Invasive alien plants and the future of agriculture: Reviewing control approaches in western Serengeti, Tanzania

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Introduction

❖ Despite its importance to ecosystem sustainability, western Serengeti and its adjacent communities are affected by invasive alien plants.

❖ Invasive alien plants have severe negative impacts on biodiversity, ecosystems, and agriculture.

❖ Despite efforts to suppress these plants in protected areas, there are significant impacts on community agricultural lands.

❖ Excluding communities in the control approaches of invasive alien plants creates a gap and decelerates the efforts.

❖ The plants hinder progress toward the United Nations Sustainable Development Goals.

❖ This study assesses the impacts of invasive alien plants on agriculture and potential control methods in villages in western Serengeti, Tanzania.
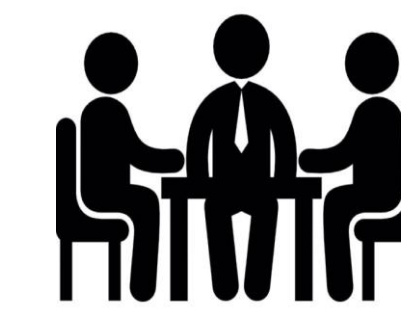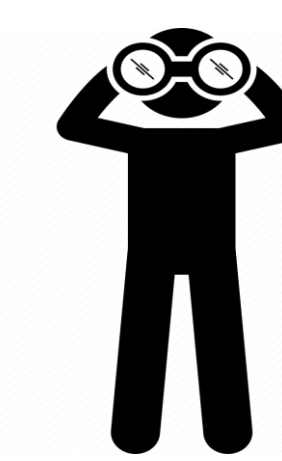
Methods for data collection

Questionnaires

❖ 40 respondents from the protected area were interviewed.

❖ 200 respondents in five villages of Bunda and Serengeti.

Key informant interviews

❖ Conducted among farmers, agricultural officers, village leaders, the local community, and protected area staff.

Direct observation

❖ Areas affected by invasive plants within the protected area and adjacent villages were surveyed.

Results and Discussions

❖ Current results in protected areas indicate that *Opuntia sp* (32%) was the most extensive, followed by *Lantana camara* (21%), *Chromolaena odorata* (14%), and *Tithonia diversifolia* (13%), and other species in total (20%).

❖ *C. odorata* has taken most of the community farmlands.

❖ More than 2500 ha have been cleared of invasive plants between 2013 and 2017 within the protected area.

❖ Mechanical (68%), chemical (7%), and integration of these two methods (25%) have been effective control methods in protected areas.

❖ While the control is promising in the protected area, it remains a challenge in adjacent community lands.

❖ The study is still analyzing the impacts on agriculture and possible mitigation measures.

❖ Failure to manage invasives outside protected areas results in decreased agricultural production hampering food security and livelihoods among communities.
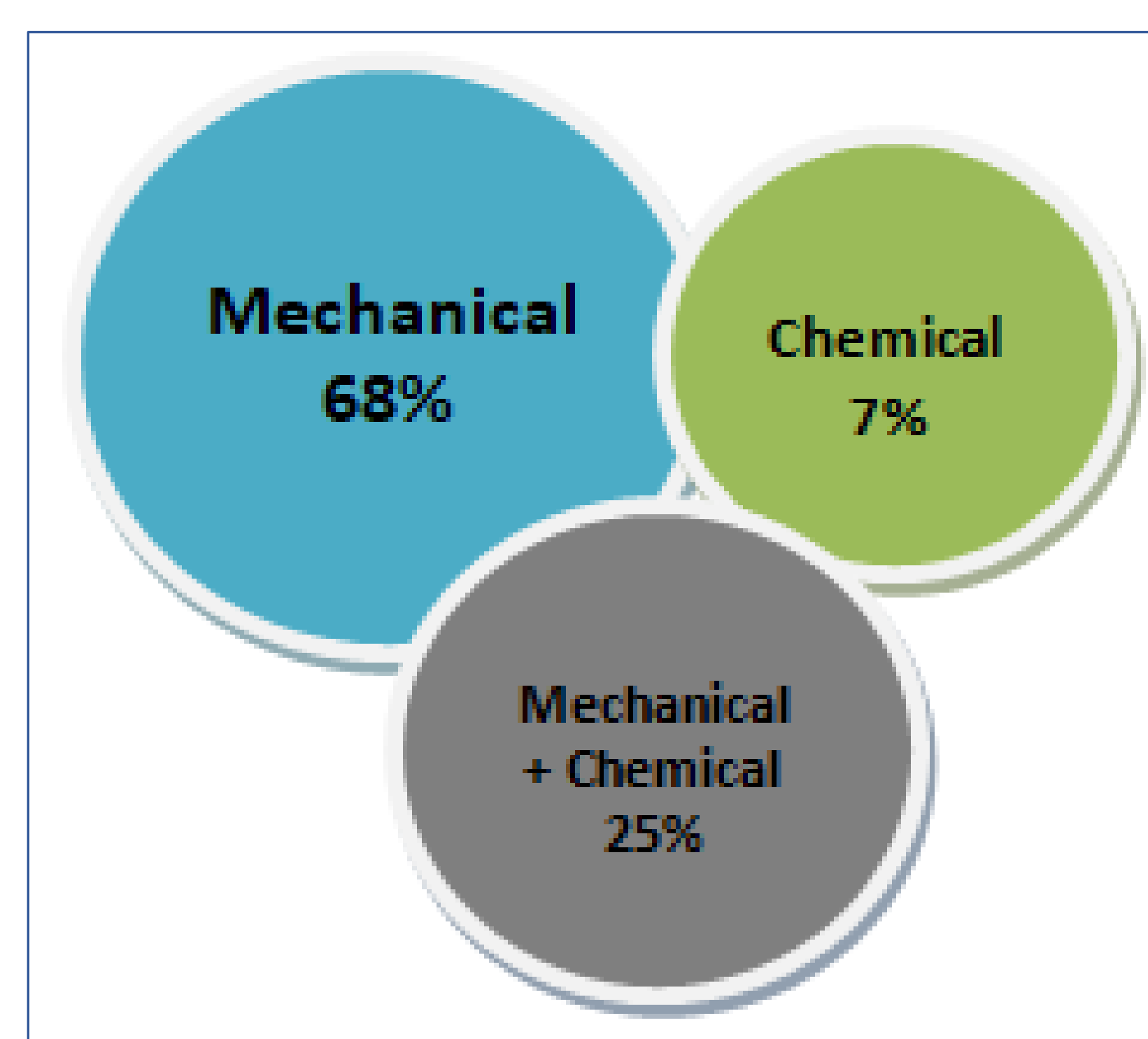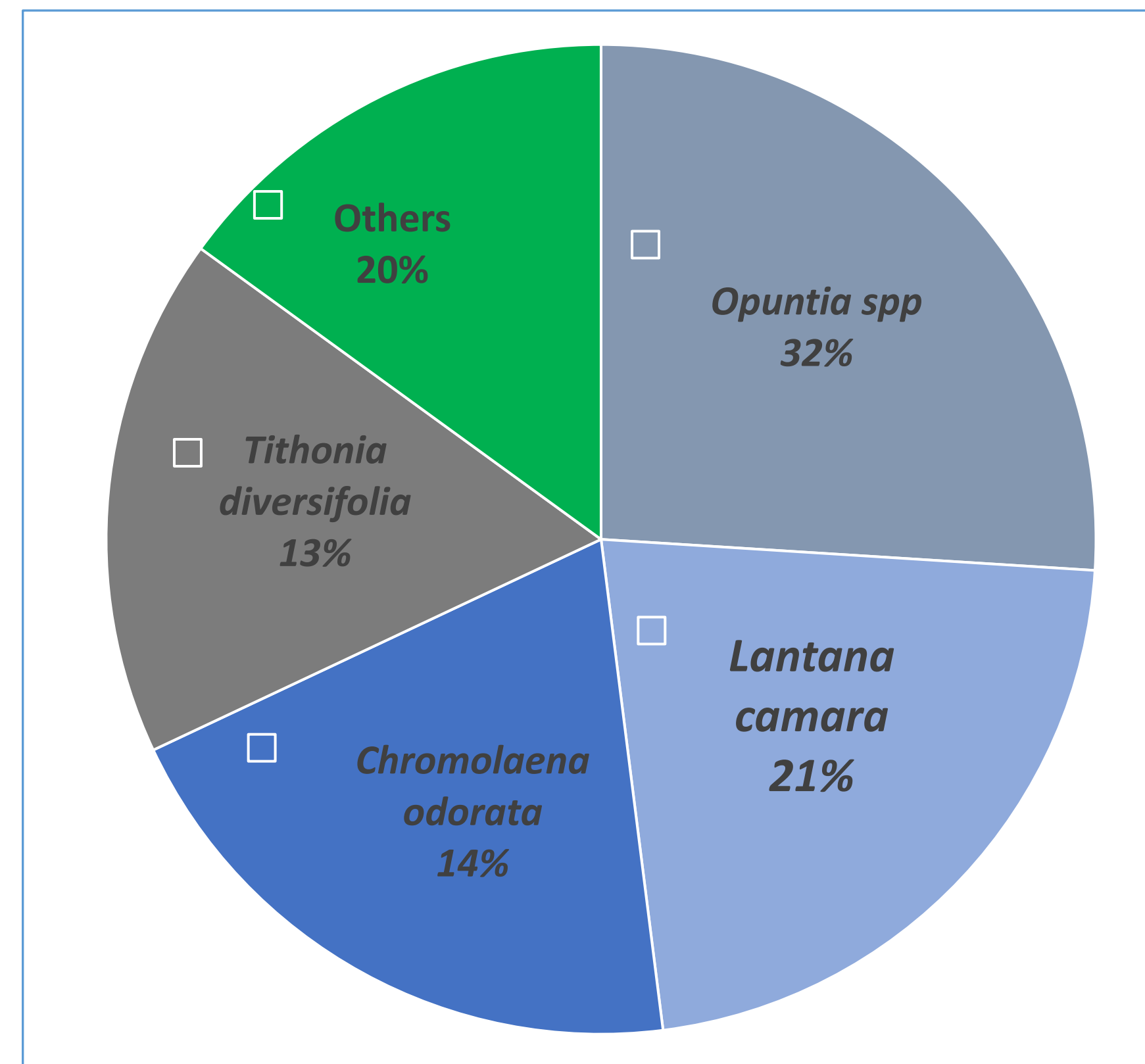
Conclusions

❖ The study recommends early detection and rapid response to new invasions.

❖ Mitigating invasive plants will help to protect agricultural lands and enhance sustainable livelihoods for communities.

❖ Raising awareness among communities is crucial.

❖ The study intends to provide education and awareness on the issue of invasive alien plants to local communities in the villages in western Serengeti.

❖ Mitigating invasive species will ensure the stability of the ecosystems and enhanced ecological benefits.

❖ The study will support improved management strategies and enhance community education and awareness.

❖ However, the mitigation programs are expensive and require significant investment.

❖ Eradicating invasive alien plants will help to achieve the Sustainable Development Goals.