Augustaland Farms

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Augustaland Farms is representative of a cow/calf operation in the central Shenandoah Valley of Virginia. Production practices, costs of production, market prices, weather patterns, and other information are based on data from the region in order to provide a realistic setting. The probabilities of risk events were also calculated using actual data; however, slight modifications were sometimes made to maintain the workability and realism of the scenario.

The farm is owned by John and Betty Lets. They run 100 mother beef cows with annual non feed variable production costs of $193 per cow. This figure does not include hay and grazing expenses. Calving typically occurs in October and early November. Weaned calves are sold in late July of the following summer typically weighing 600-700 pounds. The farm has historically had an 86 percent weaning percentage and replaces 14 percent of their mother cows each year. Since they raise their own replacements, this means they usually market 43 steer calves and 29 heifer calves each year. The initial market price for weaned 600-700 pound steer calves is $127 per hundredweight and for heifers it is $117. Cull cows weighing 1,150 pounds are sold at the end of each year for $55.00/cwt.

Beef Cattle Production

Quantity	100 head
Production costs per unit	$193 per cow
Weaning Percentage	86%
Average Steer Sale Weight	675 pounds per weaned calf
Initial Steer Market Price	$127 per hundredweight
Average Heifer Sale Weight	625 pounds per weaned calf
Initial Heifer Market Price	$117 per hundredweight
Replacement percentage	14%
Sale weight per cull unit	1,150 pounds per cow
Net Sale Price	$55.00 per hundredweight

Augustaland Farms utilizes a mixture of small and large pasture and hay properties in the local area. Their home farm has 180 acres of pasture and 25 acres of grass hay meadow. They also cash rent a 75 acre pasture from their neighbor. Just down the road a piece they rent another 40 acre farm that has 20 acres of pasture and a 20 acre grass hay meadow on it. They pay cash rent for another 15 acre grass hay meadow four miles west of their home farm. And, finally, they are able to utilize a 10 acre grass hay meadow belonging to Betty's parents and a 5 acre grass hay meadow belonging to a local clergyman essentially "rent free." Augustaland Farms utilizes their grass hay meadows as stockpiled pasture typically harvesting one cutting of hay in the early summer with an average yield of 1.5 tons per acre. Their annual hay crop expenses, including fertilizer and rent, are an average of $203 per acre. When you begin the simulation, there is 113 tons of hay in inventory with a market value of $100 per ton. This hay will typically all be fed to their cow herd over the winter months.

Hay Production

Crop Acres	75 acres
Normal Annual Hay Yield	1.5 tons per acre
Production Costs	$203 per acre
Initial Inventory	113 tons
Initial Market Price	$100 per ton

Total cattle sales will generate $66,923 in revenues each year. The Lets project $41,010 in annual expenses including pasture rent and fixed costs (depreciation, overhead, property taxes, etc.). They expect their farm to generate $25,913 in net returns each year to equity, management, and family labor.

Expected Annual Net Farm Income

Expected Revenues		Expected Expenses	
Weaned Steer Calves	43 head = $36,861.75	Cows	100 cows = $19,300
Weaned Heifer Calves	29 head = $21,206.25	Hay	75 acres = $15,225
Cull Cows	14 head = $8,855.00	Pasture rent	95 acres = $2,185
		Fixed costs	$4,300
Annual Gross Revenue:	$66,923	Annual Expenses:	$41,010

Returns to Equity, Management and Family Labor = $25,913 per year

As farm manager, you will be making decisions for the Augustaland Farms that include whether or not to purchase various insurance products (Rainfall Index-PRF and LRP-Feeder Cattle), buy or sell hay, and when to market your calves. Various market and production risks will influence the ultimate impact of these decisions as you progress throughout the simulation.

AUGUSTALAND FARMS SIMULATION

RISK & DECISIONS

YEAR 1		
Period 1	**Risk and Probability of Occurrence**	**Impact**
Oct. 1 to Dec. 31	Fall Precipitation Above Normal (33%) Normal (34%) Dry (23%) Extremely Dry (9%) ..... U.S. Corn Production Extremely high (5%) Above average (35%) Average (55%) Below average (5%)	• Wet weather will increase forage production and calf prices but decrease hay prices. • Dry weather will decrease forage production and calf prices but increase hay prices. ..... • Hay prices decrease and calf prices increase when production of competitive feed alternatives grows. Extremely high corn production results in these impacts. • There are only seasonal impacts on hay and calf prices when corn production is as expected. • Hay prices increase and calf prices decrease when corn production falls below expected levels.

<table>
<tr><th>Period 1</th><th colspan="2">Risk Management Decisions</th></tr>
<tr><td>Oct. 1
to
Dec. 31
(cont.)</td><td colspan="2">Rainfall Index Pasture, Rangeland and Forage Insurance (RI-PRF)
RI-PRF is a rainfall index insurance product offered for grid areas that are approximately12 miles by 12 miles in size. Indemnities are based on NOAA rainfall index determinations for each grid over a 2-month interval. Producer protection is established by choosing a coverage level, productivity factor, and by insuring between 10-60% of covered value in two or more 2-month intervals for the production year (January–December). Each month can only be insured once (no overlapping intervals). An indemnity is paid if the Final Grid Rainfall Index is less than the Coverage Level. This coverage decision is for the next production year and must be purchased by November 15th. Premiums are due July 1 and will be deducted from your bank balance in late June.

Decision 1: RI-PRF on Grazingland
Decide if you want to protect against the peril of low rainfall in the area by purchasing RI-PRF insurance for your 275 acres of pasture. The county base value for grazingland is $41.66 per acre.

Decision 2: RI-PRF on Hayland
Decide if you want to protect against the peril of low rainfall in the area by purchasing RI-PRF insurance for your 75 acres of grass hay meadows. The county base value for hayland is $276.85 per acre.</td></tr>
<tr><th>Period 2</th><th>Risk and Probability of Occurrence</th><th>Impact</th></tr>
<tr><td rowspan="3">Jan. 1
to
Mar. 31</td><td><u>Winter Precipitation</u>
Above Normal (25%)
Normal (44%)
Dry (28%)
Extremely Dry (3%)

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<u>Corn Planting Intentions</u>
Extremely high (5%)
Above average (20%)
Average (50%)
Below average (25%)</td><td>• Above normal winter precipitation is excellent for annual forage production and livestock yields but, in the short-run, will mean you will feed more hay. Expect hay prices to increase due to shifts in demand.
• Low winter precipitation will decrease forage and livestock yields but you will feed less hay in the short-run.
• Very dry conditions will negatively affect cattle prices.

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• Higher than expected corn acres results in expectations for lower feed prices and higher cattle prices.
• Lower than expected corn acres results in expectations for higher feed prices and lower cattle prices.</td></tr>
<tr><td colspan="2">Risk Management Decisions</td></tr>
<tr><td colspan="2">Livestock Risk Protection (LRP) Insurance for feeder cattle
The number of animals to be insured and the coverage level is to be determined here. The current expected price for “Weight 2” calves (over 600 pounds) to be delivered at the end of July will be used to determine coverage price levels for a 26-week policy contract.

Decision 1: LRP – Feeder Cattle insurance for steers
Determine how many of your 43 steers you wish to buy a 26-week price insurance policy for assuming an ending weight of 675 pounds in late July.

Decision 2: LRP – Feeder Cattle insurance for heifers
Determine how many of your 43 heifers you wish to buy a 26-week price insurance policy for assuming an ending weight of 625 pounds in late July.

Decision 3: Buy or sell hay
Hay may be purchased to increase inventory for winter feeding or sold to generate cash flow. Remember, you cannot carry a negative inventory at the end of any period. If you run short of hay during the winter feeding period, it will be purchased for you at the prevailing market price.</td></tr>
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<tr><th>Period 3</th><th>Risk and Probability of Occurrence</th><th>Impact</th></tr>
<tr><td>Apr. 1
to
Jun. 30</td><td><u>Spring Precipitation</u>
Above Normal (31%)
Normal (42%)
Dry (20%)
Extremely Dry (6%)

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<u>Corn Crop Condition Report</u>
Excellent (20%)
Normal (65%)
Poor (15%)</td><td>• Good spring precipitation will increase forage and livestock yields while decreasing hay prices due shifts in supply and demand. Lower feed prices increase cattle prices.
• Poor spring precipitation will decrease forage and livestock yields while having a positive impact on hay prices and a negative impact on cattle prices.
.....
• Hay prices will fall and calf prices will rise when corn crop conditions are excellent because of expectations for an abundance of inexpensive feed.
• Hay prices and calf prices normally decrease this time of year due to seasonal affects.
• Poor corn crop conditions will have a positive effect on hay prices and a negative effect on calf prices.</td></tr>
<tr><td></td><td colspan="2">Risk Management Decisions</td></tr>
<tr><td></td><td colspan="2">Livestock Risk Protection (LRP) Insurance for feeder cattle
The number of animals to be insured and the coverage level is to be determined here. The current expected price for “Weight 2” calves (over 600 pounds) to be delivered at the end of July will be used to determine coverage price levels for a 13-week policy contract.

Decision 1: LRP – Feeder Cattle insurance for steers
Determine how many of your 43 steers you wish to buy a 13-week price insurance policy for assuming an ending weight of 675 pounds in late July.

Decision 2: LRP – Feeder Cattle insurance for heifers
Determine how many of your 43 heifers you wish to buy a 13-week price insurance policy for assuming an ending weight of 625 pounds in late July.</td></tr>
<tr><th>Period 4</th><th>Risk and Probability of Occurrence</th><th>Impact</th></tr>
<tr><td>Jul. 1
to
Sep. 30</td><td><u>Summer Precipitation</u>
Above Normal (30%)
Normal (38%)
Dry (33%)

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<u>Corn Crop Condition Report</u>
Above Expectations (20%)
As Expected (65%)
Below Expectations (15%)</td><td>• Good summer precipitation will increase forage and livestock yields while decreasing hay prices due shifts in supply and demand. Lower feed prices increase cattle prices.
• Poor summer precipitation will decrease forage and livestock yields while having a positive impact on hay prices and a negative impact on cattle prices.
.....
• Hay prices will fall and calf prices will rise when corn crop conditions are above expectations because of expectations for an abundance of inexpensive feed.
• Hay prices and calf prices normally decrease this time of year due to seasonal affects.
• Poor corn crop conditions will have a positive effect on hay prices and a negative effect on calf prices.</td></tr>
<tr><td></td><td colspan="2">Risk Management Decisions</td></tr>
<tr><td></td><td colspan="2">Decision 1: Contract Weaned Steer Calves
You have the opportunity to contract your steer calves to a private buyer. Non contracted steers will be sold at auction at the end of July.

Decision 2: Buy or sell hay
Hay may be sold or purchased to adjust inventory levels. You must end the scenario with 113 tons of hay in inventory for winter feeding.</td></tr>
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http://www.rightrisk.org

Ag Survivor is an innovative risk research and education program. It uses real world farm and ranch settings and agricultural economics to help you understand and explore risk management decisions and evaluate the effects of those decisions. You will learn about your personal risk management style and preferences while building your decision-making skills.

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This Ag Survivor scenario was developed by RightRisk in cooperation with the Virginia Cooperative Extension and the USDA Risk Management Agency with funding support from Partnership Agreement No. 11 IE 53102 069.