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FUTURE TRAJECTORY OF CROP POLLINATION SERVICE DEMAND IN SOUTH AFRICA NECESSITATES MONITORING OF *Apis mellifera* AND NATIVE POLLINATOR HABITAT

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ABSTRACT

South Africa is quite unique in Africa in the use of managed pollination services for the production of insect dependent crops, while simultaneously having a rich biodiversity. Furthermore, the European honey bee is both an indigenous pollinator species important in natural ecosystems, as well as a managed pollinator species offered as a formal market service. However, similar to global patterns, the production of insect dependent crops are increasing sharply. Due to favourable exchange rate and seasonal opportunities for fruit export, much of South Africa's insect dependent crop production is exported. Consequently, world demand for such high value crops is a strong driving force in South African agriculture. Recent changes in crops being grown include a proliferation of high value crops like blueberries and macadamias (e.g. plantings of macadamias have doubled from 2012 to 2020). Due to the availability of a formal managed pollination service, much of South Africa's crop pollination makes use of honey bee hive rental. However due to the rapid increase in pollinator dependent crop hectares, shortages in managed pollination services seem all but certain. This places stress on the pollination services and supporting ecological services (e.g., swarm trapping and forage use). The looming shortage requires urgent investment in increasing available managed honeybee colonies, which itself has biodiversity implications. Alternatively, conservation measures to ensure that natural vegetation is conserved in close proximity to orchards needs major improvement, which is not currently the case. Therefore, monitoring the state of managed and wild pollinator populations will now become increasingly important.