Geosciences for the sustainability of Brazilian mining

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Mining in Brazil can be understood as superimposed models, with the predominance of one or the other in some historical periods, and with more complex models substituting for the simpler ones in some points of the territory, while in others the cycle is just beginning.

The models are: small mines, with inadequate technology; large mines, with inadequate technology; mines with adequate extraction technology, but without environmental control; mines with environmental control. The main impacts of this mining are: deforestation, air and water pollution, landscape degradation, conflicts with other land uses and social impacts, in a frame of an extensive but confuse legislation and a deficient licensing and enforcing system.

The main proposals for sustainability are: rationalization of legislation, fiscal incentives for mining; real warranties for reclamation; research and diffusion of environmentally sound technologies; better communication with society; insertion of mining as a legitimate land use in municipal planning and participation of the University in research and training for sustainability. Future geologists and mining engineers should be educated as environmental professionals with an attitude of respect to the human beings and to the other beings, animate and inanimate, learning science and being involved in actions for the defense, the rational use and the recovery of the environment. The conscious professionals should act to disseminate the understanding of the importance of rational mining. The concerned citizens will have conditions to demand a mineral production that meets their needs without destroying the environment.