



C.E.T.S

CENTMAX ENGINEERING TECHNOLOGY SOLUTIONS



CERTIFIED MINING PROGRAMS FOR PROFESSIONALS AND ARTISANAL MINERS

Our Partners and Clients



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PREAMBLE

Worldwide, approximately 30 million people depend directly on artisanal mining of many different minerals to provide for themselves and their families. However, poverty and a lack of education and training keep artisanal miners trapped in a cycle of rudimentary practices, which generate both environmental and health impacts. As the needs and motivations of artisanal miners are often ignored, previous attempts to deliver training projects have resulted in little sustained success.

STATEMENT

It is hard to characterize a general type of artisanal miner's family. In some regions artisanal mining is a secondary source of income for farmers, but in parts of the globe, artisanal mining is the main subsistence activity. Artisanal gold miners are typically poor, hardworking, illiterate, with little or no formal education, under health stresses, malnourished and often somewhat transient. As we consider successful approaches to education, it is helpful for us to remember that miners want to earn more money, and want their families to be healthier and more stable. Therefore, they can be enthusiastic learners.



Figure 1 Artisanal miners going about their work

It is also critical to remember that many may have had no experience of being a “successful learner”. Being acknowledged as being good at learning is critical to being confident enough to ask critical questions when we do not understand something. It is also important to establish the link between learning information and changing behaviors. Our goal in training mining families is behavior change. Whether it is using a new piece of equipment effectively, being able to do maintenance on equipment to ensure long-term use, or beginning to take the time to establish burning areas in villages, our primary focus is on establishing behavior change that enhances health and wealth.

OBJECTIVES OF OUR TRAINING PROGRAM

- Improve the health and safety of artisanal miners by providing training on proper safety protocols, such as wearing personal protective equipment, avoiding hazards, and handling chemicals safely.
- Enhance the technical skills of artisanal miners by providing training in mining techniques, such as excavation, drilling, and blasting, and processing techniques, such as crushing, grinding, and extracting minerals.
- Promote environmental management in artisanal mining by providing training on proper environmental management techniques, such as minimizing soil erosion, protecting water resources, and avoiding the use of harmful chemicals.
- Build the business skills of artisanal miners by providing training on budgeting, record-keeping, marketing, and negotiation.
- Foster compliance with legal and regulatory frameworks by providing training on mining laws, environmental regulations, and labor laws.
- Enhance social and community skills of artisanal miners by providing training on effective communication with other stakeholders, such as local communities, government officials, and other miners.

TRAINING PROGRAM

The training program will consist of the following components:

- **Health and safety training:** This component will cover proper safety protocols, such as wearing personal protective equipment, avoiding hazards, and handling chemicals safely.
- **Technical training:** This component will cover mining techniques, such as excavation, drilling, and blasting, and processing techniques, such as crushing, grinding, and extracting minerals.
- **Environmental training:** This component will cover environmental management techniques, such as minimizing soil erosion, protecting water resources, and avoiding the use of harmful chemicals.
- **Business skills training:** This component will cover budgeting, record-keeping, marketing, and negotiation.
- **Legal and regulatory training:** This component will cover mining laws, environmental regulations, and labor laws.

- **Social and community skills training:** This component will cover effective communication with other stakeholders, such as local communities, government officials, and other miners.

METHODOLOGY

The training program will be delivered through a combination of classroom sessions and hands-on training in the field. Participants will be assessed through practical assessments. The training will be delivered by our qualified trainers with experience in the mining sector.



Figure 2 Our team of experts engaging the society and some miners

EXPECTED OUTCOMES

The expected outcomes of the training program are to:

- Improve the health and safety of artisanal miners by reducing accidents and injuries.
- Enhance the technical skills of artisanal miners by improving the quality of mineral extraction and processing.
- Promote environmental management in artisanal mining by reducing negative impacts on the environment.
- Build the business skills of artisanal miners by improving their ability to manage their operations effectively.
- Foster compliance with legal and regulatory frameworks by improving the understanding of mining laws, environmental regulations, and labor laws.

- Enhance social and community skills of artisanal miners by improving their ability to communicate effectively with other stakeholders.

CONCLUSION

Our training program is designed to address the challenges faced by artisanal miners in various regions and settings. By improving the skills and knowledge of artisanal miners, we can promote sustainable.

OUR TEAM OF EXPERTS

No	Technical staff	Qualification	Position in the company
1.	Prof. Andrew Muwanaga (35 years experience)	Qualification: ✓ Ph.D. in Environmental Geochemistry, Technical, University, Braunschweig, Germany ✓ MSc. in Engineering Geology, University of Leeds, UK. ✓ BSc. (Upper Second Class Honours) (Geology, Chemistry), Makerere University Memberships: ✓ NEMA Certified Environmental Practitioner/Auditor ✓ Uganda Association for Impact Assessment ✓ Geological Society of Uganda ✓ Geological Society of Africa ✓ Leeds Engineering Geological Society	Chief Technical Consultant
2	James Ecau (10 Years)	M.Sc Geosciences (Univ. of Manchester) and Production, BSc. Geological Resources Management (MUK) Memberships: ✓ EAGE ✓ Geological Society of Uganda ✓ Geological Society of Africa	General Manager and Team-Lead
3.	Rodrick Mulinde (5 years)	Bsc Geology	Geologist
	Angumenawe Nichodemus (15 years)	Diploma Workplace Safety and Health, Diploma Environmental Science, Occupational health and safety Certified ✓ NEBOSH ✓ IOSH ✓ OPITO	QHSE Consultant

RECENT PROJECTS

S/N	Projects	Client(s)
1	Jan, 2018 –to-date <ul style="list-style-type: none"> Field geological mapping of Marble and Granite Quarries Geological Sample analysis and interpretation, Reserve estimation of Marble & Granite quarry for dimension stones 	Mechanized Agro (U) Ltd, P.O. Box 16616, Kampala (Project Areas include: Kotido, Mubende and Mukono)
2	Nov to 2019 Dec,2021 <ul style="list-style-type: none"> Field Geological Mapping Supervision of Core drilling (up to 250m Depth), Core Sampling and Logging of Ultramafic rock formation, Quarry Reserve estimation 	Pearl Mining (U) Ltd P.O. Box 2903, Kampala; project areas are in the Rift Valley, Mubende and Mukono)
3	September, 2019 to July,2020 <ul style="list-style-type: none"> Geotechnical design of oil waste dump sites Well designs for ground water wells Ground Resistivity Measurements for oil waste dump sites Environmental Impact Assessment Soil Classification and Compaction studies Borehole data acquisition and interpretation Borehole drilling Supervision 	CNOOC Uganda Ltd (Project was at King Fisher - Block 3 Area, Albertine Graben)
4	August 2019 to June, 2021 <ul style="list-style-type: none"> Geotechnical and Environmental Impact Assessment for an Iron Ore Processing Plant Use of Gold Scanner (<i>Vector Trek- long Range Scanner</i>) for mapping precious metals Soil and Stream Sediment Geochemical exploration Ground water Investigation and Hydrogeological investigations Geophysical mapping GIS and Remote Sensing Mapping 	Banta Investments Uganda Ltd P.O Box 7459, Kampala (Projects in Gold exploration and Mine development in Ibanda, Mubende, Muko-Tororo, Grounwater projects across Uganda)
5	March, 2018 to date <ul style="list-style-type: none"> Geological mapping and sampling for Limestone Lab and Core Analysis supervision Drill-hole supervision 	Bamburi Minerals Co. (U) Ltd, P.O. Box 5136, Kampala, Projects were in Kasese, Kotido and Tororo
6.	March 2018 to September 2019 Review of Energy and Mineral Development Sector Development plan for the key government institutions in Uganda	GIZ Funded Project-for ADROIT CONSULT INTERNATIONAL