Several climate change related factors including temperature increases, changes in rainfall patterns and outbreak of pests and diseases negatively affect agricultural productivity and food security. Climate change effects significantly increase production risk and rural vulnerability, particularly in regions that already suffer from chronic soil and water resource scarcity or high exposure to climatic extremes, such as droughts and flooding. The effects of climate change on agriculture may depend not only on changing climate conditions, but also on the agricultural sector’s ability to adapt through changes in technology and demand for food. Significant proportions of the growing populations in developing countries derive their livelihoods from agriculture and are, therefore, vulnerable to climate change effects. The task of eradicating extreme poverty and hunger by 2015, as per Millennium Development Goals, will require both regional and global research efforts and concrete actions among which biotechnology adoption plays a key role. Advances in biotechnology can lead to cutting-edge technologies in agriculture. However, Sub-Saharan Africa faces an uphill battle with regards to the adoption and use of agricultural biotechnology. The potential to improve the livelihoods of resource-poor farmers is a strong incentive to meet the challenge. This paper reviews research work on climate change in relation to increasing food insecurity situation in Sub-Sahara Africa, and the significance of plant biotechnology in reversing the alarming food insecurity trends on the continent. To move plant biotechnology forward, the paper recommends that African countries institutionalize effective bio-safety regulatory frameworks, and commit resources and funding into capacity building and provision of infrastructure for biotechnology development. Funding of GM-related research into tropical and sub-tropical staple foods, suitable for the needs of small-scale farmers in SSA countries, is strongly recommended. There is also the need for researchers to engage in effective education and communication with the general public so as to enhance adoption of biotechnological products in Africa.

Key words: Climate, Change, Food, Security, Biotechnology

Keywords: Climate, Change, Food, Biotechnology