**Abstract**

Coffee is one of the trademarks of Colombia. Currently, up to a half million Colombian families depend directly on coffee production for their livelihoods. As such, there has been increasing concerns about how coffee productivity will react to changing climate conditions and how coffee growers could adapt their production practices. This paper is one of the first to estimate the production function of Colombian coffee at the municipal level and to make projections about its future productivity. Using a panel dataset measured across municipalities over 2007-2013, we find that productivity depends on altitude as well as on March temperature and precipitation. We estimate projections based on the 2.6, 4.5, and 6.0 Representative Concentration Pathways derived from Global Circulation Models to find out that productivity over 2041-2060 is expected to increase by 7.6% on average. However, we find that this forecast varies greatly according to altitude. Indeed, municipalities above median elevation will increase their productivity by 16%, while those below the median will experience a 8.1% decrease in productivity. This result implies that place-tailored strategies for coffee production in Colombia are required to adapt to changing climate conditions in the future.

**Keywords:** Production function, altitude, Global Circulation Models, prediction.