UMSAEP Project Report

Developing Data-Driven Optimization Capabilities for Agribusiness Supply Chains in South Africa

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Submitted by Dr. Haitao Li

Professor and Chair

Supply Chain & Analytics Department

University of Missouri –St. Louis

Research Activities Prior to the UWC Visit

Prior to my visit to UWC in Summer 2023, I have been working on a farming planning

Table 2. The produce data varying with time.

The additional operational data include inventory holding cost, maximum water capacity, maximum labor capacity, and fertilizer consumption and cost

The base scenario was solved with a maximum of R995,717.25. An example of optimal planning solution for Pumpkin is provided in FigureThe optimal solution prescribes a combination of planting and purchasing of produce to meet demand during the planning horizon. It also shows the land use and inventory to be carried over time periods. Note that t

purchasing will not be intuitive without the decision support provided by the optimization model.

The optimization model enables data-driven decision-support for farming planning through the sensitivity analysis (also known as what-if analysis). For instance, one may ask the question what if