Agriculture is an important economic activity in Africa. Farmers rely on chemical fertilizers and pesticides for soil enrichment and management of crop pests and diseases respectively. Chemicals are toxic to humans and nontarget organisms, pollute the environment and are expensive. Farmers also rely on rain-fed agriculture and often, rainfall variability results into crop failure. Therefore, there is need for alternatives to synthetic pesticides, chemical fertilizers and rain-fed farming in pursuit of sustainable agriculture. Biofertilizers and biopesticides are viable options for managing soil fertility, pests and diseases. Similarly, hydroponic farming offers solutions to unreliable rainfed agriculture. This study investigates the use of botanical pesticides and rhizo-biofertilizers for improvement of tomato yield in soil and hydroponic systems among smallholder farmers in Tanzania. The aim is to contribute towards food safety, environmental health and economic sustainability.