The region of Huatusco, in Veracruz, Mexico, is an area of high coffee production. Coffee trees are sensitive to temperature and precipitation variations. Those climatic elements are related to the altitude, aspect and slope in the agroecological shadow system. A baseline climatic scenario was introduced on ombrothermic diagrams to relate the periods in which the reproductive phases of the coffee tree develops with the climatology of the region. This method was developed in order to achieve a better knowledge of the possible impacts of climate change on the flowering and fruit development in the species Coffea arabica and C. Canephora.

Increases of temperature and changes in precipitation were obtained using the outputs of two general circulation models, and applied to the basic ombrothermic diagram, in order to measure the possible impacts on the stated reproductive phases. According to those two climate change scenarios, important differences in regional climatology can be projected, and therefore strong impacts were detected: changes of the beginning of flowering which is related to the mean rainfall, and the extent of the preestival drought during the winter months. Also, climatic change could impact the water availability during the fruit growing period, which is related the modifications in water surplus and to the increase of the intraestival drought during the rainy season of the year.