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FAPRI Beginning Farmer and Rancher Development Project

Southwest Missouri Cow/Calf Representative Farm

Final Report

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Providing objective analysis for more than 25 years

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FAPRI Beginning Farmer and Rancher Development Project Southwest Missouri Cow/Calf Representative Farm – Final Report

Intro to Project

The Southwest Missouri cow/calf representative farm was built as part of a three-year project funded through the USDA Beginning Farmer and Rancher Development Program. In the first year of the project, four panels of beginning farmers (farming 10 years or less) were selected to build farms that are representative of beginning farmers in their area, review how the representative farm would perform financially over the next five years under one particular set of assumptions (the baseline), and identify two or three alternative scenarios that are simulated and compared to the baseline. The panels met in years 2 and 3 to discuss how their operations have changed. The results of those changes were then applied to the representative farm. This report is a summary of the financial outlook for the five-year projection period (2012-2016) and a summary of how the farm has evolved.

Representative Farm Panel Process

The representative farm approach treats a farm business unit as a unique system characterized by local features and resources to which the farm manager adapts. Local conditions are internalized in the creation and simulation of each farm.

To build a representative farm, a local facilitator takes the lead in putting together a panel of 4 to 8 producers in the area that are similar in size, structure, and type of farming operation. For this project, a local University of Missouri Extension Specialist from each area agreed to assemble a panel of local producers that fit the USDA definition of a beginning farmer or rancher. Primary data is initially developed and continuously validated by Missouri producers via a consensus process. The panels establish farm structure, size, farming practices, costs of production and associated financial requirements for the representative farm based on what the panel member know about their individual operations. Business size, structure, and management practices are allowed to change for the historical period (2007-2011) and held constant for the simulation period (2012-2016).

For the simulation, actual yield, price, and operating cost data is used for the years 2007-2011. The historical period provides some perspective of financial performance with known values and sets a footing for simulation over the five-year projection period. Farm financial statements are generated using the Farm Level Income and Policy Simulation Model (FLIPSIM), which is property of the Texas Agricultural Experiment Station, maintained at the Agricultural and Food Policy Center, Texas A&M University. National price estimates, generated by FAPRI at the University of Missouri (FAPRI-MU Report #06-12), are utilized for the 2012-2016 simulation.

The financial statements (income statement, cash flow, balance sheet) are used by the panel to make sure the representative farm is performing financially over the five-year historical period in a manner consistent with the experience of panel members. After the panel validates the historical data, projections of financial statements for 2012-2016 are used to see how the farm will perform financially in the future.

Initial Makeup of the Farm Panel

This location's panel is facilitated by Eldon Cole, Livestock Specialist and County Program Director – Lawrence County in the Southwest region of the state. The panel, first convened in 2009, consists of 4 producers from Lawrence County. At that time, panel members had been farming for 3 to 9 years, with an average of 6.5 years farming. The panel members owned between 40 and 414 acres and cash leased 50 to 1,290 acres of hay/pasture. The producers' cattle operations ranged from 20 to 339 cows, with calves backgrounded from 45 to 90 days. Two of the producers work a full-time job outside of their farming operation. The other two members do custom farming (hay, planting), thus utilizing the assets of their operation to enhance their cash flow.

How the Panel Members' Operations Have Changed

Over the three-year life of this project, the panel members have undergone change in their operations. Some of this change is due to uncontrollable factors (i.e., droughts), while others are changes made by the panel members to improve or grow their farming operations.

Drought conditions in Southwest Missouri in 2011 had an impact on the panel members' operations. Due to the drought, panel members have been forced to feed winter hay supplies in the summer and reduce cow numbers by culling harder than normal. While these conditions have been challenging for the panel members, they continue to plan for future growth and expansion by keeping back additional heifers that they will develop and breed or by purchasing cows to increase their cow herd in the future. Over the three years of the project, the overall cow numbers are up for the panel members. This increase is reflected in the current size of the representative farm.

The four panel members have spent the last three years working to manage the inherent risk associated with farming while planning for the future through changes to their individual operations. While many think increasing the size or scope of one's operation is the only way to grow the operation for the future, circumstances sometimes require decreasing the size of an operation in order to move it forward. The panel members have seen their operations grow in number of rented and owned acres, but they have also reduced their cow herd in response to the drought. The changes made by the individual panel members include:

- purchasing crop acres used to raise corn and soybeans,
- renting additional pasture, keeping back heifers and purchased cows,
- renting additional pasture used to make and sell hay, and
- selling cows and reducing cow herd with no plans to replace them at this point.

Initial Baseline Representative Farm

The baseline farm consisted of 180 cow/calf pairs on 150 acres of owned land and 560 acres of cash rented land. The farm was started in 2003 with the purchase of 150 acres of land. The calves were backgrounded for 60 days; steer calves were sold at 680 lbs, and heifer calves sold at 620 lbs. The farm put up 200 acres of hay each year using their own equipment. The farm also has other farm income of \$12,000/year.

Changes to the Baseline Representative Farm

The initial baseline farm was modified over the three years since its creation based on changes the panel members made to their operations. The main change is the representative farm purchased an additional 20 bred cows in early 2012. The panel members agreed the farm had enough pasture and hay ground to carry the additional cows and calves with better grazing-management practices. The panel members did not update or purchase any additional equipment. They did, however, increase the number of years they would keep several pieces of equipment. This is a common practice of producers, especially ones who have gone through a period of low returns, as this panel did in 2011 due to the drought.

The representative farm was also updated using the August 2012 FAPRI Baseline update. The updated baseline reflects the most recent FAPRI estimates of future commodity prices, production costs, interest rates, and land values. The panel members have the ability to override these changes as they see fit. The main change the panel had was in estimating land values. From 2009 to 2011, the panel members noticed that land prices increased at a greater pace in their local area than in the FAPRI baseline. Based on their observations of land values, the representative farm's land value per acre increased 12.5 percent over the 2009 to 2011 period.

Financial Results

The table below includes summary financials for the updated farm over the projection period (2012-2016). The farm has total operator assets, including land, machinery, and cattle of \$619,000. The updated farm starts the simulation period (2007) with 70 percent debt on land and 50 percent debt on machinery. The farm averages \$55,400 per year return to family living (\$277/cow). This number is the surplus the owner/operator has left over after paying all cash costs and represents the amount they can pay themselves for their management and labor. A more detailed summary of the financial picture for this updated farm over the 2012-2016 period can be found in Appendix A – Financial Summary.

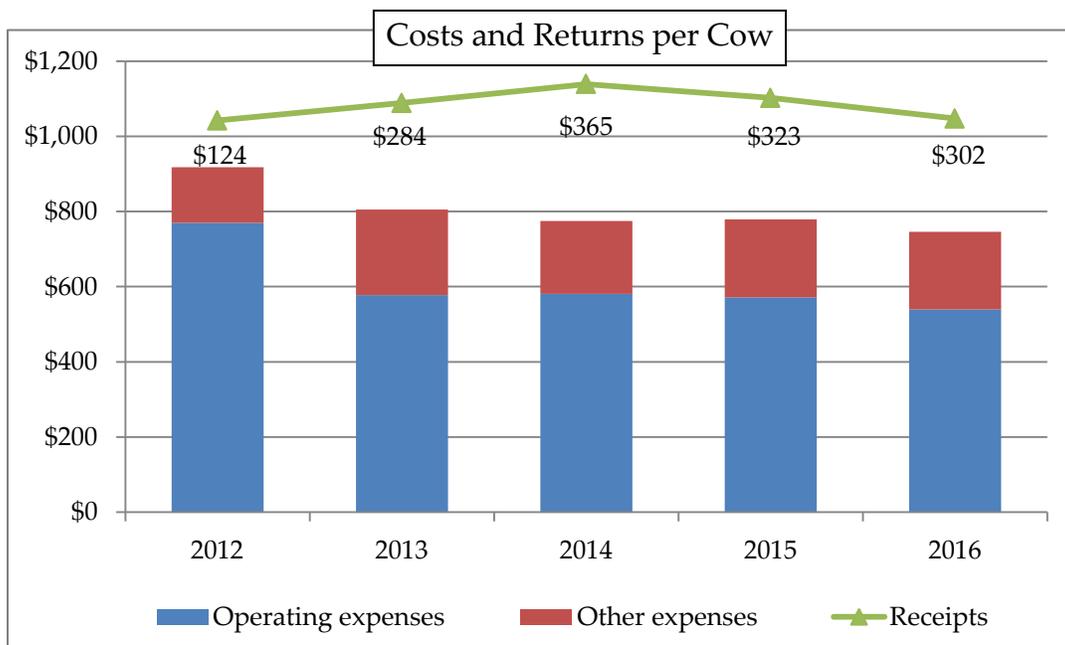
Financials (2012-2016)		Cash risk score																
		2012-2013	2014-2016															
Operator assets	\$619,000																	
Total cash receipts	\$212,600	<table border="0"> <tr> <td>Prob. Of Deficit*</td> <td>Color Score</td> <td>Risk Score</td> </tr> <tr> <td>Under 25</td> <td></td> <td>Low</td> </tr> <tr> <td>25 to 50</td> <td></td> <td>Moderate</td> </tr> <tr> <td>50 to 75</td> <td></td> <td>High</td> </tr> <tr> <td>Over 75</td> <td></td> <td>Severe</td> </tr> </table>		Prob. Of Deficit*	Color Score	Risk Score	Under 25		Low	25 to 50		Moderate	50 to 75		High	Over 75		Severe
Prob. Of Deficit*	Color Score	Risk Score																
Under 25		Low																
25 to 50		Moderate																
50 to 75		High																
Over 75		Severe																
Net cash farm income	\$94,200	<p>* Probability of cash flow deficit in any year of the projection period.</p>																
Return to family living	\$55,400																	

Another measure of the overall performance of the operation is the probability or likelihood that the farm will face a cash flow deficit. A farm faces a cash flow deficit when there is not enough cash available to cover all cash costs incurred by the operation throughout the year. Costs include variable production expenses, fixed costs, principal and interest payments, taxes, and family living.

The table above shows the baseline farms cash risk score for two different time periods: near term (2012-2013) and intermediate term (2014-2016). This farm scores in the red category (over 75 percent probability of a cash flow deficit) in the near term. This severe rating is attributable to the purchase of the 20 bred cows in 2012. The farm had the cost of purchasing the cows, but did not realize any additional income until 2013, resulting in a large probability of cash flow deficit in 2012. The farm's cash position improves in the intermediate term, scoring in the green category (under 25 percent probability of a cash flow deficit). This means that the farm has less than a 25 percent chance that it will NOT have enough cash to cover all cash costs in at least one of those three years. This is the position a producer likes to be in. This farm would be categorized as having severe cash risk in the near term and low cash risk intermediate term.

Note that this analysis does not assume any information about 2012 growing conditions. Drought is likely to reduce 2012 forage yields in this region and around the Midwest. The representative farm can be simulated with lower 2012 forage yields to estimate the impacts on purchased feed costs and financial performance measures.

The graph below contains operating expenses per acre, other expenses per acre, and cash receipts expressed on a per acre basis. The net return per acre is the difference between total receipts per acre and total costs per acre (operating expenses plus other expenses). This is the amount of cash per acre that is available for the owner/operator to pay themselves for their management and labor of the operation.



The farm faces its smallest net return per cow in 2012 the year they purchased 20 bred cows but did not receive any additional income from the cows. Over the remainder of the projection period, operating expenses are up sharply in 2012 with the purchase of 20 bred cows and remain relatively flat from 2013 to 2016, while receipts increase through 2014 before declining in 2015 and 2016. Net return per cow for the baseline farm ranges from a low of \$124/cow in 2012 to a high of \$365/cow in 2014.

Summary

In summary, the Southwest Missouri cow/calf representative farm panel has grown and changed over the last three years to reflect the changes that have occurred in the panel members' individual operations. The table below summarizes how the representative farm has changed from the initial farm to the updated farm.

	Initial Farm 2010-2014	Updated Farm 2012-2016	% Change
Size			
Number of Cows	180	200	11.1%
Assets	\$511,000	\$619,000	21.1%
Receipts	\$139,000	\$212,600	52.9%
Net Cash Farm Income	\$46,100	\$94,200	104.3%
Return to Family Living	\$21,700	\$55,400	155.3%
Return per Cow	\$120.56	\$277.00	129.8%

There are a number of things that drive the changes to this farm. First, the farm has grown in size, as defined by the number of mature cows, by just over 11 percent. This is based on the growth in the herd size experienced by the panel members over the last three years. This change in size is also a part of the reason the farm has increased its asset base, receipts, net cash farm income, and returns (return to family living and return per cow). Higher land values also contribute to the increase in assets. The increase in receipts, net cash farm income, and returns are all tied to the increase in cows and higher projected prices in the updated baseline.

In working with this panel of producers over the last three years, it has been observed that they have expanded their operation and are working to manage and reduce their risk.

The representative farm can be used to examine the farm-level impacts of changes in management practices, market conditions, or farm policies. For example, the representative farm can be used to estimate how management-intensive grazing practices will affect farm finances and help producers make choices they may face about how to increase their cow herd without having to acquire additional land.

Reference Notes

The summary financial tables always refer to the annual average of the variable for the five projection years, 2012-2016.

Cash receipts is total gross revenue from all sources, including cash sales in the market, insurance indemnities, and government payments for crops that may not be planted. This figure also includes income from custom farming activity.

Cash risk rating is scored based on the probability of cash flow deficit over two time periods. 'Near term' includes the calendar years 2012 and 2013. 'Intermediate term' is the period of 2014-2016. 'Low risk' indicates less than a 25 percent chance of cash flow deficit in *any* year of the time period; 'moderate risk' is 25 to 49 percent, 'high risk' is 50 to 74 percent, and 'severe risk' indicates a greater than 75 percent probability of a cash flow deficit.

Net cash farm income is total cash receipts less all farm *operating* expenses including interest payments on all outstanding debt. Cash costs not included are principal payments on liabilities, cash down payment for capital replacement, income taxes, and owner withdrawal.

Return to family living is the farm's after-tax bottom line for the given year. It is the residual after all other cash expenses are deducted from current year receipts. This calculation includes carryover debt, but not carryover cash from prior years.

Probability of cash flow deficit is the chance that total receipts will be less than total cash expenses as a result of price and production risk.

Appendix – Financial Summary

The table below shows in more detail the financial outlook for the updated farm over the five year projection period (2012-2016).

	2012	2013	2014	2015	2016	Average
Income (\$1,000)						
Crop	0.0	0.0	0.0	0.0	0.0	0.0
Livestock	175.5	205.7	215.9	208.5	197.5	200.6
Other	12.0	12.0	12.0	12.0	12.0	12.0
Total	187.6	217.7	227.9	220.5	209.5	212.6
Expenses (\$1,000)						
Variable						
Crop	14.2	14.4	14.6	14.7	14.7	14.5
Livestock	69.7	47.1	48.4	50.2	46.7	52.4
Total	83.8	61.5	63.0	64.9	61.4	66.9
Fixed	32.9	33.4	33.8	34.1	34.4	33.7
Interest	21.8	20.7	19.4	15.3	12.0	17.8
Total	138.5	115.5	116.1	114.2	107.8	118.4
Net Cash Farm Income (\$1,000)	49.1	102.2	111.7	106.2	101.7	94.2

Of note, the table above includes crop expenses but no crop income. The expenses are for the production of hay that is not sold but used to feed the cow herd.