1. Executive Summary

The Southeast Dairy Development project was initiated by Southeast Missouri crop producers interested in investigating the feasibility of bringing new livestock investments to the region to take advantage of the growing supply of co-products from the existing processing industries and the emerging bio-fuels industry. Specifically, the producer group asked two questions, “First, do dairy farms have a possible future in Southeast Missouri? Second, what would that future look like?” This feasibility project provides detailed answers to those two questions.

Environmental constraints were the first issue investigated. If dairy farms could not be located in the region in an environmentally compatible manner, no amount of financial reward would be enough to overcome regulatory and public sentiment objections. Initial investigations with the Missouri Department of Natural Resources and the United States Department of Agriculture - Natural Resource Conservation Service highlighted the chief environmental concern: protecting the groundwater from contamination by manure. The region’s high groundwater tables and heavy rainfall events dictated the type of manure handling system that would be necessary in Southeast Missouri. Using above-ground manure holding structures and minimizing exposure of manure to rainfall became critical. Section two of this report explains the setback distances, buffers, permits, and critical siting issues that are important to protecting the environment and gaining community acceptance. Fitting the dairy’s manure stream into the region’s cropping pattern and rotations is explained. This section also details the current fertilizer usage in the region, putting in perspective the nutrients generated by new dairies in the overall nutrient balance of the region.

Other location considerations were examined for developing dairies in Southeast Missouri. Based on the proximity of co-production locations, Southeast Missouri is centrally located near many different processing facilities such as soybean crush plants, ethanol plants, rice mills, breweries, food manufacturers and cotton gins. Each of the processing facilities produces co-products suitable for inclusion into a dairy ration diet or bedding material. Having dairies located in close proximity to these processing facilities would provide many alternatives that would be lower in price, especially with lower transportation expenses.

Marketing the milk produced by dairies in Southeast Missouri is the next critical feasibility concern. Section three of this report reviews the expected milk prices, milk marketing opportunities, and milk hauling logistics for new dairies in the region. The southeastern U.S. is increasingly milk deficient, with the highest milk prices in the nation. Milk moves from states to the north and west of Missouri most of the year to fill bottling plants in the southeastern states. Dairy cooperatives that market producer’s milk are eager to encourage new milk production in Southeast Missouri because it reduces their transportation costs and their logistical challenges. Strong demand and competition for milk in Southeast Missouri ensures a long term market for milk from the region and indicates a long term milk price that is above prices offered in regions to the North and West of the Bootheel, by at least the transportation cost from those regions. Interstate 55 and US Hwy 60 are major intersecting north-south and east-west logistical routes for moving milk into the Southeastern U.S.
Once the basic environmental feasibility and market feasibility were established, this feasibility study set about investigating different potential systems of dairy production to determine which ones were financially rewarding enough to be feasible. A chief production concern was the impact of the summer heat and humidity in Southeast Missouri upon the dairy cow’s ability to produce milk. Ventilation systems, cow housing systems, and manure handling systems were combined with three different farms sizes to eventually create 29 different potential systems of dairy production for Southeast Missouri. Initial investigations detailed those 29 systems and ranked them by return on assets and on investment per cow, two critical financial measures used by dairymen when considering expansion and relocation projects.

Finally, the returns on assets of the different systems were analyzed as a group. The returns ranged from a bottom of 1.7% return on the 200-cow slatted floor system to 13.9% return on the 3,000 cow sand bedded and mechanically ventilated system. The steering committee of crop producers carefully reviewed the 29 different systems. Two of those committee members, Jim Stuever and Gary Branum, visited the World Ag Expo and Dairy Tour in Tulare, California in February 2007 to examine first-hand the systems they were considering. They carefully selected three of the 29 systems to do in-depth business planning for future dairy development in Southeast Missouri.

Recall, this feasibility study set out to answer the following two questions. “First, do dairy farms have a possible future in Southeast Missouri? Second, what would that future look like?” Based upon this feasibility study, the answer to the first question is yes, dairy farms do have a possible future in Southeast Missouri. Based upon this feasibility study and the careful selection of the steering committee, the answer to the second question is that future dairy systems for Southeast Missouri would look like these three selected dairy models detailed in section five of this feasibility study.

- Dairy Model #3 - 3,000 Cow Confinement Bedded Pack System
- Dairy Model #29 - 600 Cow Grazing Dairy with Center Pivot System

Complete business plans for these three dairy models were completed for the Southeast Dairy Steering Committee in conjunction with this feasibility study. Those separate detailed business plans will serve as blueprints for development as the committee moves ahead in future years to grow the livestock industry in Southeast Missouri to take advantage of their growing crop co-product supplies from existing industries and the emerging bio-fuels industry.