

Case Study: Fruit Farmer

Following is a simple case study involving a fruit producer from the northeastern United States. His/her financial statements which include a Balance Sheet, Enterprise Budgets, and a projected Cash Flow Statement were prepared utilizing Finpack®, agricultural financial planning and analysis software developed by the University of Minnesota's Center for Farm Financial Management. Take a look at the numbers and try to identify those areas where risk may have a negative impact.

Both husband and wife are partners in this fruit operation along with their son and one seasonal employee. With a minimal amount of custom hire, they farm approximately 45 acres. They grow apples, peaches, and sweet corn that they sell both wholesale and retail. They also produce apple cider. For more detailed information, please refer to the set of actual financial statements.

I. Balance Sheet

The Balance Sheet is the most important financial statement. It is a summary or "snapshot" of the assets, liabilities, and owner's net worth or equity at one point in time. The Balance Sheet is the critical part of a loan application and it shows financial position and progress.

Their net worth is \$1,931,096. This is calculated by subtracting their total liabilities (\$287,483) from their total assets (\$2,218,579).

Their assets (anything of value) are divided into current (one year or less), intermediate (one to ten years), and long term (more than ten years).

Current Assets:

Checking	\$ 76,000
Apple Inventory	<u>30,000</u>
TOTAL	\$106,000

Intermediate Assets:

Farm Machinery/Equip	\$121,150
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Long Term Assets:

Farm Land	\$1,991,429
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Like their assets, their liabilities (financial commitments or debts) are divided into the same categories, current, intermediate, and long term.

Current Liabilities:

Farm Accrued Interest	\$ 1,483
Accounts Payable	20,000
Current Principal Due	<u>7,006</u>
TOTAL	\$28,489

Intermediate Liabilities:

Truck Loan	NONE
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Long Term Liabilities:

Mortgage	\$258,994
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II. Crop Budgets

The fruit farm family has developed enterprise budgets for each of the commodities that they produce and subsequently sell. These particular budgets include the yield and price, as well as direct expenses associated with the individual commodity on a per acre per year basis. The budgets reflect the average of the expenses and income over the past few years.

Referring to the actual budgets, you will note the following return (per acre) over direct expenses for each of the commodities:

Apples	\$1,509.69
Apples (New Trees)	-\$1,640
Peaches	\$2,239.75
Sweet Corn	\$1,565.41

In these examples, all of the expenses that were difficult to break out on a per-acre per-commodity basis are included in the projected cash flow as lump sums spread out throughout the year.

Projected Cash Flow

Referring to the first page of the Cash Flow, please note that the ending cash balance is \$58,571 in the Cash Flow Summary. Over the course of the year this nursery farm was required to borrow \$13,457 all of which it was able to pay back before the end of the year. By doing their cash flow projection, they could make plans to secure an operating loan at the beginning of the year.

When you look at the Farm Financial Standard Measures, also on the first page, plug the numbers into the Farm Finance Scorecard that also includes the definitions and calculations of the measures. These measures will provide a summary of the financial health of the nursery operation ranking the farm's performance from vulnerable to strong.

Schedule G: Crops and Feed

Crop	Description	Quantity	Value Per		Value
			Unit		
Apples		3,000 bu.	10.00		30,000
Total crops held for sale or feed					30,000

Schedule J: Machinery and Equipment

Make/Model	Model	Serial No./VIN	Year	Pct.	Cost	Market
	Year		Purchased	Ownership	Value	Value
case 2140	-		1994	100.00 %	-	15,000
john deere 2150	-		1993	100.00 %	-	8,500
john deere 820	-		1968	100.00 %	-	1,000
hyster fork truck	-		1985	100.00 %	-	10,000
hyster fork truck QN20	-		1948	100.00 %	-	500
orchard sprayer FMC	-		1985	100.00 %	-	5,000
woods rotary mower	-		1980	100.00 %	-	750
plastic laying machine	-		1980	100.00 %	-	600
corn planter JD 2 row	-		1976	100.00 %	-	1,000
2 air pruners	-		1980	100.00 %	-	1,500
compressor	-		1995	100.00 %	-	2,000
JD offset disk	-		1972	100.00 %	-	500
JD roller harrow	-		1983	100.00 %	-	1,500
herbicide sprayer	-		1980	100.00 %	-	250
auger	-		1975	100.00 %	-	750
3 low bed orchard wagons	-		1988	100.00 %	-	6,500
350 bulk bins	-		1983	100.00 %	-	7,000
packing equipment	-		1958	100.00 %	-	5,000
cider mill	-		1975	100.00 %	-	10,800
2 stainless bulk tanks	-		1999	100.00 %	-	1,200
7 refrig. compressor	-		1988	100.00 %	-	5,000
3 pre fab walkin refrig.	-		1988	100.00 %	-	10,000
3 refrig. cases (store)	-		1988	100.00 %	-	3,000
4 ovens	-		1988	100.00 %	-	5,000
2 -25*96 greenhouse	-		1996	100.00 %	-	8,000
1- 25*48 greenhouse	-		1990	100.00 %	-	2,000
4 greenhouse furnace	-		1979	100.00 %	-	1,200
sickle bar mower	-		1970	100.00 %	-	200
springtooth harrow	-		1970	100.00 %	-	200
2 bottom JD plow	-		1970	100.00 %	-	400
3 point hitch forks	-		1979	100.00 %	-	200
1500 apple boxes	-		1955	100.00 %	-	1,500
misc.	-		-	100.00 %	-	5,000
4 cash registers	-		1988	100.00 %	-	100
Total machinery and equipment					-	121,150

Schedule M: Farm Land

	Acres	Mkt Val Per Acr	Cost Value	Market Value
store property/building	2.6	342,857	605,000	891,429
orchard land	44.1	13,605	50,000	600,000
tower site	0.13	923,077	-	250,000
Total land			655,000	1,741,429

Schedule N: Buildings and Improvements

	Year Built	Cost Value	Market Value
residence/farm buildings	1968	40,000	250,000
Total buildings and improvements		40,000	250,000

Schedule Q: Accounts Payable and Accrued Expense

	Balance
parts	5,000
plants	10,000
fertilizer	5,000
Total accounts payable and accrued expense	20,000

Schedule U: Long Term Farm Liabilities

	Interest Rate	Principal Balance	Accrued Interest	Normal P & I	Past Due P & I	Month Due	Final Year	Principal Due	Lg Term Balance
Mortgage	9.25 %	266,000	1,483	32,852	-	multiple	2019	7,006	258,994
Total long term farm liabilities		266,000	1,483	32,852	-			7,006	258,994

Schedule Y: Ratio Analysis

	Cost	Market
Current ratio	3.72	3.72
Farm working capital	77,511	77,511
Current farm percent in debt	27 %	27 %
Intermediate farm percent in debt	- %	- %
Current + intermediate farm percent in debt	27 %	13 %
Long term farm percent in debt	37 %	13 %
Nonfarm percent in debt	- %	- %
Total debt to asset ratio	36 %	13 %
Total equity to asset ratio	64 %	87 %
Total debt to equity ratio	56 %	15 %

Crop Budget No.	1		2		3	
Crop	Apples		Apples		Sweet Corn	
Unit	bu.		bu.		doz.	
Type			Establish			
Description	wholesale					
	Lng Range	Year 1	Lng Range	Year 1	Lng Range	Year 1
Yield	300	-	-	-	417	-
Price	11.00	-	-	-	4.20	-
Product income	3300.00	0.00	0.00	0.00	1751.40	0.00
Miscellaneous income	-	-	-	-	-	-
Gross income	3300.00	0.00	0.00	0.00	1751.40	0.00
Seed	-	-	1400.00	-	33.33	-
Fertilizer	38.81	-	50.00	-	41.66	-
Crop chemicals	342.00	-	105.00	-	68.50	-
Crop insurance	-	-	-	-	-	-
Drying fuel	-	-	-	-	-	-
Irrigation energy	-	-	-	-	-	-
Packaging and supplies	125.00	-	-	-	-	-
Custom hire	-	-	-	-	-	-
Hired labor	1284.50	-	85.00	-	42.50	-
Total direct expense	1790.31	0.00	1640.00	0.00	185.99	0.00
Return over direct expense	1509.69	0.00	-1640.00	0.00	1565.41	0.00
Labor hours	117.3	-	7	-	-	-

Crop Budget No.	4	
Crop	Peaches	
Unit	box	
Type		
Description	wholesale	
	Lng Range	Year 1
Yield	187	-
Price	10.00	-
Product income	1870.00	0.00
Miscellaneous income	1305.00	-
Gross income	3175.00	0.00
Seed	-	-
Fertilizer	25.00	-
Crop chemicals	332.70	-
Crop insurance	-	-
Drying fuel	-	-
Irrigation energy	-	-
Packaging and supplies	125.00	-
Custom hire	-	-
Hired labor	452.55	-
Total direct expense	935.25	0.00
Return over direct expense	2239.75	0.00
Labor hours	-	-

Feed Prices

	Sales Price	Purchase Price
Corn equivalents (bu.)	-	-
Hay equivalents (ton)	-	-
Silage equivalents (ton)	-	-
Protein equiv. (cwt.)	-	-

Projected Cash Flow Summary

Total operating inflow		198,485
Total operating outflow	(-)	182,880
Capital purchases	(-)	-
Capital sales	(+)	-
New credit	(+)	-
Loan payments	(-)	33,034
Net cash flow	(=)	-17,429
Beginning cash balance	(+)	76,000
Operating loan borrowings	(+)	13,457
Operating loan principal payments	(-)	13,457
Ending cash balance	(=)	58,571
Beginning operating loan balance	-	-
Peak operating loan balance (Jul)		13,457
Ending operating loan balance	-	-

Projected Change in Working Capital

Change in cash		-17,429
Change in current inventories	(+)	21,489
Change in operating loan balance	(-)	-
Change in other current loans	(-)	-
Estimated change in working capital	(=)	4,060

Projected Income Statement

Gross cash farm income		198,485
Inventory change - income items	(+)	6
Gross revenue	(=)	198,491
Cash farm operating expense		182,880
Interest expense	(+)	26,034
Depreciation	(+)	12,115
Inventory change - expense items	(+)	-21,483
Total farm expense	(=)	199,547
Net farm income		-1,056

Projected Net Worth Change

Net farm income		-1,056
Nonfarm income	(+)	-
Family living / owner withdrawals	(-)	-
Income & social security tax	(-)	-
Earned net worth change	(=)	-1,056

Term Debt Coverage

Projected net farm income		-1,056
Depreciation	(+)	12,115
Nonfarm income	(+)	-
Family living/owner withdrawals	(-)	-
Income and social security tax	(-)	-
Interest paid on term debt	(+)	24,369
Balance available for term debt	(=)	35,429
Term debt payments		32,852
Term debt coverage		107.8

Farm Financial Standards Measures

Liquidity	Beginning	Ending
Current ratio	3.7	12.6
Working capital	77,511	81,571

Solvency (market)

Debt to asset ratio	13.0	11.8
Equity to asset ratio	87.0	88.2
Debt to equity ratio	14.9	13.4

Profitability (market)

Rate of return on assets		1.1
Rate of return on equity		-0.1
Operating profit margin		11.8
Net farm income		-1,056

Repayment Capacity

Term debt coverage		107.8
Capital replacement margin		2,577

Efficiency

Asset turnover rate (market)		9.0
Operating expense ratio		82.1
Depreciation ratio		6.1
Interest expense ratio		12.4
Net farm income ratio		-0.5

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Total</i>
CASH INFLOWS													
Beg cash bal	76000	69409	62318	40974	16904	500	500	500	19392	48278	48044	51806	76000
Peaches	-	-	-	-	-	-	3989	19947	5984	-	-	-	29920
Apples	-	-	-	-	-	-	-	13500	13500	13500	13500	13500	67500
Sweet Corn	-	-	-	-	-	-	-	6071	4554	-	-	-	10625
Misc. crop	-	-	-	-	-	-	-	-	10440	-	-	-	10440
Other farm	6667	6667	6667	6667	6667	6667	6667	6667	6667	6667	6667	6667	80000
Total inflow	82667	76075	68984	47640	23570	7167	11156	46685	60536	68445	68210	71973	274485
CASH OUTFLOWS													
Seed	-	-	7000	200	-	-	-	-	-	-	-	-	7200
Fertilizer	-	-	1226	250	-	-	-	-	-	-	-	-	1476
Chemicals	-	-	10027	411	-	-	-	-	-	-	-	-	10438
Pkg & supply	-	-	-	1750	1750	-	-	-	-	-	-	-	3500
C. Labor	-	-	-	14868	14868	-	255	-	-	-	-	-	29990
Fuel & oil	833	833	833	833	833	833	833	833	833	833	833	833	10000
Repairs	500	500	500	500	500	500	500	500	500	500	500	500	6000
Labor	2083	2083	2083	2083	2083	2083	2083	2083	4583	4583	4583	4583	35000
M & B leases	356	356	356	356	356	356	356	356	356	-	-	-	3200
Pers prop tx	-	4000	-	-	4000	-	-	4000	-	-	4000	-	16000
Farm insur.	4165	665	665	4165	665	665	4265	665	665	4165	665	665	22076
Utilities	1658	1658	1658	1658	1658	1658	1658	1658	1658	1658	1658	1658	19900
Marketing	92	92	92	92	92	92	92	92	92	92	92	92	1100
Misc.	-	-	-	-	-	-	-	-	-	4999	502	1500	7000
Accounts pay	833	833	833	833	833	833	833	833	833	833	833	833	10000
Min end bal	500	500	500	500	500	500	500	500	500	500	500	500	500
Tot. outflow	11020	11520	25773	28499	28138	7520	11375	11520	10020	18163	14167	11164	183380
Opr. surplus	71646	64555	43211	19141	-4568	-354	-219	35165	50516	50281	54044	60809	91105

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Total</i>
LOAN PAYMENTS													
Mortgage	2738	2738	2738	2738	2738	2738	2738	2738	2738	2738	2738	2738	32852
Tot loan pay	2738	2738	2738	2738	2738	2738	2738	2738	2738	2738	2738	2738	32852
Surp. or def	68909	61818	40474	16404	-7305	-3091	-2957	32427	47778	47544	51306	58071	58253
ANNUAL OPERATING LOAN TRANSACTIONS & BALANCES													
Beg AO bal	-	-	-	-	-	7305	10439	13457	-	-	-	-	-
AO borrowing	-	-	-	-	7305	3134	3018	-	-	-	-	-	13457
AO int. pay	-	-	-	-	-	43	61	78	-	-	-	-	182
AO prin. pay	-	-	-	-	-	-	-	13457	-	-	-	-	13457
End AO bal.	-	-	-	-	7305	10439	13457	-	-	-	-	-	-
Accrued int.	-	-	-	-	-	-	-	-	-	-	-	-	-
End cash bal	69409	62318	40974	16904	500	500	500	19392	48278	48044	51806	58571	58571

CROP & LIVESTOCK PRODUCTION

Enterprise	Units	Production Per Unit	Share	Operator Production
Apples, wholesale	20.0 Acres	300.0 bu.	100	6000 bu.
Apples	5.0 Acres	0.00 bu.	100	0 bu.
Sweet Corn	6.0 Acres	417.0 doz.	100	2502 doz.
Peaches, wholesale	8.0 Acres	187.0 box	100	1496 box
Total crops	39 Acres			

CROP & LIVESTOCK SUMMARY

		Beg	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Apples															
Produced	bu.	-	-	-	-	3000	3000	-	-	-	-	-	-	-	6000
Sold	bu.	-	-	-	-	-	-	-	-	1200	1200	1200	1200	1200	6000
Price	\$/bu.	-	-	-	-	-	-	-	-	11.25	11.25	11.25	11.25	11.25	11.25
Inventory	bu.	3000	3000	3000	3000	6000	9000	9000	9000	7800	6600	5400	4200	3000	3000
Sweet Corn															
Produced	doz.	-	-	-	-	-	-	-	2502	-	-	-	-	-	2502
Sold	doz.	-	-	-	-	-	-	-	-	1429	1071	-	-	-	2500
Price	\$/doz.	-	-	-	-	-	-	-	-	4.25	4.25	-	-	-	4.25
Inventory	doz.	-	-	-	-	-	-	-	2502	1073	2	2	2	2	2
Peaches															
Produced	box	-	1496	-	-	-	-	-	-	-	-	-	-	-	1496
Sold	box	-	-	-	-	-	-	-	199	997	299	-	-	-	1496
Price	\$/box	-	-	-	-	-	-	-	20.00	20.00	20.00	-	-	-	20.00
Inventory	box	-	1496	1496	1496	1496	1496	1496	1297	299	0	0	0	0	0

PROJECTED INVENTORY CHANGE

Commodity	Begin Inventor	\$/Unit	Begin Value	Ending Inventory	\$/Unit	Ending Value	Change
Apples	3000	10.00	30000	3000	10.00	30000	0
Sweet Corn	0	0.00	0	2	3.00	6	6
Peaches	0	0.00	0	0	15.00	0	0
Accounts receivable			0			0	0
Hedging accounts			0			0	0
Other current assets			0			0	0
Total income items			30000			30006	6
Prepaid expenses & supplies			0			0	0
Growing crops			0			0	0
Accounts payable		(End)	0		(Beg)	20000	20000
Accrued interest		(End)	0		(Beg)	1483	1483
Total expense items			0			21483	21483
Total inventories			30000			51489	21489

BALANCE SHEETS

	<i>01/01/2004</i>	<i>Projected 01/01/2005</i>
ASSETS		
Current Assets		
Cash & checking	76000	58571
Crops	30000	30006
CCC crops (net of loan)	-	-
Market livestock	-	-
Total current assets	106000	88577
Intermediate Assets		
Machinery & equipment	121150	109035
Total intermediate assets	121150	109035
Long Term Assets		
Land	1741429	1741429
Buildings & improvements	250000	250000
Total long term assets	1991429	1991429
Total farm assets	2218579	2189040
Nonfarm assets	-	-
Total assets	2218579	2189040
LIABILITIES		
Current Liabilities		
Accrued interest	1483	-
Accounts payable	20000	-
Current farm notes		
Operating loan	-	-
Total current liabilities	21483	-
Intermediate Liabilities		
Total inter. liabilities	-	-
Long Term Liabilities		
Mortgage	266000	259000
Total long term liab.	266000	259000
Total farm liabilities	287483	259000
Nonfarm liabilities	-	-
Total liabilities	287483	259000
Net worth	1931096	1930040
Net worth change		-1056
Total debt to asset ratio	13 %	11 %

Note: The principal due within 12 months on term liabilities was not moved up to the current liabilities.
The CCC crops have been valued net of loan for the above balance sheets.