

Survey for Pest and Natural Enemies of Amaranth and African Nightshades in Kenya and Tanzania

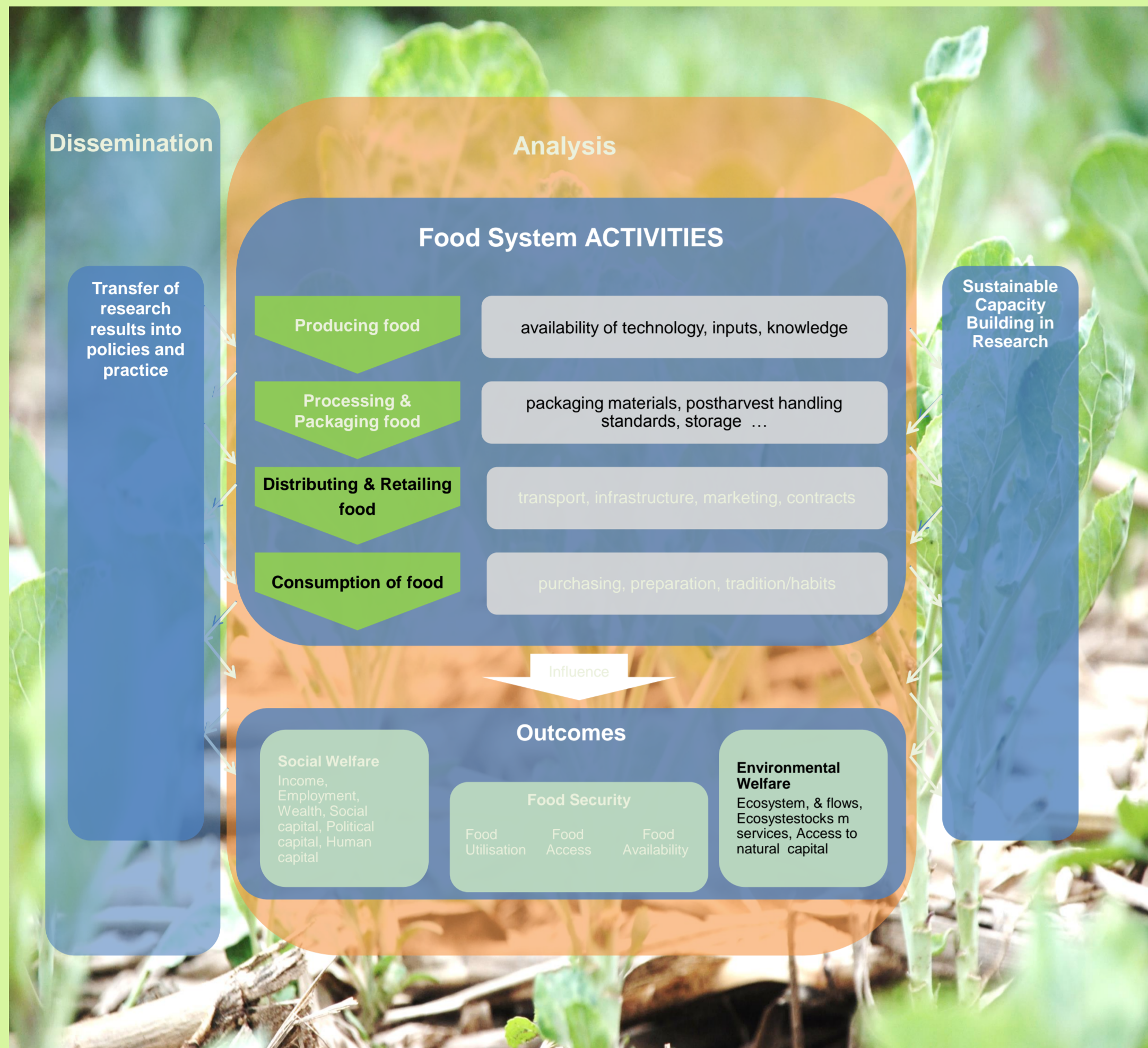


D. M. Mureithi^{2,3}, J. K. Mworio^{1,2}, R. Meyhöfer², L. K. Murungi¹,
T. Losenge¹, K. S. Akutse³, S. Ekesi³, K. K. M. Fiaboe³

¹Jomo Kenyatta University of Agriculture and Technology, Horticulture Kenya
²Leibniz Universität Hannover, Inst. Hort. Prod. Systems - Sect. Phytomedicine, Germany
³International Centre of Insect Physiology and Ecology, Plant Health Division, Kenya



HORTINLEA Framework



INTRODUCTION

Leaf amaranth and African nightshades are among the most consumed indigenous vegetables in the East African region. However, their production is faced with several challenges - key among them being attack by arthropod pests.

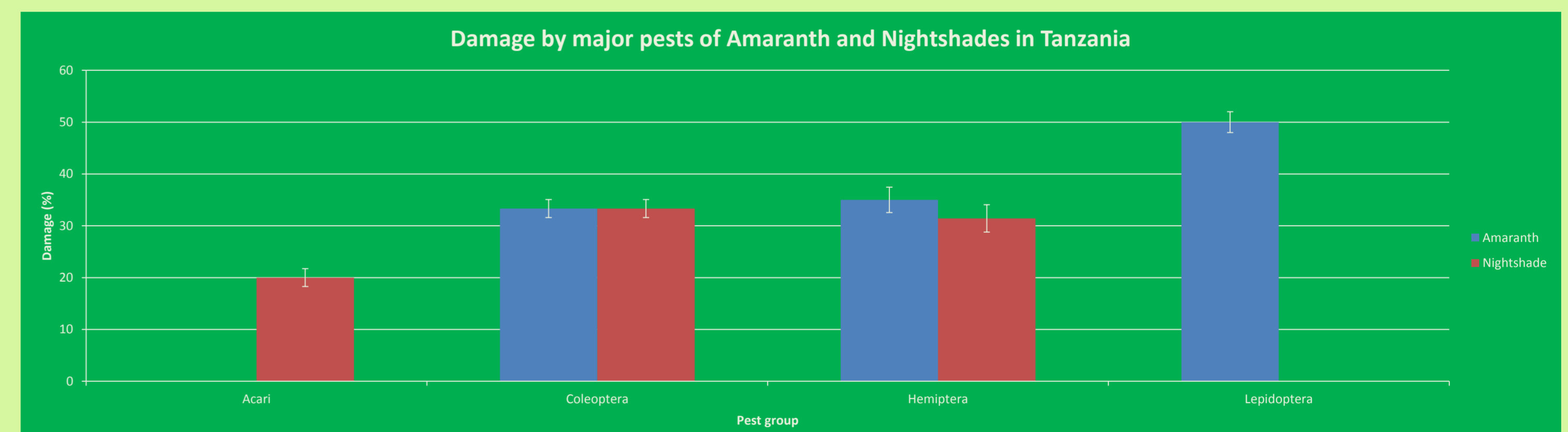
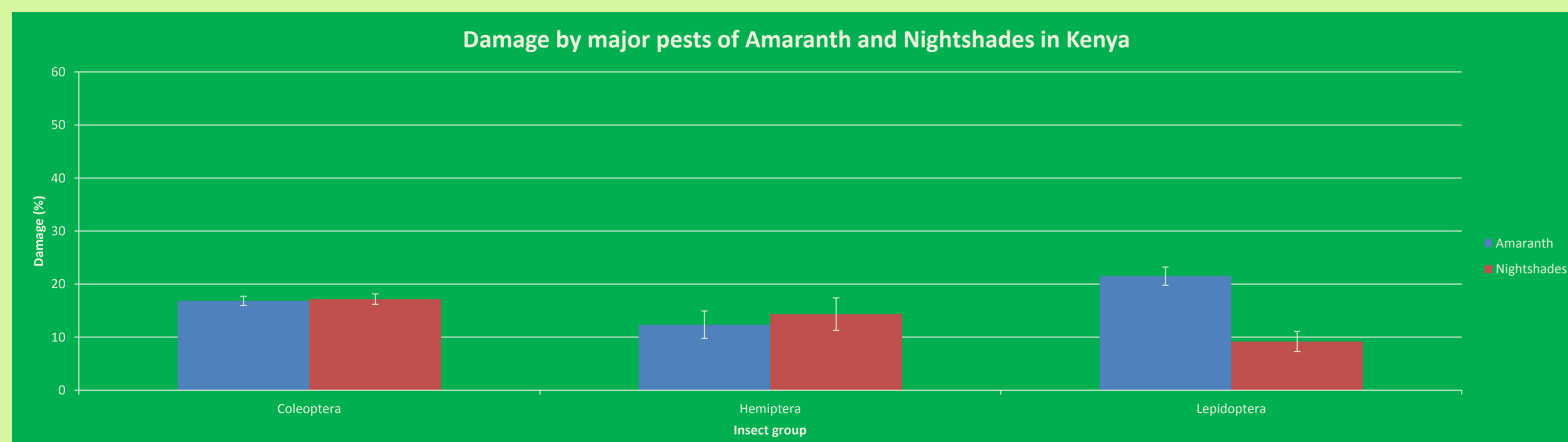
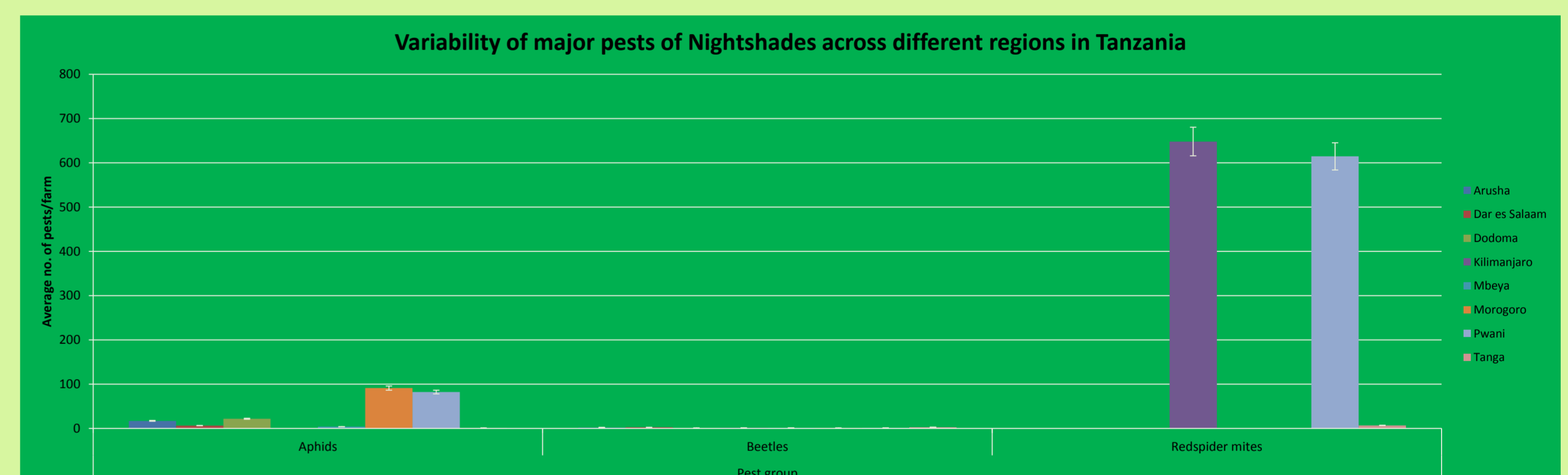
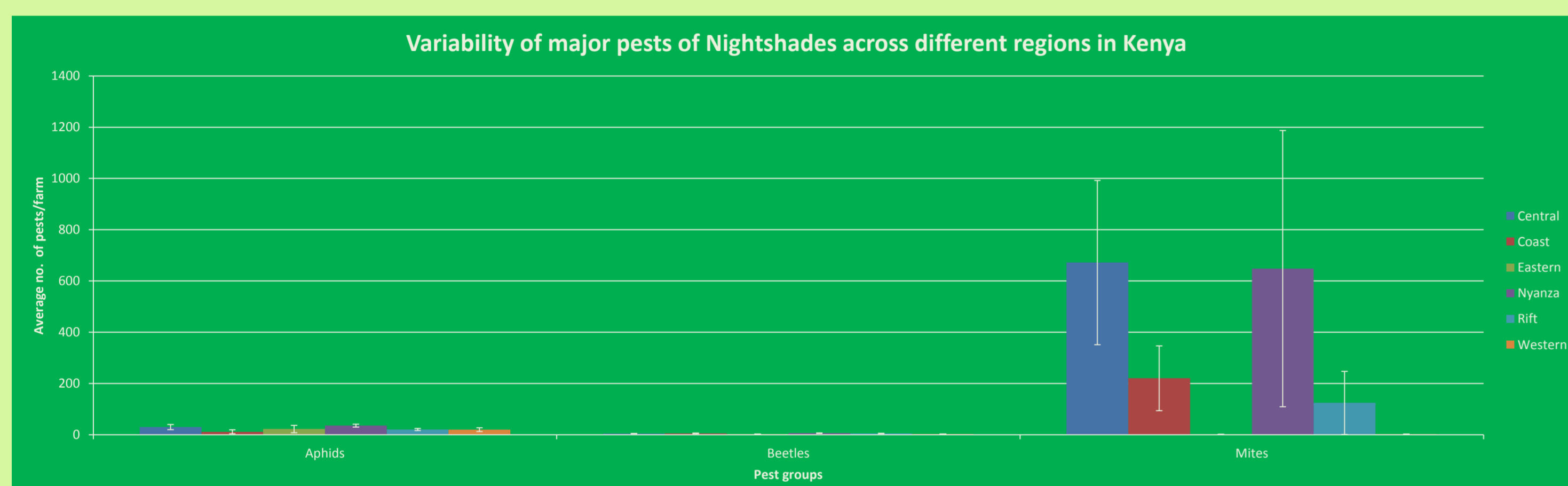
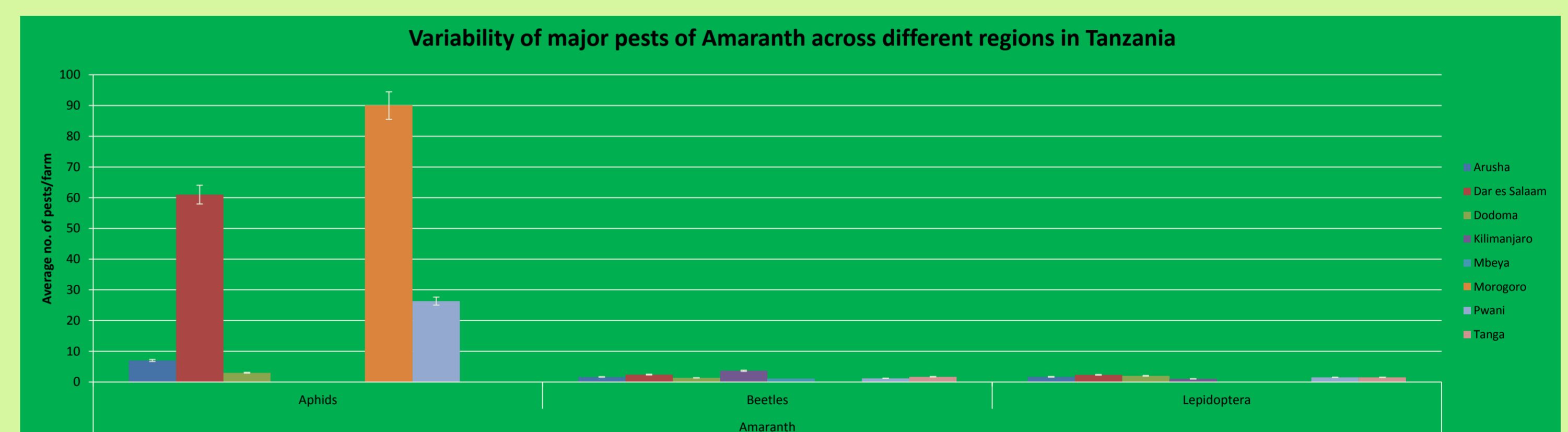
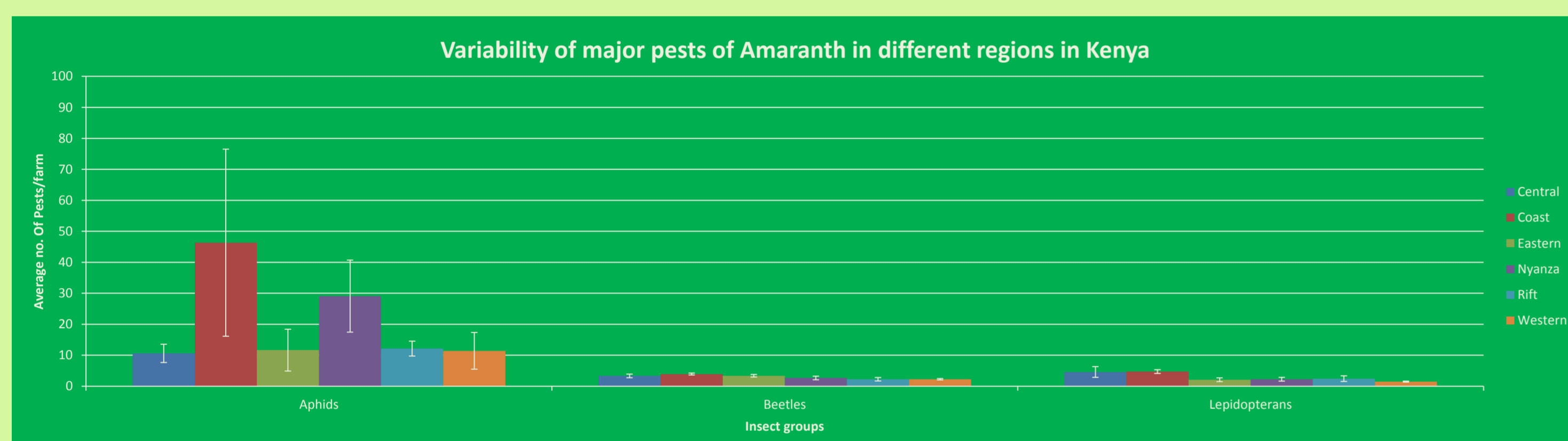
Until present, comprehensive survey for pests the two crops in the region has not been undertaken. The study was aimed at determining the major pest groups of leaf amaranth and African nightshades in various regions in Kenya and Tanzania. It also sought to assess damage caused by key arthropod pests on leaf amaranth and African nightshade in the two countries.

The survey findings were important in identification of the key pests to be addressed and the potential natural enemies that could be used for their management.

MATERIALS AND METHODS

- Baseline survey activities were conducted to identify the diversity, distribution, incidence, and damage of arthropod pests infesting leafy indigenous vegetables, i.e. Leaf amaranth and African Nightshades and natural enemies.
- 289 farms (15 counties) in Kenya and 209 farms (16 districts) in Tanzania were surveyed in two seasons of the year 2014.
- Visual examination of the plants, shaking, beating, sweeping and destructive samplings were carried out.
- Collected pest/insect specimens were preserved in 70% alcohol before identification.
- Immature stages of the pests were reared in the laboratory until adulthood before identification.

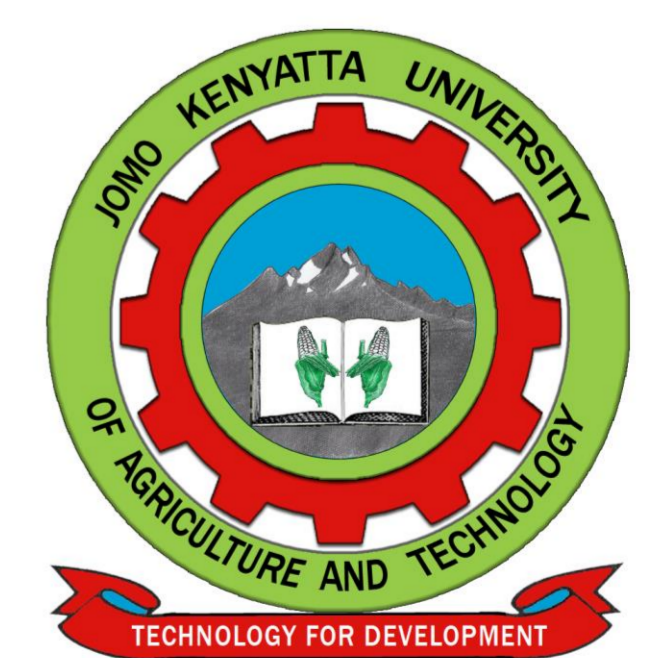
Results



Discussion

- Although the population of aphids were higher than that of lepidopterans in amaranth, more damage from lepidopterans was observed and this could be due to greater damage level caused by an individual lepidopteran compared to an aphid
- Warmer temperatures and more intense cultivation of amaranth in Coastal and Nyanza regions of Kenya could have contributed to higher aphid population as compared to the other regions. A similar scenario was observed in Morogoro and Dar-es-salaam regions of Tanzania
- Higher damage by aphids in nightshades as compared to amaranth could have been due to more virus transmission by *Aphis gossypii* in nightshade

Acknowledgement



Project HORTINLEA (Horticultural Innovation and Learning for Improved Nutrition and Livelihood in East Africa) is funded by the German Federal Ministry of Education and Research (BMBF) and the German Federal Ministry of Economic Cooperation and Development (BMZ) within the framework of the program GlobE – Global Food Security

