सत्यमेव जयते

File No.:
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), ODISHA)
****

Dated **13/09/2025**

To,

The Mining Officer, Malkangiri
Opposite Deepti Convent School, Main Road, Sambayaguda, Malkangiri, 764045
mo.malkangiri@gov.in

Subject: Approval of District Survey Report (DSR) of **Specified minor mineral in Malkangiri District** located in District-Malkangiri, State-Odisha for the period 2025 to 2030 under the provisions of EIA Notification 2006- regarding.

Sir/Madam,

This is in reference to your application submitted to SEIAA, Odisha by the Mining Officer, Malkangiri vide proposal number SIA/OR/MIN/534982/2025 dated 23/04/2025 for approval of District Survey Report (DSR) of Specified minor mineral in Malkangiri District for the period 2025-2030 located in District-Malkangiri, State-Odisha in terms of the provision of the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986 and subsequent amendment thereto, i.e. Enforcement and Monitoring Guidelines for Sand Mining (EMGSM)-2020 and in pursuance of MoEF & CC, Govt. of India Notification dated 15.01.2016 & 25.07.2018 and as per order of Hon'ble Supreme Court dated 10.11.2021 in Civil Appeal No. 36613662 of 2020 (State of Bihar Vrs. Pawan Kumar and Others)-reg.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC25C0108OR5107498N
(ii) File No.	
(iii) Clearance Type	Mining EC Under 5 Ha
(iv) Category	B2 & B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Proposal for Approval of DSR Malkangiri (Specified Mineral)
(viii) Location of Project (District, State)	MALKANGIRI, ODISHA
(ix) Issuing Authority	SEIAA, Odisha

(x) Applicability of General Conditions No

3. In view of the particulars given in the Para 1 above, the project proposal (PP) interalia including Form-2, forwarding letter, proceeding copy, copy of 30 days public notice period, copy of paper clipping and advertisement for Public notice both in Odia and in English and final revised District Survey Report (DSR) of Specified minor mineral in Malkangiri District copy were submitted to the SEIAA, Odisha for an appraisal by the State Level Expert Appraisal Committee (SEAC) under the provision of EIA notification 2006 and its subsequent amendments.
4. The above-mentioned proposal has been considered by the SEAC in the meeting held on 28.02.2025. The minutes of the meeting and all the documents are available in the PARIVESH portal which can be accessed from the PARIVESH portal by scanning the QR Code above.
5. Details of the DSR of Specified minor mineral in Malkangiri District and the brief on the salient features as submitted by the project proponent in Form-2 and as presented during the SEAC meeting are annexed as Annexure-2.
6. The SEAC, in its meeting held on 28.02.2025, based on information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects and compliance thereto furnished by the Project Proponent, the SEAC, Odisha recommended that the SEIAA, Odisha may consider for approval of the DSR of Specified minor mineral in Malkangiri District for implementation, subject to insertion/correction of the below mentioned observed by the SEAC on the following points as mentioned below.

- Some data on the running mines of road metals and decorative stones does not have date of grant of EC or volume of material mined or reserve, data on commencement of mining operation.
- In page 41, point no 10 the royalty for Mathali Tahasil is Zero for Last three years.
- But there was production of 6600 CUM each year as per point No 11.
- Mining maps showing map leases are not given.
- In the list of potential mining leases (existing + proposed), some data on total excavation is not furnished.
- Non operative mines also don’t have reserve data

The PP has submitted the revised DSR of Specified minor mineral in Malkangiri District after complying with the quarries raised by SEAC & SEIAA .

7. The SEIAA, Odisha has examined the DSR proposal in 202nd Meeting on 29.05.2025, 224th Meeting on 30.07.2025 and finally in 236th Meeting of SEIAA held on 02.09.2025 in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 under the Environment (Protection) Act, 1986 and subsequent amendment thereto, Sustainable Sand Mining Management Guideline (SSMMG)-2016,Enforcement and Monitoring Guidelines for Sand Mining (EMGSM)-2020 and in pursuance of MoEF & CC, GoI Notification dated 15.01.2016 & 25.07.2018 and as per order of Hon’ble Supreme Court dated 10.11.2021 in Civil Appeal No. 36613662 of 2020 (State of Bihar Vrs. Pawan Kumar and Others) and based on the recommendations of the SEAC, clarification submitted by Project Proponent (PP) to the query raised by SEAC & SEIAA. Accordingly, the PP/competent Authority have submitted their reply and modified revised DSR. After detailed deliberation in the matter, the authority hereby approved the DSR for Specified minor mineral in Malkangiri District and the details of revised DSR copy is attached in annexure-2 and also the same can be downloaded from the attached file of respective application number.
8. The SEIAA, Odisha reserves the right to stipulate additional conditions, if found necessary.
9. The Validity of DSR is upto 5 years i,e. from 2025 to 2030 from the date of issue of this approval letter.
10. This issue with an approval of the Competent Authority.

Copy To

1. Additional Chief Secretary, Forest, Environment & Climate Change Dept., Government of Odisha for information.
2. Member Secretary, State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8, Bhubaneswar for information.
3. The Director of Mines, Steel & Mines Dept, Govt. of Odisha Bhubaneswar for information.
4. Additional Principal Conservator of Forests, Integrated Regional Office (IRO), Ministry of Environment & Forests, A/3, Chandrasekharpur, Bhubaneswar for information.
5. Additional Chief Secretary, Revenue and DM Department, Govt. of Odisha Bhubaneswar for information.
6. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi-110032 for information.
7. Chairman/Member/Member Secretary, SEIAA for information.
8. Member Secretary, SEAC, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar for information.
9. Collector & DM, Malkangiri, Sub-Collector, Malkangiri, Deputy Director of Mines, Koraput, DFO, Malkangiri , RO, SPCB, Koraput, All Tahasildar of Malkangiri District/Mining Officer, Malkangiri for Information and necessary action.
10. The Director, Minor Mineral, Steel & Mines Dept, Govt. of Odisha Bhubaneswar for information.
11. Guard file for record/Website/Parivesh Portal

OFFICE OF THE MINING OFFICER, MALKANGIRI

Opposite Deepti Convent School, Main road, Sambayaguda, Malkangiri, 764045
Mail: - mo.malkangiri21@gmail.com, **Mob: 8249693227.**

No. 1616**/Mines.** **Date.** 2/09/2025

From

The Mining Officer,
Malkangiri

To

The Chairman,
State Level Environment Impact Assessment Authority
5RF-2/1, Unit-IX Bhubaneswar 751022, Odisha

Sub: Comply the procedure laid down for preparation for Malkangiri DSR as per Notification dated 25.07.2018 issue by MoEF & CC, Govt.at India & provision contained in "Enforcement & Monitoring Guidelines for Sand Mining"2020.

Ref: Agenda ID: EC/AGENDA/630174/8/2025 DTD. 01/08/2025 AND PROPOSAL NO-SIA/OR/MIN/534982/2025 DTD- 23/04/2025

Sir,

With reference to your letter cited above on the captioned reference, I am to say that the clarification on the laid down point by SEIAA, Odisha for Malkangiri DSR is given below,

SEAC OBSERVATION **COMMENTS ON SPECIFIED MINOR MINERAL DSR OF MALKANGIRI DISTRICT OF 3-(i) to (vi)**		
SL. No	**COMMENTS**	**COMPLIANCE**
i	The DSR format for specified Minor minerals is not as per MOEF & CC, Govt. of India EIA Notification dated 25.07.2018. The project proponent is required to submit the DSR format as per submission on DSR of Morrum and stone quarries of Malkangiri District including annexure and accordingly correction to be made in DSR as per clarification sought for DSR of Morrum and Stone in Subarnapur District.	Updated Preamble chapter as per your ADS.
ii	In most of the time it is mentioned NA that need to be corrected in light of information/data is not available, Nil, yet to be finalized, No etc.	In most of the time it is mentioned NA that has been corrected in light of information/data is not available has been finalized and clarified.

iii	Field visit report in respect of Malkangiri sub-division, the project proponent submitted report signed by Sub-Collector-Cum Sub-Divisional magistrate, Biramaharajpur that need to verify and accordingly corrected.	Field visit report in respect of Malkangiri sub-division, that has been verified and accordingly corrected.
iv	As per clarification through ADS sought by SEAC and SEIAA, the DSR is not prepared accordingly.	As per clarification through ADS sought by SEAC and SEIAA, the DSR has been clarified accordingly.
v	Not submitted proper KML file and the Source of mining are to be shown in KML file and in the District Map.	KML file has not been finalized as the data is not available in the office.
vi	The Signature of the Collector to be incorporate in the Certificate of DSR.	The Signature of the Collector has been attached in Certification Regarding Preparation Of DSR.
SEIAA OBSERVATION **COMMENTS ON SPECIFIED MINOR MINERAL DSR OF MALKANGIRI DISTRICT**		
i	Not submitted proper KML file, the PP need to submit the Proper KML file showing the source of mining area in the KML file.	That the Proper KML file has been uploaded as per ADS.
ii	In the table on total Geological & Minable Reserve (Existing & Proposed), the PP has mentioned in some column that the Geological reserve and mineral reserve data is not available that need to clarify.	Geological and Minable reserve (Existing & Proposed) has been updated as per ADS.
iii	In para-23, no information on reclamation of mined out area.	Reclamation Part has been clarified as per ADS.
iv	In para-26, no information on plantation Green belt development in respect of lease already Granted in the District.	Green Belt development part has been clarified.
v	In the Annexure -V, the column no. 05,07 and 08 that Data is not available that need to fill up.	That the column no. 05,07 and 08 has been complied as per ADS.
vi	As per Annexure -VII, the No Route Map and Location attached that need to be include in the KML file and upload the same in soft copy format and attached the same in Pdf file.	That the KML file and upload the same in soft copy format and attached the same in Pdf file has been uploaded.

Further, I would like to inform you that only twelve decorative stone quarry, classified as a specified minor mineral, exists in the district. The remaining one quarries pertain to Quartz and Quartzite.

As per the Government of India notification dated 20/02/2025, published in the Gazette and subsequently communicated to all State Governments and Union Territories on 21/02/2025, the minerals Barytes, Feldspar, Mica, and Quartz have been omitted from the list of minor minerals. These minerals are now classified as major minerals.

Accordingly, these minerals are not recommended for inclusion in the District Survey Report (DSR) under minor minerals.

This is for favour of your kind information and necessary action.

Yours Faithfully,

Encl: As Above

Mining Officer (I/c),
Malkangiri

Mining Officer
Malkangiri

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-21022025-261204
CG-DL-E-21022025-261204

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 916] नई दिल्ली, बृहस्पतिवार, फरवरी 20, 2025/फाल्गुन 1, 1946
No. 916] NEW DELHI, THURSDAY, FEBRUARY 20, 2025/PHALGUNA 1, 1946

खान मंत्रालय

अधिसूचना

नई दिल्ली, 20 फरवरी, 2025

का.आ. 924(अ).—केंद्रीय सरकार, खान और खनिज (विकास और विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 3 के खंड (ङ) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, तारीख 10 फरवरी, 2015 के का.आ. 423 (अ) द्वारा भारत के राजपत्र असाधारण, भाग II, खंड 3, उप-खंड (ii) में प्रकाशित खान मंत्रालय, भारत सरकार की अधिसूचना में निम्नलिखित संशोधन करती है; अर्थात:—

उक्त अधिसूचना में मद (iii), मद (xiv), मद (xxii) एवं मद (xxv) में विनिर्दिष्ट खनिजों का लोप किया जाएगा।

2. यह अधिसूचना राजपत्र में इसके प्रकाशन की तारीख से प्रवृत्त होगी।

[फा. सं. एम.VI-16/7/2024-खान VI-भाग (2)]

दिनेश माहुर, संयुक्त सचिव

टिप्पण.— मूल अधिसूचना, भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में तारीख 10 फरवरी, 2015 को संख्याक का.आ. 423 (अ) में प्रकाशित की गई थी।

MINISTRY OF MINES

NOTIFICATION

New Delhi, the 20th February, 2025

S.O. 924 (E).—In exercise of the powers conferred by clause (e) of section 3 of the Mines and Minerals (Development and Regulation) Act, 1957 (67 of 1957), the Central Government hereby makes the following amendment in the notification of the Government of India, in the Ministry of Mines, published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii), *vide* number S.O. 423(E), dated the 10th February, 2015, namely:—

In the said notification, minerals specified in items (iii), (xiv), (xxii) and (xxv) shall be omitted.

2. This notification shall come into force on the date of its publication in the Official Gazette.

[F. No. M.VI-16/7/2024-Mines VI-Part(2)]
DINESH MAHUR, Jt. Secy.

Note.– The principal notification was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii), *vide* number S.O. 423(E), dated the 10th February, 2015.

Uploaded by Dte. of Printing at Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

from the list of minor minerals -reg.

Sir,

I am directed to say that the Central Government, vide Notification No. S.O. 924(E) dated 20.02.2025 **(copy enclosed)**, has omitted the minerals Barytes, Felspar, Mica and Quartz from the list of minor minerals. Accordingly, these minerals are now 'minerals other than minor minerals', that is, major minerals with effect from 20.02.2025.

2. Mining Lease in respect of these minerals would now be regulated in accordance with the provisions of the MMDR Act, 1957 and the rules made thereunder as applicable to other major minerals. In order to ensure smooth transition of the existing leases of these minerals into the regulatory framework for major minerals, it is requested that the existing minor mineral lessees may be directed to get themselves registered online with the Indian Bureau of Mines (IBM) as per the provisions of Rule 45 of the Mineral Conservation and Development Rules, 2017 (MCDR, 2017) by 31st March 2025. Thereafter, the lease holders shall be required to file monthly and annual returns in the specified formats and also comply with the provisions of the MCDR 2017.

3. Additionally, the existing lease holders of minerals Barytes, Felspar, Mica and Quartz would be required to prepare and submit a mining plan for approval by the Indian Bureau of Mines (IBM) in accordance with the MCDR, 2017. However, till the approval of the mining plan by the IBM, the lessees may be allowed to continue production and dispatch based on existing mining plan approved by the State Government. The State Governments are requested to direct the existing lease holders of these minerals to submit the mining plan to IBM for approval by 30th June 2025.

4. It is also clarified that the lease period of the existing leases of minerals Barytes, Felspar, Mica and Quartz shall be governed as per section 8A of the MMDR Act. Thus, lease period of mining leases granted after the commencement of the MMDR Amendment Act, 2015 shall be for the period of 50 years.

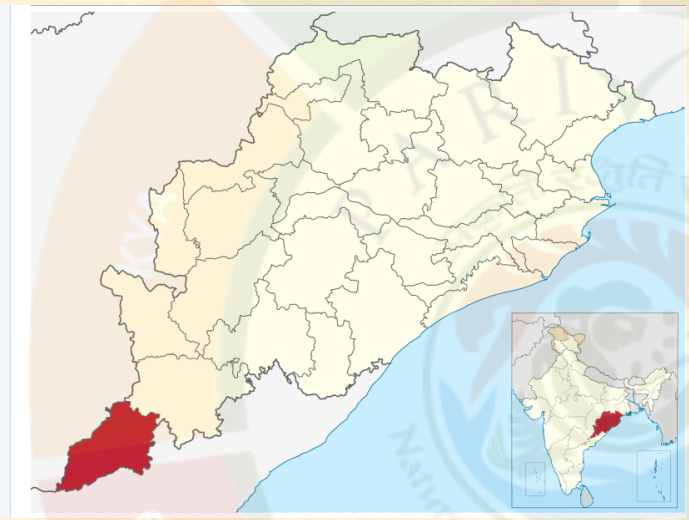
--- 2/-

(Mustaq Ahmad)
Director
Tel No- 011 23383576
Email- mustaqahmad.dad@gov.in

Copy to: The Controller General, Indian Bureau of Mines, Nagpur.

DISTRICT SURVEY REPORT(DSR)
OF
MALKANGIRI DISTRICT, ODISHA
FOR
SPECIFIED MINOR MINERAL

(FOR PLANNING & EXPLOITATION OF MINOR MINERAL RESOURCES)



As per Notification No. S.O. 3611(E) New Delhi

dated 25th July 2018 of

Ministry of Environment, Forest & Climate Change

(MoEF& CC)

COLLECTORATE MALKANGIRI

CONTENT

PREAMBLE

Odisha is one of the Major Mineral reach State in India. Malkangiri, historically known as Malikamardhangiri, is a town and municipality in Malkangiri district in the Indian state of Odisha. It is the headquarter of the Malkangiri district. Malkangiri has been the new home of the East Bengali refugees from erstwhile East Pakistan (present day Bangladesh), who have been rehabilitated since 1965 under the Dandakaranya Project. Some Sri Lankan Tamil refugees were also rehabilitated in the town, following the armed struggle of the Liberation Tigers of Tamil Eelam (LTTE) in the early 1990s, although most of them have now returned to their country. Currently, it is one of the most naxalite-affected areas of the state, and is a part of the Red Corridor.

In pursuance of MoEF & CC Notification S.O. 141(E) dated 15th Jan. 2016, District level Expert Appraisal Committee (DEAC) has been formed for Category –B2 Minor Minerals having area less than or equal to 5 ha. Prior to the formation of Odisha Minor Mineral Concession Rule 2004, (OMMCR -2004) the mining operation for minor mineral were carried out in unscientific manner. Identifying this fact in exercise of power, Conferred by Section 15 by Mines and Minerals (Development and Regulation) Act 1957 as amended in 2015 and all other powers enabling it in that behalf, the industry Mines & Geology Department, Govt. of Odisha framed the aforementioned rule, which has been amended with period of times in the year 2014, 2015 and 2016.

Keeping in view of experience gained in period of decade, the MoEF & CC came out with Environmental Impact Assessment Notification S.O.-1533(E) dated 14th Sept. 2006. It has been made mandatory to obtain environmental clearance for different kinds of development projects as listed in Scheduled -I of notification. Further, pursuance of the order of Hon' ble Supreme Court Petition (C) No. 19628- 19629 of 2009, dated 27th Feb. 2012 In the matter of Deepak Kumar etc., Vs State of Haryana and others etc., Prior Environmental Clearance has now become mandatory for mining of Minor Minerals irrespective of the area of Mining Lease. And also in view of the Hon' ble National Green Tribunal, order dated the 13th Jan. 2015 the matter regarding Sand, Road metal, & Burrowed Earth cutting for Road Construction has to take prior E.C. for Mining Lease irrespective of the fact that whether the area involved is more or less than 5 hectares. They also suggested to make a policy on E.C for minor minerals lease in cluster.

Subsequently, Hon'ble Supreme Court vide their order dt. 18.01.2022 in connection with Civil Appeal Nos. 3661-3662 of 2020, the State of Bihar and others Vrs- Pawan Kumar and

others at Paragraph 14 "We therefore find it appropriate to substitute the directions issued by Tribunal vide judgment and order dated 14th October-2020 with the following directions,

(i). The exercise of preparation of DSR for the purpose of mining of the State of Bihar in all the Districts shall be under taken afresh. The Draft DSRs shall be prepared by the Sub-Divisional Committees consisting of the Sub-Divisional Magistrate, Officers from Irrigation Department, State Pollution Control Board or Committee, Forest Department, Geological or Mining Officer. The same shall be prepared by undertaking site visits and also using by modern technology. After the Draft DSRs are prepared the District Magistrate of the concerned District shall forward the same for examination and evaluation by the SEAC. The same shall be examined by the SEAC and its report shall be forwarded to SEIAA. The SEIAA will thereafter consider the grant of approval such DSRs.

(ii). Needless to state that while preparing DSRs and appraisal thereof by SEAC and SEIAA. It should be ensured that a strict adherence to the procedure and parameters laid down in the policy of January-2020 should be followed.

The District Survey Report will form the basis for application for Environmental Clearance, preparation of reports and appraisal of projects. District Survey Reports are to be reviewed once in every five years as per statue.

In lieu of above guideline and orders of Hon'ble Supreme Court and in compliance to the orders of Hon'ble NGT, EZ, Kolkata, in connection with O.A No. 63/2020, the Member Secretary, SEIAA, Bhubaneswar issued a Letter on 27th December, 2022 to Collector & District Magistrate, Malkangiri with a direction " the DSR is to be signed afresh by the Collector and District Magistrate, along with members of the designated sub-committee consisting of Sub-Divisional Magistrate, and District Level Officers from Irrigation Department, State Pollution Control Board, Forest Department, Geology and /or Mining Department. Keeping in view of the orders of Hon'ble Supreme Court, Hon'ble NGT and directions of SEIAA, Bhubaneswar a fresh DSR has been prepared observing all formalities in the year,2023

The Main objective of the preparation of District Survey Report is to ensure the following: -

1. Identification of Mineral Resources in the District.
2. Identification of areas of minor minerals having the potentiality where mining can be allowed.
3. Identification of area and proximity to infrastructure and installations where mining should be prohibited.

1.0 INTRODUCTION

Malkangiri at a Glance:

1.1 Location and Geographical Area:

Malkangiri is the southernmost district of Orissa. It was awarded the status of the district in October 1992, when the erstwhile Koraput district was divided into four new districts. The district is bordered in the North and West by Bastar district of Chhatishgarh and in the south by Khammam and East Godavari districts of Andhra Pradesh, in the east by Koraput district, Orissa. The district lies between north latitudes 17º47'58" and 18º44'18" and East longitudes 81º23'23" and 82º27'05" falling in Survey of India Degree sheet Nos. 65 F, G, J. The district covers an area of 5791 Sq.Km and is divided into 7 Community Development Blocks – Kalimela, Khairput, Korukonda, Kudumulguma, Malkangiri, Mathili and Podia. The Malkangiri town, the district headquarter is approachable from adjacent districts through State Highways. The important towns of the district are well connected by road. It is one of the most economically backward tribal districts of Orissa.

The general drainage pattern in the district is dendritic to sub-parallel. The Kolab river along with its tributaries, the Potteru and Sileru rivers is the most prominent river of the region. The Kolab river issues from the Sinkaram hills and follows a south westerly course after passing over Malkangiri district. The river joins the Godavari river in Khammam district of Andhra Pradesh.

The hills and forests cover almost seventy six percent of the total geographical area of the district as per the classification of the forest area by legal status in Malkangiri district as on 2005, which includes reserve forests, demarcated-protected forests, un-demarcated forests, unclassified forests and other forests. Only limited areas are utilized for agricultural purposes. The net area under cultivation is only twenty six percent of the total geographical area.

Agriculture is the main occupations of the vast majority of the population. However because of forest cover and rugged terrain conditions of the district agriculture is by and large confined to Kharif Season. Rabi cultivation is practiced at places, where irrigation facilities are available. No uniform cropping pattern seems to be followed in the district. Shifting or 'Podu' cultivation is practiced on high hill slopes. Paddy is the main crop sown during the Kharif seasons. Apart from paddy, other important Kharif crops are Maize, Ragi, millet and different type of pulses. In higher altitudes above 600 m potato is cultivated during Kharif season. During Rabi oil seeds are the main crops. Pulses and wheat are also grown substantially.

Based on the soil characteristic, cropping pattern, climatological and topographical features the district has been subdivided into two agro-climatic zones, namely South Eastern Ghat and Eastern Ghat highland. The South Eastern Ghat occupies almost the entire Malkangiri district. It

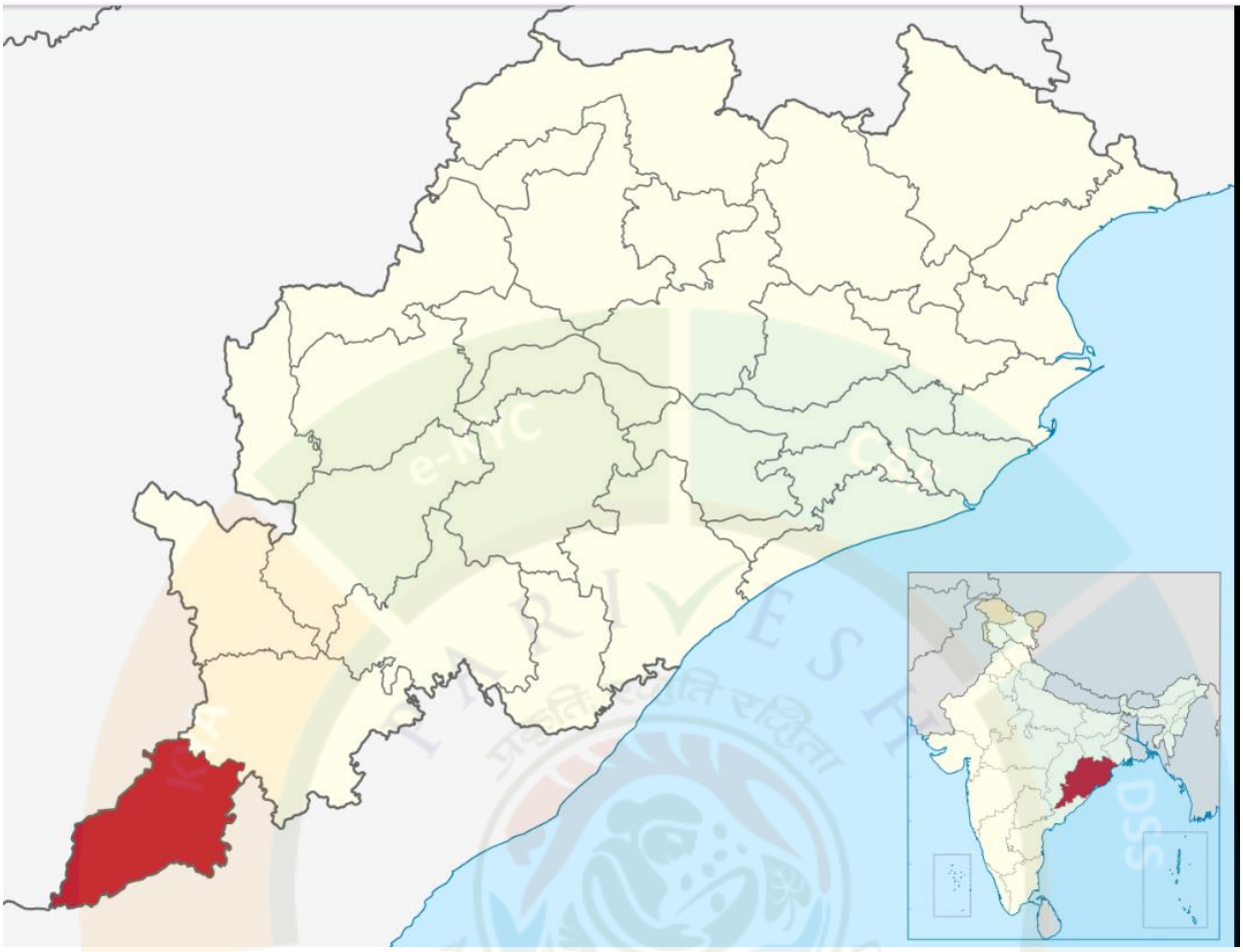
is characterized by warm climate with maximum temperature of 44ºC and minimum temperature of 11ºC. The principal crop is rice. The Eastern Ghat Highland have only a very small portion in the eastern corner of the district is characterized by Eastern Ghat Highland. The climate is warm and humid. Maximum temperature is 34ºC and minimum temperature is 8ºC. The principal crops are paddy, wheat and vegetables.

The major surface water bodies are reservoirs, rivers, streams and ponds etc. The river Potteru which is a tributary of Kolab is generally perennial in nature with a sufficient flow during summer months. The Balimela reservoir is the major irrigation project and its canal command is around 61034-Ha There are substantial numbers of tanks, ponds and water harvesting structures exist in the district, which hold considerable quantity of surface water as storage which serve the purpose for irrigation, bathing, drinking and industrial purposes.

It covers an area of about 9.62 km^2 (3.71 sq mi), and has an average elevation of 170 m (560 ft) above the mean sea level. It lies in the area between the hills of Eastern Ghats on eastern and western sides. During monsoons, the town becomes impassably swampy and heavy floods isolate it from the rest of the state.

Almost the entire population of Malkangiri is engaged in agriculture and primary sector, because it is relatively isolated from the rest of Odisha, as compared to other towns and cities, and developmental stages related to secondary and tertiary sectors are yet to be done. The primary sector accounts for 46.35% of the total workforce. Another important industry on which the population is dependent is tourism, because in and around the town, there are many tourist attractions. Thus, it has a large potential yet to be tapped.

In 1962, it was upgraded to a sub-division of Koraput district. The present Malkangiri got its identity as an independent district due to reorganization of districts of Odisha on 1 October 1992, with effect from 2 October 1992. Since 1967, the town along with its district has been one of the worst affected regions due to the Naxalite–Maoist insurgency, although in recent years, the effect has been considerably reduced.



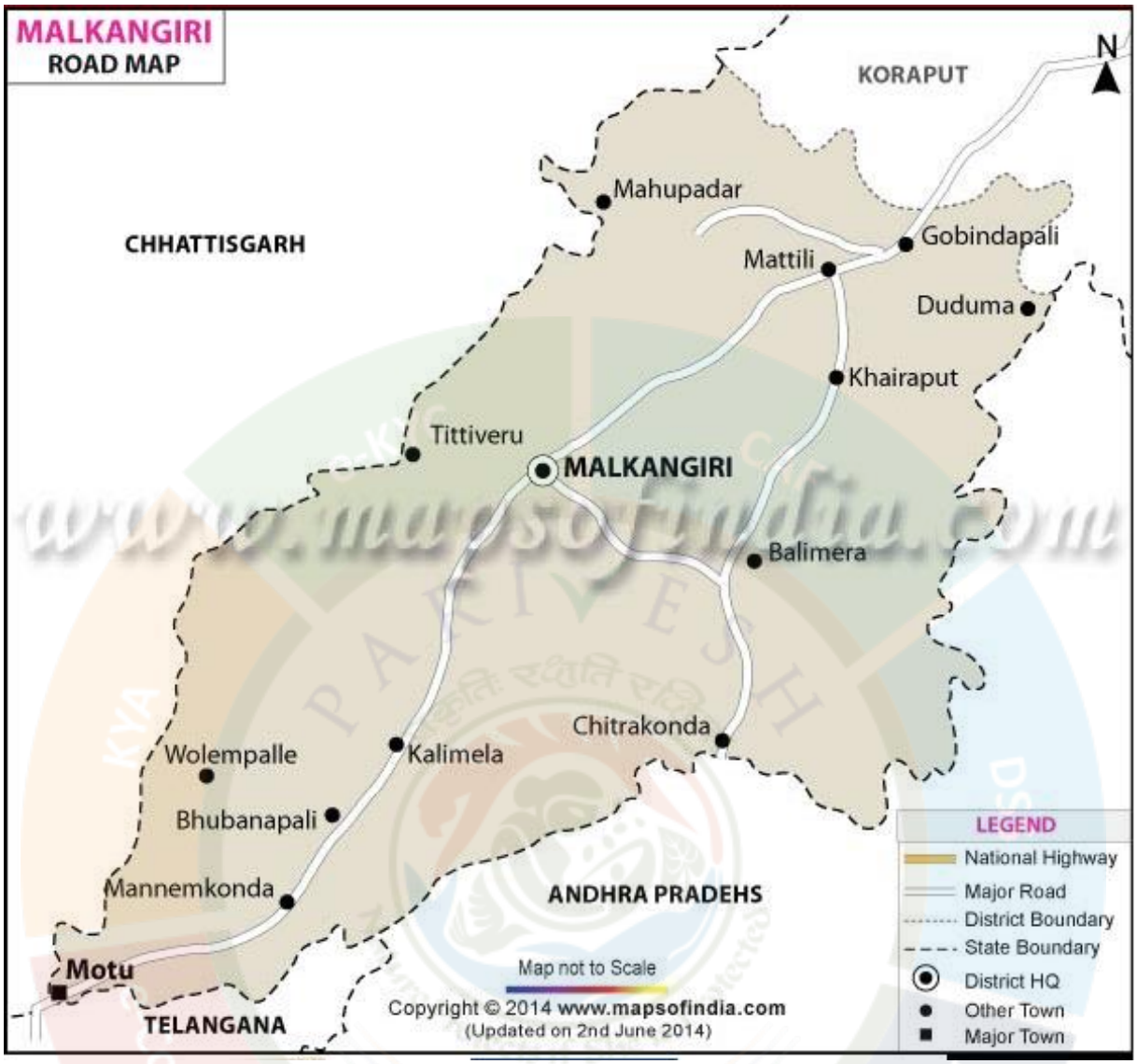
1.2 Administrative Units: -

Malkangiri is the administrative headquarter of Malkangiri District. It is located at a distance of 614.2km from Bhubaneswar, state capital of Odisha. The District has 1 sub-Division. The District has one Sub- Divisions namely 1) Malkangiri, and into 7 Blocks &7 Tahasils, namely i) Malkangiri ii) Kalimela iii) Podia iv) Korukonda v) Chitrakonda vi) Khairput vii) Mathili. The population of the Districts 613,192 according to the 2011 Census. The District accounts for 3.72% of the State's territory and about 1.45% of State's population. The density of population of the District is 106 per square km as against 270 per square km of the state. As per 2011 census, the population of Scheduled Caste is 1,38,295 (22.55%), and Scheduled Tribe is 3,56,614 (58.15%). The literacy percentage of the District covers 48.54%against 75.15 of the state.

1.3 Connectivity facilities: -

Road Network

Malkangiri District is connected to major parts of Odisha and other Districts by National Highway- 326. The Malkangiri town, the district headquarter is approachable from adjacent districts through State Highways. SH-25 & SH-4 crosses within the district. The important towns of the district are well connected by road.



Rail Network

Malkangiri i s not connected with rail network. Nearest major railway stations are Koraput, Jeypore, at 101kms & Jagdalpur in Chhatisgarh at 145km.

Air Network

At present, Malkangiri has no connection by Airway. The site selection for aerodrome is presently under process. Nearest airport is jeypore Airport 101Kms from Malkangiri. Rajahmundry Airport in Andhrapradesh is 222 kms from Malkangiri.

2. OVERVIEW OF MINING ACTIVITY IN THEDISTRICT:

Other than ordinary Building Stone, Stone & Sand a great variety of major mineral potential like Bauxite, Tin, Asbestos, Limestone and Specified Minor Minerals like Quartz, Talc/Soap Stone & Decorative Stone (Granite) are available in the district.

MAJOR MINERALS

Table-1

Sl No	MINERAL	LOCATION	RESERVE INMT	REMARKS
I	Bauxite	Korukonda	0.018	-
2	Limestone	Kottameta-Nandiveda-Uksalvagu	240	-
3	Tin	Salimi and Mundaguda	0.000347	-
4	Asbestos	Bejingwada	-	Not estimated

Minor Mineral: -

Specified Minor Mineral: -

Table-2

Sl No.	MINERAL	LOCATION	RESERVE INMT	REMARKS
1	Quartz	Gorespalli, Sardaput, Ramvaram, Kotapalli, MV-79,MV-127, MV-96, Polluru	-	Not estimated
2	Talc/Soap stone	Sardaput, Pandripani	-	Not estimated
3	Decorative/ Dimension Stone	Peta, Ponarguda, Jagannathpalli, Potteru, Majhiguda, Nilakhamar, Gagarmetla, Gangla	-	Not estimated

3.0 GENERAL PROFILE OF THEDISTRICT:

3.1 Demography:

As per data furnished by the Assistant Collector, Census, Collectorate, Malkangiri:

Table-3

Population data as per Census - 2011				
Sl. No.	**Unit**	**Total**	**Male**	**Female**
1	Population	613192	303624	309568
2	ST Population	354614	171717	182897
3	SC Population	138295	70052	68243
4	Literacy (Total)	244706	147001	97705
5	Literacy (Rural)	212881	128473	84408
6	Literacy (Urban)	31825	18528	13297

Table-4

Demographic Status						
Category	**Male**	**Female**	**Gen**	**SC**	**ST**	**OBC**
Category wise %	49.51	50.48	-	22.55	57.83	39.31

4.0 GEOLOGY OF THE DISTRICT:

The area is characterized by a complex geological set up with a variety of rock types belonging mainly to the Precambrian and Archeans, except a thin alluvial patch along river Kolab. The Geological successions of the district is as follows –

Table-5

Recent	Alluvium	
Pre-cambrian	~~~~~~~~~~Unconfirmity~~~~~~~~~~~~~~	
	Quartzites,Limestones,Conglomerates,Shales	
	~~Unconfirmity~~~~~~~~~~~~~	
	Younger Intrusives	Dolerite Dykes, Pgmatites, Vein Quartz
	~~Unconformity~~~~~~~~~~~~~	
	Andalusite Schists,Sericite Quartz Schists	
	~~Unconfirmity~~~~~~~~~~~~~	

Archeans	Charnokites Khondalites Granite Gneiss and Its variants
	~~Base is not Known~~~~~~~~

The area has suffered regional metamorphism up to the granulite facies and has experienced numerous phases of magmatic intrusions, accompanied by progressive and retrogressive metamorphism, repeated folding and shearing. As a result, original structures, textures and mineral compositions have been completely obliterated by new structures and mineral assemblages.

Granite Gneiss and its variants – These are medium to fine grained rocks exposed in the undulating plains and scattered hillocks. The suite of rocks comprises Hornblende Gneiss, Biotite, Gneiss and Pink Granite. Megascopically the rocks are fine to medium grained, leucocratic with well-developed foliation planes in case of gneisses. The gneisses are usually banded. The bands consist of thin layers rich in quartz and feldspar. Hornblende and mica are common occurrence while Garnet is found occasionally. The strike of the gneisses is variable, viz. N 75^0E – S75^0W with 20^0 dip to N 85^0W – S 85^0E with vertical dips. In the majority of the cases, the strike is similar to that of the Eastern Ghats. Granites occur in limited patches in the central and western parts of the district.

Khondalites – The khondalitic group of rocks consists of quartz – Garnet – Sillimanite Schist & Gneiss and Garnetiferous sillimanite quartzite. The khondalites are usually found in the South Eastern and Western parts of the district in the hilly terrains. These rocks exhibit multiple sets of joints having steep dips.

Charnockites – These generally occupy the hill ranges. The rock is coarse grained, dark green to grey in colour with feldspar and quartz crystals. The ferromagnesian minerals are hypersthene and pyroxene. Garnet is also present. The charnockitic rocks form massive out crops. The joints found in charnockites trend N 30^0E, N-S, & E-W with sub-vertical to vertical dips.

Schists - These include Andalusite – Schists and gneisses and quartz – sericite schists. These occupy the northern part of the district. They are essentially composed of feldspar, andalusite, sericite with inclusions of quartz.

Pegmatites and Dolerites– The pegmatites are commonly associated with the granite gneisses. These are rarely associated with the rocks of charnockites. The dolerites occur locally as dykes and small intrusions in the gneisses and charnockites. Garnet is found in the dolerite in some areas.

Quartz Reef – A prominent Quartz reef is observed in the northeastern boundary of the district. This is intrusive into the country rock and occurs as a narrow linear ridge with steep slopes covered by debris.

Conglomerate, Quartzite, Limestone, Shale – These rock types occurs near in North Eastern – South Western boundary of the district. The Quartzites are generally ferruginous in nature and are overlain by the limestones, fine grained and white to blue in colour.

Alluvium - A narrow patch of alluvium occurs along the river Kolab and its tributaries in the northern part of the district. It has only limited thickness.

The granites and its variants are most predominant rock type and occupy major parts of the district. Geological set up of the district primarily controls the Hydrogeological condition of the area

4.1 Physiography & Geomorphology:

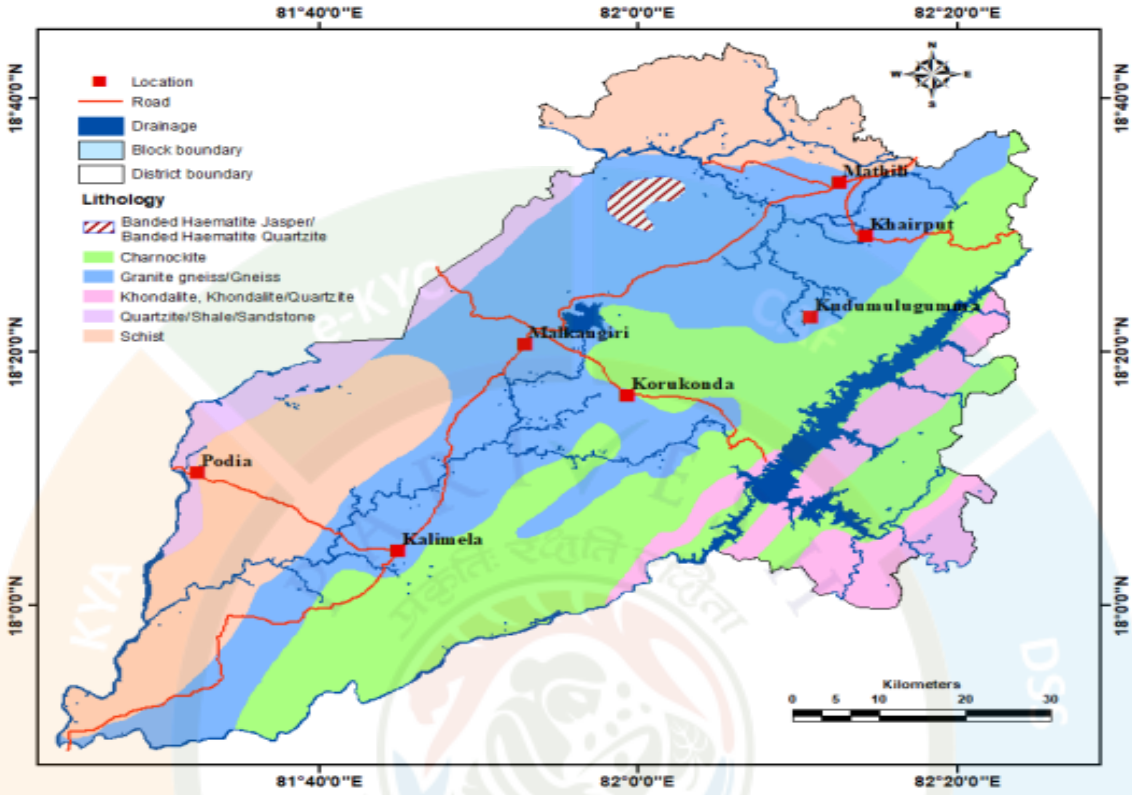
Physiography:

Malkangiri District is part of Eastern Ghat Super Group, the Eastern Ghats are a discontinuous range of mountains along India's eastern coast. The Eastern Ghats run from the northern Odisha through Andhra Pradesh to Tamil Nadu in the south passing some parts of Karnataka and in the Wayanad district of Kerala. They are eroded and cut through by four major rivers of peninsular India, viz. Godavari, Mahanadi, Krishna, and Kaveri.

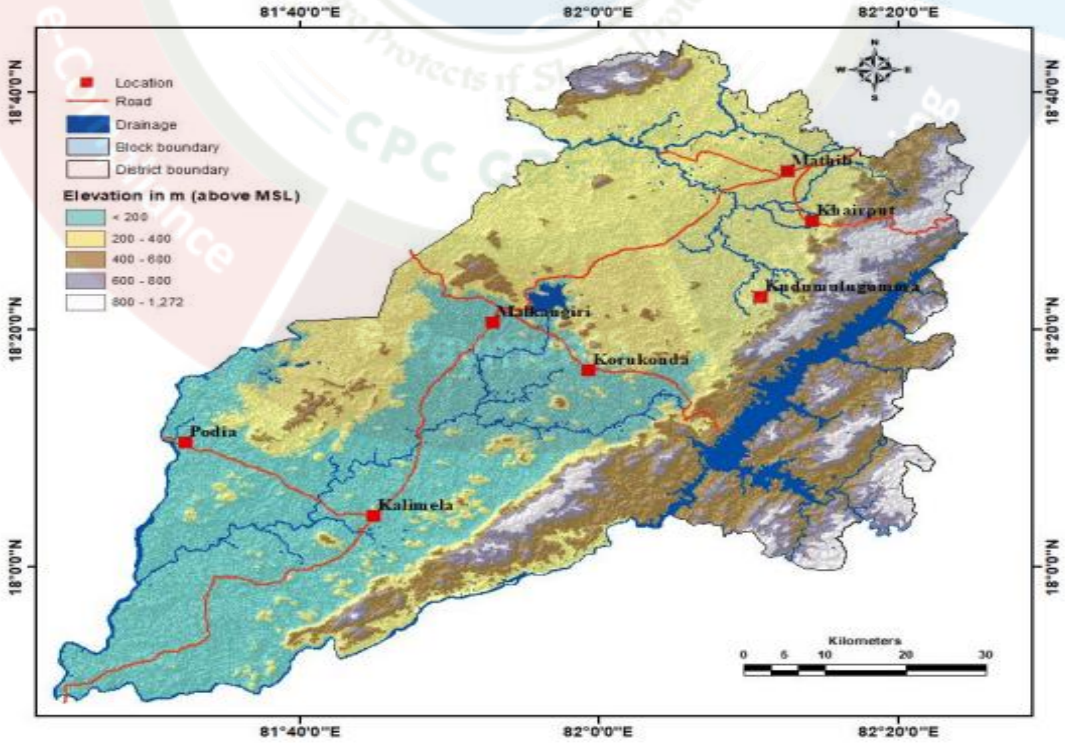
The mountain ranges run parallel to the Bay of Bengal. The Deccan Plateau lies to the west of the range, between the Eastern Ghats and Western Ghats. The coastal plains, including the Coromandel Coast region, lie between the Eastern Ghats and the Bay of Bengal. The Eastern Ghats are not as high as the Western Ghats. The Eastern Ghats are older than the Western Ghats, and have a complex geologic history related to the assembly and breakup of the ancient supercontinent of Rodinia and the assembly of the Gondwana supercontinent.

The Eastern Ghats on the east coast of India is a largely granulite terrain but also exposes granites, migmatites, anorthosites and alkaline rocks. This granulite belt has had a prolonged history of mountain building from late Archaean to late Proterozoic. During this long period the Eastern Ghats mobile belt witnessed repeated folding and possibly polycyclic metamorphism. Some recent findings suggest breaks between orogenic cycles and a proterozoic reworking of archaean granulites. Extreme- temperature crustal metamorphism under fluid-absent conditions and crustal anataxis in huge thickness of pelitic to psammitic protoliths producing leptynites are some of the important results of recent investigations of the Eastern Ghats mobile belt. Different generation of

charnockites are present in the Eastern Ghats belt, but charnockitisation of granitic gneisses is yet to be documented. Some apparently nascent growths, the patchy charnockites in the Chilka area are shown to be relict of older charnockitic rocks that suffered granulite-facies metamorphism and attendant migmatisation



GEOLOGICAL MAP



ELIVATION MAP

Geomorphology:

The district is characterized by varied geomorphological features. Based on Landsat data interpretations and field studies, the geomorphic units of the district are broadly identified as - Structural Hills, Denundational Hills, Residual Hills, Shallow and Moderately weathered pediplain, Pediment – Inselberg complex, Inselberg, Flood plains, Structural Valley, Linear Ridge, Bazada

Structural Hills – It is characterized by a group of linear/curvilinear/folded hill ranges of large areal extent, interspersed with narrow intermontane valleys showing definite structural control. It is the most important geomorphological unit in the district adjoining the entire southern border and occupying the northern corner of the district.

Denudational Hills – It occurs in the North Eastern corner of the district in a limited patch. It is represented by a group of massive hill ranges interspersed with narrow intermontane valleys having no structural control or structures obliterated by denudation.

Residual Hills – Hill ranges of moderate dimension surrounded by plains all around, occur as isolated features along the northern boundary of the district.

Shallow and Moderately Weathered Pediplain – Next to the structural hills this forms the major geomorphological unit in the district. It presents gently undulating terrain of vast areal extent, formed as a result of coalescence of different pediments along the foot hills of the Eastern Ghats and affected by shallow to moderate weathering. The northeastern part of the district is characterized by moderately weathered pediplane with weathering prevalent down to a depth of 5-20 m. The rest of the district is covered by shallow weathered pediplain with weathering restricted to 5 m depth.

Pediment – Inselberg Complex – It is a gently undulating bed rock surface with a number of small inselbergs. This unit is widely distributed throughout the district.

Inselberg – Inselbergs are scattered all over the district. These are isolated hills of limited areal extent surrounded by plains all around.

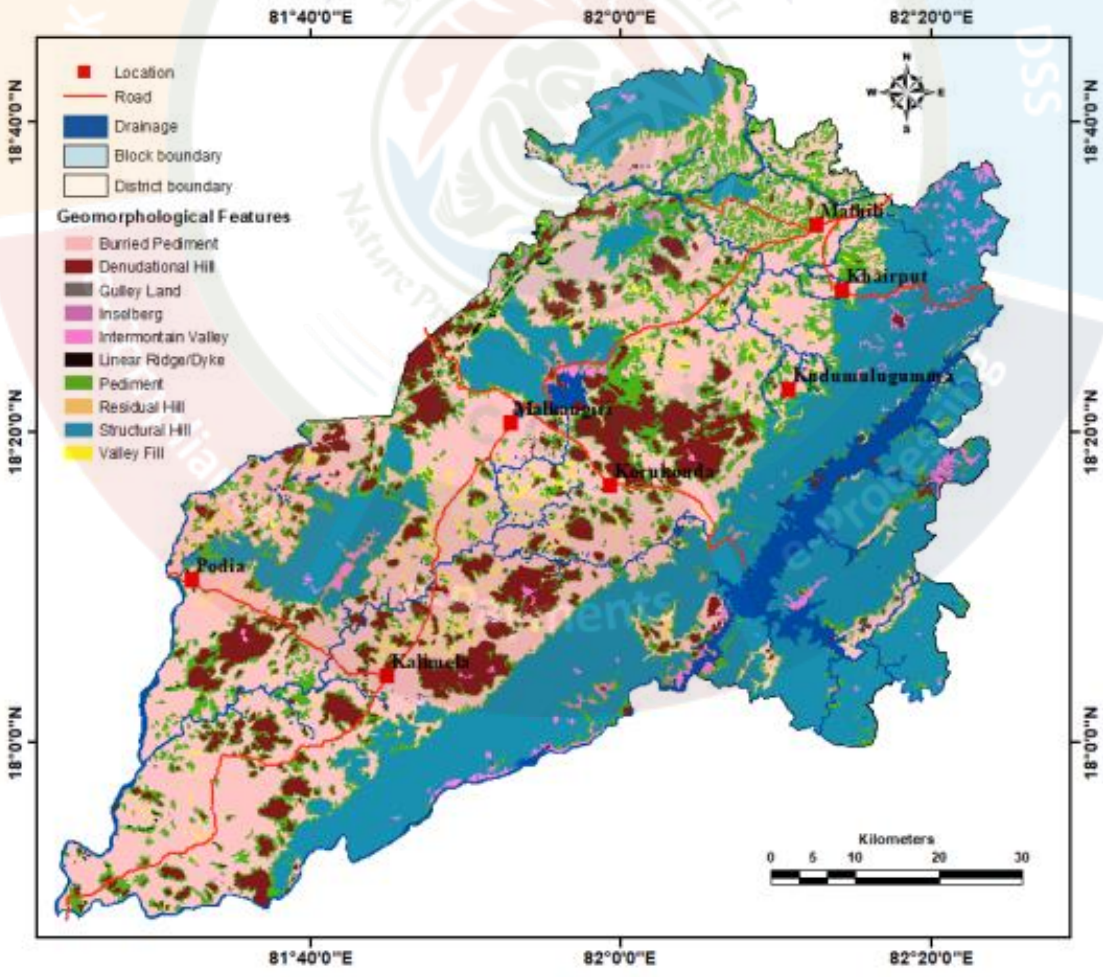
Flood Plain – A narrow stretch of alluvium occurs along river Kolab and its tributaries in the northern part of the district.

Structural Valley – A narrow linear valley within the structural hills and formed along the structurally weak planes occurs along the south eastern boundary of the district.

Linear Ridge – A narrow linear ridge of quartz reef with steep sloped covered by debris, is found in the northern part of the district.

Bazada – A gently sloping plain is formed in the foot hill zone and consist mainly of alluvial and partly alluvial material comprising fine silt to big boulders. It occurs in the Southern part of the district.

The general drainage pattern in the district is dendritic to sub-parallel. The Kolab river along with its tributaries, the Potteru and Sileru rivers is the most prominent river of the region. The Kolab river issues from the Sinkaram hills and follows a south westerly course after passing over Malkangiri district. The river joins the Godavari river in Khammam district of Andhra Pradesh.

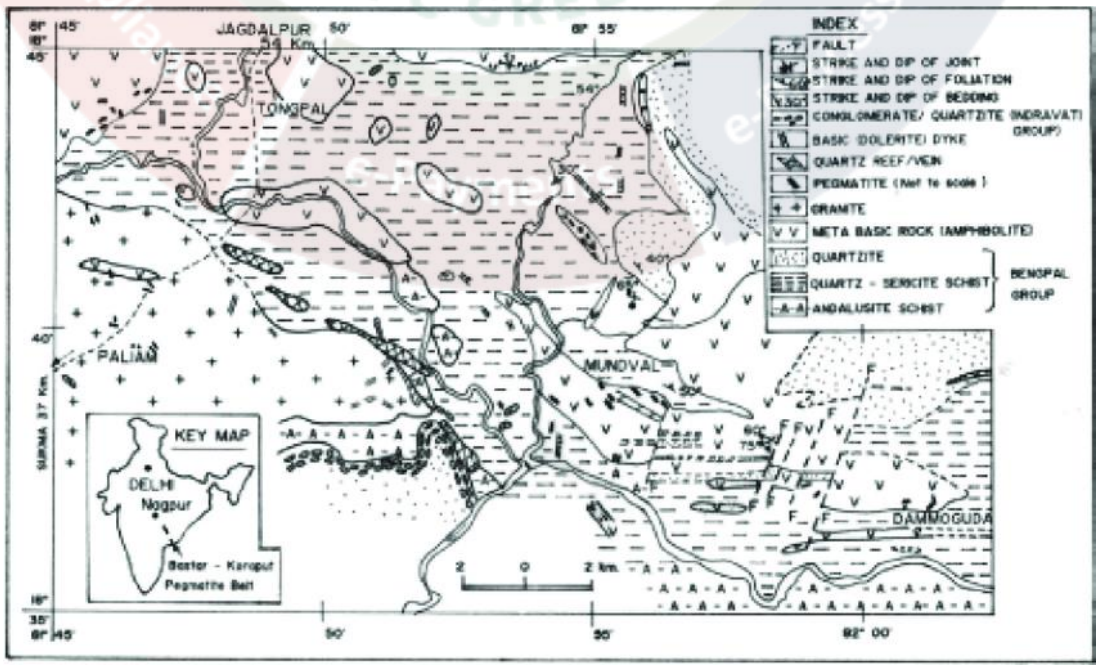


GEOMORPHOLOGY MAP

4.2 Stratigraphy:

Event Stratigraphy of the Eastern Ghat Mobile Belt is as follows;

Age(Ma)	Event
550-650	Exhumation & Stabilisation (Pan-African)
800-850	Emplacement of Anorthosite Massifs, Some Alkaline Rocks (?) Younger Granitoids are charnockites
950-1100	Main Easten Ghat Orogeny (=Grenville)
	Khondalite Group Garnet-Sillimanite-Graphite Gneiss (Khondalite) with minor cordierite-Sapphrine-Spinel Gneiss (Mg-AI) Calc- Silicate rocks & rare Marbles Quartzite (Garnet ± Sillimanite)
1100-1500	Emplacement of Alkaline rocks along with the rift Margin
1800-1600	Evolution of platform (Purana) basins like Cuddapah, Chhattisgarh Indravati etc.
2600-2800	Evolution of Nellore-Khemmam schist belt in Dharwar Craton Charnokite & Gneisses of the basement (WCZ).



4.3 Mineral Resources:

The total good quality Limestone reserves near Kotameta, Nandiveda and Uskalvagu estimated around 240 million ton and Bauxite deposits are recoded near Korkunda estimated 0.018 Million Ton and Tin is occurred near village Salimi and Mundaguda around 0.000347 MT.

In the Minor mineral categories, the specified minor minerals like quartz occurred in the villages of Gorespalli, Saradaput, Ramavaram, Kotapalli and MV-79,127,96 and Talc/soap stonare the resources of these minerals are not estimated by DG(O), BBSR:

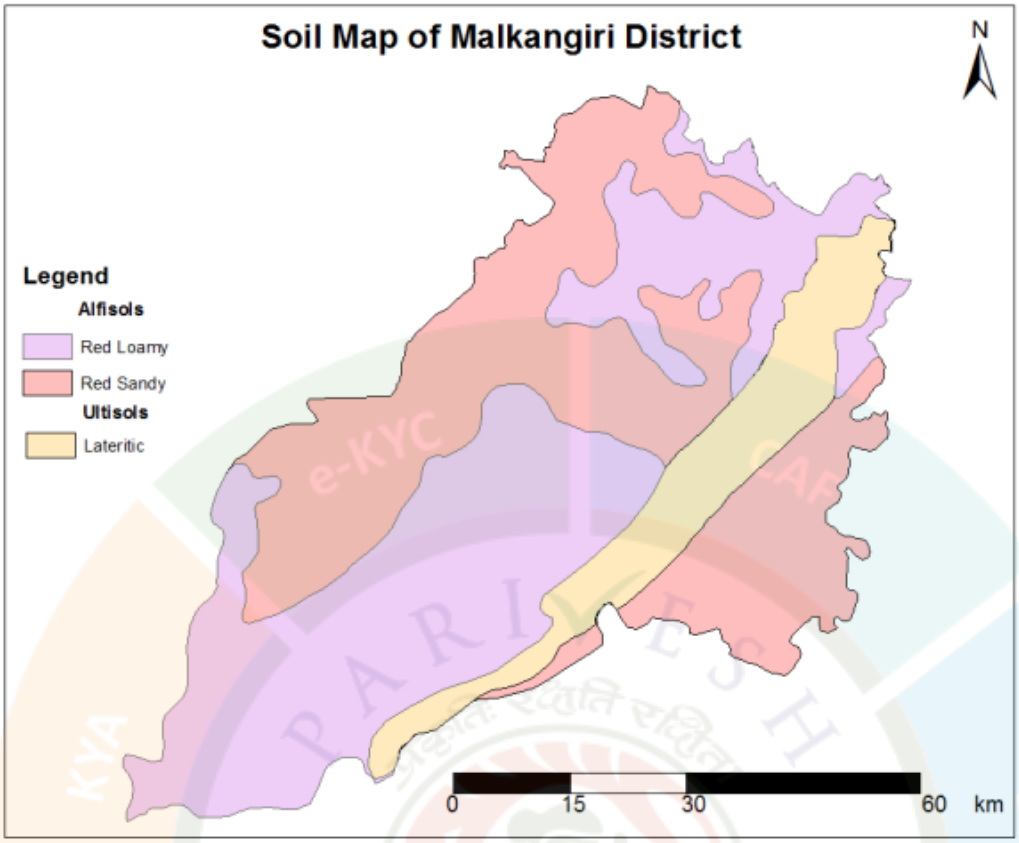
The Dimension stone are located around the village Sargiguda, Goliaguda, Padmagiri, but the reserves are not estimated by DG (O), BBSR.

4.4 Soil:

The distribution of different soil types in the district depends much on its physiographic and lithologic variations. Based on the physical and chemical characteristics, mode of origin and occurrence, soils of the district may be classified into two groups namely Alfisols (Red Soil) and Ultisols (Lateritic soil.

Alfisols - Alfisols or red soil are the most prominent soil types in the district. There are two different varieties – red sandy soil and red loamy soil. They are red in colour and clayey in nature especially the loamy soil, poor in organic matter. Its fertility is low.

Ultisols - Ultisols or lateritic soil occurs in a narrow diagonal strip across the district trending NE- SW. They are red to brown in colour and clayey in nature. Due to low organic matter content the fertility of lateritic soil is low.



5 DRAINAGE OF IRRIGATION PATTERN

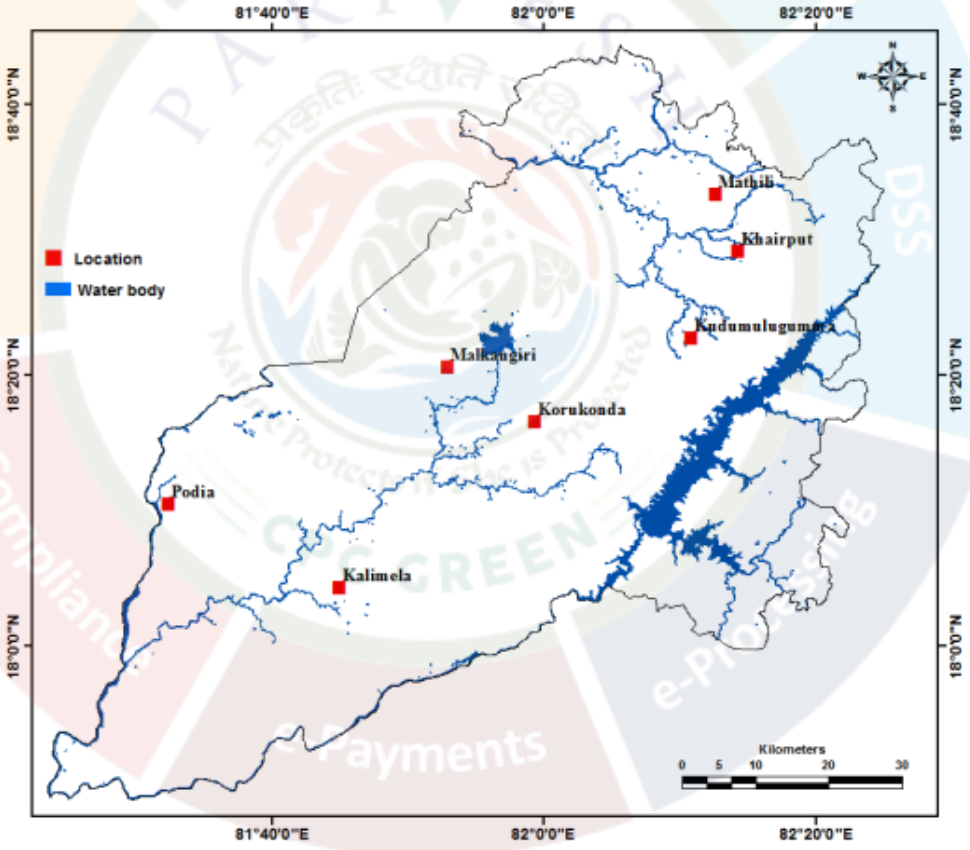
Malkangiri district is a physically hilly terrain having Predominantly dendritic drainage pattern to sub-parallel, there is only one main river named Sileru, *Kalab River* along with its tributaries, the Potteru and Saptadhara Rivers are the most prominent rivers of the region. The Kalab River originates from the Sinkaram hills and follows a south westerly course after passing over Malkangiri district. The river joins the Godavari river in Khammam district of Andhra Pradedsh. The distance of the sources from the river origin is geologically very short, hence this can be concluded that the rate of deposition of sand in Sileru & *Kalab* River is moderate, while in rest rivers within the district the rate of deposit is low.

Additional river source details are given in the following table

Table-6

Sl no.	Name of river	Area (sq. km drained	% area drained in the District
01	Saberi *I* Kolab	20427.00	28.3'4
02	Sileru *I* Machhkund	6477	75.80
03	Potteru	2188	100

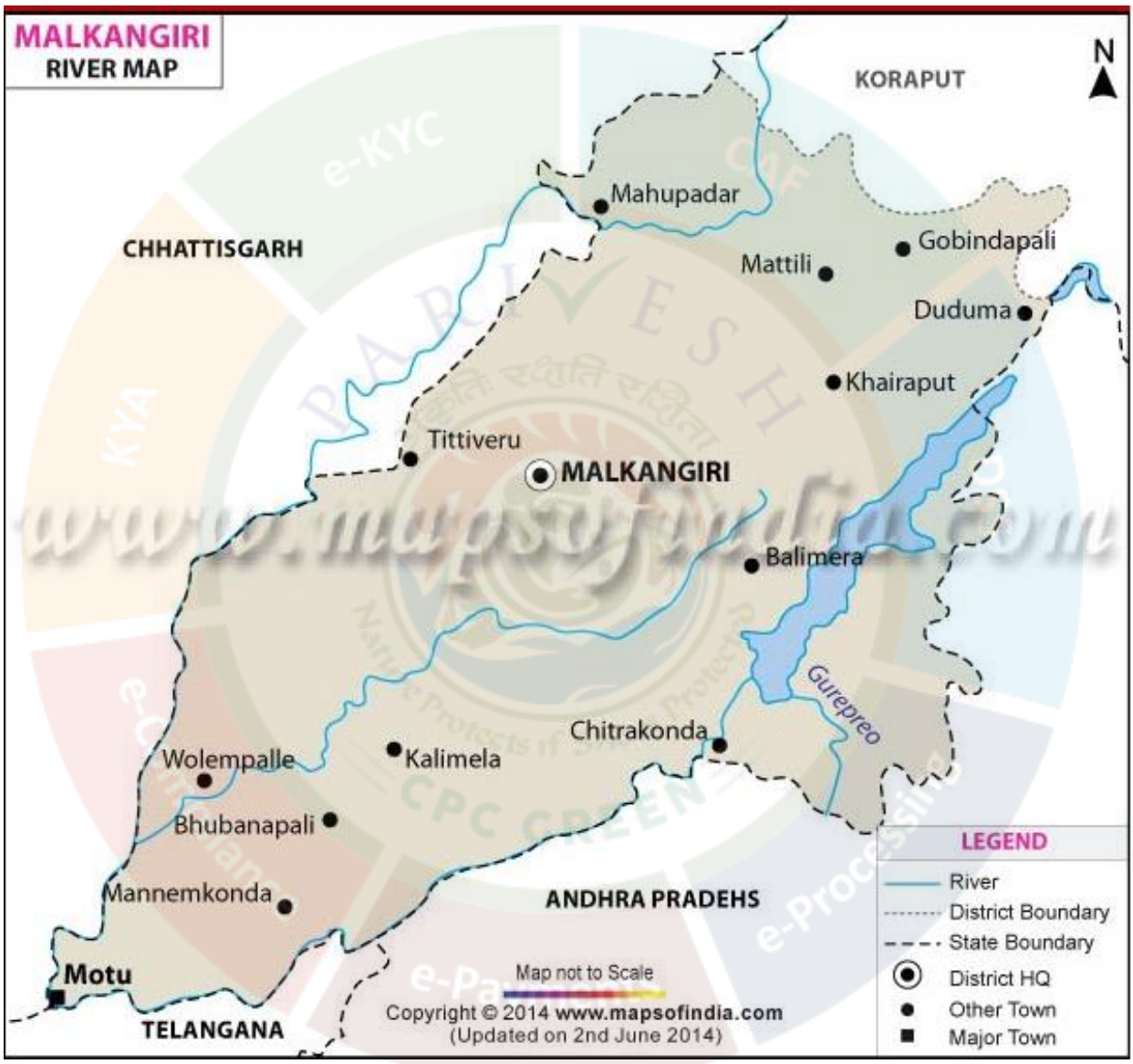
The District has considerable flat land, which provide suitable site for agricultural use. The hilly areas are mostly under forest with patches of cultivation on scarp areas. Major rivers flowing in the District are The Kolab, Sileru, Potteru. Major crops grown in the District are paddy. major source of irrigations are Canals, Tanks, well and tube wells.



DRAINAGE MAP

5.1 River System

The Kolab river along with its tributaries, the Potteru and Sileru rivers is the most prominent river of the region. The Kolab river issues from the Sinkaram hills and follows a south westerly course after passing over Malkangiri district. The river joins the Godavari river in Khammam district of Andhra Pradesh.



6.0 LAND UTILIZATION PATTERN IN THE DISTRICT

6.1 Forest and non-forest land

Forest land use as per the data collected from Divisional Forest Officer, Malk angiri is as follows;

Table-7

Status	Total Area in Ha
Reserve Forest	35256.2401
Proposed Reserve Forest	72561.3603
Demarcated Protected Forest	18865.0586
Reserve Land	22615.7164
Projected Land	95.872
Village Forest	268.2
Compensatory Afforestation	156.098
Other Forest (Under Revenue Deptt.)	140061.394
Areas not recorded forests but having characteristics of forest (Govt.)	799.4
Areas not recorded forests but having characteristics of forest (Pvt.)	35.505
Total	**290714.8444**

Malkangiri division covers a geographical area of 5791.00 sq km which has 40.34% Forest cover area (Indian State of Forest Report, 2019). This Division lies between 17°50' to 18°45' North latitudes and 81°23' to 82°25' East longitudes. This Division has six ranges, 23 sections and 116 beats. In terms to Forest Canopy Density classes, the division has 158 sq km under very dense forest, 712.76 sq km under moderately dense forest, 1465.41 sq km under open forest and 45.90 sq km under scrub. In this Division, forest types are Moist Deciduous Forest, Southern Tropical Moist Deciduous Forests, Southern Moist Mixed Deciduous Forests, Orissa Tropical Semi Evergreen Forests, Dry Deciduous Scrub Forests and Central India South Tropical Hill Forests.

Table-8

Type of Forest Cover	FC Data-2019
Very Dense Forest (VDF)	158
Moderately Dense Forest (MDF)	.712.76
Open Forest (OF)	1465.41
Total	2336.17
% **of Geographical Area**	40.34
Scrub	45.90

(Source: India state of forest report 2019-Odisha)

6.2 Mining Land: Malkangiri district in Odisha is not particularly rich in mineral resources compared to some other districts in the state like Keonjhar, Sundargarh, or Angul. However, it does have some limited and localized mineral occurrences that support certain industries and local needs. Sand and Clay (Most Abundant) River sand from the Kolab, Poteru, and Sileru rivers is extensively used in construction. Clay deposits are found in several areas, useful for making bricks and pottery. Laterite and Morrum are found in small patches, primarily used for road construction and embankments. Gravel and stone chips are quarried in limited quantities for local infrastructure work. Total land covered for all these above minerals is chalked out. which may increase in future with reconnaissance survey.

6.3Agricultural land

6.3.1Agro Climatic Zone

Table-9

Sl. No	Items	
1	Climate	Hot and sub-Humid
2	Mean Annual Rainfall (mm)	1559.35 mm (for the year 2022) 1762.47 mm (for the year 2022)
3	Mean Max. Summer Temp.	38° – 42°
4	Mean Min. Winter Temp.	20° – 23°
5	Soil Type	Broadly the district has Red, Lateritic and acidic soil. Soil texture is sandy loam

6.3.2 Land use

Agriculture land use as per the data collected from Chief District

Agriculure Officer, Malkangiri is as follows;

1. Geographical Area: 5,79,100 (Sq. Km.)
2. Cultivable Area: 1,62,716 Ha.
3. Cultivated Area:
   - High 85,760 Ha.
   - Medium 31,916 Ha.
   - Low 25,064 Ha.
   - **Total** **1,42,740 Ha.**
4. Paddy Area (Kharif):
   - High 14,235 Ha.
   - Medium 31,916 Ha.
   - Low 25,064 Ha.
   - **Total** **71,215**
5. Cropping Intensity: 135 %
6. Irrigation Potential:
   - Kharif 90420 Ha.
   - Rabi 48315 Ha.
7. Total nos. of GPs 111 nos.
   - Village 1055 nos.
   - NAC 1 no.
   - Municipality 1 no.
8. Major Crops:
   - Kharif Paddy, Maize, Pulses, Ragi, Sesamum, Vegetables
   - Rabi Groundnut, Pulses, Vegetables

1. Large Farmers : 28 nos.
2. Medium Farmers : 7,537 nos.
3. Semi Medium Farmers : 13,104 nos.
4. Marginal Farmers : 62,976 nos.
5. Small Farmers : 23,684 nos.
6. Landless : 8320 nos.
7. Average size of holding: 1.22 Ha.

The agricultural activity is by and large confined to the traditional Kharif cultivation due to lack of adequate irrigation system. The principal crops of the district are Paddy, pulses and oilseeds.

6.4 Horticulture land

In Malkangiri District, Mathili, Khairput, Malkangiri and parts of Chitrakonda blocks are suitable for fruit orchards as most part of the land are upland. Plantations of cashew, mangos, jackfruits, papayas and bananas have been taken up in these areas. Other vegetables are also grown throughout the district as well. The plantations coverage in the District for the last five years as received from Dy Director of Horticulture, Malkangiri is given in the following table.

Table-10

Sl. No.	Year	Fruit Plants Area (Ha)					Vegetables Area (Ha)	Flowers Area (Ha) Marigold
		Papaya	Banana	Cashew	Mango	Jackfruit		
1	2023-24	142.23	515.06	15882.12	8254.54	746.59	21368.61	112.5
2	2022-23	156	536	15593	8620	309	20327	87
3	2021-22	141.8	510	15506	8275	297	19351.76	86.4
4	2020-21	135	503	15420	8520	285	19053.76	80
5	2019-20	88	510	15552	8275	297	16729	90

7.0 SURFACE WATER AND GROUND WATER SCENARIO OF THEDISTRICT

7.1 Hydrogeology

The general drainage pattern in the district is dendritic to sub-parallel. The Kalab river along with its tributaries, the Potteru and Sileru rivers is the most prominent river of the region. The Kolab river originates from the Sinkaram hills and follows a south westerly course after passing over Malkangiri district. The river joins the Godavari river in Khammam district of Andhra Pradesh.

The major surface water bodies are reservoirs, rivers, streams and ponds etc. The river Potteru which is a tributary of Kolab is generally perennial in nature with

a sufficient flow during summer months. The Balimela reservoir is the major irrigation project and its canal command is around 61 034-Ha There are substantial numbers of tanks, ponds and water harvesting structures exist in the district, which hold considerable quantity of surface water as storage which serve the purpose for irrigation, bathing, drinking and industrial purposes.

The hydrogeology of the district varies widely depending upon the geological and geomorphic set up and soil characteristics. The major hydrgeological units may be categorized as – Consolidated formations and Unconsolidated to Semi-consolidated formations.

Consolidated formations - Almost the entire district is underlain by the consolidated formations, comprising granites, granite gneiss and its variants, charnockites, Khondalites, Schists, Quartzites, Limestones etc. These formations lack primary porosity and are rendered porous and permeable only when weathered and fractured. The weathered residuum forms the main repositories of groundwater, which occurs under water table conditions and circulates through deeper fractures and fissures.

Unconsolidated Formations- Alluvium -Alluvium is not well developed in the area. Small and local patches occur along the Sabari river. It is generally 2-5 m in depth. Its width varies from Zero to less than a Km. Most part of the banks of Sabari, Sileru and Potteru rivers are rocky with no tendency to deposit alluvium on either side. As such these are not useful for groundwater development because of its limited areal extent and thickness.

7.2 Ground Water Occurrence: The nature of occurrence and movement of ground water were studied through periodical monitoring of groundwater and well inventory conducted during the systematic and reappraisal hydrogeological surveys in the district. The phreatic zone constitutes the most potential groundwater storage in the district. The depth to water table values depend upon several factors including rainfall, topography, drainage characteristics, lithology, depth and nature of weathering, water bearing and water yielding properties of the rocks as also surface irrigation.

The aquifer parameters of various hydrogeological units were evaluated through pumping tests of representative dug wells and slug tests/ compressor tests of borewells. The aquifr parameters include Transmissivity and specific capacity Index. Transmissivity indicates aquifers property to transmit water and specific capacity Index (K=C/A) of the formations is expressed in terms of flow of groundwater per meter depression of head over unit cross sectional area of inflow offered by the aquifer. Transmissivity has been calculated for borewells and specific capacity Index for open wells.

Deeper Aquifers- CGWB carried out Ground Water Exploration in the district by deploying one Down the Hole Hammer (DTH) Rig. The study was aimed at identification of deeper potential fracture zones and for assessing yield potentials. In total 8 exploratory wells and 2 observation wells have been drilled in Malkangiri District. The sites for exploration were selected taking into account the hydrogeological characteristics of formations, favourable topography and tectonic features.

All the wells were drilled in Granite Gneisses except one borewell in Kalimela. The depth of drilling ranged from 38m to 200m below ground level. The top 8 to 20 m of the bore wells are cased with 1 78 mm diameter M.S pipe to prevent collapse of the loose overburden. Rest of the borewell is left uncased to tap the water bearing fractured. The discharge of the wells as tested by compressor varied widely from negligible to 10.6 Ips.

Transmissivity values ranged from 2.6 m2/day to 27.5 m2/day. Exploratory drilling has been carried out in all the blocks of the district. At Mathili in the North East Corner of the district fracture zones were encountered in the Hornblende Mica Schist and Granite Gneiss at depths of 100m and13 7 m below ground level with a cumulative discharge of 2 LPS. However, towards south at Khairpur, a number of fracture zones were encountered in depth range of 24 m to 107 m below ground level. The cumulative yield of the well was 2.8 LPS. The formation continues to be Granite Gneisses, at Kudumulgumma south of Khairput High yielding fracture zones, eleven in number were encountered within a depth of 130 m below ground level. The aquifer is Granite Gneiss with maximum discharge recorded at 10.6 Ips. The high yielding fractured granite gneisses extend southwards and at Balimela the discharge of the exploratory well was 5.16 Ips. In this well also a number of

fracture zones have been encountered at various depths. However the formations are compact towards west and yield of the exploratory well at Korukunda has been negligible down to 200 m depth. Similar formations continue in the adjacent block and at Malkangiri the exploratory well yielded hardly0.88 Ips, though a number of fracture zones were encountered within a depth of 144 m. In the south western part of the district at Kalimela six fracture zones were encountered in the exploratory well down to a depth of 195.3 meter below ground level during 'which the yield of the well was 2.54 Ips. In this well charnockite was encountered in the deeper zones. At Podia in the western most corner of the district a number of fractures were encountered within a depth of 159 meter below groundlevel with a cumulative discharge of 3.59 Ips

7.3 Ground Water Quality

The quality of groundwater in Malkangiri district has been assessed based on chemical analysis of water samples collected during the hydrogeological surveys groundwater monitoring and exploratory drilling. The general ranges of different chemical constituents are as below –

Table-11

Chemical Constituents	Shallow	Deeper
pH	7.17 – 8.21	6.86 – 8.18
Specific conductance (•S / cm at	214 - 1664	156 – 1103
Chloride (mg/L)	14 - 255	7.1 – 50
Calcium (mg/L)	18 - 110	14 –
Magnesium (mg/L)	36 -	1.8 – 47
Bicarbonates (mg/L)	79 - 409	85 – 543
Totar Hardness as CaCO3 (mg/L)	75 - 495	45 – 260
Sodium (mg/L)	10 - 161	13 – 140
Potasium (mg/L)	12 -	1.2 – 12
Sulphate (mg/L)	-	1 –
Iron (mg/L)	-	0.14 – 0.53

In the U.S Salinity Diagram the suitability of groundwater for irrigation in the district, has been assessed on the basis of Sodium Absorption Ratio (SAR) and specific conductance. The classification of groundwater based on U.S Salinity Diagram in the district is given below

Table-12

USSL Class	Grade	No. of	%
C1S1	Good	2	12.50%
C1S2	ModeratelyGood	-	-
C1S3	Unsuitable	-	-
C1S4	Highlyunsuitable	-	-
C2S1	Good	9	56.25%
C2S1	ModeratelyGood	-	-
C2S3	-	5	31.15%
C2S4	-	-	-
C3S1	-	5	31.15%
C3S4	-	-	-

It may be seen from above that ground water samples collected from the shallow aquifers are good in quality and suitable for irrigation purposes. The water samples of deeper aquifers are well within the permissible limits of drinking water standard.

The Piper Tri-linear diagram for the type of groundwater in the district, has been assessed. The plot reveals that more than 60 % of the samples belong to the calcium–bi–carbonate (temporary hardness) type of water the rest belong to the mixed type.

7.4 Ground Water Development

Blockwise

It is basically a tribal district and occupied by hard crystalline rocks. Development of ground water is feasible through dug wells. The Net ground water resource of the district is assessed to be 33598 HM and the gross annual draft for domestic, industrial, and irrigation uses is 2942 HM. The average stage of ground water development in the district is 8.76 %. The lowest being Kudumulguma at 4.57% and highest being at Khairput at 13.38%

Ground Water Development: Ground water development in the district is mainly through dug wells, Dug-cum-bore wells and bore wells. Ground water is mainly used for domestic and irrigation purpose and in limited scale for industrial purposes.

The district has a net sown area of 117823 ha out of the total geographical area of

439080 ha. However only about 46000 ha area in the district is presently irrigated from both surface and groundwater sources, leaving more than 60% of the net sown area without irrigation facilities. This vast area has rainfed agriculture. For augmenting food-grains production this area has to brought under the strings of irrigation. Considering the low stage of ground water development in the district, there remains ample scope for further groundwater exploitation which will expand the irrigated agriculture.

Dug well - It is the most common groundwater abstraction structure in the district. Dugwells are feasible in pediplain areas. In hilly tracts it is feasible only in the intermontane valleys. The design of the dugwells depends upon hydro-geomorphological and hydro-geological set up, depth to water table, seasonal water table fluctuation. The dug wells should be located preferably in topographic low and should tap maximum thickness of the weathered zone. The dugwells should be of 10 m to 18 m depth and 4.5 m to 6 m in diameter. All the wells should be energized for optimal utilization of their potentials. Tentatively a total of 27189 additional wells are feasible in the district. The wells may be fitted with 1.5 to 2 H.P. centrifugal pumps. The wells may sustain yield maximum up to 3 lps.

Dug-cum-Borewell - The dug cum borewell can be constructed in the areas where the weathered zone is more than 15 m deep. The vertical bores drilled within dugwell increase the yield of the well. The bore well within the dugwell should be 25 m to 30 m in depth from ground level. The wells should be fitted with 2 H.P. centrifugal / submersible pumps may sustain yield up to 3 lps

Bore Wells - Lineaments or structurally weak zones in the hard rocks present favourable sites for borewells. Borewells have not met with success in Korukonda block. Borewells located in the vicinity of lineaments are likely to be successful. Wells drilled in Granite and Tranite Gneisses are likely to be more successful than in other formations. Borewells should be 100 m to 150 m deep and of 150 mm to 200 mm diameter. The borewells may be fitted with submersible pumpsets of 2-3 H.P depending upon the well discharge and depth to water level.

The district is predominantly inhabited by weaker section of the society and the majority of the farmers have small and marginal land holdings. In such a background sinking of groundwater structures viz. dug-wells and bore-wells which require small

capital investments and less maintenance cost will be a better alternative for the poor farmers as compared to the major and medium irrigation projects. The financial institutions may provide loans on easy terms for the construction of these wells. The wells should be sunk at the hydro-geologically favorable sites. For this purpose, the expert guidance can be sought from the State Groundwater Organisation. Agricultural extension services may educate the farmers in adopting suitable cropping pattern, so as to fully utilize the newly created potentials. Energisation of the wells will ensure optimal utilization of this yield potentials. Programme may also be launched for the construction of percolation tanks, check dams, contour bounding which will conserve rain water and facilitate additional recharge to the groundwater reservoirs.

For the population of Malkangiri district particularly in the hilly areas, groundwater is the only sustainable and safe source of drinking water, particularly during summer season, when water scarcity becomes acute. As part of the Technology Mission programme in Malkangiri district, borewell sites

were pin pointed through hydrogeological investigations aided by Remote Sensing Studies. The water scarcity in the district may be effectively mitigated through scientific management and judicious utilization of groundwater resources.

While targeting ground water structures for irrigation use or foe heavy industrial establishment utmost care should be taken in maintaining the safe distance between ground water structures to avoid well interference. This will facilitate optimal utilization of resources without any appreciable drawdown interference. The distance between any two dug wells/ dug cum bore wells fitted with pump set should be kept at least 100m. The distance between two bore wells may be kept between 150-200m.

7.5 Ground Water Related Issue and Problems

Some of key ground water related issues are

The ground water problems mainly is in the form of Ground Water Depletion,

Ground Water Pollution: Based on the chemical analyses of water samples collected from different aquifers, it is observed that almost all chemical constituents are well with in the permissible limit for drinking as well as irrigational purposes, excepting at some localized patches where high nitrate values have been observed. As such there is no ground water pollution in the district.

Ground Water Depletion: The stage of ground water development in different blocks varies from 3.08 % (Kudmulguma) to 13.70 % (Khairput) with the overall

stage of development 6.02% in the district. The fall of water levels are shown by 46% of the total and maximum fall is recorded to the tune of 0.1.113 m (MV-64 in Kalimela block) with the majority of the values resting with in 10cm. From the perusal of water level over a period of 10 years, it has been observed that there is a significant decline in the trend ground water level.

Special Studies: Special studies in the district has been taken up in the field of drinking water source finding under Rajiv Gandhi Technology Mission on Drinking Water

Technology Mission on Drinking Water: Kalimela block of Malkangiri District covered under the programme of Technology Mission on Drinking Waters. CGWB carried out scientific source finding for 14 no-source villages. A multi disciplinary approach was adopted for identification of sustainable water sources. It included a study of the remote sensing maps which depicted lineaments and geomorphic units showing favourable locates of ground water. The hydrogeological characteristics and yield potentials of formations were studied through spot hydrogeological surveys and sites for suitable groundwater structures were pin pointed for each village. In Kalimela block 14 no-source villages were covered under source finding mission. Bore wells were recommended in 7 villages and sanitary wells in 7 others.

7.6 RECOMMENDATIONS

* Large scale planning for Ground Water Resources development should be preceded by intensive hydrogeological and geophysical survey aided by Remote Sensing studies and ground truth data.
* Existing dug wells should be deepened to tap the maximum saturated thickness of the weathered mantle or vertical bores maybe drilled to enhance the yield of the well where normally the dug wells get dried up.
* Energisation of wells should be stepped up to ensure optimal utilisation of the ground water resources to create additional irrigation potential.
* The State Ground Water Organization should render expert guidance for siting ground water structures in favourable hydrogeological settings.
* The farmers should be educated through agricultural extension services, Mass Awareness and water management training programme to adopt suitable cropping

pattern, conservation of ground water and irrigation practices especially for drought tolerant crops for optimal utilisation of available ground water resources.

* Programme for artificial recharge may also be taken up in areas where deeper water table condition coupled with high fluctuation is observed for augmentation of ground water resources through construction of percolation tanks, subsurface dykes, check dams, nala bunding and contour bunding and other site specific favourable artificial recharge structures.

* In areas of shallow water table lying within 0 to 5 m bgl during post monsoon period, surface water bodies like local ponds, farm ponds and small earthen dam along small streams may be constructed to hold water for long duration and for replenishment of soil moisture.

* Proper maintenance of reservoirs, tanks and spring channel by periodical desiltation should be carried out so that the precious water resource could be judiciously utilized after monsoon.

* For augmentation of drinking water supply to the major towns and villages near the major rivers, infiltration galleries or collector wells may be constructed in suitable locales to fruitfully harness the base flow /subsurface flow which otherwise goes as waste.

* Network hydrograph stations in the canal command areas should be strengthened and periodical water level measurements continued to monitor any alarming rise of water table.

* Not Growing of sugarcane and cash crops may be encouraged along the thin linear alluvial patches lying adjacent to major rivers where prolific ground water is available throughout the year

8.0 RAINFALL OF THE DISTRICT AND CLIMATE CONDITION

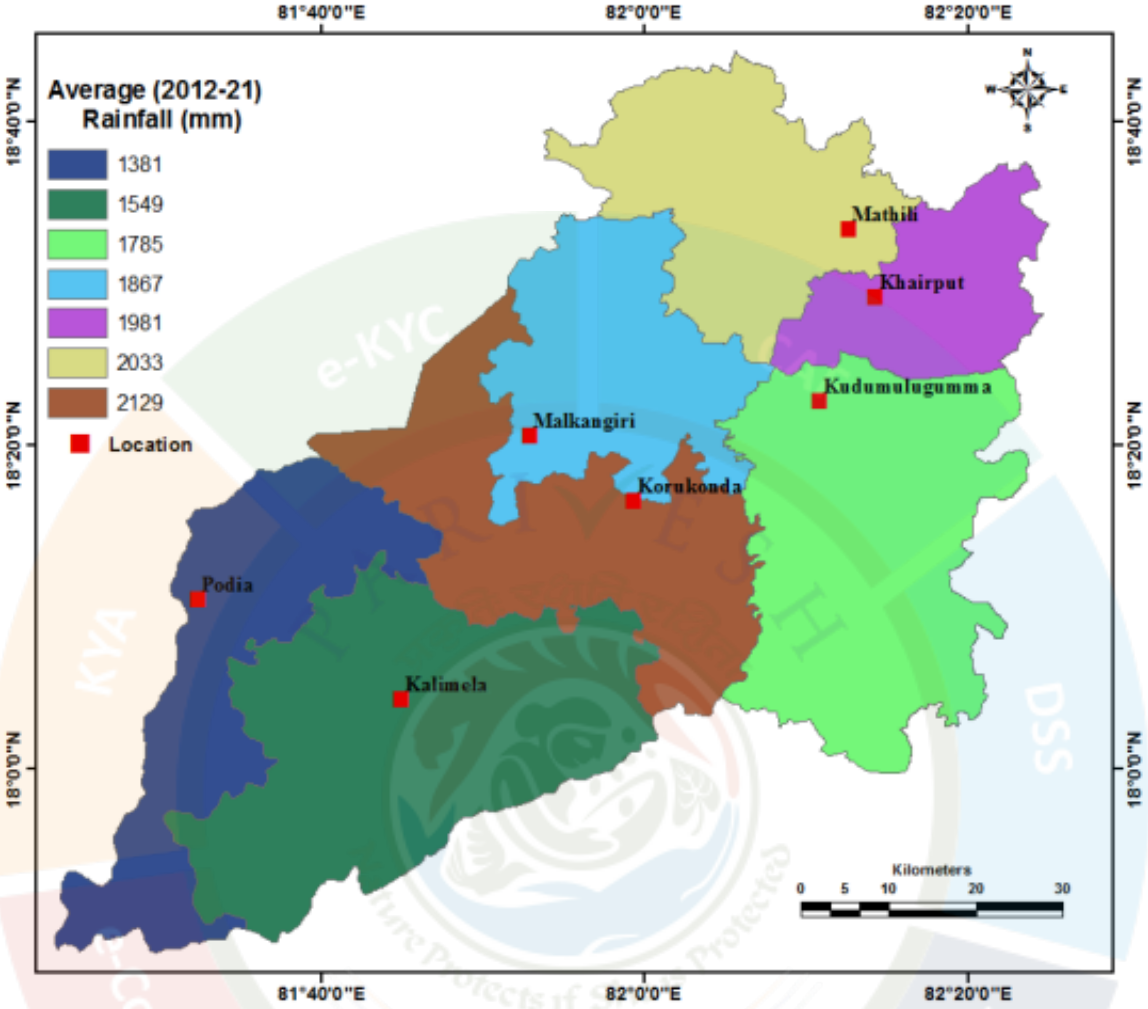
The district has a subtropical climate. Southwest monsoon is the principal source of rainfall. Rainfall pattern is uneven and erratic. The average annual rainfall gradually increases from South Western to North Eastern parts of the district. The average annual rainfall of last five years as per the data furnished by the Emergency Section, Collectorate, Malkangiri is given below:

8.1 Month wise Rainfall

Table-13

Average Rainfall data of last 5 years (Month Wise)					
Month	**(Year wise rainfall in mm)**				
	2019	**2020**	**2021**	**2022**	**2023**
January	1.14	1.91	0	17.31	0
February	0	0	2.71	0	0
March	1.86	11.49	0	0	109.87
April	5.43	89.07	97.21	32.73	50.24
May	33.71	45.71	51.63	69.49	57.1
June	151.49	238.54	216.26	110.03	215.74
July	633.84	371.54	374.09	541.2	603
August	763.34	979.64	391.96	384.43	257.4
September	339.96	211.34	371.29	343.33	368.11
October	170.61	209.54	112.63	60.66	15
November	2.86	5.21	58.8	0	37.31
December	0	0	0	0.17	48.63
Total	**2104.24**	**2163.99**	**1676.58**	**1559.35**	**1762.4**

The agricultural definition of drought takes into account the negative departure of seasonal rainfall from the mean seasonal rainfall. A perusal of the frequency of occurrence of drought indicates that mild to normal drought condition prevails in Malkangiri District.



8.2 Climate

The climate of the district is tropical with hot and dry summer and pleasant winter. The summer season extends from March to middle of June followed by the rainy season from June to September. The winter season extends from November till the end of February

Temperature Graph- Malkangiri

Maximum temperature rising up to 44^0 C during May. In the summer months of April and May, hot winds from the west are generally experienced in the afternoon. December is the coldest month with lowest temperature during Winter being 11^0C. Monsoon generally lasts from the end of May to October. Occasional showers are received in the month of April, November and December

9.0 DETAILS OF MINING LEASE OF SPECIFIED MINOR MINERAL IN THE DISTRICT

Sl. No.	Name of the Tahasil	Name of the Mineral	Name of the lessee	Address & Contact number of the Lessee	Mining Lease Grant order No & Date	Area of Mining Lease in (Hc)	Period for Mining Lease		Period of Mining Lease 1st/ 2nd renewal		Date of Commencement of Mining Operation	Status (working/Non working/temp. Working for dispatchetc	captive / Non captive	Obtained Environmental Clearance(yes/No). If yes Letter No with Date of grant of EC	Location of the Minor lease(Longitude/Latitude)	Method of Mining(opencast/underground)
							From	To	From	To						
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A1	Motu	Peta Decorative Stone Mines-1	Ch Venugopal	HIG-I, Phase-1, BDA Colony, Pokhariput, Bhub	2928/SM, 13.04.2018	Khata no-119, Plot no-4/P&	07.06.2018	20.06.2048	Data is not available	Data is not available	13.08.2018	Working	captive	J-11015/397/2015, 05.01.2017	Latitude-17°55'43.47153" to 17°55'58.84318"N Longitude-81°27'10.65617" to 81°27'34.16143"E	Opencast

				anes war-751020		7/P, Area-19.425										
A2	Motu	Peta Decorative Stone Mines-2	K Srinivas Rao	Plot No-19, At-Nutan Colony, New Bowenpally, Secunderabad (Telengana)	997/SM, 14.02.2019	Khata no-119, Plot no-4/P, Area-9.981	02.04.2019	02.04.2049	Data is not available	Data is not available	05.08.2019	Working	captive	4552, 03.05.2018	Latitude-17°55'54.08045" to 17°56'05.68424"N Longitude-81°27'13.43758" to 81°27'43.16143"E	Open cast
A3	Motu	Peta Decorative Stone Mines-3	Sri P Vengal Rao	16-2-836/3, Madhavnagar, Saidabad, Hyderabad	12625/SM, 24.12.2003	Khata no-119&199, Plot no-7,71,16,120, Area-4.917	01.01.2004	31.12.2014	Data is not available	Data is not available	01.05.2004	Lapsed & applied for revival	Non captive	Not obtained.	Latitude-17°55'56.35058" to 17°56'02.72373"N Longitude-81°27'38.17382" to 81°27'49.09555"E	Open cast

A4	Motu	Gagarmetla Decorative Stone	Sri Alok Jadhav	Marathapara, Dhamtari (C.G.)	To be granted	Khata no-912, Plot no – 129 Area-5.900	07.01.2009	06.01.2011	Data is not available	Data is not available	Data is not available	Data is not available	Non captive	Not obtained.	Latitude-18°06’39.02468” to 18°06’46.26300”N Longitude-81°48’54.52134” to 81°49’04.82717”E	Open cast
B1	Malkangiri	Ponarguda Decorative Stone Mines	M/s Karunei Granites	No-08, 2nd Block, Koramangala, (Hosur Main Road), Madivala Post., Bangalore-560068	3606/SM, 20.05.2004	Khata no-130, Plot no-111/P,245/P,276/P Area-9.134	27.07.2004	26.07.2014	Data is not available	Data is not available	20.09.2004	Non-working & to be extended.	Non captive	Not obtained.	Latitude-18°15'37.44285" to 18°15'54.91761" N Longitude-81°50'57.14147" to 81°51'08.82558"E	Open cast
B2	Malkangiri	Jagannathpalli Decorative Stone Mines	M/s Karunei Granites	No-08, 2nd Block, Koramangala, (Hosur Main	3608/SM, 20.05.2004	Khata no-118, Plot no-362/P	27.07.2004	26.07.2014	Data is not available	Data is not available	20.09.2004	Non-working & to be extende	Non captive	Not obtained.	Latitude-18°18'05.98348" to 18°18'19.93930"N Longitude-81°50'40.10285" to 81°51'02.18525”E	Open cast

				Road), Madivala Post., Bangalore-560068		,498/P , 523/P & 524/P Area-8.00						d.			
B3	Malkangiri	Ganglia Decorative Stone	M/s U Ganapati Exports	NKT Road, Opp-Govt High School, Jeypore, Dist.-Koraput	To be granted	Khata no-223, 225, 226, Plot no – 100, 101, 372, 302, 203, 304, 305, 306, 734, 735, 738/P & 272/P Area - 6.625	Data is not available	Data is not available	Data is not available	Data is not available	Data is not available	Data is not available	Non captive	Not obtained.	Lat- 18º25' 29.98588" to 18º25' 44.74520" N Long- 82º03'32.30659" to 82º03'44.12775"E	Open cast
C1	Kalimela	Potteru Decorative Stone Mines	M/s. Aakash Stone Industries Ltd.	Santacruz Airport Side, Marble Market, WE Highway, Ville Parle (East),	To be granted	Khata no-213, Plot no-319/P Area-	20.12.2006	19.12.2008	Data is not available	Data is not available	Data is not available	Applied for Mining Lease	Non captive	Not obtained.	Latitude- 17°57'24.78969" to 17°57'35.55080"N Longitude- 81°40'37.08188" to 81°40'4447010″E	Open cast

				Mumbai-400099		2.958									
C2	Kalimela	Potteru Decorative Stone	M/s Oriental Trimex Ltd.	26/25, Bazar Marg, Old Rajendra Nagar, New Delhi-110060	4676/SM, 21.05.2025	Khata no-213, Plot no-2377 Area-4.961	07.05.2007	06.05.2009	Data is not available	Data is not available	Data is not available	Non-Working	Non captive	EC24C0108OR5263608N, 31.01.2025	Latitude-17°56'33.10637" to 17°56'42.62647"N Longitude-81°40'05.36176" to 81°40'13.34104" E	Open cast
D1	Khairaput	Majhiguda Decorative Stone-1	M/s KPK Granites	H.No. 39-47/D, Old Bypass Road, Near vermi compost sheds, Nandigama, dist-Krishna(AP)	To be granted	Khata no-65, Plot no-401/789/P & 401/790/P Area-14.016	23.08.2016	22.08.2018	Data is not available	Data is not available	Data is not available	LOI issued for grant of Mining Lease	captive	Applied for EC	Latitude-18°28'19.40884"N to 18°28'29.00283"N Longitude-82°15'00.62318" to 82°15'22.84140"E	Open cast

D2	Khairaput	Majhiguda Decorative Stone-2	M/s Sri Bhubaneswari Grinites	Flat No-528, 'C' Block, Rajendra Vihar Apartment, Forest Park, Bhubaneswar	To be granted	Khata no-65, Plot no – 401/P Area-10.522	23.08.2016	22.08.2018	Data is not available	Data is not available	Data is not available	LOI issued for grant of Mining Lease	captive	Applied for EC	Latitude-18°28'28.87833"N to 18°28'36.89856"N Longitude-82°15'01.31175" to 82°15'23.05391"E	Open cast
E1	Chitrokonda	Nilakhamar Decorative Stone	Agrawal, Prop.-Jay Minerals	Plot No-24, VIP Colony, IRC Village, Nayapally, Bhubaneswar-751015	To be granted	Khata no-471, Plot no – 2687/P Area-4.740	18.12.2020	17.12.2022	Data is not available	Data is not available	Data is not available	LOI issued for grant of Mining Lease	Non captive	Applied for EC	Latitude-18°13'10.32166" to 18°13'20.03557"N Longitude-82°02'10.49592" to 82°02'19.67017"E	Open cast

10.DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS (EXISTING OPERATIONAL SPECIFIED MINOR MINERAL QUARRY):

Table-14

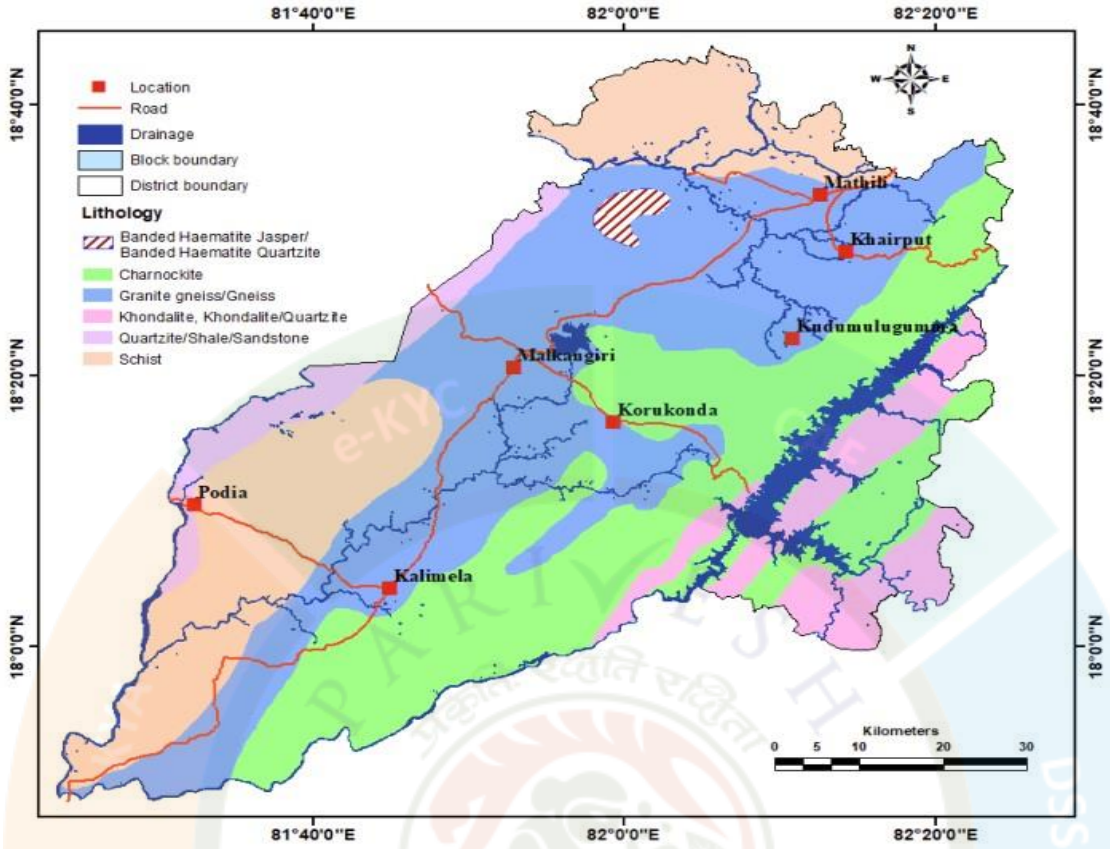
Sl No	Name Of Source	2021-22(Rs.)	2022-23(Rs.)	2023-24(Rs.)	Total
A1	Peta Decorative Stone Mines-1	Non-Operational	2,45,63,912.00	1,54,11,213.00	3,99,75,125.00
A2	Peta Decorative Stone Mines-2	Non-Operational	1,31,33,012.00	1,17,67,742.00	2,49,00,754.00
A3	Peta Decorative Stone Mines-3	Non-Operational	Non-Operational	Non-Operational	Non-Operational
A4	Gagarmetla Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational
B1	Ponarguda Decorative Stone Mines	Non-Operational	Non-Operational	Non-Operational	Non-Operational
B2	Jagannathpalli Decorative Stone Mines	Non-Operational	Non-Operational	Non-Operational	Non-Operational
B3	Gangla Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational
C1	Potteru Decorative Stone Mines	Non-Operational	Non-Operational	Non-Operational	Non-Operational
C2	Potteru Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational
D1	Majhiguda Decorative Stone-1	Non-Operational	Non-Operational	Non-Operational	Non-Operational
D2	Majhiguda Decorative Stone-2	Non-Operational	Non-Operational	Non-Operational	Non-Operational
E1	Nilakhamar Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational

11. DETAILS OF PRODUCTION OF MINOR MINERALS IN LAST THREE YEARS (EXISTING OPERATIONAL SPECIFIED MINOR MINERAL QUARRY):

Table-15

Sl No	Name Of Source	2021-22(cum.)	2022-23(cum.)	2023-24(cum.)	Total
A1	Peta Decorative Stone Mines-1	Non-Operational	8020.706	17634.720	25655.426
A2	Peta Decorative Stone Mines-2	Non-Operational	3014.928	3496.406	6511.334
A3	Peta Decorative Stone Mines-3	Non-Operational	Non-Operational	Non-Operational	Non-Operational
A4	Gagarmetla Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational
B1	Ponarguda Decorative Stone Mines	Non-Operational	Non-Operational	Non-Operational	Non-Operational
B2	Jagannathpalli Decorative Stone Mines	Non-Operational	Non-Operational	Non-Operational	Non-Operational
B3	Gangla Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational
C1	Potteru Decorative Stone Mines	Non-Operational	Non-Operational	Non-Operational	Non-Operational
C2	Potteru Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational
D1	Majhiguda Decorative Stone-1	Non-Operational	Non-Operational	Non-Operational	Non-Operational
D2	Majhiguda Decorative Stone-2	Non-Operational	Non-Operational	Non-Operational	Non-Operational
E1	Nilakhamar Decorative Stone	Non-Operational	Non-Operational	Non-Operational	Non-Operational

12. MINERAL MAP OF THE DISTRICT:



13. LIST OF LETTER OF INTENT (LOI) HOLDERS IN THE DISTRICT ALONG WITH ITS VALIDITY

Sl. No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Letter of Intent Holder	Letter of Intent Grant order No. & Date	Area of Mining Lease to be allotted in (Ha)	Validity of LOI	Use (Captive/Non-Captive)	Location of the Mining Lease (Latitude & Longitude)
A1	Peta Decorative Stone Mines-1	Ch Venugopal	HIG-I, Phase-1, BDA Colony, Pokhariput, Bhubaneswar-751020	2928/SM, 13.04.2018	19.425	20.06.2048	captive	Latitude-17°55'43.47153" to 17°55'58.84318" N Longitude-81°27'10.65617" to 81°27'34.16143" E

A2	Peta Decorative Stone Mines-2	K Srinivas Rao	Plot No-19, At-Nutan Colony, New Bowenpally, Secunderabad (Telengana)	997/SM, 14.02.2019	9.981	02.04.2049	captive	Latitude-17°55'54.08045" to 17°56'05.68424" N Longitude-81°27'13.43758" to 81°27'43.16143" E
A3	Peta Decorative Stone Mines-3	Sri P Vengal Rao	16-2-836/3, Madhavnagar, Saidabad, Hyderabad	12625/SM, 24.12.2003	4.917	31.12.2014	Non-captive	Latitude-17°55'56.35058" to 17°56'02.72373" N Longitude-81°27'38.17382" to 81°27'49.09555"E
A4	Gagarmetla Decorative Stone	Sri Alok Jadhav	Marathapara, Dhamtari (C.G.)	To be granted	5.900	06.01.2011	Non-captive	Latitude-18°06'39.02468" to 18°06'46.26300" N Longitude-81°48'54.52134" to 81°49'04.82717"E
B1	Ponarguda Decorative Stone Mines	M/s Karunei Granites	No-08, 2nd Block, Koramangala, (Hosur Main Road), Madivala Post., Bangalore-560068	3606/SM, 20.05.2004	9.134	26.07.2014	Non-captive	Latitude-18°15'37.44285" to 18°15'54.91761" N Longitude-81°50'57.14147" to 81°51'08.82558"E
B2	Jagannathpalli Decorative Stone Mines	M/s Karunei Granites	No-08, 2nd Block, Koramangala, (Hosur Main Road), Madivala Post., Bangalore-560068	3608/SM, 20.05.2004	8.00	26.07.2014	Non-captive	Latitude-18°18'05.98348" to 18°18'19.93930 "N Longitude-81°50'40.10285" to 81°51'02.18525"E
B3	Gangla Decorative Stone	M/s U Ganapati	NKT Road, Opp-Govt High School, Jeypore,	To be granted	6.625	Data is not availa	Non-captive	Lat- 18°25' 29.98588" to 18°25' 44.74520"N Long-

		Exports	Dist.-Koraput			ble		82º03'32.30659" to 82º03'44.12775"E
C1	Potteru Decorative Stone Mines	M/s. Aakash Stone Industries Ltd.	Santacruz Airport Side, Marble Market, WE Highway, Ville Parle (East), Mumbai-400099	To be granted	2.958	19.12.2008	Non-captive	Latitude-17°57'24.78969" to 17°57'35.55080"N Longitude-81°40'37.08188" to 81°40'44 47010"E
C2	Potteru Decorative Stone	M/s Oriental Trimex Ltd.	26/25, Bazar Marg, Old Rajendra Nagar, New Delhi-110060	4676/SM, 21.05.2025	4.961	06.05.2009	Non-captive	Latitude-17°56'33.10637" to 17°56'42.62647" N Longitude-81°40'05.36176" to 81°40'13.34104" E
D1	Majhiguda Decorative Stone-1	M/s KPK Granites	H.No.39-47/D,Old Bypass Road, Near vermicompost sheds, Nandigama, dist-Krishna(AP)	To be granted	14.016	22.08.2018	captive	Latitude-18°28'19.40884" N to 18°28'29.00283" N Longitude-82°15'00.62318" to 82°15'22.84140" E
D2	Majhiguda Decorative Stone-2	M/s Sri Bhubaneswari Grinites	Flat No-528, 'C' Block, Rajendra Vihar Apartment, Forest Park, Bhubaneswar	To be granted	10.522	22.08.2018	captive	Latitude-18°28'28.87833" N to 18°28'36.89856" N Longitude-82°15'01.31175" to 82°15'23.05391" E
E1	Nilakhamar Decorative Stone	Agrawal, Prop.-Jay Minerals	Plot No-24, VIP Colony, IRC Village, Nayapally, Bhubaneswar-751015	To be granted	4.740	17.12.2022	Non-captive	Latitude-18°13'10.32166" to 18°13'20.03557"N Longitude-82°02'10.49592" to 82°02'19.67017"E

14. TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT

Total mineral reserve of SPECIFIED MINOR MINERAL will access after detail study or grant of potential area, which may investigate as per details below.

(i) Blocks were identified based on geological studies through field observation.

(ii) Mineable resource was calculated by considering detail prospecting.

(iii) Area calculated as per GPS co-ordinates and information obtained from local people. Land detail need to be verified from revenue record.

(iv) Since this is an interim report, as per the present requirement of minerals, more such blocks need to be identified and the data should be updated periodically, after certain intervals to update the data bank of DSR.

TOTAL GEOLOGICAL & MINEABLE RESERVE (EXISTING & PROPOSED)

Sl. No.	Name of the Quarry Lease	Area of Mining Lease in (Ha)	Location of the Minor lease(Longitude/Latitude)	Geological Reserve (MT/Cums)	Mineable Reserve (MT/Ccums)
A1	Peta Decorative Stone Mines-1	Khata no- 119, Plot no- 4/P & 7/P, Area- 19.425	Latitude-17°55'43.47153" to 17°55'58.84318"N Longitude- 81°27'10.65617" to 81°27'34.16143"E	1549100	1306500
A2	Peta Decorative Stone Mines-2	Khata no- 119, Plot no- 4/P, Area- 9.981	Latitude-17°55'54.08045" to 17°56'05.68424"N Longitude- 81°27'13.43758" to 81°27'43.16143"E	87150	64890
A3	Peta Decorative Stone Mines-3	Khata no- 119& 199, Plot no- 7,71,16,120, Area- 4.917	Latitude-17°55'56.35058" to 17°56'02.72373"N Longitude- 81°27'38.17382" to 81°27'49.09555"E	7800	7440
A4	Gagarmetla Decorative Stone	Khata no- 912, Plot no – 129 Area-5.900	Latitude-18°06'39.02468" to 18°06'46.26300"N Longitude- 81°48'54.52134" to 81°49'04.82717"E	Exploration under process.	Exploration under process.
B1	Ponarguda Decorative Stone Mines	Khata no- 130, Plot no- 111/P,245/P,276/P Area- 9.134	Latitude-18°15'37.44285" to 18°15'54.91761" N Longitude- 81°50'57.14147" to 81°51'08.82558"E	Exploration under process.	Exploration under process.

B2	Jagannathpalli Decorative Stone Mines	Khata no- 118, Plot no- 362/P,498/P, 523/P & 524/P Area- 8.00	Latitude-18°18'05.98348" to 18°18'19.93930"N Longitude- 81°50'40.10285" to 81°51'02.18525"E	Exploration under process.	Exploration under process.
B3	Gangla Decorative Stone	Khata no- 223,225,226, Plot no – 100,101,372,302, 203,304,305, 306,734,735,738/P & 272/P Area-6.625	Lat- 18º25' 29.98588" to 18º25' 44.74520"N Long- 82º03'32.30659" to 82º03'44.12775"E	Exploration under process.	Exploration under process.
C1	Potteru Decorative Stone Mines	Khata no- 213, Plot no- 319/P Area-2.958	Latitude-17°57'24.78969" to 17°57'35.55080"N Longitude- 81°40'37.08188" to 81°40'44 47010"E	Exploration under process.	Exploration under process.
C2	Potteru Decorative Stone	Khata no- 213, Plot no- 2377 Area-4.961	Latitude-17°56'33.10637" to 17°56'42.62647"N Longitude- 81°40'05.36176" to 81°40'13.34104" E	292400	228400
D1	Majhiguda Decorative Stone-1	Khata no- 65, Plot no - 401/789/P & 401/790/P Area-14.016	Latitude-18°28'19.40884"N to 18°28'29.00283"N Longitude- 82°15'00.62318" to 82°15'22.84140"E	1608768	1439119
D2	Majhiguda Decorative Stone-2	Khata no- 65, Plot no – 401/P Area-10.522	Latitude-18°28'28.87833"N to 18°28'36.89856"N Longitude- 82°15'01.31175" to 82°15'23.05391"E	934032	511363
E1	Nilakhamar Decorative Stone	Khata no- 471, Plot no – 2687/P Area-4.740	Latitude-18°13'10.32166" to 18°13'20.03557"N Longitude-82°02'10.49592" to 82°02'19.67017"E	368541	96790

15. QUALITY/GRADE OF MINERAL AVAILABLE IN THEDISTRICT

SPECIFIED MINOR MINERAL found in District: -

SPECIFIED MINOR MINERAL of the District is very much suitable for making of various construction purposes.

16.Use of Mineral:

SPECIFIED MINOR MINERAL of the District is used mainly for road constructions, also the used in filling in various construction activities.

17. DEMAND AND SUPPLY OF THE MINERAL IN THE LAST THREEYEARS:

As such there are huge infrastructural activities such as road, building, railways are coming up by Govt. of India & PSUs under "Make In India" programme.

It is proposed to start the SPECIFIED MINOR MINERAL production for full fill the Requirement of the District which will enhance the revenue of the District and also support the livelihood of the local people.

Sl. No	Mineral Type	2021-22		2022-23		2023-24	
		Demand	Supply	Demand	Supply	Demand	Supply
1	SPECIFIED MINOR MINERAL	Data is not Available	Data is not Available	11035.63	11035.63	11035.63	21131.12

18. MAP OF EXISTING MINING LEASES IN THE DISTRICT:

Enclosed as Plate-I

19. DETAILS OF THE AREA OF WHERE THERE IS A CLUSTER OF MINING LEASEVIZ. NUMBER OF MINING LEASES, LOCATION (LATITUDE AND LONGITUDE)

Attached in Annexure VI

20. DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THEDISTRICT:

Eco sensitive zone of Kondakameru wild life sanctuary is located within the District. It covers an area of 430 km², mostly small hills and valleys. It is in the Eastern Highlands moist deciduous forests ecoregion. The major plant communities are mixed deciduous forests and scrublands.

• Additionally, Balimela Wildlife Sanctuary is also located in Malkangiri district.

21. IMPACTS OF MINING ON ENVIRONMENT:

The most important environmental impact of mining projects are: -

Acid mine drainage and contaminant leaching

Acid mine drainage is considered one of mining most serious threats to water resources. A mine with acid mine drainage has the potential for long-term devastating impacts on rivers, streams and aquatic life. If mine waste is acid generating, the impacts to fish, animals and plants can be severe. Many streams impacted by acid mine drainage have a pH value of 4 or lower – similar to battery acid. Plants, animals, and fish are unlikely to survive in streams such as this.

Transportation sources:

Transpiration sources of air pollutants include heavy vehicles used in excavation operations, cars that transport personnel at the mining site, and trucks that transport mining materials.

The level of polluting emissions from these sources depends on the fuel and conditions of the equipment. Even though individual emissions can be relatively small, collectively these emissions can be of real concern. In addition, mobile sources are a major source of particulate matter, carbon monoxide, and volatile organic compounds that contribute significantly to the formation of ground-level ozone

Stationary sources:

The main gaseous emissions are from combustion of fuels in power generation installations, and drying, roasting, and smelting operations. Many producers of precious metals smelt metal on-site, prior to shipping to off-site refineries. Typically, gold and silver are produced in melting/fluxing furnaces that may produce elevated levels of airborne mercury, arsenic, sulfur dioxide, and other metals

Fugitive emissions:

Common sources of fugitive emissions include: storage and handling of materials; mine processing; fugitive dust, blasting, construction activities, and roadways associated with mining activities; leach pads, and tailing piles and ponds; and waste rock piles. Sources and characteristics of fugitive emissions dust in mining operations vary in each case, as do their impacts. Impacts are difficult to predict and calculate but should be considered since they could be a significant source of hazardous air pollutants.

Noise and vibration:

Noise pollution associated with mining may include noise from vehicle engines, loading and unloading of rock into steel dumpers, chutes, power generation, and other sources.

Cumulative impacts of shoveling, ripping, drilling, blasting, transport, crushing, grinding, and stock-piling can significantly affect wildlife and nearby residents.

Vibrations are associated with many types of equipment used in mining operations, but blasting is considered the major source. Vibration has affected the stability of infrastructures, buildings, and homes of people living near large-scale open-pit mining operations. According to a study commissioned by the European Union in 2000: "Shocks and vibrations as a result of blasting in connection with mining can lead to noise, dust and collapse of structures in surrounding inhabited areas. The animal life, on which the local population may depend, might also be disturbed."

22. REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THEENVIRONMENT:

- Water sprinkling on haul road, loading and unloading points.
- Plantation along the safety zone and dump area.
- Providing dust masks to workers.
- Regular monitoring of ambient air quality.
- Provision of air-conditioned cabin of Excavators and Dumpers.
- Regular and proper maintenance of working equipments.
- Periodic medical examination of the workers and organize medical camp in the area.
- Use Milli Second Delay Detonator in blasting operation.
- Provisions of ear plug to the workers.
- Regular training program to the mine workers and operators.

23. RECLAMATION OF MINED OUT AREA

Necessity of Reclamation & Rehabilitation:

- Exponential growth in mineral production since1980.
- Mining activities causes physical, chemical, biological and socio-economic changes in the area.
- Surface mining activities disturb the original land profile.
- In India, mineral production comes mostly from opencast mines & hence Land degradation problems is of serious concern.
- An intricate, in-depth and site-specified techniques involving integrated approach Is necessary.

Reclamation has three vital roles:

i. **Reclamation** – Reclamation means return the mined-out land with useful life. It implies restoring the land to a form and productivity that is useful and inconformity with a prior land use. Reclamation always may not be a single-phase operation.

ii. **Rehabilitation** – Rehabilitation is to bring back the degraded land to a normal stage by a special treatment. It is a process of taking some mitigation measures for disturbed environmental condition created through mining activities.

iii. **Restoration** – Restoration is the process of returning the mined-out land being fit to an acceptable environmental condition. However, the general acceptable meaning of the term is bringing the disturbed land to its original form. Restoration is often used to indicate that biological properties of soil are put back to what they were. This is a rate phenomenon.

iv. When active mining ceases, mine facilities and the site are reclaimed and closed. The goal of mine site reclamation and closure should always be to return the site to a condition that most resembles the pre-mining condition. Mines that are notorious for their immense impact on the environment often made impacts only during the closure phase, when active mining operations ceased. These impacts can persist for decades and even centuries.

Mine reclamation and closure plans must describe in sufficient detail how the mining company will restore the site to a condition that most resembles pre-mining environmental quality; how it will prevent – in perpetuity – the release of toxic contaminants from various mine facilities (such as abandoned open pits and tailings impoundments); and how funds will be set aside to ensure that the costs of reclamation and closure will be paid for.

Proposed future land use after reclamation:

a. Forestry, b. Recreation, c. Water Reservoir, d. Crop Land, e. residential/Commercial, f. Fish & wildlife Habitat, g. Undeveloped Land, h. Grazing/Pasture Land

Statutory requirement:

As per the Mineral Conservation Development Rule, 2017, the following rules must be bear in mind by the mine owner/agent/manager, which is a part of reclamation activities Rule 22, Mine Closure Plan

Rule 23, Submission of Progressive Mine Closure Plan Rule 24, Submission of Final Mine Closure Plan

Rule 26, Responsibility of holder of mining lease Rule 27, Financial Assurance

Rule 35, Sustainable Mining

24. RISK ASSESSMENT AND DISASTER MANAGEMENTPLAN:

Mining activity because of the very nature of the operation, complexity of the systems, procedures and methods always involves some amount of hazards. Hazard identification and risk analysis is carried for identification of undesirable events that can leads to a hazard, the analysis of hazard mechanism by which this undesirable event could occur and usually the estimation of extent, magnitude and likelihood of harmful effects. The activities which can cause high risk related to face stability and the person blasting the shots. It was observed that on a working face of the mine, there were large cracks and unsupported rocks were present, which can lead to a serious hazard and injure workers engaged in loading operation and machineries because of rock falls or slides. This type of condition turns out because improper dressing of the bench and improper supervision. To avoid the hazards due to fall of rocks the face must be examined, made suitable for working and the remedial measures must be taken to make it safe if there is any doubt that a collapse could take place. Working of the face should be in the direction considering the geology of the area such that face and quarry side remain stable. Another major risk identified in mines is due to the firing of explosive by an unqualified person. In the mines there is problem of fly rocks and the village is located close to the mine and so it is rated high as it can affect may people. Explosives by nature have the potential for the most serious and catastrophic accident. Planning of round of shots, holes correctly drilled, direction logged, weight of explosive suitable for good fragmentation are the few of the steps necessary to ensure its safe use and if the shots are not properly designed can result in misfires, early ignition and flying rocks. No person is allowed to use explosives without being properly trained in its handling. In the mine a large number of heavy vehicles were in operation and the roads were not proper for haulage purpose. The haulage roads were not even and were not wide enough for the crossing purpose and hence the chances of hazards are very high. The main hazards arising from the use large earth moving vehicles are incompetent drivers, brake failure, lack of all-around visibility from the driver position, vehicle movements particularly

reversing, roll over, and maintenance. Those most at risk are the driver and pedestrians likely to be struck by the vehicle, and drivers of smaller vehicles, which cannot be seen from the cabs of large vehicles. Edge protection is always necessary to prevent inadvertent movement over the edge of roadway or a bench. Seatbelt will protect driver in case of roll. Good maintenance and regular testing are necessary to reduce the possibility of brake failure. Access to the vehicles should always be restricted to those people necessary for the work in hand. The use of personal protective equipment and proper arrangements is essential to check if the person is wearing protective equipment or not. The personal protective equipment includes helmet, non-skid safety boots, safety glasses, earmuffs etc. The required personal protective equipment should be provided and used in a manner that protects the individual from injury. Few minor injuries which can be prevented are slip, trip, or fall hazards; hazards due to rock falls and collapse of unstable rocks, atmosphere containing toxic or combustible gases; protects from chemical or hazardous material etc. A disaster management plan should be prepared for taking care of for any disaster. Other risk which are included in this category are noise, as it occurs and it can lead to permanent disability. There are problems related to road traffic in and out issuers; inappropriate exposure of moving machines; mechanical failure and because of large number of moving trucks and dumpers there is large quantity of dust present in roadways which affects the operators and can lead to accidents causing injury. They are in acceptable range because of precautions measures taken but no step is taken it can cause hazard hence steps should be taken to reduce the hazards such as for dust suppression system should be installed. Other problems like occurrence of lots of mosquitoes in the area due to unhygienic conditions which affect the human health causing malaria, dengue etc. and causing a person to be hospitalized.

Disaster in the mines like fires, explosions, entrapments, and inundations can occur any time, so emergency preparedness is a must. The Disaster management plan and risk assessment in the mines will include all sorts of above-mentioned emergency and the extent that this plan will be implemented will depend on the nature and scope of the emergency. The basic purpose of Disaster management plan and risk assessment to ensure that mine rescue and recovery activities are conducted safely for rescuer and survivors. According to MMR act 1961 a standard operating procedure should be drawn for involvement different category of staff and officers. The SOP should be updated periodically to reduce the chaos and response to the emergency should be quick and

smooth. The responsible person should be familiar with his responsibility during the mock drills. One or two standby should be there to replace the person in Emergency situation. Rescue operations should not include the survivors for any assistance.

First Information of Disaster / Emergency should go to the attendance clerk on duty. Duties of attendance Clerk (Emergency Siren) the attendance clerk or other designated person should on getting information of major accident, sound a hooter or a siren immediately declaring a state of emergency at the mine and then to contact the manager and on his advice to call key personnel using the information listed in the Emergency Organization Chart. It is important that all telephone calls are recorded in a telephone log book. Duties of Other Officials should be displayed and handed over to all concerned. Copy the same should be kept at Manager's Office for ready reference. Establishment of Control Room at Unit Level, Area Level and Company Level is essential. Control Room should keep the contact information about –

- Company Manager
- Company owner/ Administrative officer.
- District Administration
- Govt. Hospitals in Nearby Localities,
- Private Nursing Homes of Localities

Attendance roaster and duty charge register should be properly maintained so the record of missing people can be obtained.

25. DETAILS OF THE OCCUPATIONAL HELTH ISSUE IN THE DISTRICT:

The persons employed in the mines are exposed to a number of hazards at work which adversely affect their health. Some of the important ones are dust, noise, heat, humidity, vibration etc. In recent times, there has been increasing awareness among mining industry and the workers about occupational diseases such as Coal Worker's Pneumoconiosis, Manganese Poisoning, Hearing Impairment etc. caused by exposure to health hazards at work. Almost all occupational diseases are known to cause permanent disablement and there is no effective treatment. However, most of the occupational diseases can be prevented by adopting proper occupational health measures and engineering control on airborne dust at work place.

Following diseases have been notified as the diseases connected with mining operations for the purpose of sub-section (1) of Section 25 of the Mines Act, 1952:

S.R.O. 1306 dated the 21st July, 1952

1. Tuberculosis

Total Number of TB cases in Malkangiri District of last 5 years

Table-16

Year	No. Of Cases notified/detected
2015	1061
2016	1066
2017	1668
2018	944
2019	1173

S.R. O. 2521 dated the 26th June, 1986

Cancer of lung or the stomach or the pleura and peritoneum (i.e. mesothelioma)

25 S.O. 399(E) dated 21st February, 2011

1. Noise Induced Hearing Loss
2. Contact Dermatitis caused by direct contact with chemical.
3. Pathological manifestations due to radium or radioactive substances

System of Detection of Occupational Diseases in Mines In order to detect occupational diseases the industry is required to conduct medical examinations and health surveillance of workers as per the provisions of Mines Act. The present efforts of mines management are concentrated on detection of silicosis, Pneumoconiosis and other notified diseases. Very little attention is paid to other occupational diseases. The essential features of health surveillance programme required to be carried out in mines are:

(a) Initial Medical Examination of persons to be employed in mines.

(b) Periodic Medical Examination once every five years. General physical examination, chest radiographs, lung function tests and audiometry.

(c) Classification of chest radiographs of workers as per ILO Classification.

(d) Medical examination within one year of superannuation. Evaluation of all cases of suspected pneumoconiosis by Pneumoconiosis Medical Board.

(f) Maintenance of medical records till the person is in service and 10 years thereafter. The cases of silicosis detected during health surveillance programme are referred to Pneumoconiosis Medical Board of the mining companies for evaluation and certification. If certified, the case is notified to the enforcement authority and evaluated for disability and payment of compensation. Many cases of silicosis and other pneumoconiosis go undetected and a large number of

cases of silicosis are misdiagnosed due to lack of training of medical professionals.

26. PLANTATION GREEN BELT DEVELOPMENT IN RESPECT OF LEASE ALREADY GRANTED IN THE DISTRICT:

During mining operation green belt development through plantation is most important for environment safe guard, which should be done under the supervision by mining department. Different type of species should be planted near lease periphery to keep environment clean at post mining period through reclamation. Where specific usefulness of land could be decided, afforestation is normally planned through the site could have been considered for better possibilities of land use.

27. CONCLUSION:

To meet the requirement of minerals in the present scenario, it is proposed to identify such potential areas at certain interval at time and get the data bank of DSR to be updated regularly. The insitu mining activity in any area is on one hand bring revenue and employment (Direct and indirect) and on other hand if not done properly potential pollution and ecological imbalance increases, the ability of the ecosystem can also be reduced. Particulate matter transported by the wind as a result of excavations, blasting, transportation of materials, use of heavy equipment used raise these particulate levels; and Gas emissions from the combustion of fuels in stationary and mobile sources, explosions, and mineral processing. All these activities indirectly affected the biodiversity of area. Larger potential and smaller areas have been identified in Malkangiri District on the basis of geological study carried out during field observation, which can be considered for mining concession after all the parameters for statutory clearances are verified by consulting with concerned authorities.

Sl No.	Lease detail	Area in (Hect.)	Distance in (K.M) from (PA/BR/WC/FOREST)	Mining lease within 500 metres (if yes cluster area	Total excavation in Tonnes/ Annum considering digging depth max as 6 metres	Min min Decor
1	2	3	4	5	6	
A1	Peta Decorative Stone Mines-1	19.425	RF-3.53	YES	17634.720	
A2	Peta Decorative Stone Mines-2	9.981	RF-3.60	YES	3496.406	
A3	Peta Decorative Stone Mines-3	4.917	RF-2.15	YES	Non-Operational	
A4	Gagarmetla Decorative Stone	5.900	RF-8.10	NO	Proposed	P
B1	Ponarguda Decorative Stone Mines	9.134	RF-9.74	NO	Proposed	P
B2	Jagannathpalli Decorative Stone Mines	8.00	RF-8.02	NO	Proposed	P
B3	Gangla Decorative Stone	6.625	RF-7.41	NO	Proposed	P
C1	Potteru Decorative Stone Mines	2.958	RF-3.83	NO	Proposed	P
C2	Potteru Decorative Stone	4.961	RF-3.28	NO	Non-Operational	

D1	Majhiguda Decorative Stone-1	14.016	RF-1.84	YES	Non-Operational	
D2	Majhiguda Decorative Stone-2	10.522	RF-1.28	YES	Non-Operational	
E1	Nilakhamar Decorative Stone	4.740	RF-3.30	NO	Non-Operational	

List of Cluster & Contiguous Cluster

Clusters:

Name of Tahasil	Cluster No	Lease No	Location (River Bed/Patta Land)	Village	Name of Minor Minerals in Cluster	Area (in Ha)	Total Cluster Area in Hectare
Motu	Cluster-1	A1	Govt. Land	Peta	Peta Decorative Stone Mines-1	19.425	34.323
		A2		Peta	Peta Decorative Stone Mines-2	9.981	
		A3		Peta	Peta Decorative Stone Mines-3	4.917	
Khairaput	Cluster-2	D1	Govt. Land	Majhiguda	Majhiguda Decorative Stone-1	14.016	24.538
		D2		Majhiguda	Majhiguda Decorative Stone-2	10.522	

Contiguous Clusters:

River Name	Contiguous Cluster No	Cluster No	Number of leases in the cluster	Location (Riverbed/Patta Land)	Distance between clusters	Village	A Clu
No contiguous Cluster Situation available in respect of Malkangiri District							

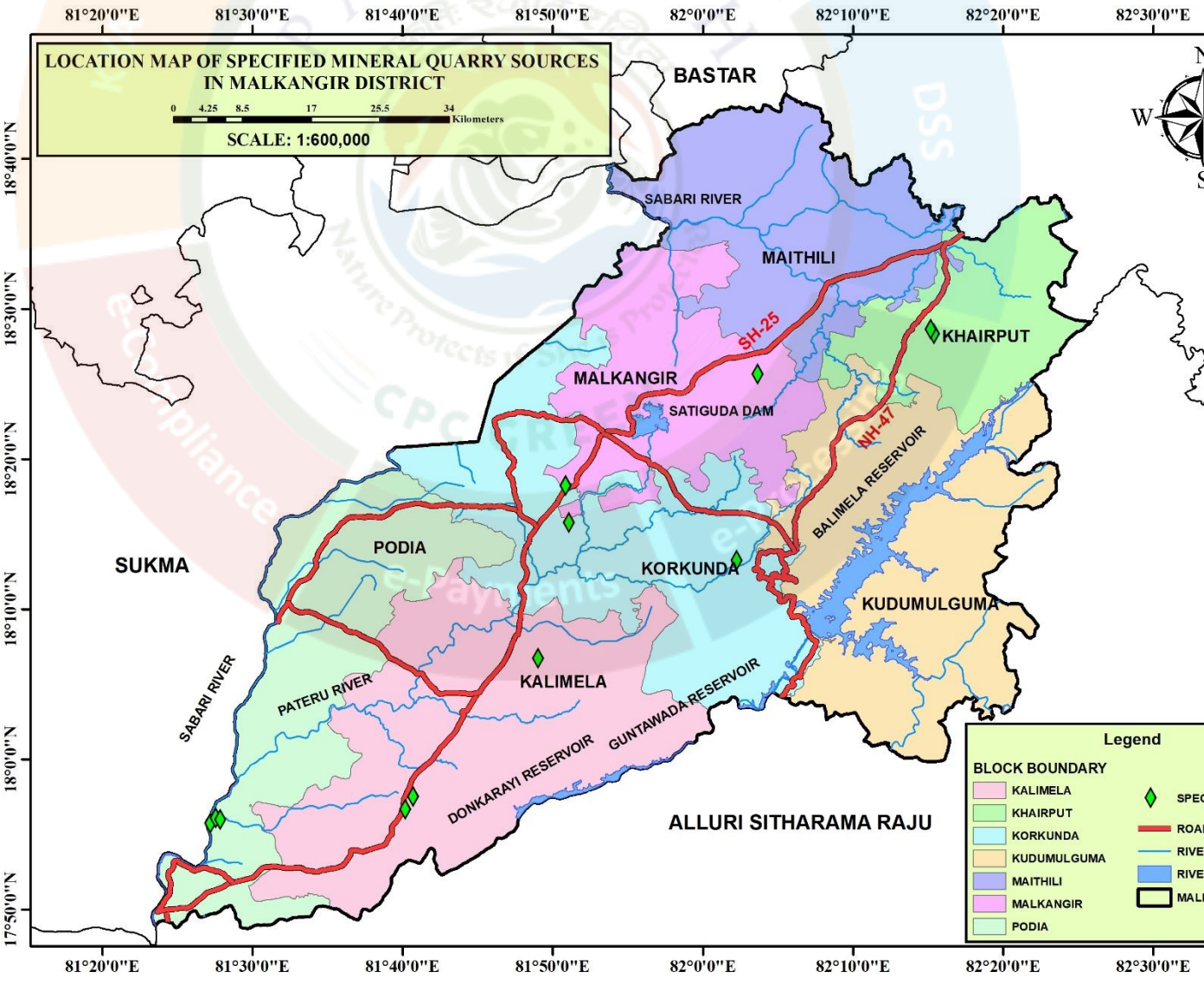
Transportation Routes for individual leases							
SL NO	NAME OF SOURCE	Transportation Route No	No of tippers/ day of Lease	Number of tippers /days of all the lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for roa (Black Topped/unp ved)
A1	Peta Decorative Stone Mines-1	Village Road	5	9	5	Unpaved	Unpaved
A2	Peta Decorative Stone Mines-2	Village Road	3	6	6	Unpaved	Unpaved
A3	Peta Decorative Stone Mines-3	Village Road	6	9	10	Unpaved	Unpaved
A4	Gagarmetla Decorative Stone	Village Road	5	9	8	Unpaved	Unpaved
B1	Ponarguda Decorative Stone Mines	Village Road	5	8	7	Unpaved	Unpaved
B2	Jagannathpalli Decorative Stone Mines	Village Road	4	7	6	Unpaved	Unpaved
B3	Gangla Decorative Stone	Village Road	2	7	5	Unpaved	Unpaved
C1	Potteru Decorative Stone Mines	Village Road	5	9	3	Unpaved	Unpaved
C2	Potteru Decorative Stone	Village Road	3	7	4	Unpaved	Unpaved
D1	Majhiguda Decorative Stone-1	Village Road	4	9	7	Unpaved	Unpaved
D2	Majhiguda Decorative Stone-2	Village Road	5	8	6	Unpaved	Unpaved
E1	Nilakhamar Decorative Stone	Village Road	6	8	6	Unpaved	Unpaved

Cluster No	Lease No	Transportation Route No	Number of tippers / days of cluster	Number of tippers/days of all the clusters on route	Length of Route in KM	Type of Road (Black Topped/Unpaved)	Recommendation for road (Black/Topped /Unpaved)	The be by Ow
Cluster No-1	A1	Village Road to State Highway	5	9	5	Unpaved	Unpaved	
	A2	Village Road to State Highway	3	6	6	Unpaved	Unpaved	
	A3	Village Road to State Highway	6	9	10	Unpaved	Unpaved	
Cluster No-2	D1	Village Road to State Highway	4	9	7	Unpaved	Unpaved	
	D2	Village Road to State Highway	5	8	6	Unpaved	Unpaved	

CERTIFICATION REGARDING PREPARATION OF DSR

The District Survey Report for all Minor Mineral & Specified Minor Minerals in respect of Malkangiri District is in accordance with Appendix-X. (I)- For river sand & (II)- for other than River Sand of S.O 3611 (E) dt. 25.07.2018 of Ministry of Environment, Forest and Climate Change, New Delhi, Enforcement & Monitoring Guideline for Sand Mining-2020 and in compliance with orders of Hon'ble Supreme Court dt. 10.11.2021 in connection with C.A. Nos. 3661-3662 of 2020. Before preparation of all District Survey report of all Minor Minerals, field verification has been conducted by the Sub-Divisional Committees of Malkangir & Sub-Divisional Magistrate, Officers from Irrigation Department, State Pollution Control Board, Forest Department, Geology Department & Mining Officer. The DSR is being submitted to SEIAA, Odisha, Bhubaneswar for necessary evaluation and approval.

LOCATION MAP OF SPECIFIED MINERAL QUARRY SOURCES OF MALKANGIRI DISTRICT



TRANSPORTING ROUTE MAP OF MALKANGIRI DISTRICT