

CES EXPERTISE IN THE HEAVY MINERAL MINING SECTOR

CES was established in 1990 as a specialist environmental consulting company. We now have offices in South Africa (Cape Town, Port Elizabeth, Grahamstown, East London and Johannesburg) and a wholly owned subsidiary in Maputo, Mozambique.

CES SPECIALISES IN ENVIRONMENTAL & SOCIAL ADVISORY SERVICES

Our principal area of expertise lies in assessing the impacts of the development process on the natural, social and economic environments through, among other instruments, the environmental and social impact assessment (ESIA) process. We believe that by offering these services we contribute meaningfully towards sustainable development.

We adopt a scientific approach to our studies, underpinned by an informed and holistic view of the environment and a pragmatic approach to sustainable development. This results in deliverables that are robust, defensible and credible. This is important for both the project and EIA processes, as is the objectivity, sincerity and professionalism of our approach. We believe that a balance between development and environmental protection can be achieved by skilful and careful planning. Our outputs reflect this.

Our track record across over 20 African countries and other emerging economies is evidence of the value add we bring to the environmental and social advisory services we provide. Our more than 30 years of advisory services has contributed to our deep understanding of the environmental and social challenges associated with establishing and operating facilities and infrastructure in emerging markets. Our staff is usually comprised of over 25 consultants and approximately 10 support staff. All professional staff members are well qualified, and as many as 90% have advanced postgraduate qualifications, including PhD, MSc and MA degrees in the biological, social and environmental sciences, and most have the required professional registrations to practice as environmental or social experts.

CES started working in Mozambique in 1995, on a large mineral mining EIA in Zambezia Province, and have been involved in projects in Mozambique every year since then.

We are familiar with the various methods used to extract minerals, from dry mining (front end loaders and dozers), hydro-mining and dredge mining. We are therefore able to assess impacts and risks associated with these various methods.

For all projects listed below we were the lead environmental and social assessment practitioner, taking full responsibility for managing the ESHIA process and meeting both local legislative and international standards and guidelines. Many of these also included the development of Resettlement Action Plans (RAPs), inclusive of quantitative socio-economic and asset inventories, achieved by using electronic tablets and capturing data digitally in the field. We benchmark our ESHIAs against the International Finance Corporation's eight Performance Standards, as well as World Bank's Environmental and Social Safeguards and African Development Bank standards. We have a demonstrated ability to manage ESHIAs for large and complex mining projects, some of which have been rigorously reviewed by the World Bank, MIGA, European Investment Bank, IFC, African Development Bank and the Dutch Development Bank (FMO). Generally, these reviews have entrenched our reputation of producing quality products within tight deadlines and budgets.

For more information see www.cesnet.co.za



ENVIRONMENTAL PROJECTS SPECIFIC TO THE MINERALS SECTOR

Kenmare Moma titanium mineral sands mining projects, Nampula Province (2000 - current)

All the ESHIAs prepared and completed by CES have been approved by the relevant in-country authorities and environmental licenses issued.

1989-1992: ESIA for Richards Bay Minerals of proposed mineral mining on the eastern shores of Lake St Lucia.

1998-1999: ESIA for the TiGen Project, acknowledged by relevant Mozambique authorities as one of the most comprehensive EIAs undertaken in Mozambique at that time.

1998-2002: ESIA for Tiomin Resources Incorporated (Canada) Kwale Project, various construction and operational Environmental and Social Management Plan (ESMP) and a Resettlement Action Plan (RAP).

1998: Pre-feasibility environmental assessment on behalf of BHP (Australia) for the Moma Heavy Mineral Sand Mine in the Moma District of Northern Mozambique.



1998: Pre-feasibility environmental assessment for the Southern Mining Corporation of a proposed heavy mineral mine at Chibuto, Gaza Province, Southern Mozambique.

2000: Detailed feasibility phase ESHIA to international standards for Kenmare Resources Plc. (Dublin) Moma Project, and numerous addendum EIAs.

2000: Strategic Assessment of the Centane area of the Wild Coast IHM Heavy Minerals and the Centre for Investment Promotion in the Eastern Cape (CIMEC) to evaluate various land-use options, including heavy mineral mining.

2002: Initial environmental assessment for a project in south-western Madagascar for Société D'exploitation Madagascar SARL, and subsequently (2005) an ESIA for what became the Toliara Sands Project for Exxaro Sands (SA).

2000-2005: Bankable feasibility phase ESIAs to international standards and all environmental and social aspects relating to the Corridor Sands Project, including an ESIA for a 87km rail link; port and ship loading facility at Matola; 200km long 400kV power line, ESMPs for all aspects of the project, and management and implementation of the resettlement process, based on a RAP prepared by CES.

2006: Initial environmental assessment for the Chipoka Mineral Sands Project, on the shores of Lake Malawi, and subsequently a bankable ESIA for the Chipoka Sands Project, also to World Bank Standards.

2007: Order of Magnitude Study (pre-feasibility baseline studies) for Rio Tinto Mining and Exploration Limited. This was completed for two mineral sand deposits located in Chilubane and Mutamba licence areas, on the coast of Mozambique near Inhambane.

The studies improved Rio's understanding of the biodiversity of the dune, lake and wetland ecosystems surrounding the concession areas, and determined the potential environmental impacts of any mining project, both from a biodiversity management and reputation risk perspective.

2008: ESIA for the El Burullus Heavy Mineral Sands Mining Project in Egypt, as part of the full feasibility study undertaken by Downer EDI of Australia.

2010-2011: Environmental and social management services to Kenmare Resources, including on-site professional services. Culminated in the issuing of a lender's compliant environmental completion certificate.

2010: Addendum ESIA for Kenmare Moma's expansion project, which covered the establishment of a second dredge and the doubling up of production.

2011: Scoping phase of an ESHIA for Kenmare's Nataka Project, Nampula Province, Mozambique.

2013: Comprehensive ESHIA to IFC Standards for dry-mining extraction of heavy minerals along the coastal dune belt for the Toliara Sands Project - Ranobe in Madagascar. Draft ESHIA Report disclosed to public and regulatory authorities in April 2013 and environmental licence issued.

2013: Environmental risk assessment for the proposed Kenmare Nataka titanium mineral sands mining expansion project, Nampula Province.

2013-2015: Gap analysis and IFC compliance audit of the E&S performance of Kenmare Resources' Moma project. The audit was against the requirements of the IFC Performance Standards (2012) as well as the Equator Principles III (2013). The primary deliverable was a gap analysis report highlighting potential gaps in performance and, where appropriate, actions to be taken to address these gaps.

2013-2015: EIA for a heavy mineral mine in the Northern Cape Province of South Africa. A large number of the specialist assessments were conducted internally by CES specialists. The project has been completed and a positive Environmental Authorization was issued. CES continues to provide E&S advisory services to Zirco Resources.

2015: Environmental risk assessment for the proposed Kenmare Pilivilli and Congolone mining expansion projects.

2016-2017: Addendum ESIA process for World Titanium Resources proposed Toliara Sands Ranobe project.

2017: Numerous constructions and operational ESMPs for World Titanium Resources proposed Toliara Sands Ranobe Project.

2017-2019: ESHIA and RAP for Kenmare Resources proposed Pilivili expansion project, Nampula Province, Mozambique.

2019-2020: Kenmare Pilivilli mining expansion projects, full ESHIA of the mining area and a second ESHIA for the dedicated haul road required to move the Wet Concentration Plant. RAPs were also prepared for

both projects, and the ESHIA and RAPs were approved by the Mozambican Authority.

2021: CES provided international expertise to the Brazilian company RGM Minerals on rehabilitation, environmental monitoring and the closure processes for their Retiro project located in Brazil, along the coast adjacent to the Rio Grande.

2021-2022: Addendum ESIA process for Kenmare's proposed Pilivili Deposit in Nampula Province, Mozambique.

2022-Current: Two separate ESHIA processes as well as two Resettlement Action Plans for Kenmare's Nataka Deposit, Nampula Province, Mozambique.

2023 – Current: Environmental Impact Assessment (EIA) for an additional mining area for the proposed Zirco Heavy Minerals mine near Garies in the Northern Cape. The EIA will meet the South African legislative requirements as well as the IFC Performance Standards.

