Update of the Iowa Produce Market Potential Calculator website

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How much capacity should be targeted in discussions regarding local food requirements in Iowa?

Results are situational. Capacity should be determined by market demand, but driven by location-specific goals and leadership. However, due to the many evolving transportation-related costs, minimizing distance to market is likely to become a central priority of marketing strategy for all farming platforms. The tool developed by this project is intended to focus all participants on minimizing transportation dependency.

Background

The purpose of the project was to update the Iowa Produce Market Potential Calculator, an online tool developed as a part of previous work sponsored by the Leopold Center. Project objectives were to:

• Update technical content to reflect more recent data,
• Redesign the visual format,
• Add geographic selection and other analytical functions,
• Introduce the finished tool to practitioners,
• Develop a “how to” guide to help others make similar tools for other states, &
• Summarize activities and responses in a final report.

The original tool, developed in 2005, challenged users to set planning targets for locally self-sustaining food regions. County-level results comparing market size to established production capacity could be generated individually for 37 fruits and vegetables known to grow in Iowa. The results of the original model demonstrated that very little cropland is used to produce fresh fruits and vegetables relative to what is needed in the state.

The new market planner can be used to explore a wider variety of topics. Goals can be targeted to a specific geographic region, consumer group, or time frame. Units of measure are much more adaptable. Instead of focusing solely on crops that can be grown in Iowa, the product list was expanded to include all fruits and vegetables reported by the U.S. Department of Agriculture’s Food Availability Data System. This includes 136 products from 80 key crops. (A product is considered to be a crop processed in a specific way, so fresh apples and frozen apples would be classed as separate products.)

Approach and methods

A planning tool was designed to make information about market size broadly acces-
sible to the public. A central priority was to maximize user flexibility without being overly complex or detailed. The resulting model, “Iowa Fruit and Vegetable Market Planner,” is available online at: http://www.intrans.iastate.edu/marketplanner/. A “how to” manual was created for distribution to other states to help them expand the focus on local planning.

**Results and discussion**

Features added to the new version of the market planner include the following:

- Instead of reporting totals at the county level, the new version allows users to define a region by specifying the driving distance from a central location. The driving distance can be any mileage value; the central location can be any city or town in Iowa.
- The new version allows users to target all consumers, or narrow results to one of five age groups residing in the range specified. Results can be prorated to any percentage of the age group specified.
- Instead of listing only fresh items, the new version includes the processes commonly applied to each crop (e.g., canned, fresh, frozen, etc.). Users can identify the distribution for a single crop, or the major crops applied to a single process.
- Instead of providing results for one crop at a time, the new version allows users to group combinations of products. Results are itemized by each product included in the group or they can be sorted by major categories, such as fruits or vegetables, or minor categories, such as citrus fruits or green vegetables.
- Instead of listing only crops that can be grown in Iowa, the new version includes all major products purchased in the United States, whether they can be grown in Iowa or not. Users still can specify Iowa crops by choosing it as a grouping criterion.
- The new version adds two “multipliers” that allow users to convert a selected unit of measure to nearly any other parameter. For example, by selecting “tons” as a unit, and adding the number “10” as a multiplier, the user can estimate how many 10-ton truckloads are required to service a region in a given time frame. The second multiplier converts the selected results to dollar values, based on a specified rate per unit (e.g., $2.00 per bushel, $500 per truck load, etc.). Users can enter any unit or dollar value. Base units include common weights and volumes as well as base measures for calories, servings, and acres (required as Iowa yield).
- Any measure can be prorated to virtually any time frame using a similar method. For example, selecting “month” as a base unit and multiplying it by “10” can be used to estimate demand for a 10-month school year. Similar values can be used to estimate truckloads per day or cubic feet of warehousing (turnover) per week relative to a particular marketing goal.

**Conclusions**

The major finding of the study is the model itself, which is available online at: http://www.intrans.iastate.edu/marketplanner/. As the model was developed, three key findings emerged:

- Minimize the number of settings that need to be monitored. Several variations of the model were developed and abandoned prior to arriving at the final online version. Each one was abandoned because it was too complicated to monitor or explain to a wide variety of users. For example, one version generated results
for each major weight category (farm weight, retail weight, consumer weight, and consumed weight). Even though this added a somewhat useful feature to the model, it reduced the continuity of what was being presented. Too many features made it too easy to confuse how the model was set. Instead of determining what to include in the model, the primary challenge was deciding what to exclude.

• Avoid being too specific. The original model was limited to a relatively fixed set of measures assumed to be useful for planning. While these options provided a novel level of insight, applicability remained relatively limited to the applications selected by the authors. The new model allows users to customize any measures that they determine are significant. This not only expands application potential, it also saves on the number of conversion variables that need to be built into the background data.

• Let the user identify monetary values. The original model indicated national average farm and retail prices for each crop, which were obtained from a USDA publication. However, the values used in the model were no longer valid by the end of the model’s life cycle. In a broader context, prices also tend to bounce from day to day and from location to location. Removing prices from the list of measurements and adding them back as a user-defined variable not only engages the broader judgment of users, it also expands the potential to evaluate costs, fees, taxes, or any other type of monetary assessment. Formatting the model so that users can assign a monetary value to any unit of measure greatly expanded the range of potential uses that can be addressed.
Impact of results

Here’s how Iowans can use this tool:

• Farmers can use it to target a specific market to develop. For example, it could be used to determine how many pounds of a product are needed during a three-month growing season to supply all of the high schools located within a 30-mile region. By targeting a particular market share from the total, and adjusting a few variables, the tool can quickly identify how many acres are needed, how much storage space, and how many truckloads per day should be expected. Cost and revenue assumptions can be applied quickly to each type of measure.

• Food policy councils, nonprofit organizations, researchers and economic development groups can use it to examine the effects of policy decisions on a specific region. Information can be used to target or acquire resources for research and education, or to assess impacts on changes in food availability, diet or marketing.

• Third-party service businesses, such as suppliers and marketing firms, can use the tool to identify support systems that might be needed, such as warehouses, processing plants, local trucking fleets and other shared infrastructure.

• Transportation officials, municipal and regional planners, and other public works agencies can use the market planner to estimate the impact of local food systems on roads and other infrastructure, or on future mandates to reduce fuel dependency and global or local emissions.

Education and outreach

The manual “Assembling a Prototype Fruit and Vegetable Market Planning Tool” is available from the Leopold Center to help those using the website.

Information about the website appeared in at least nine public and industry outlets. A presentation on the project was given to 35 people at the 2010 Leopold Center Marketing and Food Systems Workshop.

Leveraged funds

No additional funds were leveraged by this project.