

Options for Skill Development in the Mining Sector

The country is well endowed with many metallic and non-metallic mineral resources. India is a leading player in respect of many non fuel minerals including, iron ore, bauxite, dolomite, lime stone and mica. Mining sector (non-fuel) currently accounts for approx 0.5% of GDP. For accelerated economic growth on sustainable basis, this sector has to grow at a much faster pace to secure a higher percentage in the GDP.

Scientific, sustainable and transparent mining practices require well trained manpower. Skill development not only enhances productivity and safety at work place, but more importantly, it prepares the manpower to adapt to the new state of art technologies. Currently this sector employs around 0.2 Million workforce which is estimated to grow to 0.3 Million in next 10 years. On supply side bridging this gap would require up-scaling of investments in building institutional capacity for meeting the additional demand for various category of human resources as projected below:

Addl. Requirement by educational qualification in Mining Sector (Non-Fuel)

Sl.No.	Educational qualification	2009-17	2009-2025
1.	Geosciences	43	79
2.	Engineers	7,514	14,968
3.	B.Sc/B.Com/other	4,926	9,575
4.	Diploma Engineers	28,720	60,544
5.	ITI Trained/12 th standard/10 th standard/school education	45,068	94,615
	Total	86,271	179, 781

To meet the ever rising demand of technically skilled human resources, networking with national and international agencies in promoting collaborative approach, evolving a long term human resource planning for the mining sector and establishing linkages between academia and industry are a few important steps in moving forward.

Despite presence of large network of institutions providing basic education and training in geosciences, and other mining related courses, seemingly investment in knowledge creation and development of expertise and up-gradation of skills of manpower has remained a challenging task. This involves corrective action by training of manpower in key technical traits, institutional strengthening and development of institutions, curriculum development, training

of trainers, faculty development etc. To achieve the same, development of public-private partnership (PPP) holds the key.

Views of stakeholders would help the Ministry of Mines to formulate appropriate policies in coordination with nodal ministries. In doing so following may be kept in view:

- The Skill up-gradation has to keep pace with advanced mining technology to which mining sector is getting exposed gradually. Designing the Technical and Vocational Education and Training (TVET) Framework to meet the specific/ emerging requirements of Non Fuel Mining sector could be important step in moving forward.
- Dominance of private sector in the Non fuel Mining Sector, calls for greater participation of private sector in the development of required skills for the sector. The National Skill Development Cooperation (NSDC) has been set up to promote up-gradation of skills through enhanced participation of industry and academia in PPP mode. Under its mandate of development of Skill Council, the Skill Council for Mining Sector (SCMS) has become operational in Sept 2013. This is in line with National Skill Qualification Framework (NSQF) which advocates for development of Sector Skills Councils (SSCs). The key issue, however, remains how to bring diversified set of stakeholders, small and big players operating in fragmented market conditions under one umbrella.
- Due recognition to acquired skills in up-stream and cross sector jobs has the potential to enhance labour mobility and job satisfaction. For this to happen, it is imperative to develop National Occupational Standards (NOSs) and Qualification Packs (QPs) for all the important mining streams.
- Sustainable mining practices would depend on skill formation in the fields of maintenance, beneficiation, R&D programmes, advanced technologies for reconnaissance and prospecting. Expeditious quantification of mineral reserves and development of value addition chains within the country would crucially depend on obtaining and harnessing appropriate skills.