

MEDICAL GEOLOGY IN MADAGASCAR: PRELIMINARY REVIEW

LALA ANDRIANAIVO^{1*}, VOAHANGINIRINA J. RAMASIANORO²

¹*Université d'Antananarivo, Ecole Supérieure Polytechnique, Antananarivo, 101, Madagascar*

²*Université d'Antananarivo, Faculté des Sciences, Antananarivo, 101, Madagascar*

andrianaivol@gmail.com

Madagascar is an island in south-west Indian Ocean, with an area of 581540 square kilometer and having a population of over 20 million spread over 24 Regions and a territory with varied geological domain. The land-water ecosystem developed in response to geological, geochemical and hydrodynamic processes vary from place to place. Thus, the distribution and the concentrations of various natural elements also vary. Areas of excess or deficient concentration of essential trace elements and heavy metals related to health are therefore not well defined. On the other hand, geogenic processes leading to health hazards have now been established in a few countries of the world but these processes are not well known by scientific community in Madagascar. The relationship between medical treatment and geology and studies on aspects of Medical Geology in the country are rare and sparse. Many geoscientists are not totally convinced that geology can solve problems related to human health. Hot springs are included in the concept. Heavy metals and other constituents in hot spring waters can be very useful for health but sometimes also toxic for human health. Madagascar's hot springs have been utilized for bathing from ancient times mainly for medical and convalescent purposes. Therefore, the different properties and the impacts on human health of water springs are described in this chapter. An important point to note is that no systematic studies have been carried out to establish geological linkage with diseases; nevertheless, case histories of endemic diseases are reported from different parts of the island. Two major endemic diseases on account of geogenic reasons are related to deficiency concentrations of magnesium and calcium.

Keywords: Mg, cardiovascular disease, hot springs