Santorini volcano, the most active field of the Aegean volcanic arc, has suffered several explosive eruptions. The latest catastrophic one, the so-called Minoan eruption, destroyed an advanced civilization and shaped its present geomorphology by triggering a large caldera collapse. At present, the volcano is in a dormant stage, however its intense hydrothermal field and local seismicity imply for an active regime. Although the geodynamics of the area is well known through several surveys which have been carried out, evident is the lack of combined information of both volcanic and seismogenic fields that could assemble to an intergraded local hazard assessment/management system. On that purpose, between 2001 and 2003, we studied the correlation between volcanic and seismic activity and investigated for probable precursors of such phenomena, by implementing the following tasks:

1. Systematically monitored fluctuations of the hydrothermal exhalations of the volcano most active spots by using data of the permanent ISMOSAV continuous recording telemetry system and conducting several in situ measurements.

2. Installed a 6 stations temporary broadband seismic array (SANNET) to record local seismic activity. It was installed twice, in 2001 for a period of 4 months and in 2003 for a period of 6 months. 

SANNET recorded 330 local earthquakes with 1.0≤Μ≤4.0, mainly lineated in ≈N60°E direction NE of the caldera, while their depth distribution (>20 km) implies for a strong heterogeneity within the whole lithosphere of the area. In general, oscillations of the monitored physicochemical parameters values do not exhibit reactivation of the volcano, when compared to preexisting data. However, the detailed comparison of the hydrothermal field fluctuations with the spatiotemporal local seismic energy distribution reveals significant correlation, for most of the monitored physicochemical parameters of the volcanic field, such as soil temperature, sea water level, CO₂ flux, water and soil Radon content, water conductivity, pH, Redox. This correlation is especially evident during May-June 2003, when a local swarm of type A earthquakes occurred NE of the caldera. Results and perspectives from this multiparametric survey will be presented and discussed.