To make successful mid-term eruption predictions, we need to detect particular precursory processes operating in magma-plumbing system. Since 1989, we have detected the secular re-inflation of Izu-Oshima volcano and further revealed repeated deflation-inflation cycles, resulting a net inflation of the volcano. The rate of secular inflation decreased exponentially until 2006, and then kept a constant speed and the amplitude of deflation-inflation cycles increased. The activity of deep low-frequency (LF) earthquakes occurring at depth ranges of 30-40 km beneath the volcano, increased after 2007, and the LF activity preceded each inflation event. We naturally suppose that the volcano inflation is caused by the supply of magma from depths. What is the origin of the deflation? There are two possible processes, the contraction of magma due to degassing and magma drain back. In order to discriminate the deflation mechanisms, we need to combine data on the magma accumulation and degassing processes. To monitor the degassing of basaltic magma accumulating beneath the volcano, CO2 is most helpful. In September 2005, we started continuous monitoring of soil CO2 concentration at the summit of Izu-Oshima volcano, and obtained an evidence for the degassing process; the correlated increase of soil CO2 concentration during the periods of not only accelerated inflation but also deflation of the volcano. Integrating the observation data, we suppose that the rate of magma supply from the upper mantle has increased since 2007 and caused an increase of CO2 over-saturated region at the upper part of the magma reservoir beneath the volcano.