

Environmental impacts of coal mines: a case study at Kiwira coal mine Tanzania

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Coal is a solid fossil fuel extracted from the ground. It is mainly used as a source of heat energy, and also in form of coke in the extraction of iron. Coal exploration, mining and utilization result into numerous environmental and social problems. This research focuses on the assessment of the impacts of Kiwira Coal Mine project taken as a sample coal mine, to the environment. The project has an underground mine, a coal processing plant and a 6 MW coal fired electricity generation plant and has been in operation for 18 years. Water samples from strategic points were taken and analyzed for ten parameters. Gas emissions from project operations were directly measured or estimated by rapid assessment method. Physical observation of the project area, direct interviews and a questionnaire were used to gather social and environmental information. The research study identified impacts including pollution of water resources and air, loss of aesthetics, potential accident to animals and people and deforestation. On the other hand the project had a direct developmental effect to the surrounding communities. The research concludes that Kiwira coal project has both adverse and beneficial effects to the environment; however effluent water has to be treated before discharging to Kiwira River. The project management must also ensure that emissions control devices and systems are installed for mercury, acid gases from the power plant and dust. There is also a need to promote the use of coal briquette for domestic energy needs to save forests. A long term environmental audit research study in the project area is recommended.