

Exploitation of Beach Sand Minerals in the Offshore Areas – Legal perspective in the light of MMDR Act, 1957 and OAMDR Act, 2002

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Abstract

Beach Sand Minerals (BSM) form by weathering and erosion of the rocks in the hinterland which are liberated, disintegrate by various processes and, are transportation by the streams to the sites of deposition (coastal plains). These minerals get concentrated along the coastal areas due to constant winnowing by wave action. It is well documented that sea level changes have occurred along the coastal areas at different points of time whose signatures on land can be seen in the form of palaeo-strandline occurring up to 15-20 km from the present day coast. On a similar analogy and in view of bathymetric profile of the sea floor, BSM deposits are expected in the offshore areas as well, in continuity to onshore deposits, which possibly are the submerged onshore deposits of the past.

Mineral Concessions in respect of onshore BSM deposits are governed with the Mines and Minerals Development and Regulation (MMDR) Act, 1957 and those in the offshore are governed as per the Offshore Areas Mineral Development and Regulation (OAMDR) Act, 2002 and the rules thereunder respectively. This paper deals with various provisions of these Acts and recent policies of the Government to harmonize mineral concession in offshore areas in line with the onshore BSM deposits.

Keywords: MMDR Act, OAMDR Act, Beach Sand Minerals (BSM), Threshold Value, Heavy Minerals, Monazite Resources

Introduction

Beach Sand Minerals (BSM) represent a group of seven economic heavy minerals(HM) (having specific gravity >2.89), viz. ilmenite, leucoxene, rutile(titanium minerals),monazite(thorium and REE mineral), zircon,garnet (abrasive) and sillimanite which co-exists in the coastal and inland placers. Amongst these minerals, monazite is a prescribed substance under the Atomic Energy Act, 1962 and thorium is envisaged as a fuel in the 3rd Stage of the Nuclear Power Programme of the country. The mainland of Indian subcontinent is endowed with a coastal length of 6000km. The occurrence of BSM in the form of placer deposits of varied dimensions and grade has been proved by the Atomic Minerals Directorate for Exploration and Research (AMD) from various parts of the coastal and inland tracts of the country. The mineralogical composition in these deposits is the reflection of hinterland geology whereas their concentration depends up on the coastal processes operating along the coast.

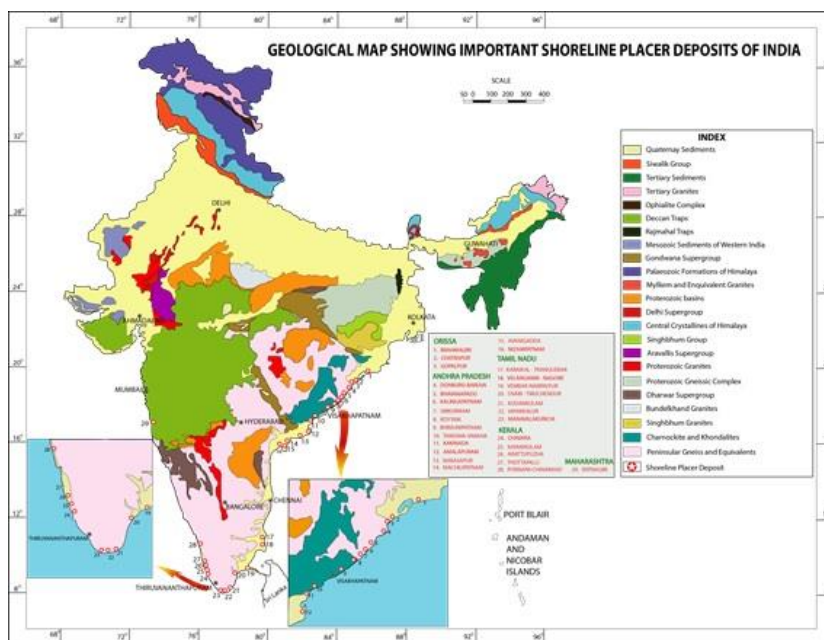


Fig. 1: Heavy Mineral Deposits of India explored by AMD (Source: <http://amd.gov.in>)

Coastal Heavy Mineral Deposits

The shoreline BSM deposits are of varied dimensions having their width up to 3km from the present day coastline. The heavy mineral content in these deposits varies from 1 to 49%. AMD, Department of Atomic Energy (DAE), Government

of India is a pioneer organization having mandate for exploration of atomic minerals. Systematic exploration and evaluation by AMD have established heavy mineral resource of 1231 million tonnes (mt) of which 12.73 mt is the monazite resources. The monazite content in these placer deposits range from 0.02-5% in Total Heavy Minerals (THM). (Heavy Mineral Resources of India, 2020, AMD). Khondalites, charnockites, leptynites, granites, pegmatites, Deccan Traps, etc. are the host rocks for BSM which are found in the hinterland. These deposits are formed by weathering and erosion of these hinterland rocks, liberation, disintegration and transportation by the streams to the sites of deposition (coastal plains). These minerals get concentrated along the coastal areas due to constant winnowing by wave action. BSM deposits occur abundantly along the coastal tracts in Andhra Pradesh, Odisha, Tamil Nadu, Kerala and a few small deposits in Karnataka, Maharashtra and West Bengal along the eastern and western coastal plains of the country.

Offshore Heavy Mineral Deposits

The offshore areas extend up to the territorial waters [12 nautical miles (NM) from low tide line (LTL)] and exclusive economic zone (EEZ) [200 NM from territorial waters]. India enjoys exclusive economic rights to map, assess, explore and harness the mineral wealth of the seabed up to EEZ in the offshore [Ministry of Mines (MoM) Report on 12th Five Year Plan].

The Geological Survey of India (GSI) and the CSIR-National Institute of Oceanography (CSIR-NIO) are the pioneering agencies involved in the exploration of the nearshore and offshore regions of India. The source of sediments/minerals in the nearshore or offshore areas is the same hinterland rocks viz. khondalites, charnockites, leptynites, granites, pegmatites, Deccan Traps etc. as in the case of inland deposits. The rivers drain through the rocks containing these heavy minerals and deposit in the sea and are preserved due to sea level changes that occurred along the coastal areas over a period of time. [India Bureau of Mines (IBM), Indian Minerals Year Book (2012) and Merh (1992). The Marine and Coastal Survey Division, GSI has been acquiring geoscientific data on the sea bed sediments, seabed morphology, mineral resource, geochemistry and geophysical parameters. GSI has identified offshore mineral-rich tracts and obvious geological potential areas for detailed exploration and scientific exploitation. [S.K. Wadhawan, GSI, 2016].

Further exploration in the potential offshore areas has been reported for the mineral assemblage of ilmenite, sillimanite, garnet, monazite, zircon, rutile and others (amphibole and pyroxene, etc). The grades of heavy minerals as reported from the offshore blocks of Bhimunipatnam (Andhra Pradesh), Palur-Malud (Odisha), Cochin and Quilon (Kerala) varies from 0.030% to 8.50%. Preliminary investigations carried out by GSI and CSIR-NIO in the offshore areas indicated monazite content varying from 1-

4% in THM. The exploration and analytical data on heavy mineral resource in these offshore blocks are not available in public domain.

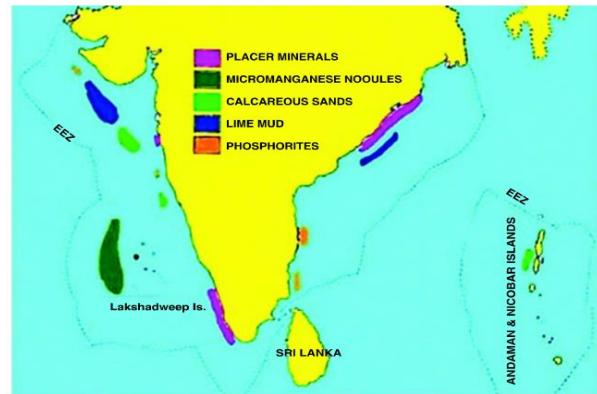


Fig. 2: Offshore mineral-rich tracts constitute obvious geological potential areas, S.K. Wadhawan, GSI

Legal perspective

The Government of India (Allocation of Business) Rules, 1961, delegates powers to various ministries, departments, etc. to administer the business of the Government. As per the said Rules, the Ministry of Mines (MoM) has been delegated powers to make legislation/laws made by the Parliament for regulation of mines and development of minerals within the territory of India, including mines and minerals underlying the ocean within the territorial waters or the continental shelf, or the EEZ and other maritime zones of India.

Exercising above powers, MoM has notified various Acts and Rules thereunder for regulation and development of mineral resources of the country. As a part of our study, we restrict to the provisions of two major Acts and the rules made thereunder which are:

1. The Mines and Minerals (Development and Regulation) [MMDR] Act, 1957
2. The Offshore Areas Mineral (Development and Regulation) [OAMDR] Act, 2002.

Salient features of MMDR and OAMDR Acts- Comparative study

MMDR Act, 1957

It is an Act under the control of the Union which extends to the whole of India and is enacted by the Parliament of India. MMDR Act, 1957 notified by MoM has enabled powers to the Central Government (viz. MoM) to make separate rules for grant of mineral concessions, for conservation and development of mineral resources, etc. It has also enabled powers to the State Governments to make rules for minor minerals and to make rules for preventing illegal mining, transportation and storage of minerals. Exercising these powers, several rules have been made. Reconnaissance Permit (RP), Prospecting Licence (PL) and Mining Lease (ML) are the mineral concessions mainly dealt under this Act

on the principle of “First Come First Serve” basis. Mineral concessions were granted based on the applications system and the holder of RP and PL will have preferential rights for obtaining PL and ML as the case may be. The atomic minerals are listed under Part-B of First Schedule of MMDR Act, 1957.

MMDR Act has been amended from time to time based on the industrial and other strategic policies of the country. Major amendments were made in the parent Act and MMDR (Amendment) Act, 2015 was notified on 12.01.2015 with the concept of grant of mineral concessions through competitive bidding and e-auction along with other amendments.

Exercising powers under Section 11B of the MMDR (Amendment) Act, 2015, MoM vide notification dated 11.07.2016 issued the Atomic Minerals Concession Rules (AMCR), 2016 with the concept of Threshold Values for atomic minerals and also brought BSM under Part-B ‘Atomic Minerals’. The Threshold for BSM was initially notified as 0.75% monazite in THM. For the purpose of conservation and in the national interest, Government of India has revised the threshold value for BSM from 0.75% to 0.00% monazite content in THM vide notification dated 20.02.2019.

OAMDR Act, 2002

The Government of India notified the Offshore Areas Minerals (Development & Regulation) Act, 2002 (OAMDR) for development and regulation of mineral resources in the territorial waters, continental shelf, EEZ and other maritime zones of India and for matters connected thereto. The Act is applicable to all minerals in offshore areas

MMDR Act, 1957	OAMDR Act, 2002
It extends to the whole of India for all minerals except mineral oils, petroleum and natural gas	It extends from low tide line to territorial waters and EEZ of India for all minerals in the offshore areas including prescribed substances, except mineral oils and hydrocarbons
RP, PL, PL-Cum-ML and ML are the mineral concessions	RP, Exploration Licence and Production Lease are the mineral concessions
State Government is the Authority for Grant of Mineral Concessions	ADG, National Mission Head-II, GSI is the Administering Authority
RP, PL and ML are granted for a period not exceeding 2, 3 and 30/50 years respectively	RP, EL and PL are granted for a period not exceeding 2, 3 and 30 years respectively
Royalty shall be paid to the State Govt. as per the scheduled rates notified by Central Govt.	Royalty shall be paid to the Central Govt. as per scheduled rates notified by Central Govt.
No RP, PL or ML in respect of atomic minerals without “Previous Approval” of Central Govt. (NOC from DAE)	No Production Lease in respect of atomic minerals or prescribed substance without consultation with DAE

AMCR, 2016	OAMC Rules, 2006
Applicable to atomic minerals (AM) having grades= or > than the Threshold Value	Applicable to all minerals including AM and prescribed substances. No threshold concept
Govt. agencies permitted under Section 4 of the Act can undertake exploration for AM	Any person (Indian) or company registered in India can undertake exploration
Above Threshold, ML to Govt. agency. Below Threshold, ML only through Auction.	Mineral concessions to any person granted by the Administering Authority (No Auction)
RP, PL, ML for atomic minerals in consultation with DAE/AMD	RP, EL, PL in consultation with MoM, Defence, MoEFCC, Home Affairs, Fisheries, NIO, Shipping, Petroleum and Natural Gas

including minerals prescribed under the Atomic Energy Act, 1962, but excludes oils and related hydrocarbons. The Act and the rules made thereunder viz. the Offshore Areas Mineral Concession (OAMC) Rules, 2006, deals with the mineral concessions viz. Reconnaissance Permit (RP), Exploration Licence (EL) and Production Lease (PL) which came into effect w.e.f. 15.1.2010.

Comparative study: MMDR Act, 1957 Vs OAMDR Act, 2002

AMCR, 2016 Vs Offshore Rules, 2006

Under OAMDR Act or OAMC Rules, provision for consultation with DAE is mentioned at the stage of grant of production lease but not during grant of RP and EL. The Government has taken several measures to address these issues.

Post amendment of threshold value, all BSM deposits (onshore/inland placers) in association with monazite are notified as above threshold, irrespective of monazite grade. Hence mining leases shall be granted at the instance of DAE to a Government Company/Corporation as per the provisions of AMCR, 2016. However, in spite of containing appreciable concentration of monazite in the near shore and offshore areas, the legislation under OAMDR Act is different from MMDR Act. Technically, atomic minerals occurring in offshore areas (governed by OAMDR Act) cannot be treated differently from the atomic minerals in inland/onshore areas (governed by MMDR Act). Hence legislation for grant of reconnaissance permit, exploration licence or production lease in the offshore areas shall be in line with the minerals laws in force for inland/onshore areas i.e. AMCR, 2016.

Recent policies of the Government to harmonize the grant of mineral concessions in offshore areas:

As per the above study, it is understood that:

- Source of BSM in the near-shore or offshore areas are hinterland rocks, same as in the case of inland/onshore BSM deposits.

- Offshore BSM deposits are in immediate vicinity of onshore BSM deposits and appear to be continuation of same placer assemblages.
- Appreciable concentrations of monazite in near shore and offshore areas.
- For conservation of strategic mineral resources viz. monazite, zircon etc. and in the national interest, mineral concessions of onshore BSM deposits are granted to Government Company or Corporation owned or controlled by the Government. However, there is no such concept in the OAMDR Act/Rules.

The Government of India has brought certain amendments in OAMC Rules, 2006 to harmonize the provisions of grant of mineral concession in offshore areas in line with those of onshore BSM deposits. The MoM vide notification dated 23.08.2019 has made certain amendment i.e. the Offshore Areas Mineral Concession (Amendment) Rules, 2019, as per which, no reconnaissance permit, exploration licence or production lease of atomic minerals shall be granted to any person, except the Government or a Government Company or a Corporation owned or controlled by the Government.

The provision for grant of production lease in the offshore areas is also governed as per Section 6 'Grant of Operating Rights' of OAMDR Act, 2002. As per Section 6, provisions for consultation with DAE exists for grant of production lease in respect of atomic minerals or prescribed substance, but not for the reconnaissance or exploration licence. For effective governance, amendment in Section 6 of OAMDR Act, 2002 is required to the effect that, operating rights i.e. reconnaissance permit, exploration licence or production lease in respect of atomic minerals or prescribed substance shall be granted to the Government or a Government Company or a Corporation owned or controlled by the Government, with the prior approval of DAE.

Conclusion

The Government has harmonized the provisions of grant of mineral concessions in the offshore areas in line to the mineral concessions of onshore BSM deposits, for conservation of strategic mineral resources by amending OAMCR Rules, 2006 vide notification dated 23.08.2019. However, for effective

governance, Section 6 of OAMDR Act, 2002 also need to be amended in line to the provisions of mineral concessions under MMDR Act, 1957 and the rules made thereunder so as to have uniform/similar mineral concession policies in respect of atomic minerals and/or prescribed substances irrespective of whether it occurs in the inland or in the offshore areas.

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