

Coral ecosystems, usually found in the shallow waters of the globe, are more and more vulnerable due to global change. These aquatic ecosystems, among the most diverse and the most extensive on the planet, are particularly impacted by the increasing human activities over the past two centuries. The ecological consequences reflect the deterioration of their state of health with the bleaching of corals due to rising temperatures, and the regression of the growth or even the atrophy of the carbonate skeleton of corals, this phenomenon being directly related to oceans acidification (significant anthropogenic CO₂ storage in the ocean). Although the majority of the studies carried out on this subject show the disturbance of the system of the carbonates, some corals would be able to acclimatize to the acidification of the oceans. It is in this context that the primary objective of the ACCLICOS project is to identify the physiological mechanisms implemented by corals to cope with global change. In this respect, recent studies (ANR CARIOCA) have revealed three natural sites in Papua New Guinea and New Caledonia presenting extreme pH / CO₂ conditions (close to the values predicted by the evolution scenarios of the IPCC by 2100) and harboring coral reefs. These sites are therefore of major interest to study the possible acclimation of corals to anthropogenic forcings. The latter will be studied using the isotopic signatures (geochemical approach) of the internal calcification fluid in order to trace the different physiological mechanisms regulating the rate of biomineralization of corals and to better predict their future.