**Article highlights**

* RCP4.5/8.5 scenario analysis showed greater variability in precipitation up to 180% increase and 90% decrease for all hot spots of the southern India
* The scenario analysis predicted extreme variation in temperature levels ranging from 0.5–8.5ºC increase for the entire study region.
* Ecophysiological studies showed that coffee (robusta) would adapt well to future challenging climatic condition closely followed by cardamom and black pepper.