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**“Buying Local” Means “Selling Local” – Using a Transportation Alliance of
Environmental and Food Horticulture Producers in Georgia**

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Buying “Local” Means “Selling Local” – Using a Transportation Alliance of Environmental and Food Horticulture Producers in Georgia

Background

During the past five years, economic and social and climatic factors have negatively impacted the food and environmental horticulture crops industry in Georgia. The prolonged drought, the global and domestic economic recession, the instability of oil prices, and the increases in production input costs have forced these industries to become more efficient in both production and marketing and distribution. The trend of rising costs has been more persistent in transportation and logistics. Transportation is becoming the determining factor of success for most fresh produce and floriculture/environmental horticultural operations, regardless of size. How, when, and with whom growers do their shipping determines how sustainable, efficient, productive, and profitable an operation becomes. With the surge in interest for “buying local” comes also the need to address “selling local,” as producers becoming expected to deliver their goods to “local” retailers. The term “local” often involves transporting produce or plants 250 – 300 miles one way. Deliveries of inputs are often being made from the same source to neighboring operations and/or growers are making deliveries to common buyers at about the same time over common routings, duplicating the transportation costs (ownership and variable expenses) for the small- to medium-sized operations. Industry participants share clients, routes, and origins; yet each producer has an independent transportation system. “The remedy for the medium- and small-sized carrier businesses is to establish coalitions in order to extend their resource portfolio and reinforce their market position,” (Krajewska and Kopfer, 2006)

Problem, Objectives, and Methodology

Most Georgia produce and green industry operations own their own box or container trucks and tow-trailers, owning multiple units of various sizes and capacities to that a match can occur between order size and appropriate vehicle for delivery. Among the factors that affect the expansion of horticultural crops (food or ornamental) operations, production, marketing, personnel, and transportation are considered the most relevant (Hodges and Haydu, 2005). Ornamental plants nurseries ranked transportation as an important factor of concern for expansion of their markets, ranking transportation above debt capital, equity capital, and marketing, but below personnel and production (Brooker et al, 2005). In the agricultural sector, the importance of transportation costs is heightened as evidenced by the statement that transportation accounts for over ten-percent of the wholesale value of total farm shipments (Stegelin, 2009). Logistic cooperation is an important strategic alternative to reduce costs and increase efficiency in the agricultural sector.

The objective of this update is to share the results of determining if a transportation alliance through horizontal cooperation and routing junction or logistic software would reduce shipping costs and increase distribution efficiency among environmental horticulture suppliers in Georgia who are “selling local.” The methodology includes conducting meetings with prospective collaborators to explain the reasons and benefits for participating in the evaluation, explaining what an alliance is (versus a cooperative), and identifying the data needed as input to develop a simple unit cost allocation model that is adaptable and useable with the GIS software

ArcLogistics 9.3. The last step is to evaluate and interpret the results to build a sensitivity analysis.

Once the order sharing routings were developed, three alliances were considered – a north, a south, and a central location cluster – which represented most of the production among the small- to medium-sized operations. An attempt was made to determine the optimal number of orders per shipping cycle, given the three location clusters (alliances), with the decision to assign 50, 100, and 150 orders per shipping cycle due to the variability and inconsistency in current deliveries. Time windows were also evaluated with respect to the delivery efficiency (time spent unloading at each delivery destination), which were also grouped as 30-, 60-, and 90-minute stops. With respect to each of the alliances, a central depot location (central to the producing operations in that alliance) and a major thoroughfare location were also evaluated. Figures representing many of these actions are presented.

Although the study seemed to have buy-in from the environmental horticulture producers (and fresh fruit and vegetable growers), concerns among the cooperators and participating producers arose with respect to the survey. Examples of these issues included: “What’s in it for me?”; a reluctance to provide logistics, marketing and sales (volumes, product lists, delivery dates and sites, etc.) information; additional concerns about what an alliance was and entailed for shipper involvement; survey design; adequate sample size; format and availability of data needed to run the software; a lack of commonalities among the growers (facilities, vehicles, customers and their locations, product specifications, shipping containers, delivery dates and times, driver efficiency, etc.); and the managerial relevance of using averages in conducting the sensitivity analysis.

Results

Eighty-percent of the respondents to the fresh produce inquiries stated that transportation and delivery costs had increased over the prior year, at an average rate of 21-percent among the respondents, and that transportation costs now account for over ten-percent of their total cost of production and marketing. The net results from having evaluated utilizing transportation alliances among Georgia’s small- and medium-sized fruit and vegetable producers were lower in savings than reported for the environmental horticulture crops producers, although both groups’ ownership and overhead costs were year-round. The greenhouse and ornamental plants producers are generating more inventory turns and selling (and shipping) plant materials at least nine or ten months of the year, whereas the produce growers are shipping primarily during the summer and early fall (production between last frost and first frost in a calendar year).

The net results from having evaluated the plausibility and feasibility of utilizing transportation alliances among Georgia’s small- and medium-sized environmental horticulture crops producers were:

- Average total cost savings to the participating operators were nine-percent;
- Average total miles driven savings were eight-percent;
- Average number of trucks owned savings were eight-percent;
- Average hours driving time savings were fifteen-percent; and

- Average CO₂ savings (reduced carbon footprint) were eight-percent.

The net results for the three produce transportation alliances were:

- ✓ Average total cost savings to the participating operators were seven-percent;
- ✓ Average total miles driven savings were eight-percent;
- ✓ Average numbers of trucks owned savings were seven-percent;
- ✓ Average hours driving time savings were twelve-percent; and
- ✓ Average CO₂ savings (reduced carbon footprint) were seven-percent.

References

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Figures

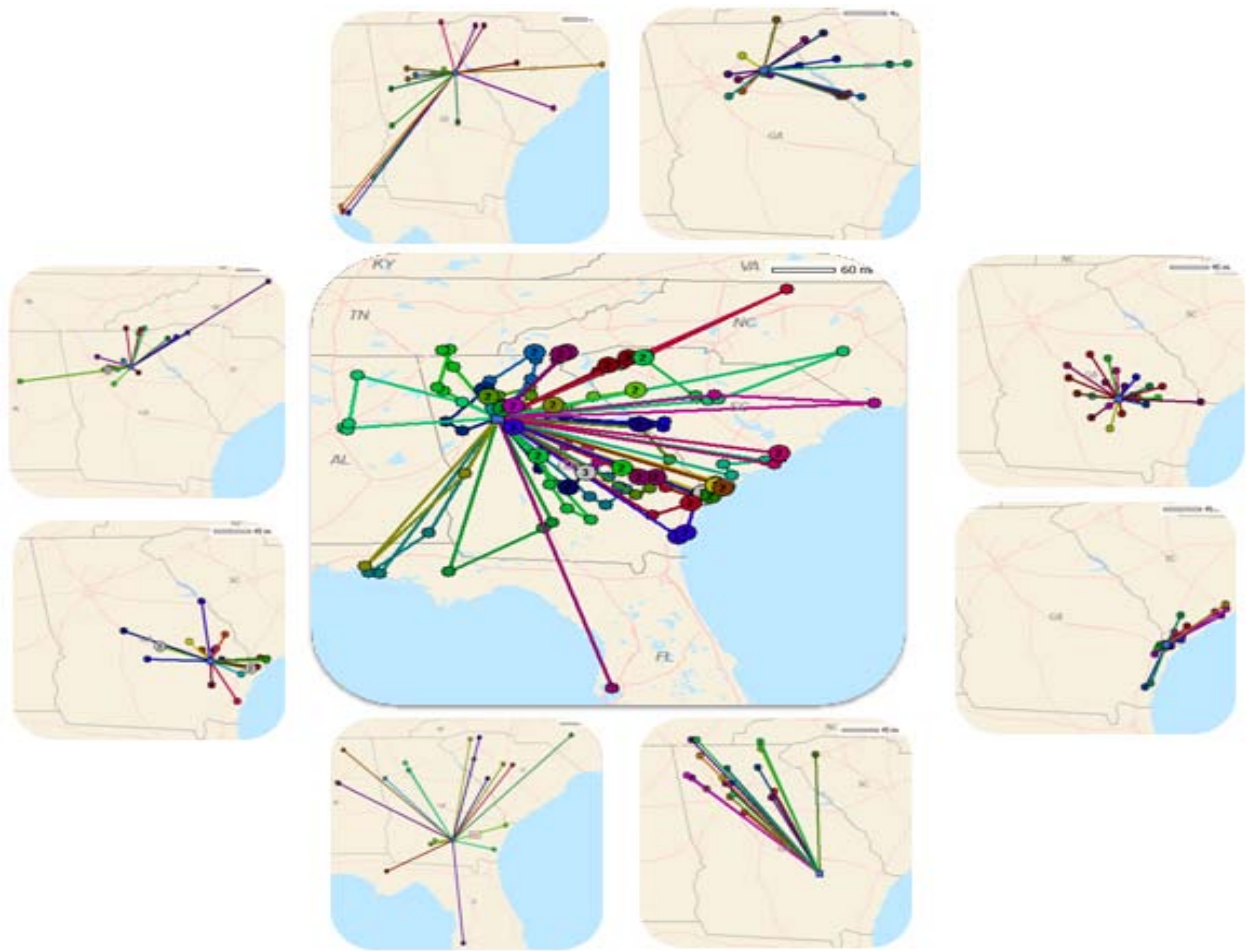


Figure 1. Order Sharing Routing Maps

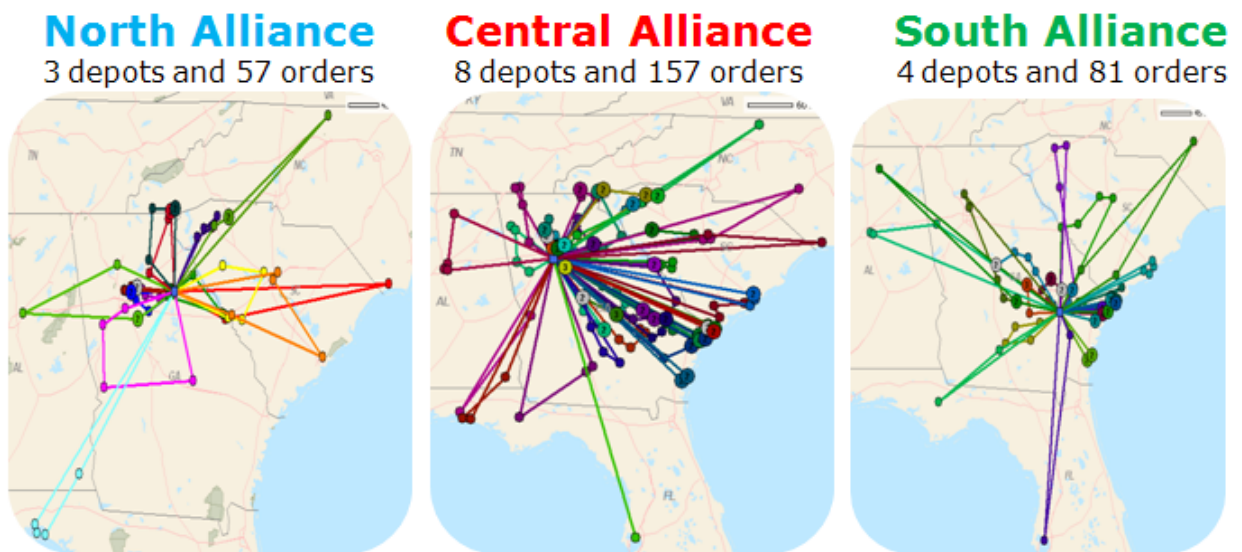


Figure 2. Location Clusters Routing Maps

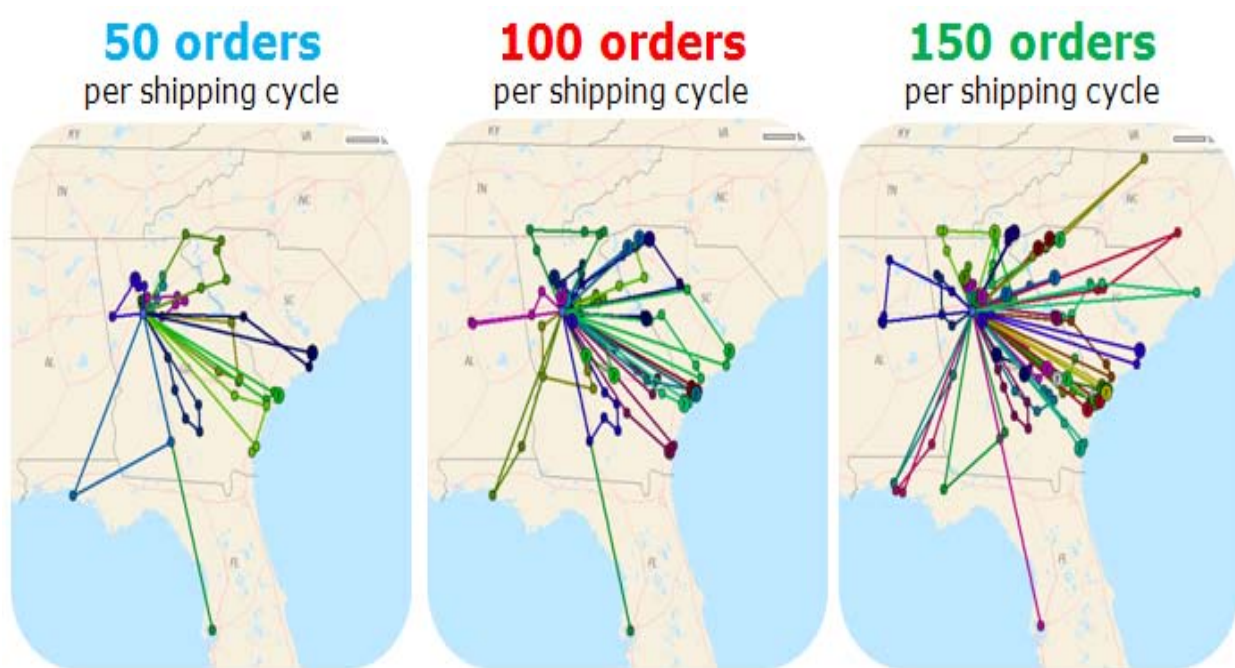


Figure 3. Optimal Numbers of Orders Routing Maps

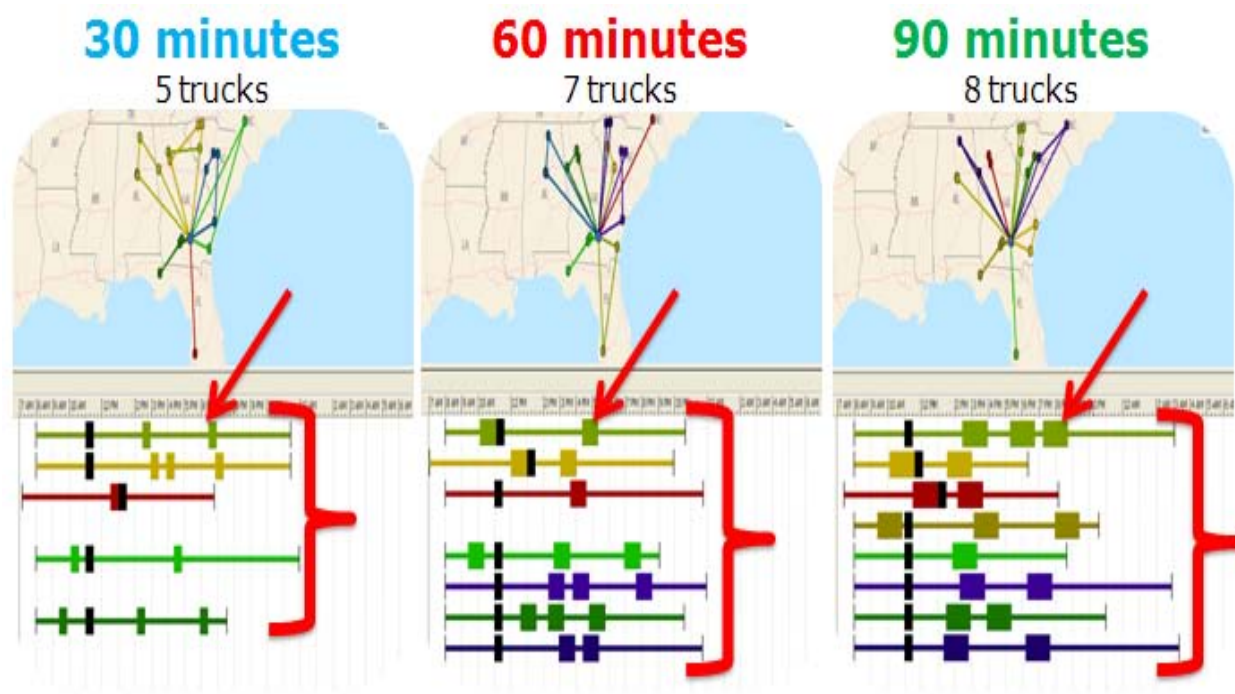


Figure 4. Time Windows Routing Maps