



Government of India  
Geological Survey of India  
Mission-II (Natural Resources Assessment)  
GSI Complex, 2nd Floor, C-Block  
Seminary Hills, NAGPUR-440 006

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## Message from the Head, Mission-II, GSI Nagpur.

My hearty congratulations to all the field Geoscientists, Supervisory Officers, Mentors, DDGs of Regional Mission-IIs, HoDs of Regions who contributed for progressing in the mineral exploration activities of the FS 2018-19. The chain of success rate from G4 stage of exploration to developing G3 stage and G2 stage blocks for the commodities like basemetal, precious metals, ferrous group, industrial minerals is commendable. The achievements were directly reflected in the 58<sup>th</sup> CGPB and surely the contributions of Geoscience in Mineral Industry is expected to rise in the coming years. In addition, taking the challenge of identifying the potential areas for kick- starting of 390 mineral exploration projects for FS. 2019-20 for furthering the VAQ initiatives is worth appreciating.

Again, to keep the supply of potential blocks for auctioning by G3 and G2 stage exploration by the efforts G4 stage exploration and baseline data acquisition programmes is worth appreciating. Concentrated efforts for the discovery of new mineral deposits from the concealed and partially exposed terrain under the flagship programme viz., UNCOVER (India) pilot projects, Regional Mineral Targeting (RMT) projects by interacting with the expert Geoscientists of Geoscience Australia for expanding the discovery space in the country by close knit interactions between Geologists, Geophysicists and Geochemists across Regions needs a special appreciation to the concerned teams. I witnessed a significant progress and proper application of RMT concepts by the RMT teams. A vast amount of information and data generated by the teams of UNCOVER projects on buried topography, predictive geology, alteration systems, distal foot printing by geochemical studies of bedrock, groundwater, calcrete etc., is appreciated. Delineation of potential zones for fine tuning of certain areas by multi-disciplinary geoscience approach is commendable. Follow-up and execution of highly specialized deep geophysical data acquisition programme for mapping the crustal features by MT and DSRS studies in the current FS., along the transects is vital for mineral system studies by these teams.

The joint working teams of Mission-II, Mission-III and domain experts also need worth mentioning for progressing in updating the OGP maps of entire country in addition to creation of Geological Potential domains for the strategic and critical mineral commodities. These updated data sets will lead to the commodity-wise atlases of Geological Potential domains that will be released in the 59<sup>th</sup> CGPB expected to be held in February 2019 and later, show-cased in the IGC-2020.

The current FS 2019-20 is very special in particular to the entire mineral exploration teams of GSI in order to take-up the large number of mineral exploration projects, nearly double the average annual mineral exploration projects by engaging the teams from the other missions. That needs a combined effort by all the Regions, Training Institute, National Mission-II with its tailor-made, field intensive and lab training programmes in respect of deposit styles to up-skill the geoscientists of other

missions to take up the mineral exploration programmes is essentially required prior to regular fieldwork. Involvement of GSI teams of Geoscientists in the IGC 2020 is also to be accommodated seriously with larger contribution of papers and participation.

The concentrated efforts to convert Greenfield Regions into Brownfield is essentially required to boost the mineral industry in the country by all the Missions of GSI as inter-mission ventures. Looking beyond OGP area, especially in the windblown/ alluvial regolith covered terrains (~6.9 lakh sq. km) of northern India, the younger volcanic cap area i.e., Deccan Volcanic Province (~5 lakh sq. km) of central and west central India and laterite covered area in eastern and southeastern India by suitably formulating at-least one pilot scale project with the teams represented by geologists, geophysicists, geochemists needs special attention. This year, few pilot scale projects to develop the SOPs for targeting Regolith covered regions of western and northwestern parts of India by scientifically incorporating varieties of geochemical sample media, geophysics and geology needs to be taken-up. Incorporation of suggestions by the Geoscientists of Geoscience Australia will have to be suitably executed in these pilot projects.

The role of geophysics in delineating the potential zones by narrowing down the large Regions for increasing the rate of mineral deposit discovery is playing a key role especially, in the concealed terrains of our Indian subcontinent. GSI teams of Geophysicists are gearing up and acquiring the specialized skills by interacting with the global experts and started delivering the results by closely working with the other Geoscientists. There will be enhanced inputs of Geophysics for future mineral deposit discoveries in the country. I request our Geoscientist teams (Geology & Geophysics) to interact on day to day basis in the field & HQ., as well for taking up the deposit discovery challenge for increasing the rate of deposit discovery in the country.

Quick and accurate geochemical results from various sample media are the essential component in developing the exploration blocks as well as discovering the new potential zones. The role of Chemists in prioritization of mineral exploration samples and also their direct and indirect involvement in R & D of analyzing non-conventional geochemical samples is helping in vectoring for new buried terrains for mineral targeting. In this FS 2019-20., there will be more responsibility on Chemistry team for achieving the desired results of large number of mineral exploration programmes in a stipulated period of time. Therefore, my appeal to them is to plan and develop a road map with achievable mile stones so that, the samples generated will be analysed in time to prioritise and plan the exploration strategies by exploratory drilling etc.

Exploratory drilling is the ultimate test for discovering the mineral deposit and also for developing the G3 and G2 stage exploration blocks for various commodities. The drilling teams of GSI including the teams involved in outsourcing of drilling works have done the commendable works despite many difficulties related to Forest, terrain accessibility, unfavorable working window due to cultivation, unfavorable subsurface formations for drilling etc. Planning of exploratory drilling for full progress in large number of mineral exploration projects during new FS needs a special attention for execution by monitoring at various levels. I wish all the concerned teams to focus and execute the exploratory drilling by active and continuous interactions with Regions and Missions to take up the substantial meterage of drilling.

In the previous year, GSI TI Hyderabad gathered a pool of expert mineral exploration Geoscientists (Geology, Geophysics) and created tailor made modules for field and Lab intensive Regional (RMT) to Detailed Mineral Exploration by closely interacting with this Office is appreciated. The (RMT)

training elevated the use of all geoscience data of various scales for mineral targeting using latest software and techniques by bringing Geologists, Geophysicists and their Supervisory Officers together by minimizing the common gray area between Geology & Geophysics. This year, there will be more training modules for both new entrants from the other missions for mineral exploration at various stages as well as for new RMT teams.

The advanced mineral exploration countries are in the progressive stages of understanding the lithosphere characteristics of their country by acquiring and integrating Magneto telluric (MT) and Deep Seismic Reflection Survey (DSRS) data. Such geoscience information provides new insights on lithospheric architecture and deep conductive sources for targeting the possible concealed and deep-seated mineral systems. I must congratulate the National Mission-II team, Nagpur for developing the National Project document on IndMAP (Magnetotelluric Acquisition Project for Indian Subcontinent) by interacting with the Geoscience Australia (AusLAMP), MT team. This is first of its kind in the country, especially to understand the conductive layers of the subcontinent and to plan successive exploration programmes. I am sure that this National Programme will take-off from the current year by procuring (process in progress) the latest MT instruments and training the teams.

The special efforts of Director (Fin), NM-II, Director (Fin) of Regions and the concerned teams resulted in full utilization (99.9%) of allotted Mission-II funds for fully supporting the mineral exploration projects without any financial lag during the FS. 2018-19 is appreciated. This year, there will be a challenge for meeting the financial demand by the large number of mineral exploration projects.

Nevertheless, I am sure, the legendary contributions of GSI to mineral industry since 1851, the year of establishment GSI with the scientific environment, motivation and support given by our Ministry of Mines will continue.

  
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