MET-LAB CAPACITATION POSITIVE BENEFITS TO MINERS

The Department of Metallurgy has 4 main technical sections namely Extractive, Physical, Analytical, as well as the Ceramics Metallurgy. According to the Department's 5 year Development Strategy Plan, the Analytical Section was capacitated with new technologically advanced world class equipment to carry out a wide range of tests that assists Mining and related industries namely: Inductively Coupled Plasma –Optical Emission Spectrometer (ICP-OES),Wavelength Dispersive X-Ray Florescence Spectrometer (WD-XRFS) and Carbon and Sulphur Analyzer (CS).

Commented [CC1]: In our 5 development plan

In the National Development Strategy 1 (NDS1) mining is identified as one of the key pillars that will anchor the development of the nation as we drive towards the national vision of an 'Empowered Middle Income Economy by 2030.With the'USD12 billion-dollar Mining Industry by 2023' milestone already achieved, Commissioning of the ICP-OES, WD-XRFS and CS will contribute to NDS1 by:

- Increasing mineral resource accounting for export consignments and at production plants
- Enabling exploration of Rare Earth Elements and other mineral elements previously not assayed
- Improved analyses and quality control.
- Support for small and medium scale miners.
- Increased economic value from mining and mineral processing.
- Attracting international collaboration and investment.

OTHER EXPECTED BENEFITS OF THE INSTRUMENTS INCLUDE:

- Analyses of geological samples, from prospecting and mining to refining
- Determine raw materials, control the concentration process and quality control the final product
- Verification of the composition and purity of the extracted metals ores
- Analyses of rare earth elements, which are vital for the economy and advanced R&D
- Petroleum and Petrochemicals analysis through monitoring the production of fuels, oils, and additives, ensuring quality and compliance with standards.

- Evaluate materials and products with wide elemental coverage, concentration ranges and varied samples matrices.

These benefits result in:

- Faster Resource Evaluation
- Smelting Efficiency
- Material testing and Quality Control
- Blending Strategies
- Resource Management
- Process Automation
- Environmental Compliance and Sustainability by monitoring Carbon and Sulphur Oxide emission and detecting harmful waste in ores and dumps, e.g. Arsenic and Mercury, for responsible mining methods and healthy mining environments
- Detecting penalty and waste elements in iron ore
- Optimized Extraction Strategies.