. The area for Dam and existing Canal is in possession of the Irrigation Department. There is no widening of the canal has been carried out under the Chandrapur Forest Division and only the re-sectioning/ deepen work within the existing Canal has been done with an aim to increase the water discharge and enhance the water carrying capacity of the existing canal.
d.	A complete layout map or DGPS map showing the purpose wise utilization of forest land has not been submitted nor found uploaded online. The State Govt. needs to upload the DGPS map showing the component wise utilization of forest land under diversion	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The Divisional Forests Officer, Chandrapur vide letter dated 23/11/2023 has mentioned in its compliance letter which is shown as under:- A complete layout map or DGPS map showing the purpose wise utilization of forest land is submitted herewith and also uploaded DGPS map showing component wise utilisation of forest land under diversion online **(Annexure No. 5D)**
e.	The State Govt. has still not submitted the KML file of Non-forest land involved in all the three forest division. Instead of submitting the Non-forest land KML file, the user agency has submitted KML file of submergence area at various height intervals ie. 217.25 meter and 214.50 meter. Therefore, the State Govt. shall provide the complete & correct KML file of forest land as well as Non-forest land involved in the project as per the proposal and located under various forest diversion.	The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:- The revised KML files for Non Forest land for all three divisions is examined by Forest Department and submitted herewith. **(Annexure No.5E)**

<table>
<tr><td>f.</td><td>The correct DGPS map and the Survey of India toposheet map showing the proposed CA site has not been uploaded nor submitted. The State Govt. shall upload the correct DGPS map and the Survey of India toposheet map showing the proposed CA site on PARIVESH portal as the maps uploaded at present are not in conformity with the KML file of the CA land.</td><td>The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:-

The correct DGPS map and the Survey of India toposheet map showing the proposed CA land which is in conformity with the KML file of the CA land is submitted herewith in a CD. (Annexure No. 5F)</td></tr>
<tr><td>vi.</td><td>The cost benefit analysis is apparently higher which shall be re-examined by the State. Further, the Cost benefit analysis is required to be submitted as per the prescribed format given in the Handbook of guidelines dated 28.03.2019 containing the detail of all parameters like habitation fragmentation cost etc.</td><td>The Divisional Forests Officer, Chandrapur and Chief Conservator of Forests (T), Chandrapur vide letter dated 23/11/2023 & 28/11/2023, 15/12/2023 has submitted compliance:-

The Divisional Forests Officer, Chandrapur vide letter dated 23/11/2023 has mentioned in its compliance letter which is shown as under:-

The cost benefit analysis as per the Handbook of Guidelines dated 28.03.2019 containing the detail of all parameters like habitation, fragmentation cost is examined by the Forest Department and submitted herewith (Annexure No.6), Since the existing command area of the project is increased from 9091 ha been increased to 54749 ha i.e 5 times benefitting around 9440 families of 84 Water User Associations comprising of 118 villages in 3 Talukas namely Saoli, Mul and Pobhurna of Chandrapur District increasing GDP of the Chandrapur District. Hence, cost benefit analysis is apparently higher. The names of benefited villages are given below
<table>
<tr><th>Sr. No.</th><th>Name of Talukas</th><th>Name of Villages</th></tr>
<tr><td>1</td><td>Saoli</td><td>Pathari, Kargaon Chak, Rajoli, Bothali, Hirapur, Kesarwahi, Saoli, Chak Piranji, Piranji Mal, Saoli Tukum, Khedi, Chandali, Singapur, Bhattijam, Jibgaon, Kondekhal Chak, Kondekhal Rai, Kisan Nagar, Ghodewahi, Sindoda, Usegaon, Rudrapur, Rudrapur Rai, Kawathi, Paradi, Chak Virkhal Tola, Nimgaon, Virkhal Chak, Dabgaon, Navegaon Tukum, Rajoli Chak, Thergaon, Belgaon, Chichbodi, vichora Tu, Ambhora, Vyahad Khurd, Keroda, Mokhada,</td></tr>
</table>
</td></tr>
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				Vyahad Buj, Samda Buj, Wagholi, Sonapur, Kapsi, Petgaon (N), Vadholi Chak, Vadholi Gandali, Chokhal, Upari, Bhansi, Upari Chak, Donada Chak, Donada Mal, Kadholi, Kajalwahi Chak, Haramba, Umari, Jam Keroda, Jam Buj, Petgaon, Sirsi Chak, Petgaon Mal, Petgaon Rai, Sirsi Mal, Sakhari, Londholi, etc. (66)
		2	Mul	Bhavrada, Babrada, Chak Dugada, Dugada Mal, Junasurla, Gadisurla, Navegaon Buj, Bembal, Chachala, Haldi gaonganna, Vedi Rith, Dahegaon Chak, Dahegaon Mal, Mankapur, Tadada, Tadada Tukum, Gothangaon, Bhejgaon, Yergaon, Pipari Dixit, Nandgaon, Gowardhan, Bembal Chak etc. (23)
		3	Pombhurna	Ghosari, Bondala Buj, Bondala Khurd, Dewada Buj, Borghat Mal, Borghat Chak, Dighori, Pipari Deshpande, Chak Thana, Chak Thanewasana, Thanewasana Mal, Navegaon More, Bhimani, Chak Bramhani, Ghatkul, Khandala Rai, Thergaon, Chak Ghosari, futana Mokasa, Kosambi Chak, Chak Futana, Welwa Chak, Welwa Mal, Sellur Chak, Sellur Nagreddy, Navegaon Chak, Khapri Chak, Khapri Rith, Mohada Rai, etc. (29)

In view of the above facts, the aforesaid compliance submitted for further needful action.

Encl-As above.

Yours sincerely,

19/12/23

(Naresh Zurmure)
Addl. Principal Chief Conservator of Forests
& Nodal Officer

Copy submitted to the Principal Secretary (Forests), R&FD, Mantralaya, Mumbai -32 for information.
Copy to the Chief Conservator of Forests (T), Chandrapur for information.
Copy to the Divisional Forest Officer, Chandrpaur Forest Division, Chandrapur for information.
Copy to the Executive Engineer, Asolamendha Project Renovation Division No.1. Mul for information.

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (HEAD OF FOREST FORCE), MAHARASHTRA STATE, NAGPUR
ADDITIONAL PRINCIPAL CHIEF CONSERVATOR OF FORESTS AND NODAL OFFICER
First Floor, 'B' Wing, Van Bhavan, Civil Lines, Nagpur-440001.

Tel no. 0712-2556916 E-mail- apccfnodal@mahaforest.gov.in

No.:Desk-17/Nodal/S1/PID- 39591/Chandrapur/23-24 /2732
Nagpur – 440 001, Dated : 19/12/2023

To,

The Assistant Inspector General of Forests (FC),
Government of India,
Ministry of Environment, Forest and Climate Change
(Forest Conservation Division),
Indira Paryavant Bhawan, New Delhi-110003.

Sub :- Diversion of 315.74 ha. forest land under Forest (Conservation) Act, 1980 for Renovation of Asolamendha Irrigation Project in Division Bramhapuri, Central Chanda and Chandrapur Forest Division, Saoli, Mul and Pombhurna takukas of Chandrapur District in the State of Maharashtra (Online No.FP/MH/IRRIG/39591/2019)-reg.

Ref- 1) Government of India, MoEF&CC, New Delhi vide letter No. File No. 8-33/2022-FC, dated 10/10/2023

2) The Chief Conservator of Forests (T), Chandrapur letter No.Desk-3(1)/land/Sr.No.570/2023-24/1165, dated 28/11/2023 and No.1273, dated 15/12/2023

Sir,

The Government of India, Ministry of Environment, Forests and Climate Change, Regional Office Nagpur vide letter under reference No.1 has sought approved copy of Catchment Area Treatment Plan as per provisions contained in Handbook of guidelines dated 28.03.2019. Accordingly, the Chief Conservator of Forests (T), Chandrapur has submitted the same. The report is self-explanatory and this office recommended and approval. The said CAT Plan is enclosed herewith for further needful action.

Encl:- As above

Yours sincerely,
19/12/23

(Naresh Zurmure)
Addl. Principal Chief Conservator of Forests
& Nodal Officer

Copy submitted to the Principal Secretary (Forests), R&FD, Mantralaya, Mumbai -32 for information.
Copy to the Chief Conservator of Forests (T), Chandrapur for information.
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Copy to the Executive Engineer, Asolamendha Project Renovation Division No.1. Mul for information.

महाराष्ट्र शासन वन विभाग
मुख्य वनसंरक्षक, चंद्रपुर वनवृत्त चंद्रपुर, यांचे कार्यालय
वनभवन,सिव्हील लाईन, नागपुर रोड, चंद्रपूर
स्वातंत्र्याचा अमृत महोत्सव
दुरध्वनी क्र.07172-256279, 252232 E-mail :- ccfchandrapur@gmail.com, ccfchandrapur@mahaforest.gov.in

क्रमांक : कक्ष-3(1)/जमिन/प्र.क्र.574/2022-23/ 1273 दिनांक :- 15-12-23

प्रति,

अपर प्रधान मुख्य वनसंरक्षक व केंद्रस्थ अधिकारी,
महाराष्ट्र राज्य, नागपूर

विषय :- Diversion of 315.74 ha. of forest land under Forest (Conservation) Act, 1980 for Renovation of Asolamendha Irrigation Project in Division Bramhapuri, Central Chanda and Chandrapur Forest Division of Saoli, Mul and Pombhurna Talukas of Chandrapur District in the State of Maharashtra- regarding.

संदर्भ :- 1. भारत सरकार, पर्यावरण वन व हवामान बदल मंत्रालय, नवी दिल्ली यांचे पत्र क्र. 8-33/2022-एससी, दिनांक 10.10.2023
2. आपले कार्यालयीन पत्र क्र. कक्ष-17/FCA-S1/PID-39591/चंद्रपूर/2589, दिनांक 05.12.2023
3. कार्यकारी अभियंता, असोलामेंढा प्रकल्प नुतनीकरण विभाग क्र. 1 मुल यांचे कडील पत्र क्र. 1696, दिनांक 06.12.2023
4. विभागीय वन अधिकारी, चंद्रपूर वनविभाग, चंद्रपूर यांचे कार्या. पत्र क्र. कक्ष-14/सर्व्हे/जमीन/1697, दिनांक 13.12.2023

उपरोक्त विषयांकीत प्रस्तावाचे अनुषंगाने आपले संदर्भिय पत्र क्र. 2 अन्वये 1 ते 3 मुददे उपस्थित करून त्याबाबतचा सविस्तर अहवाल मागविण्यात आलेला आहे. तेव्हा विभागीय वन अधिकारी, चंद्रपूर वनविभाग, चंद्रपूर यांनी त्यांचे संदर्भिय पत्र क्र. 4 अन्वये खालीलप्रमाणे अहवाल सादर केलेला आहे.

अ.क्र.	त्रुटी	करावयाची पूर्तता
1	CAT Plan हा संबंधीत उपवनसंरक्षक यांचेकडून तपासणी करून त्यांचे स्पष्ट अभिप्रायासह साक्षाकित करून सादर करावा.	प्रकल्प यंत्रणेनी सादर केलेल्या CAT Plan चे निम्न हस्ताक्षरकर्ते यांनी तपासणी केली असता वनक्षेत्रामध्ये Nalla Bunding चे कामे प्रस्तावित नसल्याने सुधारीत CAT Plan देण्याबाबत सुचना दिलेल्या होत्या. प्रकल्प यंत्रणेनी CAT Plan मध्ये सुधारणा करून दिलेल्या असल्यामुळे व योग्य असल्याचे दिसून आल्याने विभागीय वन अधिकारी, चंद्रपूर व निम्नहस्ताक्षकर्ते यांनी CAT Plan योग्य असल्याबाबतचे प्रमाणपत्र दिलेले आहे.
2	पूर्तता अहवालासोबत सादर केलेल्या पृष्ठ क्रमांक 316,317, 318,319 वरील DGPS नकाशे हे संबंधीत उपवनसंरक्षक यांचे कार्यालयाकडून तपासणी करून त्यांचे स्वाक्षरीसह सादर करावा.	प्रकल्प यंत्रणेनी सादर केलेले पृष्ठ क्रमांक 316, 317, 318, 319 वरील DGPS नकाशावर उपवनसंरक्षक, ब्रम्हपुरी, उपवनसंरक्षक, मध्य चांदा व विभागीय वन अधिकारी, चंद्रपूर यांनी तपासणी करून स्वाक्षरी केलेले नकाशे प्रस्तावासोबत जोडण्यात येत आहे.

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18/12/23

3	भारत सरकार, पर्यावरण वन व हवामान बदल मंत्रालय, नवी दिल्ली यांचे पत्र क्र. 8-34/2022-एफसी, दिनांक 10.10.2023 अन्वये The Dy. DGF (Central) Regional Office, Moef & CC, Nagpur यांचेकडून खालीलप्रमाणे माहिती सादर करण्यास निर्देश दिलेले असून त्याची प्रत या कार्यालयास पृष्ठांकीत केलेली आहे. The Office, Nagpur of this Ministry shall carryout the inspection of the forest land proposed for diversion, sites identified for comsatory afforestation (CA) and submit a detailed site inspection report (SIR) to this Ministry for further necessary action.	भारत सरकार, पर्यावरण वन व हवामान बदल मंत्रालय, नवी दिल्ली यांचे पत्र क्र. 8-34/2022-एफसी, दिनांक 10.10.2023 अन्वये The Dy. DGF (Central) Regional Office, Moef & CC, Nagpur यांचेकडून प्रकल्प बाधीत क्षेत्राचे स्थळ निरिक्षण करण्यात आल्याचे Site Inspection Report प्रस्तावात जोडण्यात आलेले आहे.

प्रकल्प यंत्रणेशी संबंधीत असलेल्या मुदयांची माहिती व वनविभागाशी संबंधीत असलेल्या मुदयांचा अहवाल वरीलप्रमाणे सादर करण्यात येत आहे.

करीता माहितीस सविनय सादर.

सहपत्र:- प्रस्तावाच्या 3 प्रती

(डॉ. जितेंद्र रामगावकर)
मुख्य वनसंरक्षक
चंद्रपूर वनवृत्त, चंद्रपूर

प्रतिलीपी:- विभागीय वन अधिकारी, चंद्रपूर वनविभाग, चंद्रपूर यांना माहितीस अग्रेषित.
प्रतिलीपी:- कार्यकारी अभियंता, असोलामेंढा प्रकल्प नुतनीकरण विभाग क्र. 1 मुल यांना माहितीस अग्रेषित.

महाराष्ट्र शासन
वनविभाग

विभागीय वन अधिकारी, चंद्रपूर वनविभाग, चंद्रपूर यांचे कार्यालय

रामबाग फॉरेस्ट कॉलनी, मुल रोड, चंद्रपूर - 442401 (म.रा.)
E-mail :- dfochandrapur@gmail.com

क्रमांक :- कक्ष-14/सर्व्हे/जमीन/ 1697 **दिनांक :-** 13/12/2023

प्रति,

मुख्य वनसंरक्षक,
चंद्रपूर वनवृत्त,
चंद्रपूर.

विषय :- Proposal of Diversion of 315.74 ha. of forest land for under Forest (Conservation) Act, 1980 for Renovation of Asolamendha Irrigation Project in Division Bramhapuri, Central Chanda and Chandrapur Forest Division, Saoli, Mul and Pombhurna Talukas of Chandrapur District in the State of Maharashtra-regarding.

संदर्भ :- 1. केंद्र शासनाचे पत्र क्रमांक MOEF 8-33/2022, दिनांक 10/10/2023.
2. अपर प्रधान मुख्य वनसंरक्षक तथा केंद्रस्थ अधिकारी, महाराष्ट्र राज्य, नागपूर यांचे पत्र क्रमांक कक्ष-17/FCA-S1/ PID-39591/Chandrapur/2589, दिनांक 05/12/2023.
3. कार्यकारी अभियंता, आसोलामेंढा प्रकल्प नुतनीकरण विभाग क्र. 1, मुल यांचे पत्र क्र. 1696/तां.शा./वनप्रस्ताव/ 2023, दिनांक 06/12/2023.

अपर प्रधान मुख्य वनसंरक्षक तथा केंद्रस्थ अधिकारी, महाराष्ट्र राज्य, नागपूर यांनी त्यांचे संदर्भिय पत्रान्वये उपस्थित केलेल्या 1 ते 3 मुद्याच्या अनुषंगाने यंत्रणेने त्यांचे संदर्भिय पत्र क्रमांक 3 अन्वये पूर्तता अहवाल प्रस्तावासह सादर केलेला आहे. सदर अहवालाच्या अनुषंगाने खालीलप्रमाणे प्रस्ताव पूर्तता अहवालासह 4 प्रतीत यासोबत जोडून सादर करण्यांत येत आहे.

अ.क्र.	त्रृटी	करावयाची पूर्तता
1.	CAT Plan हा संबंधीत उपवनसंरक्षक यांचेकडून तपासणी करून त्यांचे स्पष्ट अभिप्रायासह स्वाक्षांकित करून सादर करावा.	Cat Plan हा संबंधीत उपवनसंरक्षक यांचेकडून तपासणी करून तसेच स्वाक्षांकित करून **पृष्ठ क्रमांक 13** वर जोडून सादर करण्यांत येत आहे.
2.	पूर्तता अहवालासोबत सादर केलेल्या पृष्ठ क्रमांक 316, 317, 318, 319 वरील DGPS नकाशे हे संबंधीत उपवनसंरक्षक यांचे कार्यालयाकडून तपासणी करून त्यांचे स्वाक्षरीसह सादर करावा.	पृष्ठ क्रमांक 316, 317, 318, 319 वरील DGPS नकाशे हे संबंधीत उपवनसंरक्षक यांनी तपासणी करून स्वाक्षरीसह सोबत जोडून सादर करण्यांत येत आहे.
3.	भारत सरकार, पर्यावरण वन व हवामान बदल मंत्रालय, नवी दिल्ली यांचे पत्र क्र. 8-34/2022-एफसी, दिनांक 10/10/2023 अन्वये The Dy. DGF (Central) Regional Office, MoEF & CC, Nagpur यांचेकडून खालीलप्रमाणे माहिती सादर करण्यांस निर्देश दिलेले असून त्याची प्रत या कार्यालयास पृष्ठांकित केलेली आहे :- The Office, Nagpur of this Ministry shall carryout the inspection of the forest land proposed for diversion, sites identified for compensatory afforestation (CA) and submit a detailed site inspection report (SIR) to this Ministry for further necessary action.	भारत सरकार, पर्यावरण वन व हवामान बदल मंत्रालय, नवी दिल्ली यांचे पत्र क्र. 8-34/2022-एफसी, दिनांक 10/10/2023 अन्वये The Dy. DGF (Central) Regional Office, MoEF & CC, Nagpur यांचेकडून मौका तपासणी करण्यांत आल्याचे Site Inspection Report **पृष्ठ क्रमांक 328 ते 339** वर जोडून सादर करण्यांत येत आहे.

सहपत्र :- पूर्तता अहवाल 4 प्रतीत.

Khade

(प्रशांत खाडे)
विभागीय वन अधिकारी,
चंद्रपूर वनविभाग, चंद्रपूर

प्रतिलिपी :- उपकार्यकारी अभियंता, आसोलामेंढा प्रकल्प नुतनीकरण विभाग क्र. 1, मुल यांना माहिती व आवश्यक कार्यवाहीस अग्रेषित.

ANNEXURE - 1

Abstract of Total Tree Enumeration

Forest Division	FRL		FRL-2		FRL-4		Total Submergence	Canal		Total Canal	Total Canal and Submergence
1	2	3	4	5	6	7	8	9	10	11	12
	Below 60	Above 60	Below 60	Above 60	Below 60	Above 60		Below 60	Above 60		
Bramhapuri	18233	1074	23516	2855	3821	1872					
	3026	584	6397	1279	4322	788					
		348		711		448					
		269		268		221					
Total Bramhapuri	21259	2275	29913	5113	8143	3329	70032	0	0	0	70032
Central Chanda								1216	24		
								274	2		
otal Central Chand	0	0	0	0	0	0	0	1490	26	1516	1516
Chandrapur	5769	2555	5129	2267	1927	855		3648	2337		
	7337	1165	6528	1038	2455	389					
		563		503		198					
		454		406		153					
Total Chandrapur	13106	4737	11657	4214	4382	1595	39691	3648	2337	5985	45676
All Division Total	34365	7012	41570	9327	12525	4924	109723	5138	2363	7501	
											117224

JE

JUNIOR ENGINEER
ASOLAMENDHA PROJECT RENO.
SUBDIVISION SAOLI

Subdivisional Engineer
Asolamendha Project
Sub Division Saoli

Executive Engineer
Asolamendha Project Reno.
Division No.1 Mul

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (HEAD OF FOREST FORCE), MAHARASHTRA STATE, NAGPUR

ADDITIONAL PRINCIPAL CHIEF CONSERVATOR OF FORESTS AND NODAL OFFICER, MAHARASHTRA STATE, NAGPUR,
First Floor, 'B' Wing, Van Bhavan, Civil Lines, Nagpur-440001.

Tel no. (0712) 2530166, 2556916, Fax no. (0712) 2550675 E-mail- apccfnodal@mahaforest.gov.in

Sub:- Proposal for diversion of 315.74 ha. forest land under Forest (Conservation), 1980 for Renovation of Asolamendha Irrigation Project in Division Bramhapuri, Central Chanda and Chandrapur Forest Division, Saoli, Mul and Pombhurna talukas of Chandrapur District in the State of Maharashtra (FP/MH/IRRIG/39591/209).

No. : Desk-17/Nodal/Chandrapur /I.D- 13913/1818/2022-23
Nagpur - 440 001. Dated :- 17/10/2022

To,
The Principal Secretary (Forests),
Revenue & Forest Department,
Mantralya, Mumbai - 400032

The Executive Engineer, Asolamendha Project Renovation Division No.1, Mul has submitted proposal for diversion of 315.74 ha. forest land under Forest (Conservation), 1980 for Renovation of Asolamendha Irrigation Project in Division Bramhapuri, Central Chanda and Chandrapur Forest Division, Saoli, Mul and Pombhurna talukas of Chandrapur District in the State of Maharashtra. The details of forest land proposed for diversion is as given below: -

Sr No.	Item of work / purpose	Taluka	Village	District	Compt no.	Survey No.	Area (in ha.)	Status
1	Submergence	Sindewahi	Kanhalgaon	Chandrapur	1445	23	0.110	Protected Forest
					1422/287	49	27.700	
					1426	86	0.400	
					--	91	0.030	Government Forest
					--	105	0.030	
					--	106	0.030	
					1427	119/1	19.550	Protected Forest
					1427	117/1	3.520	
					1421	127	0.354	
					427	118	1.670	
					140	140	37.160	Reserved Forest FDCM
					141	141	25.060	
		Sindewahi	Samda Khurd	Chandrapur	281	108	10.03	Reserved Forest
					1417	134	1.29	Protected Forest
					--	152	1.82	Government Forest
					--	153	0.03	
					1418	171	0.790	Protected Forest
					--	176	0.12	Government Forest
					1418 14 19	177	0.600	Protected Forest
					--	178	0.190	Government

Sindewahi	Tekari Tukum	Chandrapur	--	180	0.38	Forest
			--	181	0.27	Canal
			--	182	0.060	
			--	183	0.390	
			--	184	0.23	
			--	185	0.22	
			--	186	0.52	
			--	187	0.990	Protected Forest
			1418	188	0.100	
			1418	189	0.750	
			1419	191	1.830	Governme Forest
			--	30	0.67	
			--	34	0.12	
			--	57	0.31	
			--	62	0.040	
			--	76	0.015	
			--	77	0.175	
			--	157	0.112	
			--	168	0.1	
			1415	193	24.66	Protected Forest
			--	220	0.082	Government Forest
			--	221	0.610	
			--	222	0.150	
			--	230	0.14	
			--	234	0.64	
			--	237	0.1	
			--	239	0.81	
			--	240	0.05	
			--	241	0.04	
			--	246	0.32	
			--	248	0.08	
			--	258	0.02	
			--	261	0.450	
			--	295	0.086	
			--	296	0.164	
			--	302	0.06	
			131	--	1.51	Reserved Forest F.D.C.M
Sindewahi	Gunjewahi Kotha	Chandrapur	--	105	0.051	Government Forest
			--	315	0.13	
Sindewahi	Gunjewahi Mal 1	Chandrapur	--	427	0.020	
			1404	421	0.09	Protected Forest
			1405	408	0.88	
Saoli	Asola Chak	Chandrapur	--	47	1.090	Unclassed Forest
			--	52	4.670	
			--	51	0.690	
Saoli	Savangi Dixit	Chandrapur	1626	45	13.410	Protected Forest
			1627	56	0.210	
			1626	44	5.350	
			1626	47	0.040	
			1603	60	2.1	Protected Forest
Saoli	Bhanapur	Chandrapur	297	--	5.74	Reserved Forest
			298	--	28.25	

Forest

		Saoli	Palebarsa	Chandrapur	148	148	12.86	
2	Canal	Saoli	Pathari	Chandrapur	1663	MC 320	0.600	Protected Forest
					--	Mr.320	0.120	
					--	322	0.480	
					--	Mr.336	0.075	
					--	MC 336	0.400	
					--	340	0.120	
					--	379	0.675	
					--	437	0.085	
					1662	MC 381	1.260	
					--	Mr.381	0.335	
					--	718	0.825	
					--	488	0.175	
					--	458	0.013	
					163 A (IP Side)	163 A	2.440	Reserved Forest F.D.C.M
					163 A (SR Side)	163 A	2.300	
					164	164	1.020	Reserved Forest
		Saoli	Kargaon Chak	Chandrapur	1675	28	0.450	Protected Forest
					1675	29	0.600	
					1679	339	6.150	
					1679	338	0.300	
					165A	165A	1.300	Reserved Forest F.D.C.M
					166	166	1.200	
		Saoli	Rajoli Chak	Chandrapur	1565	73	3.260	Protected Forest
		Saoli	Bhattijam	Chandrapur	1706	52	0.480	Protected Forest
					1706	72	0.460	
		Saoli	Ghodewahi	Chandrapur	1704	254	3.433	Protected Forest
					1705	455	0.218	
					1705	454	0.343	
					1705	421	0.525	
					1705	420	0.600	
		Saoli	Kondekhal	Chandrapur	1551	303	0.090	Protected Forest
					1551	302	0.225	
					1551	301	0.180	
					1551	300	0.145	
		Saoli	Singapur	Chandrapur	--	157	1.463	Unclassed Forest
					--	157	0.075	
					--	254	0.150	
		Saoli	Kesarwahi	Chandrapur	-	242	0.150	Unclassed Forest
					--	213	0.180	
					--	96	0.040	
					-	240	0.110	
		Saoli	Kisannagar	Chandrapur	-	258	1.060	Unclassed Forest
						245	1.955	
					--	238	0.750	
					--	238	0.230	
					-	159	0.285	
					--	263	0.140	
		Saoli	Hirapur	Chandrapur	--	198	0.063	Unclassed Forest
					-	150	0.525	

			--	146	0.125	
			--	97	0.563	
			--	89	0.138	
			--	127	0.075	
				116	0.200	
				93	0.143	
			1701	285	1.280	Protected Forest
			1701	286	0.690	
			1701	282	0.725	
Saoli	Sindola	Chandrapur	1713	267	1.120	Protected Forest
			1713	267	0.083	
			1713	267	0.230	
			1712	161	0.300	
			1713	256	0.200	
			1712	134	0.040	
Saoli	Chak Pirangi	Chandrapur		416	0.280	Unclassed Forest
				416	0.030	
			--	414	0.850	
			--	414	0.215	
			--	414	0.260	
			--	413	0.235	
			--	413	0.075	
			--	535	0.150	
			--	411	1.500	
			--	410	0.020	
			1703	308	0.440	Protected Forest
Mul	Bhavrala	Chandrapur	181	--	0.120	Unclassed Forest
			143	--	0.550	
Saoli	Chak Virkhal	Chandrpaur	1571, 1573	Br.88	0.360	Protected Forest
				Br.80	0.402	
				Mr.80	0.060	
				Br.70	0.312	
				Mr.70	0.096	
				31	0.348	
Saoli	Chichbodi	Chandrapur	1560, 1561	145	0.330	Protected Forest
				143	0.033	
				146	0.144	
				144	0.183	
				171	0.063	
Saoli	Vyahad Buj	Chandrapur	1503, 1505, 1506	415	0.041	Protected Forest
				261	0.131	
				83	0.168	
				137	0.300	
				240	0.135	
				242	0.135	
Pombhurna	Ghosari	Chandrapur	546	223	1.272	Protected Forest
				217	0.525	
				218	1.700	
				218	1.395	
				219	0.300	
				220	0.930	
				221	0.400	
				221	0.625	
				325	0.200	
				221	0.350	
				311	0.070	

	Pombhurna	Futana Mokasa	Chandrapur	547	174	0.586	Protected Forest
					197	0.750	
					271	0.020	
					209	0.249	
					207	0.075	
					162	0.070	
					194	0.200	
					206	0.750	
					207	0.122	
					197	0.938	
	Pombhurna	Dighori	Chandrapur	552, 547	157	0.150	Protected Forest
					85	0.105	
					161	0.360	
					70	0.128	
					70	0.140	
					70	0.625	
					77	0.438	
	Mul	Bembal	Chandrapur	543	917	1.150	Protected Forest
					904	0.450	
					904	1.695	
					902	3.020	
	Mul	Babrala	Chandrapur	--	59	0.42	Zudpi Jungle
				--	65	0.02	
				--	57	0.03	
				--	70	0.01	
				--	29	0.22	
				--	67	0.05	
					Total Forest Area (in ha.)	**315.74**	

Abstract

Sr.No.	Name of Division	Area (in ha.)
1	Bramhapuri Forest Division	168.86
2	Central Chanda Forest Division	20.538
3	Chandrpaur Forest Division	126.342
	Total Forest Area (in ha.)	**315.74**

3.00 The proposal has been initiated by the Executive Engineer, Asolamendha Project Renovation Division No.1, Mul. for approval under Forest (Conservation) Act, 1980. The proposed project dam site is located about 70 Km from Chandrapur District place. Asolamendha Renovation Project envisages Strengthening of 2.96 Km long existing Earthen dam across river Pathari near Village Pathari in District Chandrapur to create irrigation potential 56317 ha. in Chandrapur District. The proposed project to raise the height of existing Asolamendha dam by 2.70 M. and proposed to store the additional water through Gosikhurd Right Bank Canal. It Also proposed to increase the existing command area of Asolamendha project from 9919 ha. to 54879 ha. It is very important to increase the socio-economic status of cultivators in the command area of Asolamendtha. So this forest proposal is prepared for sanction the additional forest area required for increased submergence and for canal renovation networks in Saoli, Mul and Pombhurna talukas of Chandrapur District. The 71.99 ha. area involved Reserved Forest F.D.C.M.

3) Following documents as prescribed in Government Circular, Revenue and Forest Departme No.FLD-1081/2041/(A)/F-3, dated 20/03/1982 and according to Government of India's instructions issued from time to time are enclosed in three copies.

3.1 Prescribed form dated 10/01/2003.
3.2 Certificate regarding minimum demand of forest land for the project.
3.3 Area Statement.
3.4 Index map in suitable scale.

4.00 The Deputy Conservator of Forests, Bramhapuri, Central Chanda and Divisional Forest Officer, Chandrapur Forest Division, Chandrapur have certified that:-

4.1 The total non forest land involved in the project is 628.26 ha.

4.2 The copy of the Administrative /Technical Approval accorded by the Government of Maharashtra, Suprama/2016/394/2016/Mopra-2, dated 21/09/2016 is enclosed on **page No.19**

4.3 The Site Inspection Report of the Deputy Conservator of Forests, Bramhapuri, Central Chanda and Divisional Forest Officer, Chandrapur Forest Division, Chandrapur are enclosed on **page no.119 to 124.**

4.4 The Site Inspection Report of the Chief Conservator of Forests (T), Chandrapur is enclosed on **page No.205 A to 205 B.**

4.5 No suitable alternate land is available and the forest land required is barest minimum demand **(P/142), (P/159) & (P/173).**

4.6 The area belongs to Eco-value class-III, having density 0.2 to 0.6 **(P/148), (P/163) & (P/185 to 187).**

4.7 There are 7501 trees to be felled in the project the Girth wise break up is as under:-

Division	Below 60 cms	Above 60 cms	Total
Central Chanda	1460	26	1516
Chandrapur Forest Division	Difference upto FRL to FRL -4 to canal area		5985
Total	**1460**	**26**	**7501**

Measurement of Trees upto FRL to FRL-4

Division	Purticular	Below 30 cms	31-60	61-90	91/120	121/150	Above 150	Total
Bramhapuri	Upto FRL	18233	3026	1074	584	348	269	23534
	FRL to FRL-2	23514	6248	2858	1279	712	415	35026
	FRL-2 to FRL-4	3821	4322	1872	788	448	221	11472
	Total	**45568**	**13596**	**5804**	**2651**	**1508**	**905**	**70032**
Chandrapur Forest Division	Upto FRL	5769	7337	2555	1165	563	454	17843
	FRL to FRL-2	5129	6528	2267	1038	503	406	15871
	FRL-2 to FRL-4	1927	2455	855	389	198	153	5977
	Total	**12825**	**16320**	**5677**	**2592**	**1264**	**1013**	**39691**

4.8 The area involved in the project does not form part of any existing National Park, Wildlife Sanctuary, Nature Reserve etc **(P/143), (P/166) & (P/174)**

4.9 Proposed project is not likely to affect any monumental site of cultural, historical, religious, archeological or recreational importance **(P/140), (P/161) & (P/170).**

4.10 There is no violation of Forest (Conservation) Act 1980 **(P/139), (P/160) & (P/169).**

4.11 (i) The proposed project is at 27.724 Km. from the boundary of Tadoba Andhari Tiger Reserve boundary & More than 10.00 Km away from Buffer Zone area boundary of Tadhoba Andhari Tiger Reserve **(P/136)**

(ii) The proposed project not fall within the 10 Kms. Zone from the boundary of Protected Area. The distance from nearest sanctuary i.e. Kanhargaon WLS is 14.600 Kms **(P/162)**

(iii) The proposed project is 27.721 Km. from the boundary of Tadoba-Andhari Tiger Reserve boundary 19.775 Km. away from Buffer Zone area boundary & Eco-sensitive Zone Boundary away from 19.971 Km. of Tadhoba-Andhari Tiger Reserve **(P/181)**

4.12 The non-forest area covered under the project is not under the provision of Maharashtra Private Forest (Acquisition) Act 1975 by virtue of application of Section 35 of Indian Forest Act 1927 and are not recognized as deemed reserved forest as well as not included in the area identified as "forest" as per dictionary meaning of forest as intimated to the expert committee appointed under interim judgment of the Hon'ble Supreme Court dated 12/12/1996 **(P/144), (P/165) & (P/175 to 176)**

4.13 Proposed compensatory afforestation over 315.74 ha. non forest land the details of CA land is mentioned below:-

Sr. No.	District	Taluka	Village	Survey No.	Area (in ha.)
1	Yavatmal	Babulgaon	Dabha	93/1,93/1b, 94,97,98,991/1,99/2,100,101/1, 101/1A,101/2,102,103/1,103/1B,103/2,103 /3,104/1,104/1a,104/1b,104/2, 104/3,105/1, 105/1a,105/1b,105/2, 105/3,106,107/1, 107/2,107/3,109/1,109/1a,110,111,144/1,1 45/2,145/3,147/1,147/2,147/3,147/4,148/2, 149,150/1,150/2,151/1,151/2,151/3,151/4,1 52/2,153/3,152/4,152/5,153/1,153/2,153/3, 154/2,154/3,156/1,156/2,156/3,157/1,157/2 ,159,161/3,165,165/1b,165/1c,166,171/1,1 71/1a,172/2,172,173/1,174,177/1,177/2, 177/2a,177/3,179/1,179/2,179/3,179/4,180/ 2,181/1,181/2,183/2,184/1,184/2,184/3,185 /1,185/1a,185/1b,185/1c,185/2,185/3,188,1 90/1,190/2,191/1,191/2,192/1,192/2,198/1, 198/1a,198/1c,198/2,199/1,199/1a,199/2,19 9/2a,199/3,200/1,200/2,203/1,203/2,204,20 5/1,205/1a,205/2,205/3,206/1,206/2,206/3, 207/1,207/2,207/3,214/1,214/2,215/1,215/1 a,215/2,215/3,216,217,218/1,218/1b,218/2, 219/1,219/2,220,221/1,222/1,222/2,222/3,2 26,237/1,237/2,238,239/3,240/1,240/2,240/	315.74

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				9/2a,199/3,200/1,200/2,203/1,203/2,204,205/1,205/1a,205/2,205/3,206/1,206/2,206/3,207/1,207/2,207/3,214/1,214/2,215/1,215/1a,215/2,215/3,216,217,218/1,218/1b,218/2,219/1,219/2,220,221/1,222/1,222/2,222/3,226,237/1,237/2,238,239/3,240/1,240/2,240/3,240/3a,240/3b,240/4,241/1,241/3,241/4,242/1,242/2,243/1,243/2,243/3,243/4,245/1,245/4,246/1,246/1a,246/2,246/3,247/1,247/2,249/1,249/2,249/3,250/1,250/2,251/1,251/2,252/1,252/2,252/3,253/1	
2	Yavatmal	Babulgaon	Pahur	728,740,742,743,745,746,747,748,749,751,752,753,754,755,756,760,761,782,783,784	

at the cost of the user agency. As far as possible, a mixture of local indigenous species shall be planted and monoculture of any species may be avoided.

7.4 The cost of compensatory afforestation at the prevailing wage rates as per compensatory afforestation scheme and the cost of survey, demarcation and erection of permanent pillars if required on the CA land shall be deposited in advance with the Forest Department by the project authority. The CA will be maintained for 10 years. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.

7.5. NPV:-

a) The State Government shall charge the Net Present Value (NPV) for the 315.74 ha forest area to be diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 30/10/2002, 01/08/2003, 28/03/2008, 24/04/2008 and 09/05/2008 in IA No. 566 in WP (C) No. 202/1995 and as per the guidelines issued by the Ministry vide letters No. 5-1/1998-FC (Pt.II) dated 18/09/2003, as well as letter No. 5-2/2006-FC dated 03/10/2006 and 5-3/2007-FC dated 05/02/2009 and File No.5-3/2011-FC(Vol-I). Dated 06/01/2022 in this regard.

b) Additional amount of the NPV of the diverted forest land, if any, becoming due after finalization of the same by the Hon'ble Supreme Court of India on receipt of the report from the Expert Committee, shall be charged by the State Government from the User Agency. The User Agency shall furnish an undertaking to this effect.

7.6 User agency shall restrict the felling of trees to minimum number in the diverted forest land and the trees shall be felled under the strict supervision of the State Forest Department and the cost of felling of trees shall be deposited by the User Agency with the State Forest Department.

7.7 All the funds received from the user agency under the project shall be transferred/ deposited to CAMPA fund only through (https://parivesh.nic.in/).

7.8 The complete compliance of the FRA, 2006 shall be ensured by way of prescribed certificate from the concerned District Collector.

7.9 Speed regulating signage will be erected along the railway line at regular intervals in the Protected Areas/ Forest Areas.

7.10. The user agency shall provide suitable under/ over passes in Protected Area/ Forest Area.

7.11 No damage shall be caused to the flora and fauna of the area.

7.12 No labour camp shall be established on the forest land.

7.13 The user agency, if required, shall undertake comprehensive soil conservation measure at the project cost in consultation with the Forest Department.

7.14 The user agency shall carry out muck disposal at pre- designated sites in such manner so as to avoid its rolling down;

7.15 The dumping area for muck disposal shall be stabilized and reclaimed by planting suitable species by the user agency at the cost of project under the supervision of State Forest Department. Retaining walls and terracing shall be carried out to hold the dumping material in place. Stabilization and reclamation of such dumping sites shall be completed before handing over the same to the State Forest Department in a time bound manner as per plan;

7.16 The user agency shall consult organizations (s) having experience in construction of roads in hilly areas to avoid frequent road blocks due to landslides etc. and shall provide breast walls and retaining walls wherever necessary;

7.17 The layout plan of the proposal shall not be changed without the prior approval of the Central Government.

7.18 All other conditions as may be mandatory under relevant Acts, Rules and guidelines shall be complied with by the user agency.

8.00 It is therefore, requested that Government of Maharashtra may kindly be placed before the Government of India for its approval under section-2(ii) of the Forest (Conservation), Act, 1980

Encl. :- Proposal 2 copies

(Naresh Zurmure)
Addl. Principal Chief Conservator of Forests
& Nodal Officer

Copy to the Chief Conservator of Forests(T), Chandrapur for information.
Copy to the Deputy Conservator of Forests, Bramhapuri, Central Chanda for information.
Copy to the Divisional Forest Officer, Chandrapur Forest Division, Chandrapur for information
Copy to the Executive Engineer, Asolamendha Project Renovation Division No.1, Mul for information

ANNEXURE-2

FDCM NOC

ANNL

(महाराष्ट्र शासनाचा उपक्रम)
CIN:- U45200MH1974SGC017206
कार्यालय:- एफडीसीएम भवन, अंबाझरी, हिंगणा रोड, नागपूर-४४००३६
E-Mail : gmpInfdcm@gmail.com website = www.fdcm.nic.in

11
ANNEXURE
II

क्र. कक्ष-नियो/आसोलामेंढा बुडीत क्षेत्र/प्र.क्र.८९/२०२१-२२/ २५०६ नागपूर, दिनांक 18 OCT 2023

प्रति,
प्रधान मुख्य वनसंरक्षक (वनबल प्रमुख),
महाराष्ट्र राज्य, नागपूर

विषय:- आसोलामेंढा प्रकल्पाचे बुडीत क्षेत्र तथा कालव्याच्या कामाकरिता लागणाऱ्या वनसंपादन प्रस्ताव पाथरी कक्ष क्र. १३१,१४० व १४१- बाधित वनक्षेत्र ६३.७३० हे. १६३ A(IP SIDE), १६३ A (SR SIDE) १६४, १६५ A व १६६ मधील एकुण ८.२६० हे. असे एकुण ७१.९९० हे. वनक्षेत्र वळती करणेबाबत.

संदर्भ:- १. अपर प्रधान मुख्य वनसंरक्षक तथा केंद्रस्थ अधिकारी, महाराष्ट्र राज्य, यांचे पत्र क्र. P/89 Desk-17/nodal/Chandrapur/I.D.13913/2389/22-23 DT.15.12.2022.
२. या कार्यालयाचे पत्र क्र. कक्ष-नियो/ आसोलामेंढा/ प्र.क्र.४०/ २०१८-१९/३६२ दि.१८.०५.२०२१ P/96
३. प्रादेशिक व्यवस्थापक, चंद्रपूर प्रदेश यांचे पत्र क्र.प्राव्य/चंप्र/जमिन/फा.क्र.६७(अ)/ २२-२३/१३४८, दि. ०२.०८.२०२३. P/187

उपरोक्त संदर्भिय पत्र क्र.१ अन्वये, विषयांकित प्रकरणी एफडीसीएम लिमिटेड अंतर्गत चंद्रपुर प्रदेशाकडील ब्रम्हपुरी वन प्रकल्प विभागातील ७१.९९० हे. वनक्षेत्र बाधित होत असून सदर बाधित क्षेत्राबाबत ना हरकत प्रमाणपत्र देण्याची विनंती करण्यात आलेली आहे.

२.०० तथापी उक्त ७१.९९० हे. क्षेत्रापैकी यापुर्वी सम प्रकरणी ८.२६० हे. वन क्षेत्र बाधित होत असल्याने ८.२६० हे. वन क्षेत्राची मुल्यांकन रक्कम रू.३५,१६,७४७/- (अक्षरी रक्कम पस्तीस लक्ष सोळा हजार सातशे सत्तेचाळीस फक्त) निश्चित करण्यात येऊन संदर्भिय पत्र क्र. २ अन्वये, ना हरकत प्रमाणपत्र देण्यात आले. सदरील ८.२६० हे. चे ना हरकत प्रमाणपत्र याद्वारे रद्द करण्यात येत असुन संदर्भिय पत्र क्र. ३ अन्वये प्रादेशिक व्यवस्थापक, चंद्रपूर प्रदेश यांनी बाधीत एकूण ७१.९९० हे. वनक्षेत्राचा सुधारीत मुल्यांकनाचा प्रस्ताव सादर केलेला आहे. यामध्ये ब्रम्हपूरी विभागातील कक्ष क्र.१३१,१४०,१४१,१६३A,१६४, १६५A, व १६६ मधील एकुण ७१.९९० हे. वनक्षेत्र विषयांकित प्रकल्पातंर्गत बाधीत होत असल्याचे कळविले आहे.

३.०० सदर बाधित क्षेत्रावरील एफडीसीएम लि. च्या मालमत्ते पोटीची रक्कम ही एफडीसीएम लि. च्या दि.२७.०९.२००६ रोजी संपन्न झालेल्या संचालक मंडळाच्या १३६ व्या सभेतील निदर्शाप्रमाणे आजमितिस रु ११,५४,८७,८५२/- (अक्षरी रक्कम अकरा कोटी चौंपन लक्ष सत्याऐंशी हजार आठशे बावन फक्त) व त्यावरील १८% जीएसटी रु. २,०७,८७,८१३-(अक्षरी दोन करोड सात लक्ष सत्याऐंशी हजार आठशे तेरा रुपये फक्त) असे एकूण रु. १३,६२,७५,६६५/- (अक्षरी तेरा कोटी बासष्ट लक्ष पंच्याहत्तर हजार सहाशे पासष्ट फक्त) इतकी होते. संचालक मंडळाचे निर्देशानुसार क्षेत्र हस्तांतरणाच्या वेळेस बाधीत मालमत्तेचे जे मुल्य निश्चित होईल ते संबंधित यंत्रणेकडून एफडीसीएम लि. ला देण्यात येईल या अटीवर सदर क्षेत्राचा वापर एफडीसीएम लि. च्या कामाव्यतिरीक्त नमूद कामासाठी करण्यास कंपनीची हरकत नाही.

(विकास गुप्ता)
व्यवस्थापकीय संचालक
18/10/23

प्रतिलीपी- अपर प्रधान मख्य वनसंरक्षक तथा केंद्रस्थ अधिकारी, महाराष्ट्र राज्य, नागपूर यांना माहिती व

Forest Development Corporation of Maharashtra Limited

Office –Principal Chief Conservator of Forests (Head of Forest Force),
Maharashtra State, Nagpur

Outward No. Neo/Asolamendha Submergence /Case No.89/2021-22/2406 Date :-18 Oct. 2023

To,

Principal Chief Conservator of Forests (Head of Forest Force),
Maharashtra State, Nagpur

Subject :- Regarding proposed diversion of forest land for submerged area and canal works of Asolamendha Renovation Project 63.730 affected forest area in Pathari Range compartment No. 131,140, and 141. and 8.260 ha of compartment No. 163 A (IP SIDE), 163 A (SR SIDE) 164, 165 A , and 166. Likewise total of 71.990 hectares of forest area.

Ref :-
1. Letter from Principal Chief Conservator of Forests / Central Officer, State of Maharashtra, Desk-17/ nodal/ Chandrapur/ I.D. 13913/2389/22-23 DT.15.12.2022
2. This office's letter no. Kaksha- Neo/ Asolamendha/ Case.No.40/ 2018-19/362 dt. 18.05.2021
3. Regional Manager, Chandrapur Region letter no. Pravya / Chandrapur / Land /Fr. No. 67 (a)/2022-23 /1348, dt. 02.08. 2023.

****

The above reference letter no. 1, 71.990 ha in Bramhapuri Forest Project Division of Chandrapur Region under FDCM Limited in the subject matter. The forest area is being affected and a request has been made to issue a no objection certificate regarding the said affected area.

2.00 but the said out of the total area of 71.99 ha in the previous case. 8.260 ha as the forest area is affected. The assessment amount of forest area was fixed at Rs.35,16,747/- (Rupees. thirty five lakhs sixteen thousand seven hundred and forty seven only) and with reference to letter no. 2 no objection certificate was issued under reference No.2. the said. No Objection Certificate of 8.26 ha is hereby canceled and reference letter no. 3. total of 71.99 ha covered by the Regional Manager, Chandrapur Region under reference letter no. 3. A proposal for revised assessment of forest area is submitted. In Bramhpuri division. Compartment No. 131, 140, 141, 163, 164, 165 and 166 having total 71.99 ha. The forest area is reported to be affected under the subject for Project.

3.00 The amount under the assets of FDCM Ltd. As per the recommendation of the 136th meeting of the Board of Directors held on 27.09.2006, uptodate Rs.11,54,87,852/- (Rupees. eleven crore fifty four lakh eighty Seven thousand eight hundred and fifty two only) and 18% GST on it is Rs.2,07,87 ,813- (Rupees Two Crores Seven Lakhs Eighty Seven Thousand Eight Hundred and Thirteen Rupees only) Total Rs. 13,62,75,665/- (Rupees thirteen crores sixty two lakhs seventy five thousand six hundred sixty five only). According to the direction of the board of directors, the value of the affected property at the time of transfer of the area will be determined and that will be payable by the concerned agency to FDCM Ltd. On this Condition there is no objection for use of area for said purpose than FDCM work.

Sd/-
(Vikas Gupta)
Managing Director

Copy - Principal Chief Conservator of Forest /Central Officer, State of Maharashtra for Information and necessary action.

ANNEXURE-3

CAT PLAN

Asolamendha Renovation Project

Name of Plan:- Catchment Area Treatment Plan For Asolamendha Project. Oct 2023

Catchment area treatment plan for Asolamendha Renovation Project is prepared by User agency as per site conditions and submitted for approval, Catchment treatment plan is checked and found correct, recommended for approval.

(Prashant Khade)
Divisional forest officer,
Chandrapur Forest Division,
Chandrapur.

(Dr. Jitendra Ramgaonkar)
Chief Conservator of forests,
Chandrapur Circle,
Chandrapur.

PREFACE

Asolamendha Project constructed in British Era was made part of Gosikhurd National Project in the original Administrative approval dated 31 March 1983, and it was proposed to raise the height of Asolamendha Dam by 2.70 m, thereby increasing the capacity of the dam from 67 TMC to 120 TMC and increasing the irrigation potential from 9919 Ha to 54879 Ha. Asolamendha Renovation Project is under construction on Pathari River in district Chandrapur of Maharashtra State. Pathari river is Tributary of The Wainganga River which is sub-basin of Godavari River. The project lies at Latitude 20° 13'45" N and longitude 79° 49' 0" E

The catchment area of this project 245.72 Square Kilometers. The gross storage is 120.568 Mm^3 with proposed irrigation potential of 54849 hectors. This irrigation is proposed by main canals 41.37 KM, & Three Branch Canal.

The Central Government, the Ministry of Environment & Forest has accorded the Environmental clearance to this project subject to some conditions vide letter No. J 11016(7), dated 3.2.1988 for Gosikhurd Project and Asolamendha is part of it. The forest proposal for diversion of 315.74 ha of forest land under FC Act 1980 is submitted on 17.07.2019 and resubmitted after compliances on 15.06.2022. MOEF had raised EDS dated 1/12/2022 and 10/10/2022 and asked for submission of Catchment Areat Treatement plan for Asolamendha Dam. As a part of fulfilment of these conditions, a detailed report on Catchment Area Treatment Plan is prepared. the same submitted herewith.

The basic information required for preparation of this report is gathered in the month of July - August 2023 from various departments of Maharashtra Govt. like Revenue, Water Resources, Forest & Agriculture. After scrutiny of this information the CAT report is prepared in this Volume which consists of detailed Report and Drawings.

We heartfully acknowledge Chief Engineer Shri Vemulkonda Saheb and Shri R.G. Patil Saheb, Superintending Engineer for extending their valuable guidance for preparation of this report.

We also acknowledge all the Government officials from various Government Departments of Maharashtra State for extending their kind co-operation.

CHAPTER 1

Asolamendha Renovation Project

CATCHMENT AREA TREATMENT

SECTION 1: INTRODUCTION

Pathari river is one of the major tributary of River Wainganga which is sub basin of Godavari river and it runs through Chandrapur District of Vidarbha Region. Major portion of Vidarbha Region is covered by Pranhita Sub-Basin of Godavari river basin. The main tributaries which contribute to form Pranhita river are Penganga. Wardha and Wainganga. The three valleys cover about 74% of the gross area of Vidarbha Region, out which 31% accounted for by Wainganga river valley.

Pathari river rises at an approximate elevation of R.L. 265 m near Rajoli in Sindewahi District of the Maharashtra. From high level elevations all near its origin, the river flows down through the Dense Forest After emerging from the hill the river enters the plains and flows generally southwards.

The river then flows along the Taluka border between Sindewahi & Saoli Tahsil and enters in the Pombhurna Tahsil. Where it meets the Andhari river, after confluence the river is known as Andhari which flows on the border of Pombhurna tahsil and Chandrapur Tahsil and joins the Wainganga river near Ghatkul in Chandrapur district.

The catchment area upto dam site is 245.72 Km^2. A number of big tributaries contributes to the total flow of Wainganga river before its confluence with Wardha river.

The Nallas/ tributaries upto the dam proper on left & right side are as follows:

Sr.No.	Left Blank Nalla	Catchment Area	Right Blank Nalla	Catchment Area
1	4E8A4d1	11.86	4E8A4g4	14.643
2	4E8A4d2	13.61	4E8A4g3	9.643
3	4E8A4d3	14.34	4E8A4g2	11.753
4	4E8A4f3	8.13	4E8A4g1	5.303
5	4E8A4f5	8.62	4E8A4f9	11.243
6	4E8A4f8	7.05	4E8A4f7	9.173
7	4E8A4g5	10.24	4E8A4f6	7.403
8	4E8A4g6	12.58	4E8A4f4	6.623

9	4E8A4g7	9.6	4E8A4f2	9.683
10	4E8A4g8	10.34	4E8A4f1	9.723
11	---		4E8A4c9	8.053
12	----		4E8A4c7	10.431
13	---		4E8A4c4	9.553
			4E8A4c8	9.411
			4E8A4c3	6.712
Total		**106.37**		**139.35**

At the dam side the river has a Narrow fan shaped drainage area which has a large variation in respect of slope, soil and vegetation cover. The portion of the catchment area near the origin of various tributaries and in their early lengths are semi hilly with some agricultural and forest cover. After the tributaries leave the hill slopes they enter relatively plain and wide valleys.

The head work of this Project is a composite dam of 3.18 Km length inclusive of spillway of length of 250 m and Non over flow portion of 3 Km lengths on both flanks. The Main canal is 42 km long and have three Branch canal which will irrigate 43763 Ha. land in Chandrapur District . There is also a provision of supply of water for Drinking Purpose.

Climate:-

The climate surveyed area is characterised by semi-arid climate with hot summer and mild winter. The mean annual air temperature is 30° C for Chandrapur stations while May is the hottest month with maximum temperature of 46° C and minimum as 37° C. December is the coldest month with maximum temperature of 25.6° C and minimum of 5.2° C. The area receives rainfall mainly from South- West Monsoon winds.

The meteorological data presented in Table 1, 1 (a), 1 (b) indicates that the annual rainfall of the area ranges between 1119 to 1307 mm, averaged, of which nearly maximum is received during June to September.

The mean summer (June, July, August) and mean winter (December, January, February) air temperature vary in between 26.2° C to 29.2° C and 16.2° C to 21.7° C, respectively with a difference of 7.3°C to 10.0° C which is more than 5°C and hence can be classified in "Hyperthermic" temperature family.

Most of soils remain moist for above 120-140 days during the year.

SECTION 2: CATCHMENT AREA

The catchment area of Asolamendha Project is 245.72 km². The catchment lies in Saoli, Sidnewahi Talukas of Chandrapur district in Maharashtra State .

The portions of the catchment area near of origin of various tributaries in their early length are hilly and are covered with agricultural land and forests. After the tributaries leave the hill slopes they enter relatively plain. In view of these large variations, the catchment area was required to be divided into various zones. The break-up of catchment is as follows:

1) Chandrapur District of Maharashtra State 245.72 km^2

The breakup of catchment area such as agriculture land, forest land and other land comes under Maharashtra state is available and is as below:-

1) Agriculture Land	---- 15.50 %
2) Forest Land	---- 73.57 %
3) Other than cultivation and Forest Land	---- 10.93 %

The catchment area of the project is generally plain terrain with dense forest. The forest is mostly classified as A & C Class having Yen, Bija, Haldu, Khair, Hiwar, Apta, Arjun, Mahua, Dhawada, Teak, etc, and mostly shrubby grown and small bushes. The density of forest cover is varying from 0.2 to 0.6.

The forest presents good cover for prevention of soil erosion with the help of vegetation, bushes and concentration of trees of various verities. In contrast, due to unplanned and unscientific felling of trees in recent years, it has resulted in fast deletions of forest cover, hence requires extensive afforestation treatment.

The proposed reservoir will submerge the total area of 9.44 km^2 land in Chandrapur-district. The details are as below:-

1) Forest land	180.79 Km^2 (73.57 %)
2) Revenue land	26.85 Km^2 (10.93 %)
3) Private land	30.08 Km^2 (15.5 %)
Total	245.72 km^2

For afforestation about 315.74 Hectors of land which cultivable land owned by user Agency has been acquired and delineated for Compensatory afforestation The afforestation work on down stream of dam is proposed to carried out in some area. Efforts to start the afforestation work in the above land will be made after approval of forest proposal.

GREEN BELT ALONG RESERVIOR PERIPHERY

It is proposed to carry out the afforestation along periphery of reservoir to compensate the forest land going under submergence of the Project The total forest land of 315.74 Ha. is required for the Renovation of this project and 315.74 Ha. of land has been made available to the Forest Department for afforestation in Yavatmal district of Maharashtra.

In addition to the above provisions, already there is forest along periphery of reservoir on an area in between MWL and FRL in addition to that afforestation along periphery of reservoir can be thought of in due course of time. This effort certainly will be helpful to increase the area of green belt along reservoir periphery and will help to reduce the soil erosion.

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SECTION 3: RIVER SYSTEM

In a drainage basin, presence of stream and channels are the important factors. Besides erosion they also serve as depositional agent for entire basin. The Andhari Sub basin with main river as Pathari and its tributaries upto dam site on 08 Nalla on River Left Bank and 09 Nalla on River Right Bank are the main source of supply originating from dense forest. Tributaries are non-perennial and are active only during rainy season and winter season.

The yield of the catchment area is generally affected due to human interference in the form of unauthorised felling of forest, change in Agriculture practices and increase in the area of cultivation resulting in decrease of natural precipitation. The rainfall in the catchment area is confined much during rainy season except for one or two post monsoon falls during November and December.

For the purpose of framing this scheme, the catchment areas upto dam site are divided into following water sheds.

Sr.No.	Left Blank Nalla	Catchment Area	Right Blank Nalla	Catchment Area
1	4E8A4d1	11.86	4E8A4g4	14.643
2	4E8A4d2	13.61	4E8A4g3	9.643
3	4E8A4d3	14.34	4E8A4g2	11.753
4	4E8A4f3	8.13	4E8A4g1	5.303
5	4E8A4f5	8.62	4E8A4f9	11.243
6	4E8A4f8	7.05	4E8A4f7	9.173
7	4E8A4g5	10.24	4E8A4f6	7.403
8	4E8A4g6	12.58	4E8A4f4	6.623
9	4E8A4g7	9.6	4E8A4f2	9.683
10	4E8A4g8	10.34	4E8A4f1	9.723
11	---		4E8A4c9	8.053
12	----		4E8A4c7	10.431
13	---		4E8A4c4	9.553
			4E8A4c8	9.411
			4E8A4c3	6.712
Total		**106.37**		**139.35**

Pathari River-Water Shed:-

The river originates in Chandrapur-district-of-Maharashtra and meets with the Andhari river at 70-km down stream. It originates near Rajoli in Chandrapur District. The river bed is not much steep and flows with raiswal height bank of 2 to 3 metre. The total Catchment area is 245.72 Km^2.

District wise Predominant land use pattern of the catchment are in Maharashtra state is as follows.

Sr.No.	District	Catchment area in District km^2	Forest area in km^2	Other area not available for cultivation	Cultivable area in km^2
1	2	3	4	5	6
01	Chandrapur	245.72	180.79	26.85	38.08
	Total	**245.72**	**180.79**	**26.85**	**38.08**

SECTION 4 : GEOLOGY

Physiography :-

In the catchment area of Asolamendha Project, most of the area in Maharashtra is lying in the Plain area between elevations of 202 m. to 265 m above M.S.L. Catchment area in Maharashtra is fully plain.

It is Flat to the north east and west and has an average elevation of 230 m above M.S.L. The district lies both the north latitudes 20° 13' 45" and east latitudes 79° 45' and covers area of about 245.72 km². The elevation of the area ranges both 202 m and 265 m above M.S.L.

The total length of the river is about 54 km from its origin to confluence with Andhari River.

Geology :-

Geologically, Chandrapur district forms a part of Gondwana sedimentary basin. The Gondwana sedimentation took place in Wardha valley where Gondwana sediments have overlay the Archean rocks. Lithologically Chandrapur district presents a variety of stratigraphic units right from Archean to recent alluvium and laterites (Fig. 2). The Archaean rocks comprise gneisses, quartzites, Banded Haematite Quartzites (BHQ), schists with basic intrusive rocks like pyroxenites, amphibolite, etc. The rocks are intruded by several dykes, trending NE–SW, are exposed in the eastern part of Chandrapur district. Iron ore series and Sakoli series are equivalent in age. Iron ore series constitutes the important iron deposits of Chandrapur district. The rocks are quartzite, BHQ, quartzite schist, phyllites, etc.

The Dharwars have been intruded on a very large scale and comprise of granites, granitoids and gneisses. The Vindhyans are represented mainly by flaggy and massive limestones, shale's and sandstones. The lenticular patches of breccia with angular fragments cemented by calcareous matrix are found at several places in limestones. The limestones are dolomitic at places. Sandstones and quartzities are hard copact and forms ridges.

Lower Gondwana includes hard quartzite, sandstones, grits, and conglomerates. The sandstones are finegrained whitish colored and calcareous in nature. The shales are of red colour and are found in small patches in the southeastern part of Chandrapur district. The Deccan trap lava formation covers small part of the district. The amygdaloidal softer variant varieties usually show calcite filling. In the district, Alluvium is mostly of fluviatile origin and comprises sand, silt and clays. It is generally found along the banks of nallas and rivers. Its thickness varies from 8 to 35 m as observed along the Wardha river, the Erai and the Wainganga river courses. It also contains gravel along with sand, silt and clays at places.

SECTION - 5: METEOROLOGY

The catchment area of Asolamendha Project is influenced by the meteorological features of Chandrapur of Maharashtra -State. The climatological features in whole of the catchment area is almost same with slight variation. The climate in this region is dry and the temperature have large variation. The maximum and minimum temperatures recorded at Chandrapur are about 47° C in Summer and 5.2° C in winter.

The precipitation in the catchment area is mainly due to south-west monsoon. The monsoon precipitation generally commences in the last week of June and continues till September with occasional spell of late monsoon showers during in October. The average annual rainfall in the area is about 1300 mm; which is more or less assured but its distribution shows an erratic trend. Out of the total rainfall the precipitation of 95% is from June to October and remaining 5% is from post monsoon.The seasons of the year are broadly divided into three viz Winter, Summer and Rainy season.

Winter Season :-

The winter season generally occurs from November to February. December and January are the coldest months in winter period.

Summer Season :-

The summer season is from March to June extends upto the on-set of monsoon. During this season the maximum temperatures are mostly recorded during the month of May.

Rainy Season:-

The rainy season in this area occurs from last week of June and extends upto September with occasional spell of showers during the month of October. The maximum rainfall resulting in flooding of the river and streams of this area, have been observed during July and August. There have been some instances of flood in the month of September as well.

The nearest meteorological station for this project is located at Nagpur. At 00 G. M. T. the station show high percentage of relative humidity at the ground which is of the order of 92% in August. During June to September i.e. the monsoon period, air is more moist, the relative humidity is still higher during this period. At 12 G. M. T relative humidity is less compared to 00 G. M. T at Chandrapur station.

The mean surface wind speed at 00 G. M. T is generally high during the monsoon period and at 12 G. M. T strong surface wind area observed at Chandrapur station.

The mean surface relative humidity percentages observed at Chandrapur station at 00 G. M. T and 12 at G. M. T for the entire year are as given under :-

Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
a) (at 00 GMT)											
74	94	85	70	68	95	98	99	98	89	83	97
b) (at 12 GMT)											
24	19	15	17	17	28	46	49	49	33	30	31

The season wise temperature and relative humidity at Chandrapur are tabulated here under.

TABLE-1

METEOROLOGICAL DATA

Month	Precipitation (mm)	Humidity %	Temperature		
			Max.	Min.	Mean
January	2	48%	28.9 °C	15.8 °C	22.3 °C
February	7	42%	32.2 °C	18.8 °C	25.6 °C
March	12	34%	36.1 °C	22.3 °C	29.4 °C
April	10	29%	40 °C	26.5 °C	33.4 °C
May	17	28%	41.6 °C	29.9 °C	35.8 °C
June	204	54%	35.7 °C	27.5 °C	31.4 °C
July	376	78%	30.1 °C	24.8 °C	27.1 °C
August	325	81%	29.4 °C	24.3 °C	26.5 °C
September	203	79%	30.7 °C	24.1 °C	27 °C
October	62	65%	31.6 °C	22 °C	26.7 °C
November	14	55%	30.4 °C	18.8 °C	24.5 °C
December	3	50%	28.7 °C	16 °C	22.3 °C
Total	1235				

Source:- Meteorological Station Chandrapur.
Temperature Family:- Hyperthermic
Climatic Zone :- Tropical hot Climate

SECTION 6: IRRIGATION FACILITIES

Total catchment area of Asolamendha Project is 245.72 km². The break-up of catchment in Maharashtra State is as below:-

1) Maharashtra State :- 245.72 km²

Most portion of the catchment area lies in Plain area, having attitude of 202 m to 265 m above M. S. L. The area of remaining catchment is considerably flat. The break-up of Agriculture land, Forest land and Revenue land in the catchment of this project is as below:-

1) Forest land ... 18079 Ha..
2) Agriculture Land ... 3808 Ha
3) Revenue land ... 2685093 Ha.

The Agriculture land under catchment area is about 38.08% of total catchment area.

The following projects which are either completed or under construction or under planning are considered for upstream reservation in Maharashtra State.

Sr. No.	Name of Project	Utilisation
1)	Major Project	--
2)	Medium	--
3)	Minor & Local Sector	08 MCu.M
	Total	**08 MCu.M**

In addition to above the upstream reservation The existing irrigation in this area by wells, river and other sources is about 7% only, as compared to the I.C.A. of this project. This area under well irrigation is about 2000 Ha. only.

In the recent past due to felling of trees, erosion of soils, the environment has changed slightly. This can be controlled and counteracted by large scale afforestation and soil conservation programme, which will help to improve the water retention capability of the soil. This will moderate floods and stabilise the slopes. All these measures would stabilises the irrigation by adopting scientific irrigation practices and modified cropping pattern.

Project after completion will stride towards green revolution, will be helpful in Agricultural, Industrial and commercial developments of the area. The irrigation potential of the Asolamendha project which was 9919 ha since British Era will increase to 54879 ha benefitting 82 villages of Chandarpur district. Thus, it can very well be said that this project is really a 'Boon' to the people of Vidarbha in Maharashtra State.

Soil conservation and afforestation :-

To control the flow of sediment, measures such as land levelling, contour bunding etc. are being implemented by Agriculture Department of Maharashtra State in the catchment area and by command area development authority of Maharashtra State in the command area of project.

Alternative non-forest land is made available to the Forest Department for afforestation. In addition to above, plantation is also proposed in the degraded forest land under the catchment area of this project. Such type of plantation works are to be carried out by Forest Department as per State plan and proposed to be completed in time span of 5 years. This will definitely go a long way in stabilising sub- soil and surface cover in the catchment of the Project.

(There is also a scheme envisaged under social forestry plan to plant trees around the fringe of the reservoir)

SECTION-7: INHABITANTS & CULTURE

Most portion of the catchment area of Asolamendha Project lies in Plain area, having altitude of 202 m to 265m above M.S.L. The entire catchment consists number of small streams and nallahs which adds to the drainage area upto the dam site.

The Asolamendha Dam is situated near village Pathari, Tahsil saoli, District Chandrapur which is approachable by the shortest route from the District Head Quarter Chandrapur as stated below:-

Chandrapur to Mul (National Highway) – 40 Km
Mul to Saoli (National Highway) – 13 Km
Saoli to Pathari – 25 Km
Pathari to Asolamedha Project – 1.4 Km

The dam site is also approachable from Gadchiroli via Vyahad - virkhal –Pathari Road. The distance is about 26 km from Gadchiroli to Pathari. The dam site is also approachable by Nagpur via Umred- Bhiwapur - Nagbhir –Sindewahi- Pathari which is about 170 km. Railway line, also passing through the catchment area of this project. In addition to these, there are No. of districts and village road/cart tracks passing through the catchment and are well inter-linked with State Highways.

The small scale industries, (Rice Mill) are established in the area. However, the large portion of population is in Agriculture. As more than 70% of the catchment area is Forest area, the work of Agriculture can be considered as the main occupation of the inhabitants. Advantages of this fact can be taken by subjecting more area under Irrigation with advanced technology and scientific Irrigation facilities. The area in catchment is irrigated presently with facility of minor Irrigation Projects in Maharashtra State.

The inhabitants of the valley have their own culture. A large population of the region resides in rural areas and is dependent on the Agricultural productions. The main language of the area is Marathi & Gondi, however Hindi is also spoken and understood. The Regional Head Quarter Nagpur is located on National Highway No. 6 and 170 km away from Dam site. The Divisional Head Quarter is located on State Highway 930 at Mul, which is about 35 km away from dam site, is well connected with other towns and villages. Almost all villages are electrified in this district Education facilities are also available in almost all villages.

Domestic fuel (firewood) is made available from local market and Forest Department. The essential commodities are available in the Taluka places situated in vicinity of catchment and from local weekly markets.

The people of the area are now well aware of the fact that indiscriminate felling of the forest results imbalance in the environment. However, because of resources and adverse economic

conditions, the malpractice of cutting forest for fodder and fuel purposes are still persisting. Considering the above process and conservation it appears that an integrated scheme for further developments of the area by afforestation and soil conservation will surely pay dividends and improve the economic conditions of the inhabitants and counter-act the effect of imbalance environment.

SECTION 8:

STATUS OF ENVIRONMENT IN CATCHEMNT AREA

General:

India ranks second most populous country in the world It can be observed during the preceding years, the population is increasing at an accelerated rate. Hence, the need for accelerating the pace of developing the natural resources is also increasing. The country has resorted to planned development after independence, which has considerably increased the living standard of the people.

As a result of accelerated growth of population, it is necessary to have planned and accelerated development of natural resources. One such development is soil conservation and other is afforestation. The top layer of the soil play the key role in the agricultural activities and forms the key for the vegetal growth.

The top layer of the earth crust interacts with nature and natural resources. The seepage through the surface soil adds to flows in the form of small or big streams. The surface flow plays key role in fertility of the local soil. Due to hilly track the rainfall being naturally more and the surface run-off increased due to steep slope resulting in enormous erosive effects. The rate of soil erosion of any area is due to several factors, out of which some are natural and others are man-made.

Natural Factor :-

The natural factor causing soil erosion is very slow process and most of these areas are non destructive.

Erodability of soil

The common feature of the basin is the rolling and undulating country, a series of ridges and valleys interspersed with low hill range. A large portion of it is covered with forests. There is a predominance of medium black soil except for a small portion in the north having shallow black soil. The soils in command area are mostly residual soil resulting from the decomposition of deccan traps. The command is rich in fertile black cotton and alluvial soils.

Sediment deposition computation by Empirical sediment distribution method have been made. Total proposed silt accumulation at the Asolamendha dam site will be about 25.90 Mm^3. Considering annual silt inflow rate in 02 Mft^3/year. Adopting a total accumulation of 12.1 Mm^3 of sediment at 100 years in the reservoir, the sediment pattern has been worked out based on the Silt Survey carried out by Irrigation Department.

Seismicity :

The dam site lies in seismic zone II. Hence basic seismic coefficient (o) is taken as 0.02 g. since the height of the damn is less than 100 m, the seismic coefficient method, as recommended by IS 1893-1975 is adopted for deciding horizontal seismic coefficient in design of earth dam & concrete dam respectively to take care of any possible earthquakes in the area.

Intensity :-

The area in absence of vegetal growth face the direct impact of rain drops resulting in disturbance of soil structure. The beating action of the drops of rain disturbs the soil particles. The action is called splash erosion. The extent of such erosion depends upon intensity of rainfall also on vegetation cover. Once the surface soil particles are dislodged, they are carried away easily by surface runoff.

Surface slope :-

A major portion of precipitation during monsoon season flows along the earth surface in the form of surface run off. The velocity depends upon the natural gradients. The run-off is considerably more in hilly region, continuing forest, shrubs, grass, rocks etc. Even though high velocity created because of the steep slope of such terrain, results in less eroding in such catchment carrying the soil with it.

Man-made Factors :-

Due to accelerated growth of population the consumption of firewood and fodder have also increased, which in turns has increased in abnormal deforestation and successive grazing by cattle herd. This process remove the forest growth covering the land surface. In absence of which soil particles with the direct impact of the rain get disturbed, in long run resulting in erosion. This in turn imbalance the environment.

Human population :-

The largest factor adversely affecting the environment is the population pressure, which has almost doubled in last decades. Study reveals that the population of India in the last decades has increased by 27.%. Apart from mounting needs of the people, the demands for forest product like wood and other products has risen steeply in the area. This has resulted in heavy pressure over the forest area and their consequent depletion.

Animal population :-

Due to subjecting more and more area under plough, the area which were once feeding source to the animals is getting diminished, starving the animal population and also lessening of natural manure for Agricultural fields. This meant higher demand for fodder and grass while already diminished resources are incapable of providing extra fodder. The availability further goes down due to plantation of needle like leaves, in places of broad leaves which can not be eaten by animals. This can be prevented by growing and increasing of forest there by long range security in ecological balance.

Requirement of fuel :-

Another added factor aggravating the situation is the growing need of fire wood for the accelerated population. In the previous couple of decades due to non-availability of alternative fuel the whole burden of supply of fuel was to be met with the existing sources. As the forest property considered common to the community, everybody concern were extracting more and more without re- generation of the sources.

Deforestation :-

Forest products are generally required in various domestic and industrial uses. The inhabitants generally required fuel and other domestic requirement such as building and furniture pay no attentions towards re-plantation.

In addition to providing timber and fuel wood, the forest cover further helps in retention of moisture in the soil. The water of such retained flows through underground drains add to capacity of springs that feed the main river and supports various plants and animal life.

Unscientific Agricultural Practices :-

The non bunding of fields and un-planned cropping pattern results in losing the retentively of soil as well as erosion of the surface.

Defence and Rallway :-

Defence and Railways establishment in the past decades have consumed timber extensively for making sleepers, carriages and other necessities. However, the railways of late have replaced the wooden sleepers by steel and concrete one. This has some how reduced depletion of valuable forest.

Impact of Environmental Degradation :-

The degradation of the catchment area has given rise to problem such as degradation of low proportion of forest cover and low forest increased deposition of silt in the lower regions of reservoir and water ways. Due to excessive exploitation of the natural resources may face serious depletion in coming days. Thus the ecological balance get disturbed. This happens due to destruction of forest cover by human sources and consequent soil erosion taking place.

The Development Dilemma

Reconciling economic needs with those of maintaining biological productivity can be achieved through integrated approach to development, which takes in to account factors like ecological, economic, social, cultural and Government involved in functioning of the system.

The integrated development of the catchment area should account for:

i) Massive afforestation programme with involvement of local community.
ii) Pasture development and their rotation.
iii) Prevention and control of natural and man-made fire.
iv) Development of the fuel, fodder and timber.
v) Soil conservation and increasing of water retention.

vi) Restoration and preservation of environment.

vii) Encouraging people to go for family planning to reduce the population pressure on natural resources.

SECTION 9

LAND USE AND SOIL EROSION

The general picture that emerges of the catchment area considering the degradation in environment, pertain to land, forest and water, which are the principal resources Ecological imbalance occurred due to excessive exploitation of these resources. There objective can be best realised through comprehensive catchment area treatment resulting on optimum use of natural resources.

The catchment area treatment combination of Engineering and Biological measures. It covers all the three resources viz land, forest and water. The measures should involve essentially envisaged planned change in land use pattern, which is very vital for effective implementation and sustainability of project. Framing up to scheme involves classification of the catchment area according to various capabilities to produce crops, vegetation and forest. The data regarding land use contemplated to potentiality of the land and physical option available. The data for land use can be contemplated as such and supplemented with other parameters such as meteorological, economic and social factors for right planning. Since the catchment area treatment depends upon status of soil erosion, the other requisites of the planning pertains to erosion characteristics of the land.

Once the data regarding land use and erosion characteristics are known it would facilitate to restore the damaged and diminished forest, revised depleted land and augment water resources.

The entire catchment area for the purpose, has been classified as under :-

1) Cultivated land,
2) Forest Land,
3) Other area.

The area falling under each class has varying degree of soil erosion. To facilitate decision of extent of treatment to be provided for treatment and formulation of action plan and implementation of other scheme, the data of the land use has been presented.

In addition to above, the sedimentation of Asolamendha reservoir is considered. Sediment deposition as mentioned above. Considering the sedimentation rate of 0.2 Mft^3/year. Total proposed silt accumulation at the Asolamendha Dam site will be about 25.90 Mm^3. Adopting a total accumulation of 25.90 Mm^3 of sediment in 100. years in the reservoir, the sediment pattern has been worked out.

The Geological features of the area and data considered for water balance study of Godawari Basin has been considered for land pattern.

In view of above, a scheme for integrated development of the entire catchment area has been prepared. the share of each activity in any area depend upon the attitude of the area, slopes, forest covers, susceptibility of the soil erosion and availability of material resources. For framing this project, the entire catchment area has been divided into mainly five categories viz Forest (Reserve/ Protected/Degraded), Culturable land, follow land, pasture land and other

land. Further for achieving maximum benefit of soil conservation and covering as much critical area as feasible in minimum possible time, the pocket of sediment contributing areas has been identified which require soil conservation measures on priority basis and accordingly a comprehensive plan to tackle these areas in order of the priority has been prepared The total cost estimated as Rs. 617.54 lacks as a rough estimation for this purpose.

LAND USE CULTURABLE AREA :-

This area mainly belongs to private individuals being used for growing different type of crops. The total area under cultivation is about 38.08 Sq. km. (15.50%) Most of the forest area is reserved forest and protected forest under Maharashtra State. Some forest area are maintained as Zudupi forest. It is primarily used for the local people for their requirements of fuel and fodder. The total area under forest is about 180.79 sq. km. which is about 73.57% of the total catchment area.

OTHER AREA:

This area which is neither forest area nor area suitable for cultivation comprising of Revenue Land, fallow under water Abadi, road, rock out crop and blank area. The area of such type of land comes to about 26.85 sq. km. which is about 10.93 % of total area.

The break-up of land under catchment area of Gosikhurd Project is as under:

1) Forest Land :	180.78 Km^2
2) Cultivated land :-	38.08 Km^2
3) Other land :-	26.85 Km^2
Total	245.72 Km^2

SOIL EROSION:

Considering the Geological study of the area, the bunding of nallahs, fields, and streams and forest cover available, fodder cultivation, plantation to restore deforested area, the soil erosion will be very minimum. This can be further prevented by compensatory afforestation, command area development and soil conservation measures of catchment area, already taken in some area and to be taken in remaining area.

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SECTION 10

PROJECT COMPONENTS

The catchment upto the Gosikhurd Dam is vast and well spread covering the area of six districts of Madhya Pradesh and two districts of Maharashtra State. The number of minor schemes have been constructed and are functioning properly. Many minor schemes are under construction and investigation and are anticipated to be completed in the near future.

Wainganga is one of the major tributary in Godavari basin. break-up of the catchment area in Maharashtra State is as follows:-

Chandrapur 245.72 Km^2

The break-up of catchment area such as forest land, agriculture land, Revenue Land, follow land, pasture land and other land is as below:-

1) Forest Land :	180.78 Km^2
2) Cultivated land :-	38.08 Km^2
3) Other land :-	26.85 Km^2
Total	245.72 Km^2

The scheme for catchment area treatment of the valley involves works pertaining to different disciplines with varied nature. The execution of scheme is expedited in wide and scattered area in plain terrain and area of hilly terrain. The various aspects are classified as below :-

1) Forestry :-

The total area of forest in the catchment area is about 180.78 km^2 but out of this an area of about 26.85 km^2 falls under land free from Vegetation. Out of the this area, afforestation can be taken in the blank area in the different stages of development. The sequence in which areas are to be taken up for treatment depends upon susceptibility of land for soil erosion and location of the various project and requirement of manpower.

2) Wood plantation

This is the most important and high yielding item of the development programme and comprises of plantation of timer and fuel wood. The type of plants will depend on the altitude of the area, the need of the local people, commercial value and type of soil. It is better suited to plant local broad leafed species having more capacity to retain moisture and conservation of soil.

Birds while feeding themselves also act as scatterers of the seeds far and near and this helps in afforestation to some extent. Therefore such species on which birds feeds themselves should also be planted. Wild bushes should also be planted to increase water retention and soil

conservation capacity. Development of mixed variety of forest will help in protection of forest area against natural fire.

3) SOIL CONSERVATION:

Soil conservation comprises of protection of soil cover by biological measures of improvement of the eroding or eroded area by Engineering techniques. Series of measures under afforestation and horticulture will on the one hand yield more food, control soil erosion effectively by providing vegetal cover, over the area. This basic process of soil conservation is proposed to be supplemented by various engineering: techniques and measures. In the catchment of this project, the soil conservation department are paying lot of attention to soil conservation work. The soil conservation departments in district Chandrapur are executing lot of soil conservation works such as field drains, graded bunds, land levelling nallah training, nallah bunding at various places from their sanctioned funds allotted by the State Government.

Minor Irrigation Schemes:

There are various minor irrigation schemes for state and local sector. The details of which are as under:

No. of schemes :-	23 Lake
Catchment area	6.70 Km^2
Command Area:	38.08 km^2
Total Command Area	38.08 km^2

On completion of projects irrigation benefit will be provided to 38.08 km^2. Cultivated land under the catchment area of this project. Each project has its own catchment, submergence and command area. Obviously, the treatment to command area in respect of the project would be made. This has been done because of every project will have its own command area development authority and has to be treated independently. Hence the above command cultivated area of completed and ongoing irrigation schemes under the catchment area of this project need not be considered for treatment under this project.

SECTION 11

ACTION PLAN,

The successful implementation of the catchment upto the catchment area treatment scheme involves the following factors.

1) An Organisation to give proper shape to the scheme.
2) Adequate financial resources for funding of the scheme.
3) A phased implementation programme based on rational criteria to ensure optimum utilisation of resources.
4) Monitoring and evaluation to keep watch on the programme of work and to asses its impact and the updating of the scheme based on the feed back from the fields.

ALTERNATIVE ORGANISATION SET :

Preparation of guide lines for detailed planning, implementation and co-ordination of various sectional programme and assuming overall responsibility for several organisational set up have been considered and their function are as below :-

Catchment area authority:

An institution for implementation of the Asolamendha Project catchment area scheme is considered for setting up the authority. The authority can draw a major part of experts and technical work force from various existing departments and can recruit directly as per the requirement. Necessary consulting assistance can also be taken according to the needs, the authority should take the responsibility of planning, execution, monitoring and evaluation of work in the valley. The Divisional Commissioner may take charge the scheme or the experts with adequate knowledge and know how an of such scheme can be considered.

The departmental structure not proper co-ordination to function with adequate team spirit.

Various areas under forest land will have to be made available for working to the staff. This creates Administrative and procedural bottle-necks, which is another point for delay in implementation.

INTRODUCTION :-

The Central Government, the Ministry of Environment & Forest has accorded the environmental clearance to Gosikhurd Project (Asolamendha Project as its part) subject to some conditions vide letter No. J11016/(7), dated 3.2.1988. One of the conditions is to prepare phased catchment area treatment scheme before the filling up of the reservoir commences.

In order to prepare the phased CAT plan prioritization of subwatersheds for very high & high category of soils in catchment is a must, for this a letter was written to Soil Survey Officer, AISLUS, Nagpur vide reference No. 2873/PB-1/94, dated 19.8.94 for taking up the

survey work of the catchment for preparing CAT plan. Accordingly soil survey department carried out detailed survey work of catchment area and submitted its detailed report on prioritization of subwatersheds of 4E5 catchment (part) of Godavari basin. The details of this report is as under.

The rapid reconnaissance survey of the catchment area under Gosikhurd Irrigation Project was taken up by Nagpur Regional Centre, All India Soil & Land use survey at the request of the Maharashtra State Irrigation Department for providing the data base which could help in planning and execution of Soil Conservation measures in the Catchment Area. The objective of the survey has been to prioritize small hydrologic units within the Catchment Area with respect to their relative contribution towards sedimentation in the proposed Gosikhurd reservoir with ultimate objective of preventing soil erosion in the Catchment Area, reducing the sedimentation in the dam reservoir and thus eventually enhancing the life span of the dam. All round agricultural development of the Catchment Area is ultimately envisaged.

The catchment area treatment has been proposed mainly based on two disciplines i.e. Engineering and biological measures with some broad aspects of these two disciplines like, graded bunding, bench terracing gully plugging, afforestation, horticulture, farm. foresting etc. The nature of treatments are being given in this area as per the soil conditions. Data of degraded forest land and non forest land have been updated and degraded land has been identified where treatments are to be given and marked on the Index map appended. Similarly the area where soil conservation works have been done are identified and marked on the Index map. Out of 25 sub water sheds 0f 24572 ha, an area of 1621 ha. (6.59 %) fall under very high priority category and an area of 1186 ha (4.82 %) are categorized under high priority category. These very high and high priority category areas needs soil conservation treatment on priority basis for significant reduction in the sedimentation of reservoir.

The subwatersheds have been categorised by fixing the ranges of sediment yield Index Values for each of the categories. The subwatersheds having more than 1100 SYI value have been placed in very high priority category and those having SYI value between 1050- 1099 under High Priority Category. The ranges of other priority categories are: Medium Priority category (1000-1049), low priority category (950-999) and very low priority category (less than 950 SYI value).

These priority categories are primarily meant to indicate the relative severity of the problem in the different sub water sheds. Keeping in view, any local condition and conveniences, any sub water sheds within very high and high priority category could be selected, for implementing soil conservation programme in the first phase towards catchment area treatment.

There are 25 sub water sheds in the Catchment area of Asolamendha Project falling in Chandrapur District of Maharashtra, covering an area of 245.72 Sq.Km. Out of this 4176 Ha. (11.41%) fall under high and very high priority category which require this catchment area treatment on priority basis.

The priority-wise area distribution tables are depicted as under.

Sr.No.	Priority category	Sediment Yield Index	Area in ha.	Percentage
1	Very high	1100 and above	1765	7.13
2	High	1050-1099	2411	9.81
3	Medium	1000-1049	1121	4.56
4	Low	950-999	2766	11.26
5	Very Low	Below 950	16689	67.42
	TOTAL		**24572 ha**	**100**

WATER SHED MANAGEMENT ORGANISATION :-

This work pertains to various component scheme for implementation, degraded forest barren cultivable land and irrigation concerned Department the State Government. The second alternative be Organisation consisting experts the field may created to provide guidance, general administration and to co-ordinate the activities of the respective department. monitoring, evaluation and general administration will be carried out by the management itself. The following advantages have been observed as a result of above :-

1) The existing Organisation of various department mobilised quickly for implementation of the scheme
2) There will be least possibility of disturbance in the structure and function of various departments.
3) The monitoring, evaluation and funding are controlled by the organization resulting the effective control over the implementation and function be elastic.
4) Watershed management in the manner in a shorter scale is being carried out by the respective department in catchment area. This can be further strengthened adequately for expeditious implementation.

INDEPENDENT DEPARTMENTAL WORKING :-

The work can also implemented respective departments their own. The management allocate funds for various schemes of the Project' the disposal various departments. remaining funds can be made departments. evaluation updating be handed respective departments. Such Organisation may present problems such as -

The functioning of respective departments are isolated this affects the implementation of the scheme which require integrated efforts. Effective monitoring will not be possible.

Constant watch on the impact of the project and its updating on the basis of feedback from the field will be infeasible.

With a view to the above to implement the schemes in a large scale expeditiously the water shed management Organisation by the State Government is considered most appropriate in the prevailing circumstances and hence recommended for adoption.

FUNDING :

The sound implementation of the project through various disciplines have involved total cost of Rs. **918.72** lakhs. The cost of the scheme totally about Rs. 918.72 lakhs is proposed to be charged to Asolamendha Renovation Project.

The amount to be arranged for various disciplines are attached separately vide Annexure II. The details of yearwise requirement of funds for catchment area proposed for treatment of this project is appended vide Annexure II

IMPLEMENTATION/PROGRAMME:-

As mentioned earlier, on the basis of detailed soil survey report submitted by AISLUS this department has prepared a detailed phased CAT Scheme. This scheme is completely based on the report submitted by soil survey department.

In view of the various number of works of the disciplines, topography of the area, a period of 5 years has been proposed for implementation of the scheme. The period can be further divided in to one year span. At the end of each proposed span a review of implementation will be taken.

The scheme of implementation of the catchment area covers various disciplines. It is much advisable to take up work under each discipline simultaneously. The criteria for planning of the scheme is as follows.

The primary purpose of the scheme is to improve the environmental condition of the Region. Second important object is to minimise the adverse impact of silt load in water either completed, on going or proposed irrigation schemes. Thirdly, the most important factor of the scheme is afforestation.

The area contributing for maximum silt deposition into the stream are identified and taken up on priority. The treatment work will be taken from peak to lower levels.

The catchment area of Asolamendha Project is 245.72 sq. km. This comprises of Pathari river some small streams & Nallas.

The treatment measure on the high and very high degraded area under net freely draining sub-water-sheds is considered for treatment measures and funded by this department. In the proposal of Gosikhurd Project enough silt trap has already been provided on the basis of the silt expected to be produced from the catchment. As the project has already bore the cost on account of the provision for the silt to be received from the general catchment of this project, the provision for de-sedimentation is not made to charge again to the cost of the general catchment treatment of the project.

The proposal of catchment area treatment in view of promoting the environmental consideration, a working phased action plan has been prepared. The details are narrated in the next chapter namely catchment area treatment and cost aspects.

SECTION 12

CATCHMENT AREA TREATMENT

PREAMBLE :-

The proposal for Environmental clearance of Gosikhurd Project (included Asolamendha) from Bhandara district of Maharashtra State including replies on questionnaire of ecological aspects, was submitted to the department of Environment, Government of India, New Delhi in the year June 1987 to obtain the clearance from Environmental angle..

The Central Government, the Ministry of Environment & Forest has accorded the environmental clearance to Gosikhurd Project subject to some conditions vide letter No. J 11016/(7), dated 3.2.1988.

On the basis of scrutiny of report submitted earlier, the Central Government; Ministry of Environmental and Forest has directed to revise the Environmental clearance report of Gosikhurd Project on the guidelines issue vide their letter No. 11016/7), dated 3 February 1988.

In the above letter the project Authorities were requested to prepare detailed Action Plan on the following aspects.

1) Rehabilitation Master Plan
2) Phased Catchment Area Treatment Scheme
3) Command Area Development
4) Compensatory afforestation
5) Flora and fauna
6) Health Aspect

However, the project was cleared from Environmental point subject to some conditions.In the light of above parameters, the phased catchment. area treatment scheme for Asolamendha Project hereby prepared. The complete detailed information on the above parameters is narrated in the following paragraphs.

2.0 CRITERIA ADOPTED FOR IDENTIFYING DEGRADED AND VULNERABLE AREA

Environmental includes soil, water, air and the socio economic conditions. Forests are directly connected with soil, water, air and the economic conditions of the Environment. The Agriculture & Forest Department are paying attention to soil conservation. The Irrigation Department (Project) had been paying attention only to revenue land and degraded area.

The check list furnished by the Department of Environment make the brief reference to the catchment area. Accordingly a report has already been narrated in the previous chapters, covering the themes of the river system, Geology and Soil, Metrology, Irrigation facilities, inhabitants and culture, land use and soil erosion, with special reference to forests/degraded forests and details of all type of land for the Asolamendha Project catchment.

The catchment area treatment has been proposed mainly based on two disciplines i.e. Engineering and biological measures with some... broad aspects of these two disciples like Nallah bunding, Gully plugging Graded bunding, farm forestry and afforestation etc. The nature of treatments are being given in this area as per the soil conditions.

2.1 Methodology :-

The procedure outlined in the Technical bulletin on Methodology of priority delineation survey published by All India Soil & Land Use Survey (1991) was followed for prioritisation of subwatersheds in the Catchment Area. Field surveys of rapid reconnaissance intensity were carried out employing 1:50,000 scale base map drawn from Survey of India topo-maps, for acquisition of data on geomorphic factors, soil and land attributes, land cover and soil management factors. The mapping legend consists of a set of erosion intensity mapping units, each representing an assemblage of geomorphic, soil, land cover and management factors. The various steps involved in the procedure adopted are :

2.2 Framework of subwatersheds :-

The catchment area was subdivided into small hydrologic units six stages of hierarchical system of delineation and codification of subwatersheds following the approach described in the Watershed Atlas of India on 1:1 m Scale (All India Soil & Land Use Survey, 1988). The delineation and codification upto watershed level was taken base from the Watershed Atlas of India and watershed was further subdivided into smaller hydrologic units following the systematic approach and subsequently codified by suffixing the English alphabets to the watershed code. The Asolamendha Irrigation Project catchment area was represented by 4E8A4 sub-catchments. The above sub watersheds has been symbolized by an alphanumeric code indicative of the Water Resources Region, Basin, Catchment, Sub-catchment and watershed delineated on national level basis. The sub watershed codes symbolized by English alphabets represent further delineation within the watersheds.

2.3 Rapid Reconnaissance Surveys :-

Rapid reconnaissance survey was carried out, employing 1:50000 Scale base map, together information on the geomorphic, soil and land attributes, land cover, the existing erosion and soil management factors. Based on the broad variation in geology, geomorphology and stratigraphy, etc. the major landscapes were first delineated through rapid traverse in the area and tentative erosion intensity mapping units. was developed. The units were symbolized using alphanumeric codes based on geology and landform and the mapping legend was formulated. Subsequently the whole catchment area was mapped through rapid reconnaissance survey and the Erosion Intensity Map thus developed was used for computing sediment yield index values.

2.4 Assignment of weightage values and Delivery Ratios :

The composite erosion intensity mapping units were assigned relative erosivity values adjudged to be indicative of the combined effect of dynamic interrelationship of the parameters

composing the mapping units in terms of their active erosivity. A factor 'K' rated as an inertia factor signifying equilibrium between erosion and sedimentation was assigned a value of 10 and proportional additions or subtractions from this value were made assessing the relative effect of parameter.

The values of delivery ratios, employed as a measure of transportability of detached soil material to the reservoir site were assigned to various units assessing the combined effect of the parameters affecting suspension and mobility of suspended material.

2.5 Computation of Sediment Yield Index Values:

The area of each of the mapping units was computed planimetrically and sediment yield index was calculated using the following equation

$SYI = \sum_1^n (AiX\ Wi\ X\ Di)\ X\ 100\ /\ Aw$ i= 1 to n

Where,

SYI = Sediment Yield Index
Ai = Area of unit
Wi = Weightage value of i^{th} mapping unit
Di = Delivery ratio assigned to i^{th} mapping unit
n = Number of mapping units
Aw = Area of subwatershed

3.0 PRIORITIZATION OF SUBWATERSHEDS

The ultimate objective of the survey is to demarcate the priority area in the catchment for development of soil and water conservation treatment plan in a phased manner. This task has been achieved by grading subwatersheds in accordance with sediment yield index. Higher value of the index suggested higher priority and vice versa.

The subwatersheds have been categorised by fixing the ranges of sediment Yield Index Value for each of the categories. The subwatersheds having more than 1100 SYI value have been placed in Very High priority category and those having SYI value between 1050-1099 under High priority category. The ranges of other priority categories are Medium priority category (1000-1049), low priority category (950-999) and Very low priority category (Less than 950 SYI value)

Under Brief summary of the distribution of different categories of priority is given below.
Subwatersheds

Sr.No.	Priority category	Sediment Yield Index	Area in ha.	Percentage
1	Very high	1100 and above	1765	7.13
2	High	1050-1099	2411	9.81
3	Medium	1000-1049	1121	4.56
4	Low	950-999	2766	11.26
5	Very Low	Below 950	16689	67.42
	TOTAL		**24572 ha**	**100**

Some of the important findings of the surveyed area of Asolamedha Irrigation Project are Summarised below.

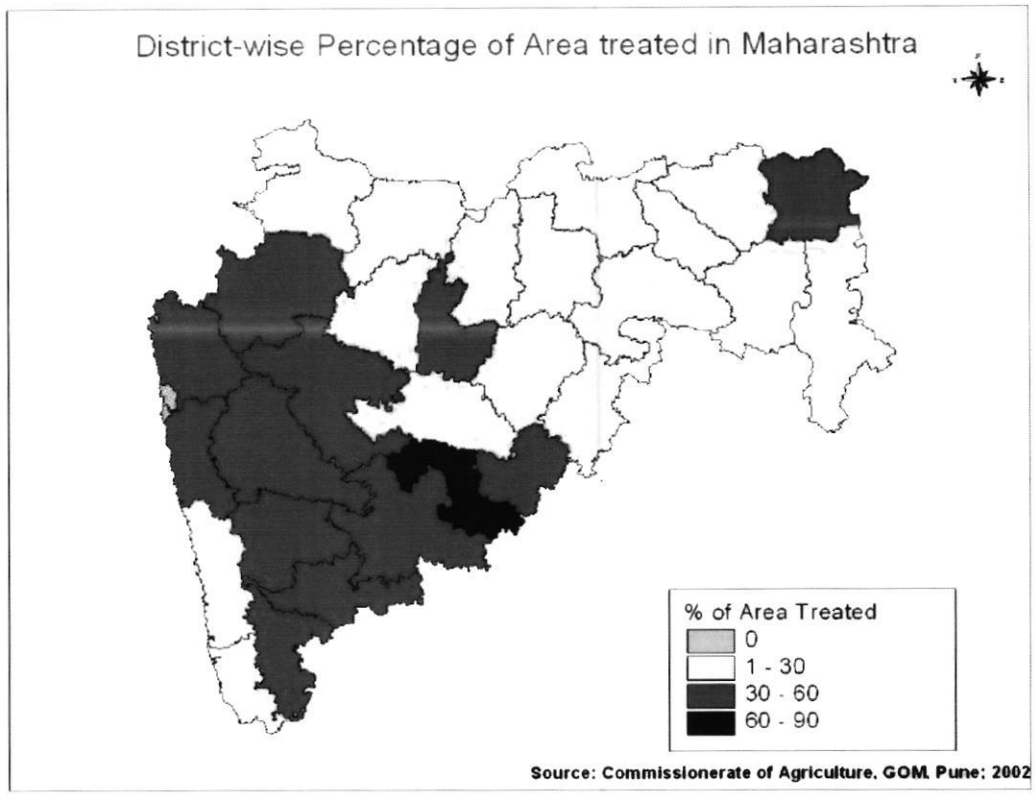
Out of 25 subwatersheds, an area of 1765 ha. (7.13%) fall under very-high priority category and an area of 2411 ha. (6.93%) are categorised under high priority category. These very high and high priority category areas need soil conservation treatment on priority basis for significant reduction in the sedimentation of reservoir.

These priority categories are primarily meant to indicate the relative severity of the problems in the different subwatersheds. Keeping in view, any local conditions and conveniences, any subwatersheds within very high and high priority category could be selected for implementing soil conservation programme in the first phase towards catchment area treatment.

The major part of the survey area is as under good vegetal cover and it also susceptible to moderate to slight erosion (87.98 %) area hazards resulting the under low and very low priority category. It, thus indicates the moderate problems of erosion hazards in relative sense and with reference to sedimentation of Asolamendha Irrigation Project.

The district wise distribution of area under

Distrct	Geographical Area in ha	Area available for Watershed	Completed Watershed	Total treated area including incomplete watershed	Balanace area for watershed development	Expenditure incurred in lakhs
Maharashtra	30758300	20737620	8127	6115376	14622244	225176
Chandrapur	1091800	556940	202	105943	450997	6640



The Division wise priority wise categories in Maharashtra is shown below. Respectively.

Division	Total no of Water shed		Dark and grey Watershed		DPAP watersheds		Triable Watersheds		Other area watersheds	
	No of incomplete watershed	% of remaining area	No of incomplete watershed	% of remaining area	No of incomplete watershed	% of remaining area	No of incomplete watershed	% of remaining area	No of incomplete watershed	% of remaining area
Nagpur Region	1627	39	79	35	844	38	65	58	639	39
Maharashtra	16678	46	1344	39	3060	48	7681	46	4593	45

It is seen that about 3.3% of the area falling in Maharashtra under very high and high category of priority and needs immediate soil conservation treatment. However during scrutiny and detailed study of the catchment area it is observed that after deduction of the area which comes under the catchment of other project on upstream of Asolamendha Dam the net area under free drainage works out to 24572 ha.

Out of this 24572 ha, net area proposed for treatment from Agriculture & Forest Department is 21887 ha. Hence it is 0.89% as compared to the total catchment area in Maharashtra State i.e. 20737620 ha.

Map showing critically degraded area requiring engineering biological treatment on the basis of the recent field survey is enclosed separately vide page No. 3 of Volume II. Details of engineering & biological measures proposed to be carried out as a time bound programme.

The task of forest conservation tree plantation and development of fallow land simultaneously are the national property. For this purpose the Waste Land Development Board and Social Forestry Department will be joined together under the charge of C.C.F. and to be continued the scheme from own sources. The problem Government related with funds for new schemes. Final shape being given to proposal for securing special assistance from the Central Government. As their time framed would depend the need of fund and choice of implementing by the various Department, these measures considered supplemental only. (However the details engineering and biological measures proposed to carried over very high and highly degraded land under the catchment area AsolamendhaProject are narrated as under.)

4.1 CATCHMENT AREA TREATMENT PLAN

4.2 CATCHMENT AREA

Pathari River is one of the major tributary of Andhari basin, runs through Vidarbha Region. It rises at approximate elevation of R. L 265 m near Rajoli in Chandrapur District of Maharashtra State. The total length of the river is 38 km from its origin to Asolamendha Dam site, situated near village pathari in Saoli Tahsil of Chandrapur District in Maharashtra State.

There are 17 major Nalla or steam, which contribute major flow of the Pathari river upto the dam site are as follows:-

Small streams and Local Nallah 245.72 sq. km.

The total catchment area of Asolamendha Project is 245.72 sq. of Maharashtra State viz Chandrapur.

4.3 LAND USE PATTERN:

The land user pattern of the catchment area upto dam site is mainly divided as follows

Type of land	Area in km²	Percentage
1) Forest Land	180.79	73.57
2) Cultivated land	38.08	15.50
3) Other land	26.85	10.93
Total	245.72	100

The proposed reservoir will submerge a total area 9.54 km². The break-up of submergence area is as

Type of land	**Area in km²**	**Percentage**
1) Forest Land	2.43	25.47
2) Cultivated land	4.77	50.00
3) Other land	2.34	25.53
Total	9.54	100

4.4 DETAILS OF CATCHMENT AREA AND AREA OF TREATMENT PROPOSED:

The total catchment area of this project is 245.72 sq. km. After deducting the submergence area of the reservoir, the catchment area of completed, on-going schemes, on upstream of the dam site area and area of soil conservation treatment in different village which has already been provided and is under progress, the free drainage area of the project works out to 57.77 sq. km. The details of such area are as below:-

1) Total catchment area	245.72 km²
2) Deduction:	
a) Existing Reservoir Area	18.60 km²
b) Additional submergence area	9.54 km²
c) Total Lake/Pond area of completed and on-going schemes on U/S of the Dam.	6.69 km²
d) Gaothan area	1.55 km²
e) Deduct Dense Forest	151.58 km²
Net free drainage area	57.77 km²

4.5 CAT PLAN:-

CATCHMENT AREA TREATMENT OF VERY HIGH AND HIGH PRIORITY CATEGORY UNDER THE NET FREELY DRAINAGE AREA OF ASOLAMENDHA PROJECT

Soil conservation is an integrated approach of mainly two disciplines viz engineering and biological. Sources of the broad aspects of these two disciplines are given as under :-

a) Engineering:- Check dams, Contour bunding, trenches, bench terracing, Gully plugging and bank protection etc.
b) Biological –
   i) Agronomic : Contour farming, strip cropping and crop rotation.
   ii) Forestry :- Forest conservancy of degraded forest, control of grazing and afforestation.
   iii) Grass cover: Pasture development and protection by vegetation including grass cover.

The type of the catchment area treatment depends on the actual site conditions. According to the site conditions, and Considering the works set out by the "All India Soil and Land Use Survey Organisation" (AIS & LUSO) under the ministry of Agriculture, Government of India, communicated vide Report No. AGRI/1174 May 1999. The Sub-water-sheds have been categorised by fixing the sediment yield index values for each of the category. The Sub-water-sheds having more than 1100 SYI value have been placed in "very high priority" category and those having SYI value between 1050 to 1099 under "high. priority" category.

Out of 25 Sub-water-sheds, an area of 1765 Ha. fall under very high priority category and an area of 2411 Ha. are categories under high priority category. These very high and high

priority category areas of about **4176** Ha. (M. S.) needs soil conservation treatment on priority basis. As per the statement on page No. 60, the areas which falls in Maharashtra State under high & very high category are (1765+2411) = 4176 ha.

In Maharashtra State No. of irrigation projects are completed on the upstream of Asolamendha Project. The catchment area in high & very high priority area is only 4176 ha, considered for deduction. Thus free drainage area works out to 57.77 Km^2 for 25 sub-catchments which is considered for treatment. As stated above theout of 5777 ha of free drainage area, high and very high priority area of this project comes about 4176 Ha.

The addition to above, it is necessary to consider the treatment works on acquired land on D/S of Dam, land scaping on quarry areas, plantation along reservoir periphery (between FRL & MWL) compensating afforestation on double forest land going under submergence of this project.

4.6.0 TREATMENT OF NET FREELY DRAINAGE UNDER CATCHMENT AREA:

As stated above facts and circumstances it is proposed to carryout various Engineering and Biological measures for treatment of total 5777 Ha which falls under drainage of this project.

The break-up of various types of land proposed for various treatment is given as under :-

i)	Degraded Forest...	2921 ha (29.21 Km^2)
	(A) Total	2921 ha.
ii)	Cultivated land	2856 ha
	(B) Total	2856 ha
	(A) + (B) Total	5777 ha

4.6.1 MEASURES ADOPTED FOR TREATMENT

4.6.1.1 BIOLOGICAL

Engineering and Biological measures are to be adopted for treatment of degraded area under the catchment of Gosikhurd Project. Soil conservation essentially consist of protection of soil by biological measures and improvement of the eroding/ eroded area by Engineering technique.

The various measures afforestation, Horticulture, farm forestry and vegetative barriers proposed under this disciplines. This will on one hand yield more wood, food, fuel fodder conserve water and other hand will control erosion effectively providing vegetation cover the degraded.

The salient aspects works proposed under different disciplines as described below

a) AFFORESTATION:

Total forest land including revenue forest the catchment Asolamendha Project 245.72 sq. km

The details forest are as under

I	Reserve forest & Protected Forest	180.79 km^2
Ii	Revenue Forest	
Iii	Degraded forest	
	Total	**180.79 km^2**

For compensatory afforestation between FRL MWL considered afforestation different stages development. is planned to phase afforestation for a period of 5 Years it is proposed be implemented through Forest Department of respective States. Forest Conservation Plan has been submitted by Forest Department in Wild life Proposal.

b) HORTICULTURE:

The total quarry area which needs treatment is 5.3 Ha. Development fruit trees which is 1.90% out of 280 Ha. The catchment of this region suitable for orange trees. Hence horticulture has a scope in the region, if forest plantation is carried out and people are encouraged to switch over to horticulture in their Culturable land not suited for agriculture. The requirement of plants shall be made available from the existing network of Forest Department and Agriculture Department. The work will be carried out by Agriculture Department.

c) FARM FORESTRY: -

The work proposed under this sub-head is 280 ha Land of total land, which works out to be 10% of total area to be treated. Under this components of development scheme, plants will be distributed to the farmers free of cost near Gaothan. The farmers may use these plants on home stead, bank of streams, boundaries of fields and fallow area according to availability of area and their convenience. The work will be carried out by Agriculture Department as well as by farmers at their convenience under the guidance of Agriculture Department.

4.6.1.2 ENGINEERING MEASURES

The works in respect of engineering treatment are mostly proposed such as, graded bunding, bench terracing, gully plugging in cultivated lands under this discipline, which prevents erosion and check the siltation problems. The salient aspects of works proposed under different disciplines are as described below

Cultivated land /Contour Trenching :-

Since last some years, the various soil conservation works have been carried out by the State Soil Conservation Department in different villages in the catchment area of Asolamendha Project and adjoining to the catchment area of project.

The net degraded forest land under freely drainage area is worked out to 285 km^2 including waste land (Padit land) where various treatments are to be provided.

b) **Graded Bunding Nalla Bunding:-**

The small bunds are proposed to be constructed on a failing or graded contour providing with a channel on the U/s side to break the slope for diverting run-off safely. Under this sub-head treatment is proposed on 1684 Ha land as shown vide ANNEXURE II .

c) Gully Plugging:

This treatment involves the construction of gully control structure by loose boulders and masonry in the eroded channels to reduce the slope of the water flowing therein during high stage and also the resulting velocity thereby preventing excessive scour and erosion. This will also be use to retain. silt and debris. Provision for nallah plugging has been made on 280 Ha. arca @ 1 No./100 Ha. land which works out 3 Nos.

d) Pasture Land: Grazing Land :-

One of the chief cause of soil deterioration in pasture land is the loss of plant cover, due to over grazing and poor management practices that expose the ground to wind and rains.

The total pasture land in the freely drainage area under catchment of this project works to about 283 ha. For achieving maximum conservation, 60% of the benefit of soil net pasture development and 40 % for grass land development land with shrubs protections are considered which comes to 170 Ha. and 112 Ha. respectively.

4.7.0 ACTION PLAN FOR BIOLOGICAL AND ENGINEERING MEASURES OF CATCHMENT AREA OF GOSIKHURD PROJECT.:

4.7.1 BIOLOGICAL TREATMENT:

4.7.1.1AFFORESTATION :-

In the catchment area of Project the forest land which comes under freely drainage area which, are to be treated has been identified as shown in Drawing .

The afforestation work is proposed to be carried out over an area of 20 Ha. land including revenue forest land between FRL & HFL .

Rate as per guidelines for new generation watershed development projects (wdc-pmksy 2.0) Rs. 22000/ Ha

Maharashtra State

Total Area under high and very high priority = 4176 ha.
Cost of treatment - 4176 Ha X 22000 = 91872000/-
Say Rs. 918.72 Lakhs.

The work is proposed to be carried out and completed within 2 years. The details of yearwise planning of afforestation including requirement of funds for treatment are given as below. This planning is based on the completion of Dam and Waste weir work which is proposed to be completed by March 2025 .

Year	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
1st Year March 2024	40	1670	342.43
1st Year March 2025	60	2506	513.65
Total	**100**	**4176**	**918.72**

4.7.1.2 FARM FORESTRY AND HORTICULTURE -

For farm forestry and horticulture, the requirement of plants shall be met out from the existing network of forest and Agriculture Department for implementing the programme.

The farm forestry and works are proposed to be carried out over (10 % area of Total) 280 Ha area of fallow land under the freely drainage area of this project. The district wise of land proposed under treatment is given as under:

a) FARM FORESTRY
Total Area of treatment = 280 Ha.
Rate/ Ha. = Rs. 22000/-
Total cost of treatment Rs. 61,60,000 /

The work is proposed to be carried out and completed within 2 years. The details of year-wise planning of form foresting works including year-wise requirement of funds for treatment are given as under

Year	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
1st Year March 2024	40	112	24.64
1st Year March 2025	60	168	36.96
Total	**100**	**280**	**61.60**

b) HORTICULATURE

Total Area of treatment = 280 Ha.
Rate/ Hector Rs. 22000/-

Total cost of treatment Rs. 61,60,000 /-

The work is proposed to be carried out and completed within 2 years. The details of year-wise planning of horticulture works including year-wise requirement of funds for treatment are given as under

Year	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
1st Year March 2024	40	112	24.64
1st Year March 2025	60	168	36.96
Total	**100**	**280**	**61.60**

c) GRADED BUNDING/CONTOUR TREACHING & NALLA BUNDING

The graded /contour bunding treatment is proposed to be freely under vide above carried out in 1684 ha culturable land shown drainage of this project, ANNEXURE II.

Maharashtra State

Total Area of treatment = 1369 Ha.
Rate/ Hector Rs. 22000/-

Total cost of treatment Rs. 30118000 /-

The work is proposed to be carried out and completed within 2 years. The details of year-wise planning of form bunding works including year-wise requirement of funds for treatment are given as under-

Year	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
1st Year March 2024	40	548	120.47
1st Year March 2025	60	821	180.71
Total	**100**	**1369**	**301.18**

Thus the total cost of Biological measures under Forest Area comes to Rs 424.38 Lakhs for treatment of 1929 ha land in this catchment of this project.

2.7.2 ENGINEERING MEASURES

4.7.2.1 CULTURABLE LAND:

In the catchment area of this project, the culturable land, which are to be treated has been identified to the tune of about 3808 ha. as shown vide ANNEXURE II.

The district-wise breakup of cultivated land proposed under treatment is given as under and proposed for treatment under various discipline as below:-

Chandrapur - 3808 Ha.

Total -3808 Ha

a) GRADED BUNDING/CONTOUR TREACHING & NALLA BUNDING

The graded /contour bunding treatment is proposed to be freely under vide above carried out in 1684 ha culturable land shown drainage of this project, ANNEXURE II.

Maharashtra State

Total Area of treatment = 1684 Ha.
Rate/ Hector Rs. 22000/-

Total cost of treatment Rs. 370,48,000 /-

The work is proposed to be carried out and completed within 2 years. The details of year-wise planning of form bunding works including year-wise requirement of funds for treatment are given as under-

Year	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
1st Year March 2024	40	674	148.19
1st Year March 2025	60	1010	222.29
Total	**100**	**1684**	**370.48**

GULLY PLUGGING

The gully plugging/nallah bunding works are proposed to be carried out over 280 Ha area of land under the freely drainage arca of this project. The district wise breakup of land proposed under treatment is given as

Maharashtra State

Total Area of treatment = 280 Ha.
Rate/ Hector Rs. 22000/-

Total cost of treatment Rs. 61,60,000 /-

The work is proposed to be carried out and completed within 2 years. The details of year-wise planning of form bunding works including year-wise requirement of funds for treatment are given as under

Year	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
1st Year March 2024	40	112	24.64
1st Year March 2025	60	168	36.96
Total	**100**	**280**	**61.60**

2.7.2.2 PASTURE LAND (Grazing Land):

The pasture land development works are carried out over 282 Ha grazing land under the freely drainage area of this project. The district wise breakup of land proposed under treatment is given as under:

Maharashtra State

Total Area of treatment = 283 Ha.

Rate/ Hector Rs. 22000/-

Total cost of treatment Rs. 6226000 /-

The work is proposed to be carried out and completed within 5 years. The year-wise planning of treatment on pasture land development including requirement of funds are given as under-

Year	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
1st Year March 2024	40	113	24.90
1st Year March 2025	60	170	37.22
Total	**100**	**283**	**62.26**

Thus the total cost of catchment area treatment on Engineering measures works out to Rs. 918.72 Lakhs for treatment of 4176 ha land under the catchment area of this project.

In this way the total cost of catchment area treatment Action Plan including Engineering and Biological measures on very high and highly degraded land under the freely drainage area of Asolamendha Project works out of Rs. 918.72 Lakhs for the treatment over 4176 Ha are.

The detailed requirement of yearwise funds and yearwise work programme of Engineering and Biological measures under Maharashtra State are given as under:

Perticular	Percentage Area Proposed	Area in ha.	Amount in Rs. Lakhs
In Forest Area	**46.19**	**1929**	**424.38**
In Non Forest Area	**53.80**	**2247**	**493.94**
Total	**100**	**4176**	**918.72**
Year of Programme	Percentage Area Proposed	Area of Treatment (Ha)	Cost of Treatment (Rs Lakhs)
1st Year	40	1670	342.43
1st Year	60	2506	513.65
Total	**100**	**4176**	**918.72**

This expenditure is proposed to be incurred in a span of 2 years as has been elucidated in above mentioned chapters and paras.

Junior Engineer

Sub Divisional Engineer
Asolamendha Project Renovation Division, Saoli

Executive Engineer
Asolamendha Project Renovation Division No. 1 Mul

GOSIKHURD (INDIRA SAGAR) PROJECT.
ASOLAMENDHA RENOVATION PROJECT

SALIENT FEATURES

Sr. No.	Description		As per 3 rd R. AA Proposal
1	2		3
1	**Location of Dam**		
	State	:	**Maharastra**
	Tahsil	:	**Sindhewahi**
	District	:	**Chandrapur**
	Village	:	**Pathari**
	Latitude	:	**20^0 13' 45" N**
	Longitude	:	**79^0-49'-0" E**
	Topo Sheet No.	:	**55 P/16**
2	Name of river	:	**Wainganga River / Human / Pathari**
	Name of Basin	:	**Godavari**
3	**(i) Catchment Area**	:	
	(Sq. km)	:	**245.53 Sq. Km.**
4	Average annual rainfall in the catchment	:	**1320.80 mm.**
5	Average monsoon rainfall in the catchment	:	**1278 mm.**
6	**Water Availability**	:	
	i) 75% dependable masoon yield	:	**282 Mm^3**
	ii) Post monsoon Yield (4.7%)	:	**1.24 Mm^3**
	iii) Total annual yield	:	**283.24 Mm^3**
	iv) Up stream reservation for minor, medium & major projects.	:	**Nil**
	v) Balance Available for use at dam site	:	**283.24 Mm^3**
	vi) Feeding from Gosikhurd Dam	:	**94 Mm3**
	vii) Total yield for planning	:	**377.24 Mm^3**
7	**Utilisation** (75% dependable year)	:	
	i) Irrigation utilisation	:	
	ii) Evaporation Losses	:	
	Annual Tolal	:	**282 Mm^3**
8	**Storage Planning**	:	
		:	

	i) Gross Storage	:	**120.568 Mm^3**
	iii) Dead storage	:	**28.50 Mm^4**
	iv) Live storage	:	**92.068 Mm^5**
		:	
9	**Controlling Levels**	:	
	i) T. B. L.	:	**R. L. 220.00 m.**
	ii) M. W. L.	:	**R. L. 217.52 m.**
	iii) F. R. L.	:	**R. L. 216.50 m.**
	iv) Crest of Spillway	:	**R. L. 216.50 m.**
	v) M. D. D. L.	:	**R. L. 211.60 m.**
	vi) Out let sill level (RBC)	:	**R. L. 208.18 m**
	vii) C. B. L. (RBC)	:	**R. L. 208.00 m**
	ix) River Bed Level	:	**R. L. 202.08 m.**
10	**Submergence details**	:	
	i)Area Under Submergence at (F. R. L.)	:	**2315 ha.**
	ii)Submergence ratio w.r.t. I.C.A.	:	**5.50%**
	iii) Land Under Submergence at F. R. L.	:	
	a) Private Land	:	**2117 Ha**
	b) Govt. Land (Existing 2117 Ha)	:	**0 Ha**
	c) Forst Land	:	**198 Ha**
	Total	:	**2315 Ha**
	iv) Total villages affected	:	
	Partly and Fully	:	**Chandrapur**
	Fully	:	**2**
	Partly	:	**11**
	Total	:	**13**
11	**DAM :**	:	
	i) Type of Dm	:	**Rolled filled earthen dam**
	ii) Length of Dam	:	**3180 m**
	iii) Maximum Ht of Dam	:	**18 m**
	iv) Free Board over M. W. L.	:	**2.0 m**
	over F. R. L.	:	**3.5 m**
12	**Spillway**	:	
	i) Type of Spillway	:	**PKW Type Spillway**

	ii) Length of Spillway	:	**250 m**
	iii) Maximum Height above river Bed	:	**14.42**
	iv) Crest Level	:	**R. L. 216.50 m**
	v) Design Flood	:	**2744 cumecs**
	vi) Flood routing at F. R. L.	:	**2741.62 cumecs**
	at M. W. L.	:	
	vii) No. of gates	:	**Ungated**
	viii) Size of gate	:	**NA**
13	**Outlets**	:	
	i) Location	:	**RD 30 m(R.B.)**
	ii) Discharge	:	**62.756 cumecs**
	iii) Outlet sill	:	**208.00**
	iv) C. B. L. of start	:	**208.00 m**
	vii) Bed gradient	:	**1:100**
14	**Canal**	:	**R. B. C.**
	i) Type of Canal	:	**Lined Canal**
	ii) Bed Width	:	**18.10**
	iii) F. S. D.	:	**3.05 m**
	iv) Free Board	:	**0.95 m**
	v) Side Slope	:	**2:1**
	vi) Bed gradient at start	:	**1: 10000**
	vii) Discharge	:	**62.756**
	viii) Length	:	**41.37 km**
15	**Command area in Ha.**	:	**R. B.**
	IP	:	**54879**
	G.C.A	:	**57050**
	C.C.A	:	**43763.00**
	I.C.A	:	**41575.00**

CROP PATTERN (PROPOSED)

Sr. No.	Crops	%	-	-
	KHARIF :			
01)	H.Y.V. Paddy	60		
02)	Drilled Paddy	5		
03)	Ground-nut	2		
04)	Sugarcane	2		
05)	Chillies	5		
06)	Vegetables	3		
07)	Horticulture crop	3		
08)	Green manuring	5		
09)	Pulses (U.I.)	15		
	RABI			
10)	Wheat	30		
11)	Jawar Hybrid	5		
12)	Peas/ Gram	5		
13)	Vegetable / Onions	5		
14)	Ultra pulses	8		
15)	Summer Paddy	5		
16)	Green Fodder	2		

18)	**ECOLOGICAL ASPECTS :**			
18.0	**CATCHMENT AREA TREATMENT**			
18.1	CATCHMENT AREA	:	245.72	Sq. km.
	b) Maharashtra State	:	245.72	Sq. km.
18.2	**LAND USE PATTERN IN CATCHMENT AREA**			
		Area in km^2		Percentage
1)	Forest Land	180.79		15.50
2)	Cultivated Land	38.08		73.57
3)	Fallow Land	26.85		10.93
4)	Lfollow Land under water			
5)	Rock and Outcrop			
6)	Grazing land			
7)	Other land (Road, Abadi etc.)			
	Total			

NET AREA CALCULATION FOR CATCHMENT AREA TREATMENT

(High & Very High Priority) **Annexure I**

Sr. No.	Name of Sub catchment	Gross area of S.C. in ha	Area not available for treatment	Area available for teatment (3-4)	Area under catchment of other project		Net area available for treatment	Remarks
					Area	Name of Project		
1	2	3	4	5	6	7	8	9
1	4E8A4d1	1186	1186	0	0	--	0	
2	4E8A4d2	1361	1215	146	17	Local Lake	129	
3	4E8A4d3	1434	1147	287	10	Local Lake	277	
4	4E8A4f3	813	774	39	12	Local Lake	27	
5	4E8A4f5	862	728	134	33	Local Lake	101	
6	4E8A4f8	705	603	102	10	Local Lake	92	
7	4E8A4g5	1024	820	204	50	Local Lake	154	
8	4E8A4g6	1258	820	438	80	Local Lake	358	
9	4E8A4g7	960	614	346	17	Local Lake	329	
10	4E8A4g8	1034	820	214	50	Local Lake	164	
11	4E8A4g4	1464.3	850	614.3	30	Local Lake	584.3	
12	4E8A4g3	964.3	750	214.3	50	Local Lake	164.3	
13	4E8A4g2	1175.3	745	430.3	22	Local Lake	408.3	
14	4E8A4g1	530.3	450	80.3	22	Local Lake	58.3	
15	4E8A4f9	1124.3	850	274.3	65	Local Lake	209.3	
16	4E8A4f7	917.3	650	267.3	170	Local Lake	97.3	
17	4E8A4f6	740.3	680	60.3	0	--	60.3	
18	4E8A4f4	662.3	555	107.3	29	Local Lake	78.3	
19	4E8A4f2	968.3	785	183.3	38	Local Lake	145.3	
20	4E8A4f1	972.3	800	172.3	13	Local Lake	159.3	
21	4E8A4c9	805.3	620	185.3	120	Local Lake	65.3	
22	4E8A4c7	1043.1	901	142.1	0	--	142.1	
23	4E8A4c4	955.3	789	166.3	0	--	166.3	
24	4E8A4c8	941.1	790	151.1	1	Local Lake	150.1	
25	4E8A4c3	671.2	505	166.2	2	Local Lake	164.2	
	Total	**24572**	**19447**	**5125**	**841**		**4284**	

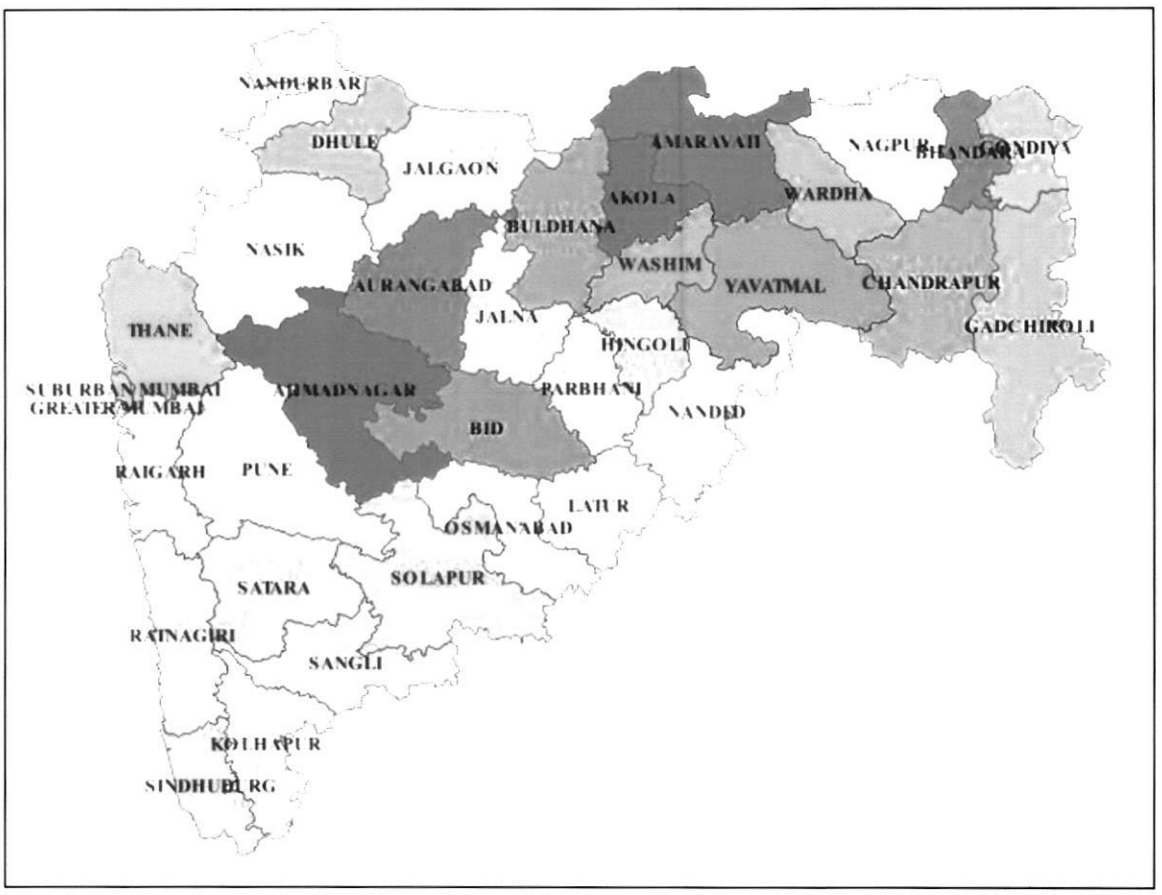
TABLE - ANNEXURE - II

SPECIFIC PROBLEM & PROPOSED TREATMENT FOR SOIL PROTECTION

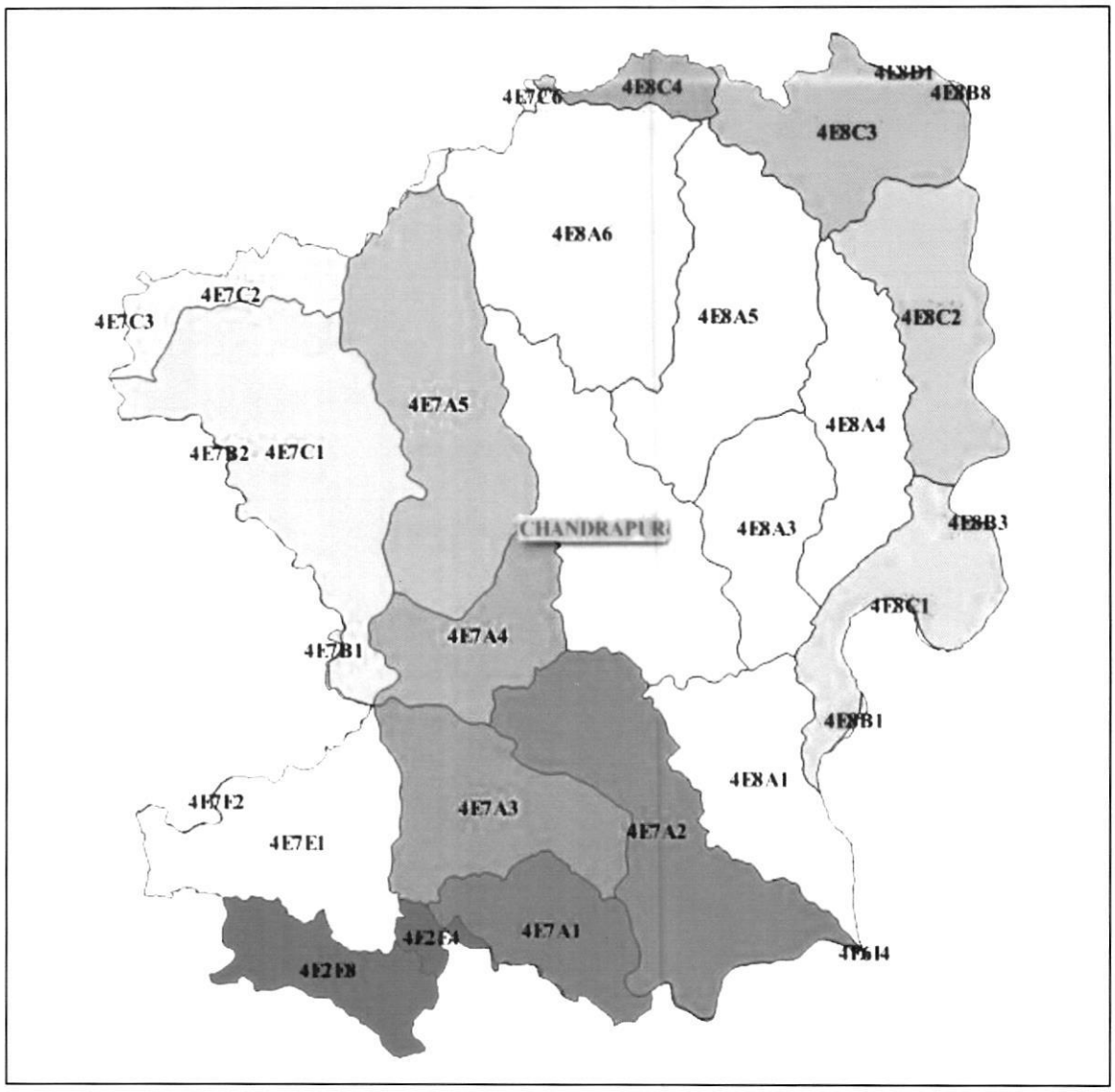
Sr. No.	Specific problems	Erosion intensity mapping units	Total area in Ha.	Treatment Proposed				
				Graded bunding Nalla bunding	Gully Plugging	Horticulture	Plantation/ forest	Pasture land grazing
1)	**A - Deep to Very Deep Soils**							
	1) Very gentle slope, slight to moderate erosion	--	--	--	--	--	--	--
	2) Gentle to moderate slope with moderate to severe erosion.	--	--	--	--	--	--	--
	2) Very gentle to gentle slope with moderate severe erosio.	--	--	--	--	--	--	--
2)	**B - Moderately Deep to deep**							
	1) Gentle to moderate slope with moderate erosion.	--	--	--	--	--	--	--
3)	**C - Shallows to Moderately Deep soils**							
	1) Gentle to moderate slope with slight to moderate erosion & stony rockey phase.	4E8A4d1, 4E8A4d2, 4E8A4d3, 4E8A4f3, 4E8A4f5, 4E8A4f8, 4E8A4g5, 4E8A4g6, 4E8A4f6,	1310	950	40	40	280	--
	2) Very gentle to gentle slope with moderate severe erosio.	4E8A4g7, 4E8A4g8 ,4E8A4g4, 4E8A4g3, 4E8A4g2, 4E8A4g1, 4E8A4f9, 4E8A4f7, 4E8A4C7, 4E8A4C4,	1997	1433	89	192	0	283
	3) Steep to very steep slope, moderate erosion & slightly stony and rockey phases	4E8A4f4, 4E8A4f2, 4E8A 4f1, 4E8A4c9, 4E8A4c8, 4E8A4c3	869	670	151	48	--	--
4)	**D- Very Shallow to Shallow soils**							

	1) Gentle to moderate slope, moderate to sever erosion, with slight stony & rockey phase.		--	--	--	--	--	--
	2) Strong to moderate to sereve erosion with slightly stony & rockey phase.		--	--	--	--	--	--
	3) Steep to very steep slope, moderate to sereve erosion with stony and rockey phases.		--	--	--	--	--	--
	Total		4176	3053	280	280	280	283

Maharashtra Watershed Divided Districtwise



Chandrapur Distrct Watershed



Pathari River Microwatershed

Pathari River Microwatershed

Total Catchemnt of Asolamendha Project is 245.72 km^2 which includes 25 micro watershed 10 on Left side and 15 on Right Side

Sr.No.	Left Blank Nalla	Catchment Area	Right Blank Nalla	Catchment Area
1	4E8A4d1	11.86	4E8A4g4	14.643
2	4E8A4d2	13.61	4E8A4g3	9.643
3	4E8A4d3	14.34	4E8A4g2	11.753
4	4E8A4f3	8.13	4E8A4g1	5.303
5	4E8A4f5	8.62	4E8A4f9	11.243
6	4E8A4f8	7.05	4E8A4f7	9.173
7	4E8A4g5	10.24	4E8A4f6	7.403
8	4E8A4g6	12.58	4E8A4f4	6.623
9	4E8A4g7	9.6	4E8A4f2	9.683
10	4E8A4g8	10.34	4E8A4f1	9.723
11	---	---	4E8A4c9	8.053
12	----	---	4E8A4c7	10.431
13	---	---	4E8A4c4	9.553
14	---	---	4E8A4c8	9.411
15	---	---	4E8A4c3	6.712
Total		**106.37**		**139.35**

Right Side sub Catchement

Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4c8

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- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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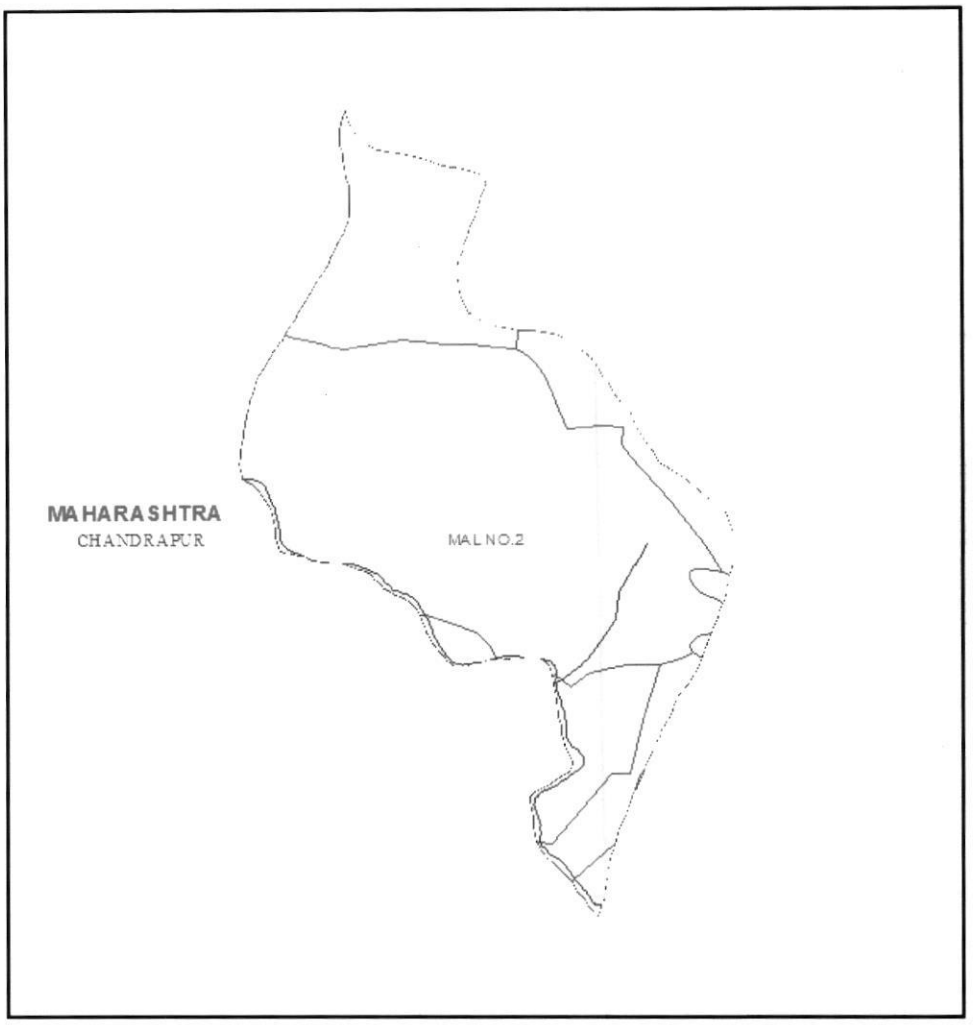

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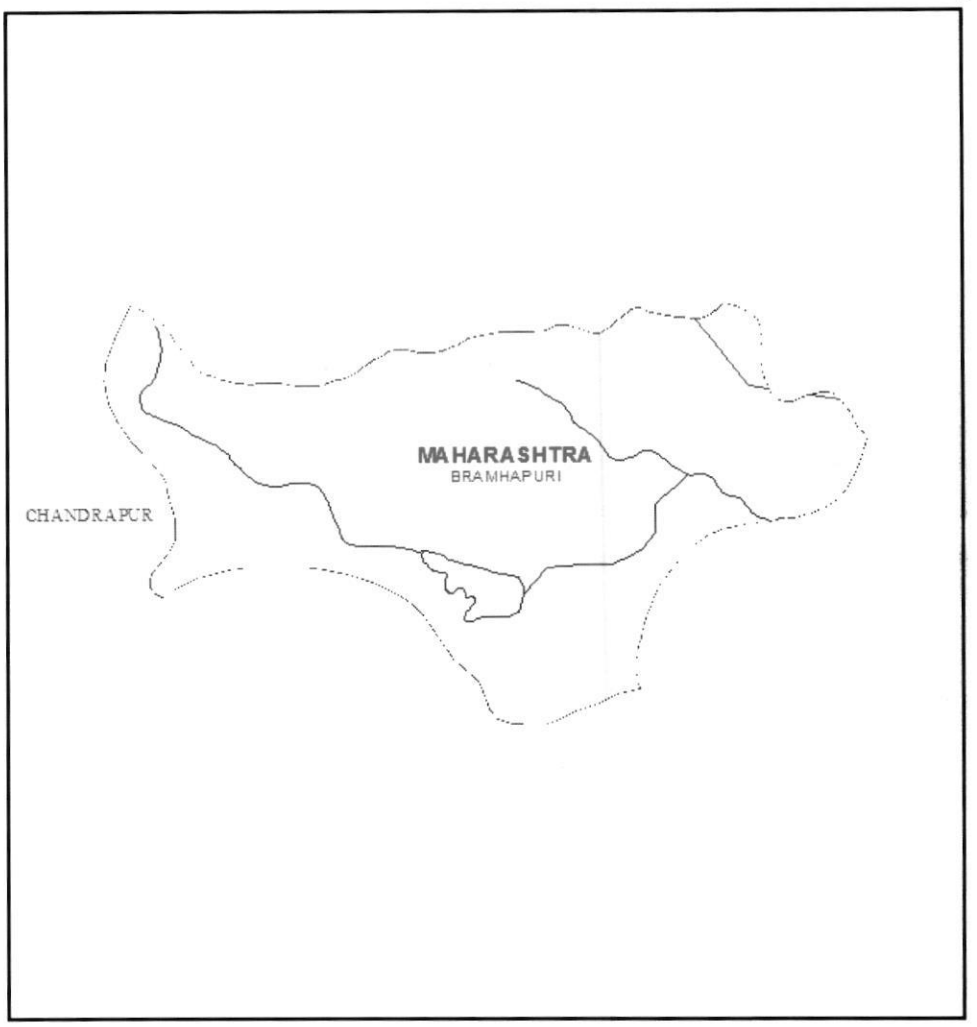

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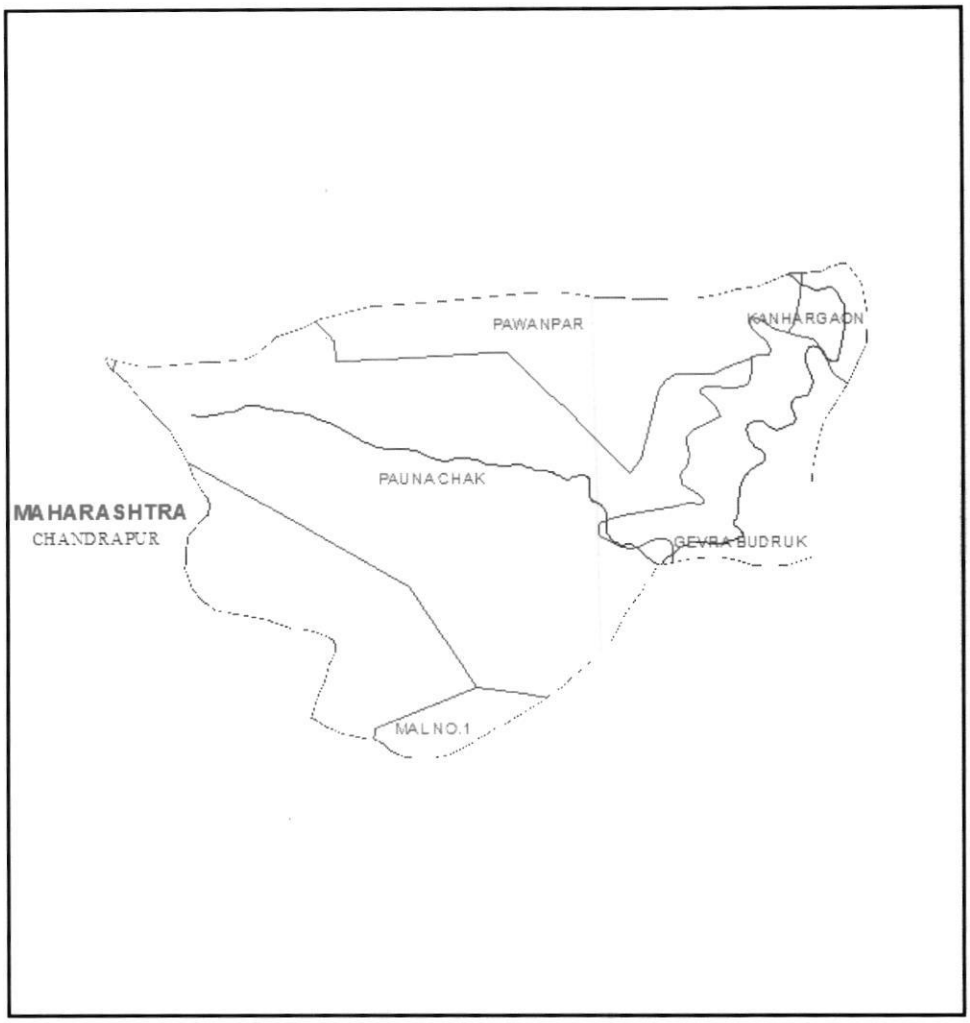

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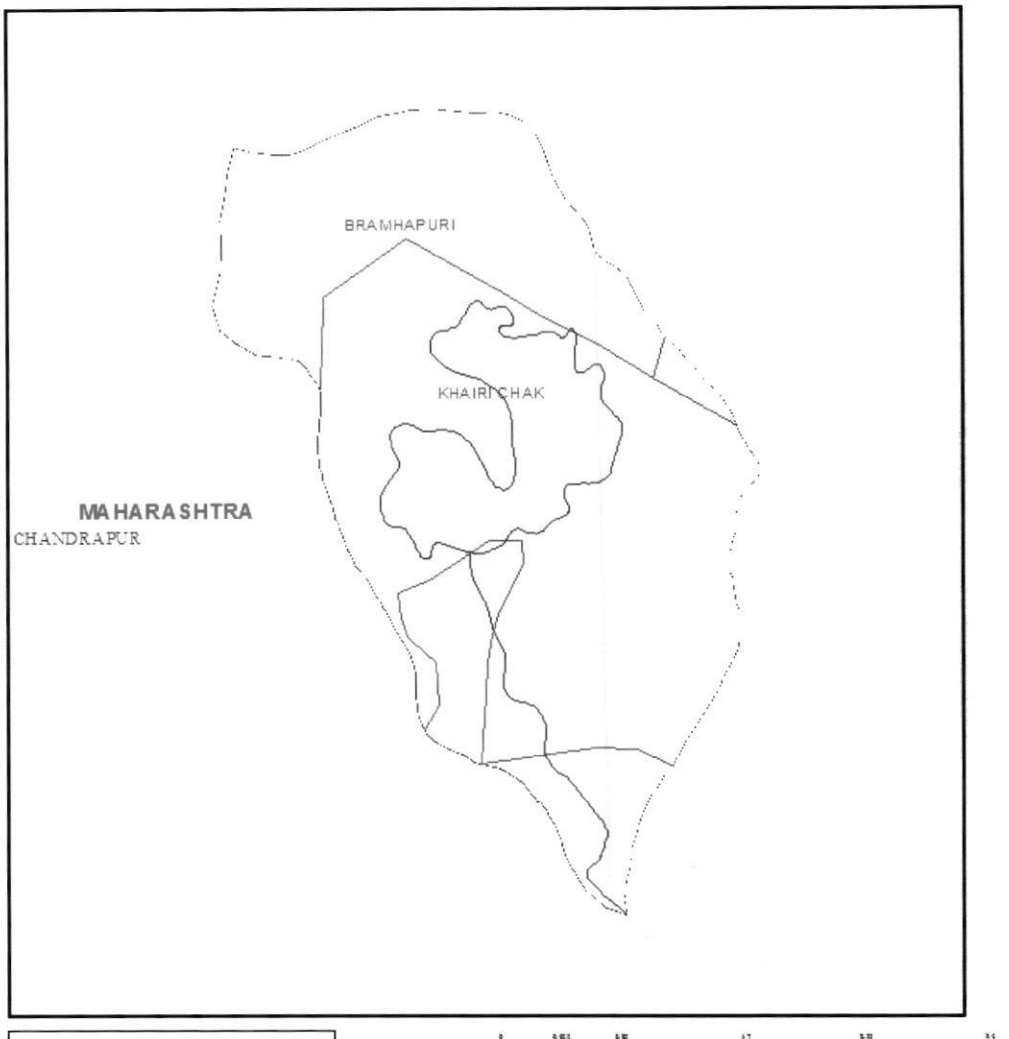

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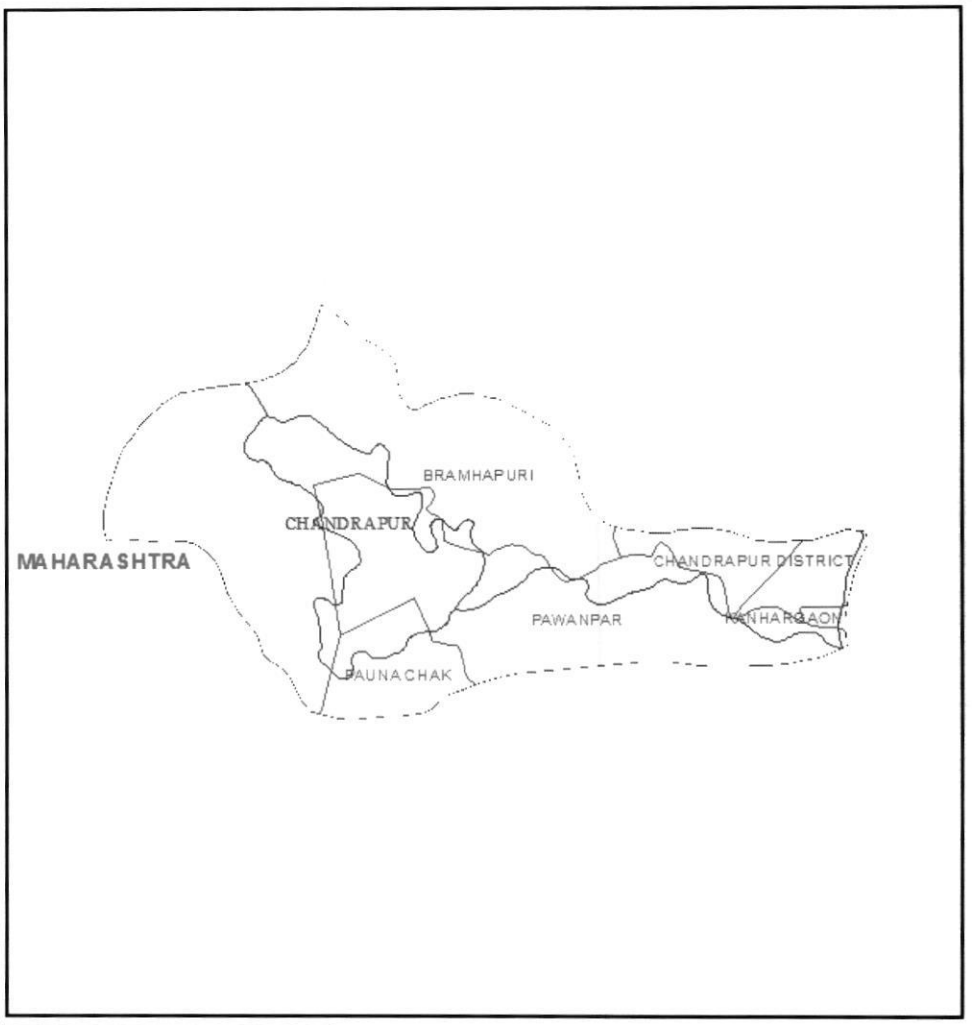

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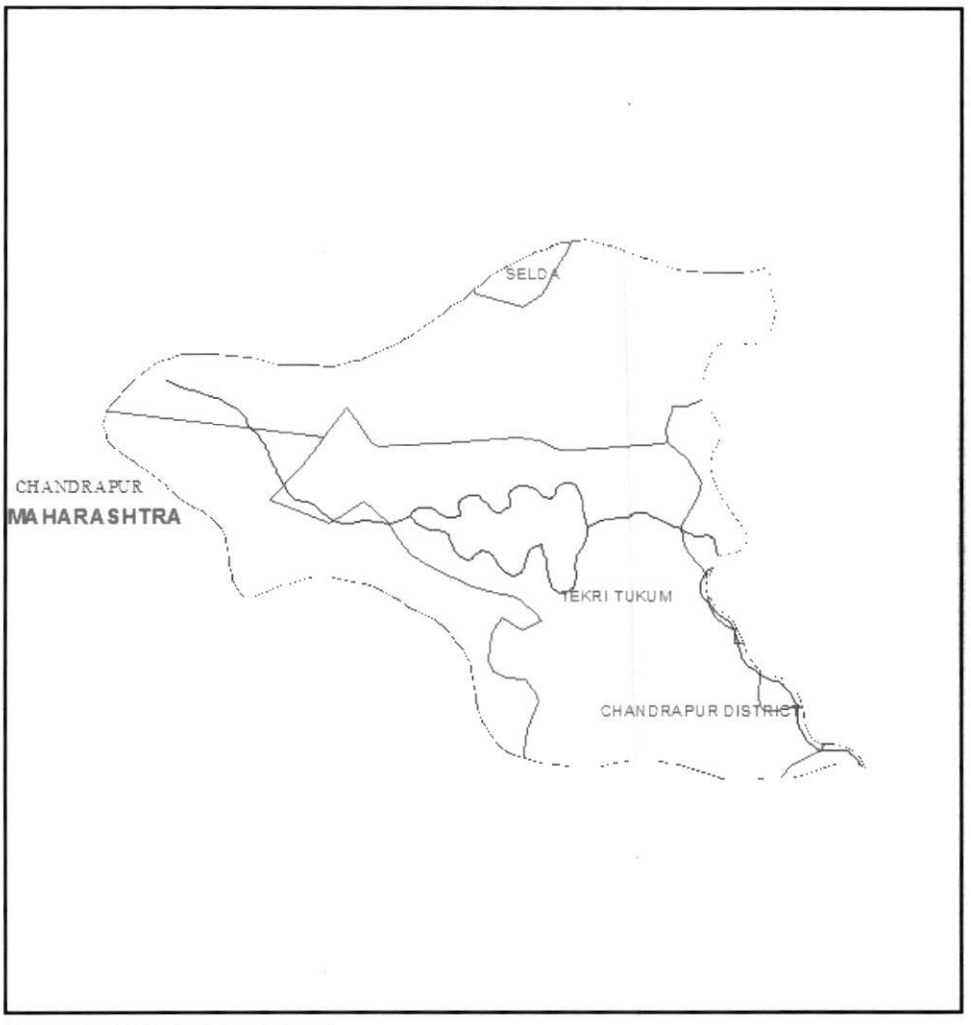

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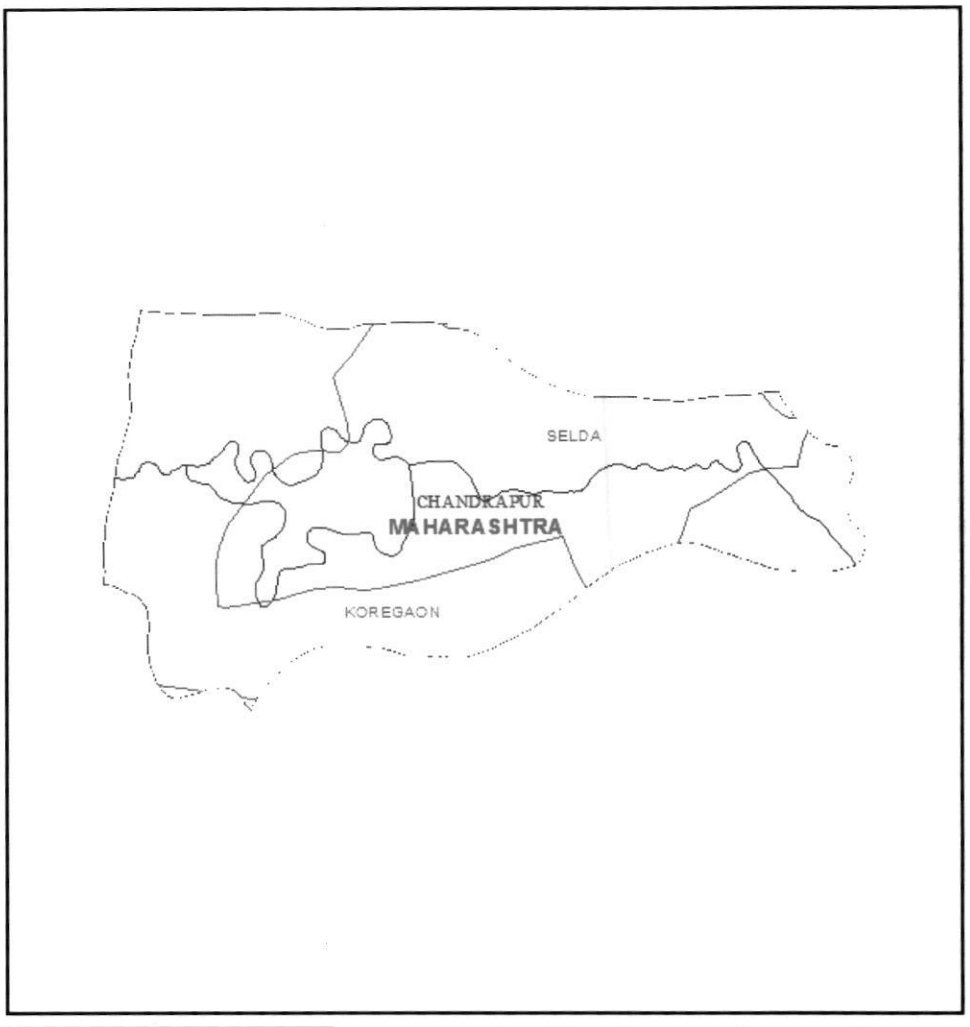

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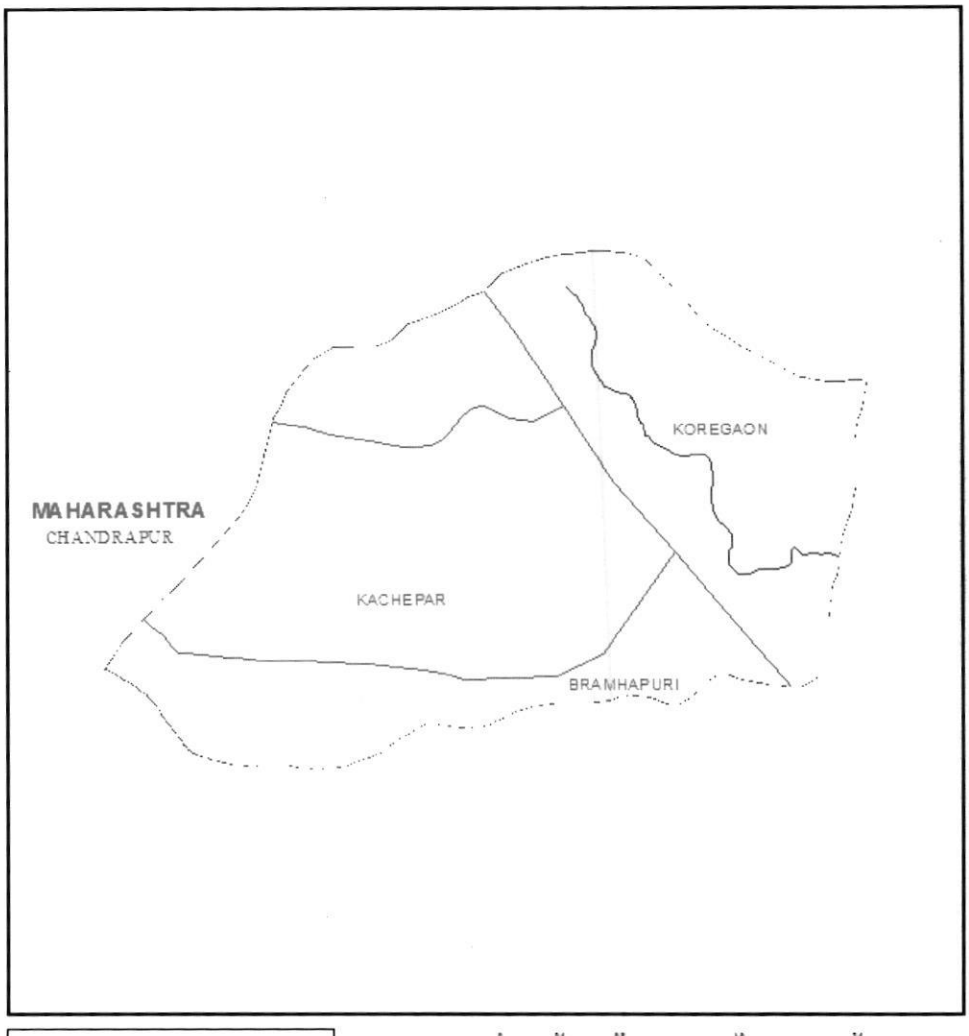

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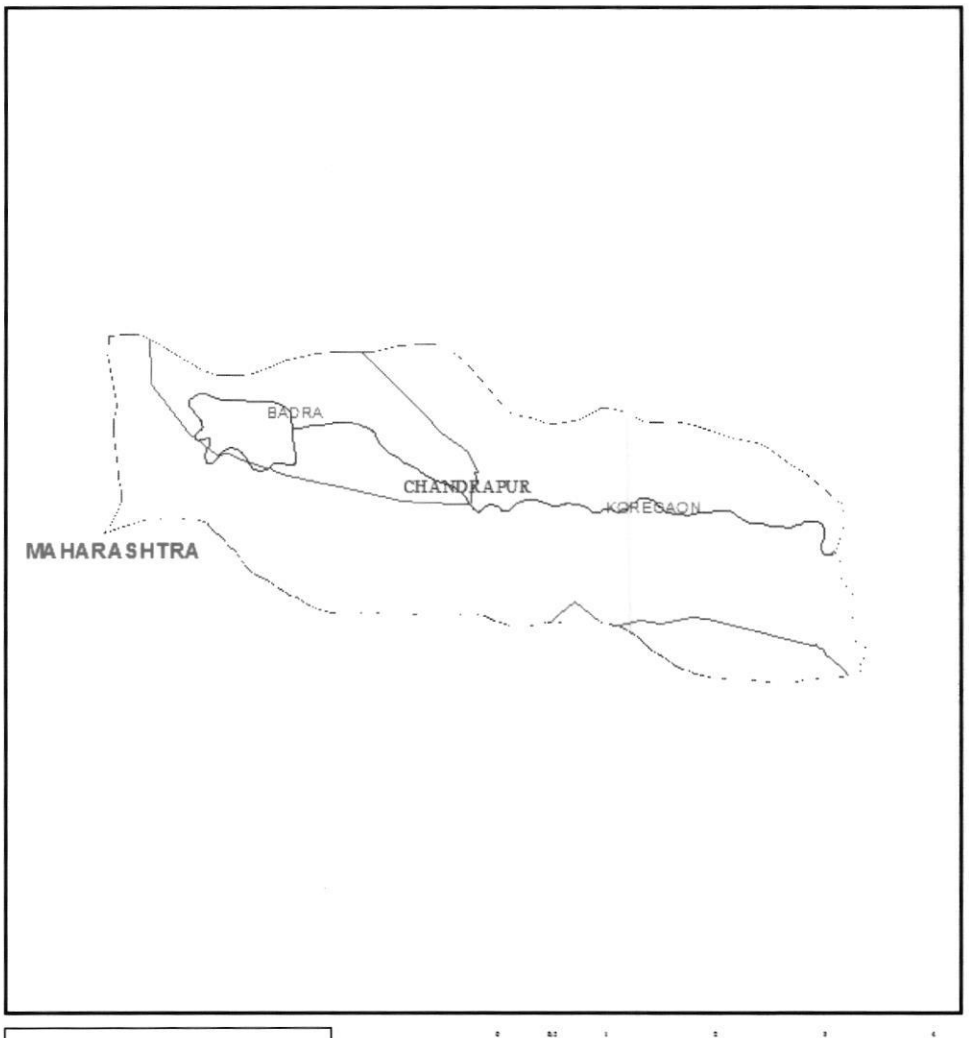

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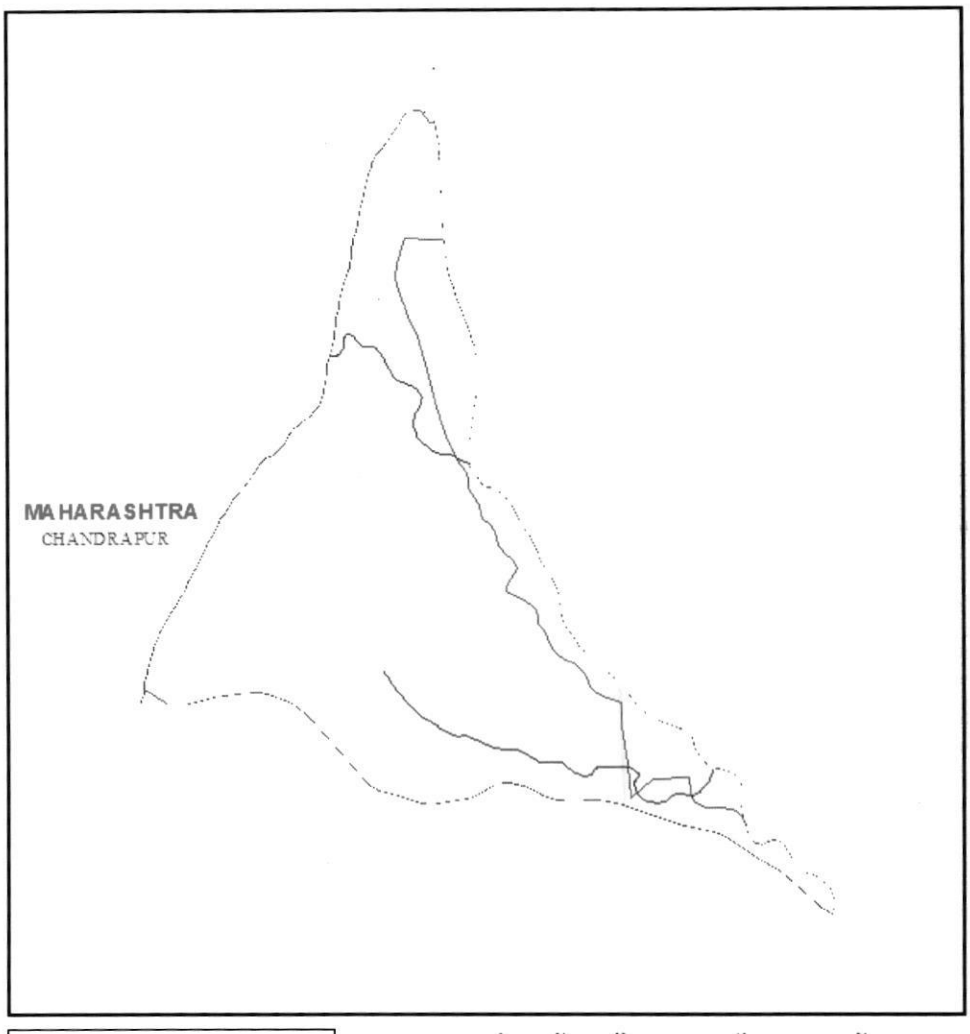

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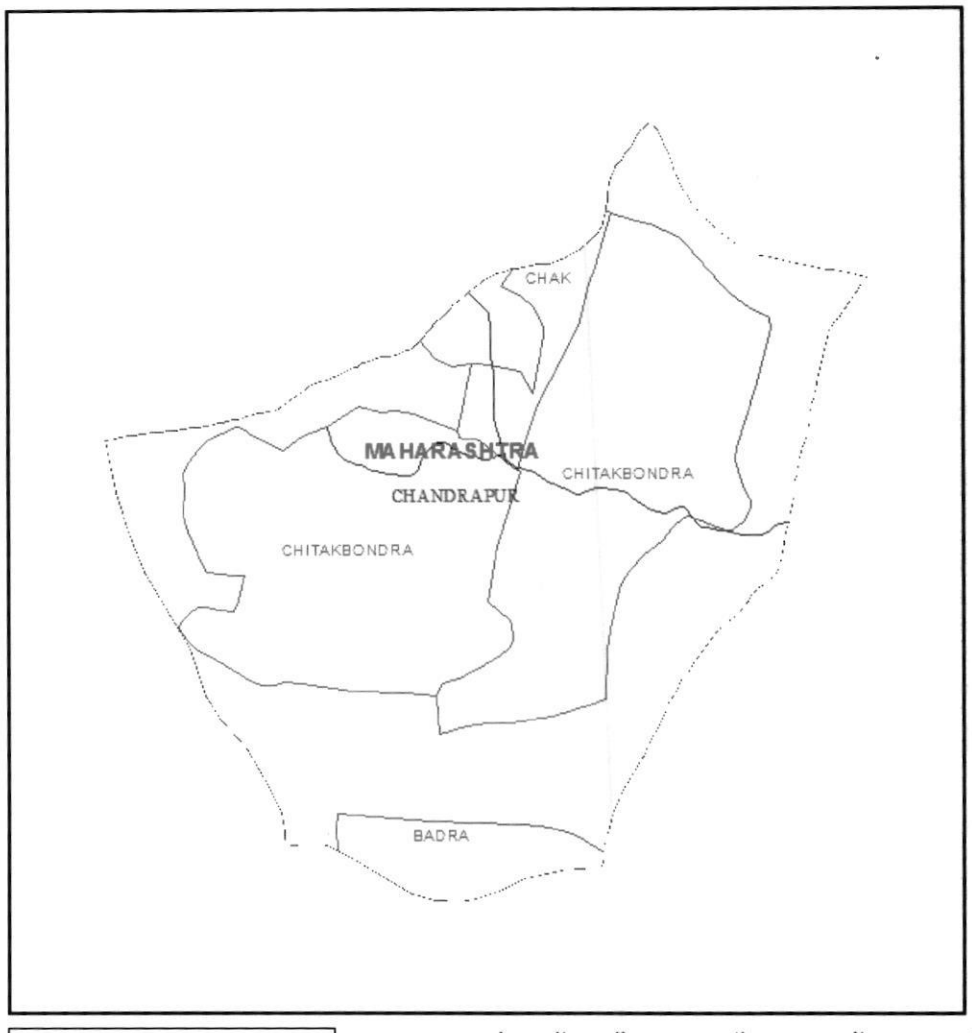

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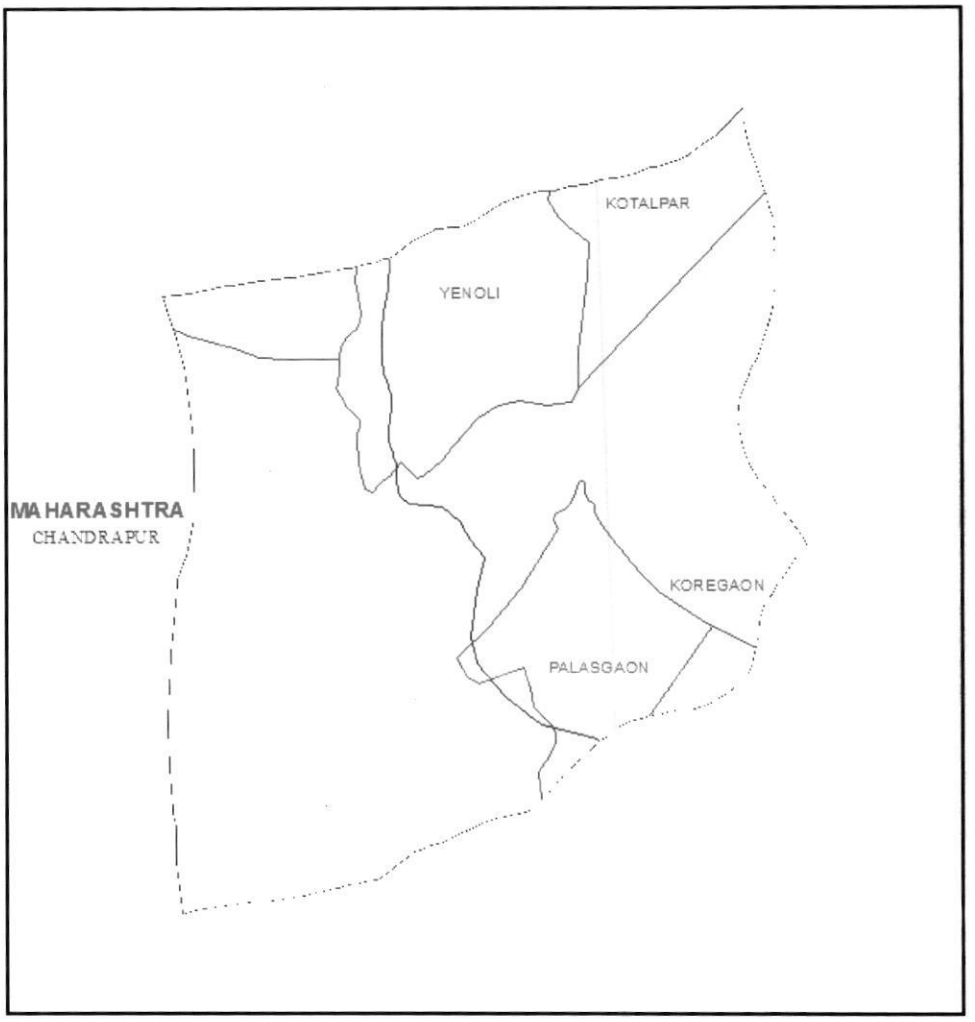

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- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4g4

Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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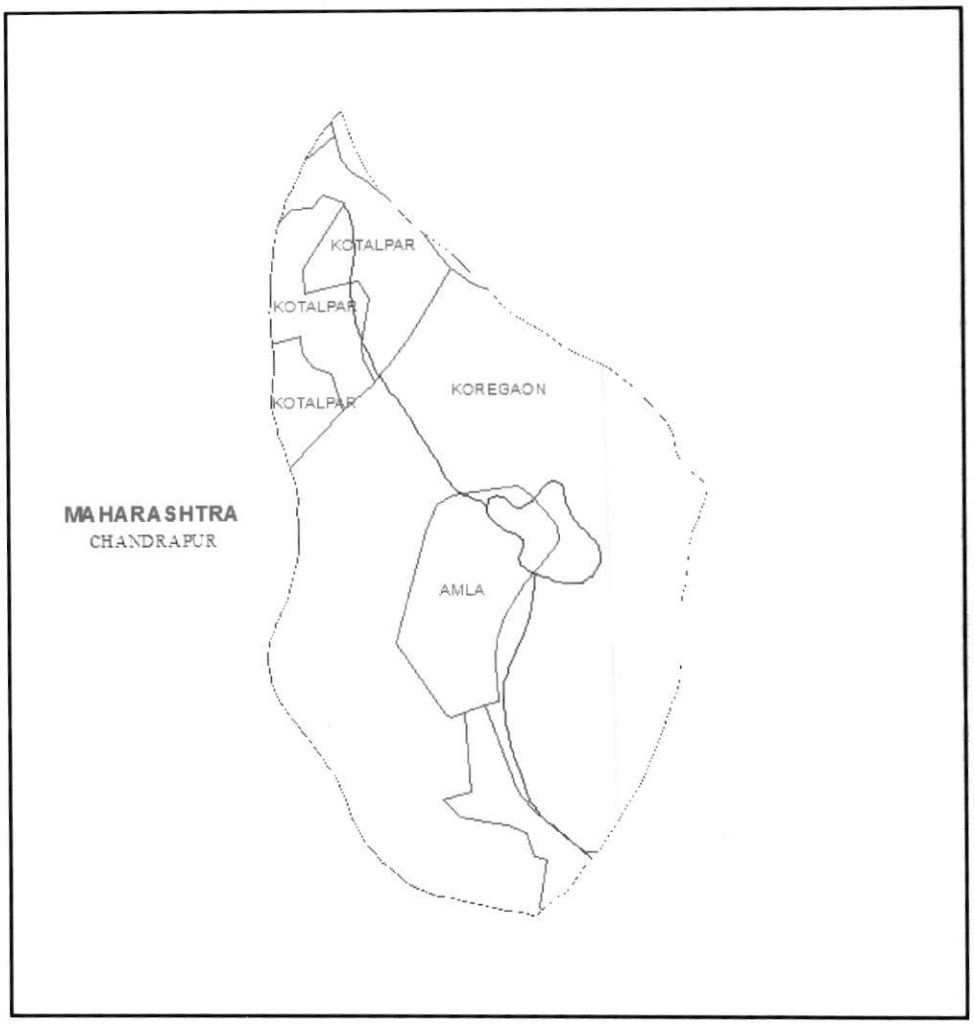
Left Side sub Catchement

Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4g8



Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4g7

Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4g6

Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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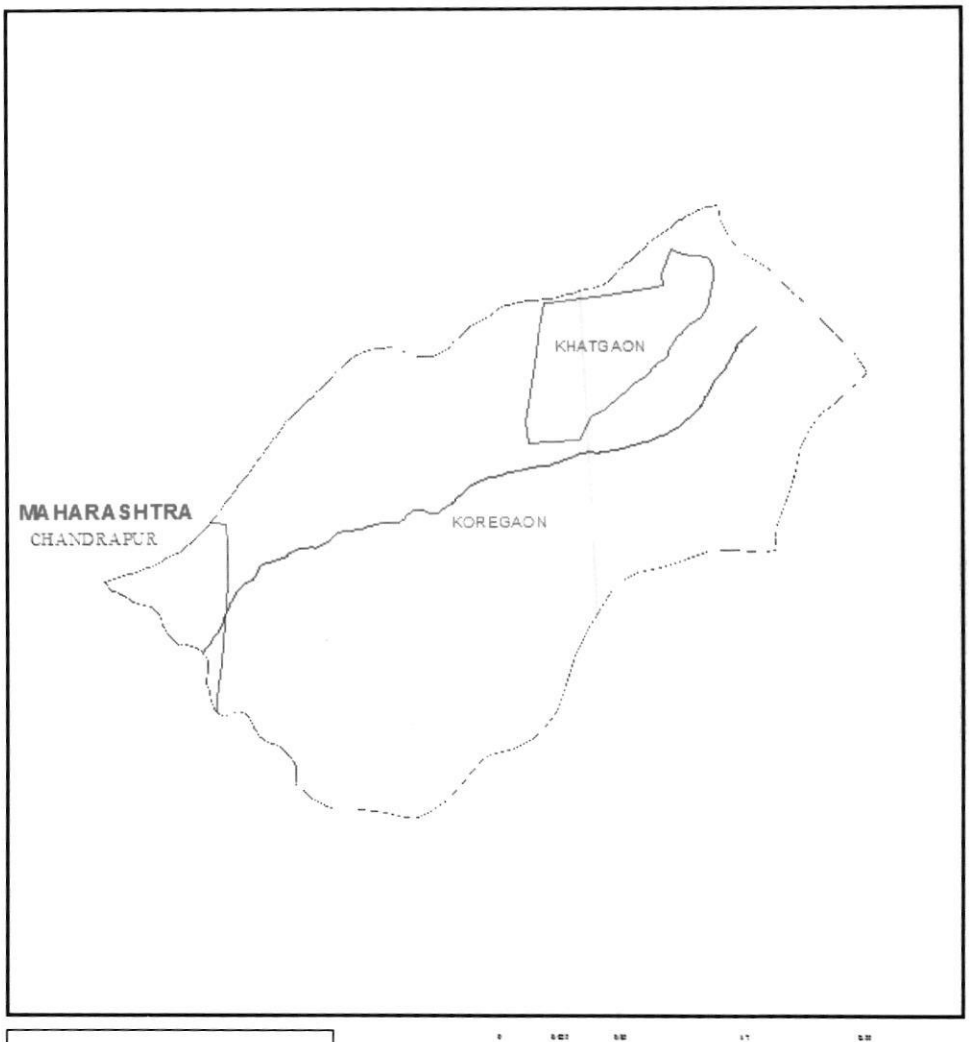
Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4g5



Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4f8

Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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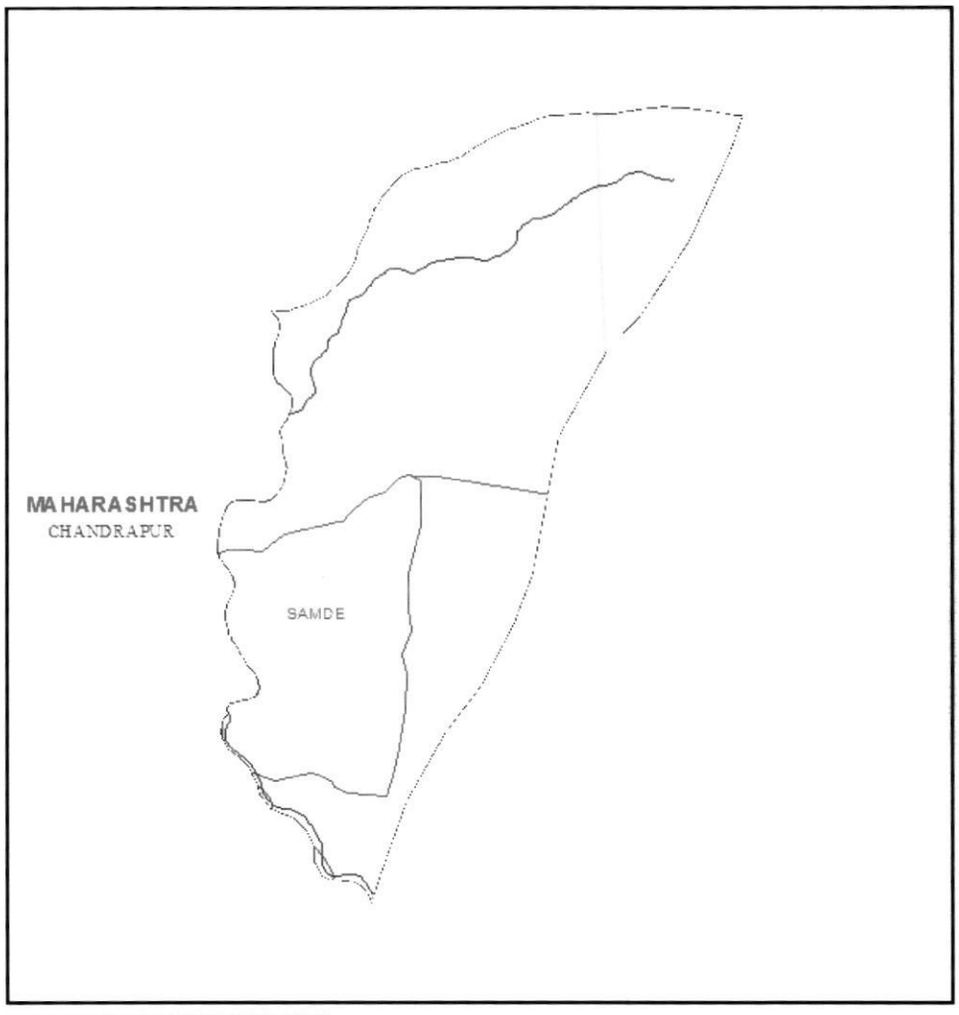
Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4f5



Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4f3

Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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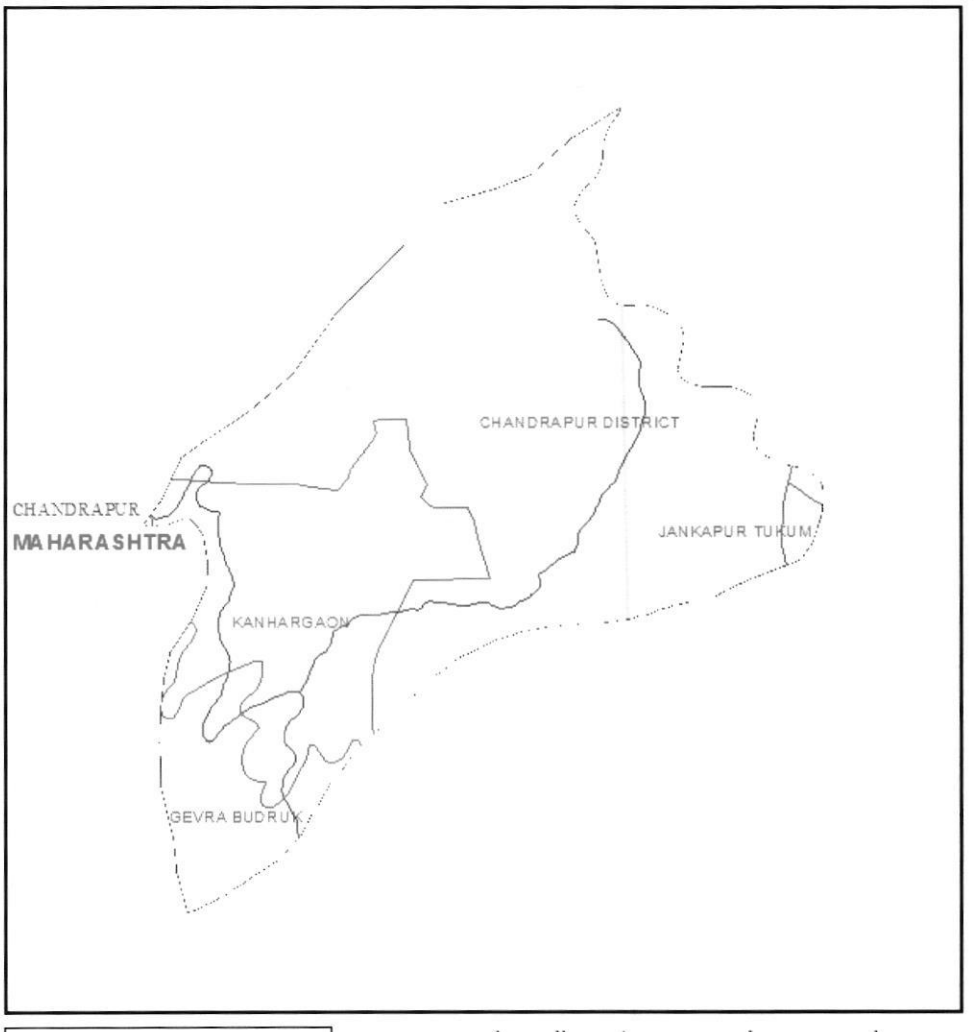
Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4d3



Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4d2

Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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Microwatershed Atlas of Maharashtra

Microwatershed Map : 4E8A4d1

Legend

- STATE BOUNDARY
- DISTRICT BOUNDARY
- THESIL BOUNDARY
- VILLAGE BOUNDARY
- DRAINAGE
- MICROWATERSHED

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