

The Rationale for Degassing Lakes Nyos and Monoun

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Until the late 70's, information on CO₂ potential hazards at the earth's surface was essentially limited to the massive releases of this gas from volcanoes but since the early 80's, over two thousand people are known to have lost their lives from explosions of CO₂ previously trapped within the earth or in some crater lakes. In 1979, some 179 people died while escaping from an impending eruption of the Dieng volcano in Indonesia and in 1984 and 1986 respectively, explosions of Lakes Monoun and Nyos, both in Cameroon, released huge amounts of CO₂ that claimed the lives of about 1800 people and thousands of livestock. The death of a considerable number of people and animals as well as plants in less spectacular circumstances, cleaning of wells, digging of pit latrines and the yearly death of elephants and other animal species in the fabled "African death valleys" around Lake Kivu etc., has also been attributed to CO₂ asphyxiation. In all of these cases, the CO₂, derived from deep magmatic sources, is initially trapped in gas pockets within the earth or in the deep lakes prior to release, as was the case in Lakes Nyos and Monoun. Lake Nyos, in addition, holds another impending disaster, that of flooding, resulting from the potential rupture of the fragile pyroclastic dam at its outlet. Such a rupture will trigger a coupled gas-flood disaster with tremendous trans-border consequences downstream. Controlled degassing aimed at removing the gas to acceptable levels was initiated in 2001 at Nyos and 2003 at Monoun. The survivors of the Lake Nyos disaster, ~5000, were resettled and given land and tools/means to enable them start a new life in their new environments. The loss of grazing and farmland at Nyos as well as an economic lifeline by the Monoun fishermen, coupled with inherent socio-cultural consequences, has caused them considerable hardship. The demographic pressure on the land and utilities is enormous and after almost 20 years, many are still eager to return and some have already done so regardless of the dangers still lurking in these lakes as well as the total absence of social facilities.