

Analysis of the Impact of Climate Change on Maize (Zea Mays) Yield in Central Ethiopia

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Abstract : Climate change refers to a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or variance of its properties and that persists for an extended period, typically decades or longer. In Ethiopia; Maize production in relation to climate change at regional and sub- regional scales have not been studied in detail. Thus, this study was aimed to analyse the impact of climate change on maize yield in Ambo Districts, Central Ethiopia. To this effect, weather data, soil data and maize experimental data for Arganne hybrid were used. APSIM software was used to investigate the response of maize (Zea mays) yield to different agronomic management practices using current and future (2020s-2080s) climate data. The climate change projections data which were downscaled using SDSM were used as input of climate data for the impact analysis. Compared to agronomic practices the impact of climate change on Arganne in Central Ethiopia is minute. However, within 2020s-2080s in Ambo area; the yield of Arganne hybrid is projected to reduce by 1.06% to 2.02%, and in 2050s it is projected to reduce by 1.56 While in 2080s; it is projected to increase by 1.03% to 2.07%. Thus, to adapt to the changing climate; farmers should consider increasing plant density and fertilizer rate per hectare.

Keywords : APSIM, downscaling, response, SDSM

Conference Title : ICESCC 2016 : International Conference on Earth Science and Climate Change

Conference Location : Montreal, Canada

Conference Dates : May 16-17, 2016