A survey was carried out to determine the causes of low vegetable production by looking at the challenges faced by organic based smallholder farmers and the potential coping strategies employed and their experiences, coping and adaptation strategies to climate change and variability (CCV). The study’s objective was to determine the major vegetables grown, marketable quality attributes, challenges faced and coping strategies to enhance vegetable production and understanding of CCV. More than 60 organic based farmers from Kajiado, Kiambu and Muranga counties of Kenya were selected for the survey through questionnaires. The data collected was analysed using SPSS. The challenges faced in production of the key vegetables included; unpredictable rains 85%, lack of irrigation equipment 43%, crop pests and diseases 28%, among others. Causes of CCV cited were; deforestation and poor agricultural practices (62%) and emission of green house gases (33%). Effects of climate change were (80%) reduced crop yields. Ninety percent of farmers responded to the effects of CCV through good agricultural practices such as; agro-forestry, mulching, organic inputs, drought tolerant crops and rain water harvesting. The farmers contended that through trainings and exposure, they would be empowered to cope with and reverse the negative impacts of CCV and consequently guarantee food and nutritional security. In addition, research efforts ought to be directed towards soil analysis, irrigation and greenhouse production and recommendations on site specific input rate application made available to the farmers.