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Model Business Plan for Season Extension with **Hoophouses**

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MICHIGAN STATE UNIVERSITY EXTENSION

Background: Since 2006, Michigan State University (MSU) faculty and staff members, working with farmers and community partners throughout the state, have conducted research on hoophouses (also known as high tunnels) for use in extending the season for vegetable and small fruit production. Results of the research indicate that, with good management and growing consumer demand for locally grown foods, hoophouses can contribute to farm profitability. Statewide outreach efforts based on the research have reached almost 2,000 current and prospective growers.

Use of these materials: Farmers can use this information to develop a business plan for hoophouse production. Such a plan may be required by lenders to obtain credit to purchase a hoophouse structure. Even if a loan is not required, it is a good practice to develop a business plan in advance of any major change or new venture in a farming operation. The plan can help a farmer anticipate and better deal with inevitable challenges.

The balance sheets and budgets were developed by Mike Score, of MSU Extension, and David Conner, C.S. Mott Group for Sustainable Food Systems at MSU, using results from Conner and Mike Hamm's research projects[1], yield and price data from John Biernbaum and Adam Montri, MSU Student Organic Farm and Department of Horticulture, and other university publications. The numbers have been reviewed by several Michigan farmers. The results in this document represent what a good manager with sound production and marketing practices can likely achieve. We strongly suggest that Michigan residents use the services of an MSU Product Center innovation counselor[2] to guide the overall business planning process. Further information on hoophouses can be found at: **http://hoophouse.msu.edu/blog/index.php**.

Caveats and suggestions: In this scenario, the hoophouse is an add-on to an already successful farm business; the basic overhead costs of a farm — such as land, taxes, buildings, equipment and vehicles — are assumed to be covered by the farm business. Only new expenses associated with this new venture are included in this scenario. The farmer already has established customers, markets and infrastructure (e.g., a packing line). Without these, the prospects for success would be greatly diminished.

In this scenario, the farmer asks for an expansion of an existing line of credit from a bank with which he or she already has a good track record. The farmer likely would need to provide evidence of both collateral and his/her own investment even for a line of credit; the need would be much higher if it were a new loan application.

[1] Initial funding for the research and outreach efforts came from the USDA Cooperative State Extension, Education Service (CSREES), MSU Extension, the Michigan Agricultural Experiment Station and Project GREEEN. Funding for development of business plans came from Project GREEEN (**www.greeen.msu.edu**).

[2] **www.productcenter.msu.edu/**.

This plan does not consider increased taxes on income and property value as a cost.

A farmer applying for a loan would need access to many more documents than are mentioned here. Specifically, much more documentation of the farm business and farmer history will be needed. The farmer should obtain a credit report and be prepared to discuss any past delinquencies. The farmer should also have evidence of the farm's financial performance over the past three years, including cash flow, tax documents and balance sheets listing all the farm's assets and liabilities.

Cost estimates from licensed contractors (to install electrical and water lines) and/or past invoices from agricultural suppliers (seeds and compost) will increase lenders' confidence that costs estimates are well-founded and that overruns will not undermine the planned activities. Documentation of the basis for estimated yield and price outcomes (past farm records, USDA price data, university-based enterprise budgets) will also increase credibility in lenders' eyes.

The lender will also want to see documentation of the overall farm business structure. If it is an L.L.C., bring the charter and be prepared to talk about who is the managing partner and who has authority to borrow or pledge assets. Documentation of off-farm income and family living expenses will also give the lender a better picture of the farmer and the business.

Acknowledgements

Thanks to the following people for their helpful comments, suggestions and assistance: Mike Score, Hantz Farms; Dave Russ, USDA Farm Service Agency; Tom Urban and Dave Armstrong, Greenstone Farm Credit Services; Bob Jones, Cornerstone Alliance, Berrien County, Michigan; MSU Extension educators Frank Gublo, Hannah Stevens and Van Varner; Michigan farmers Jimmy Spencer, Nic Welty, and Adam and Dru Montri; Susan Smalley, MSU.

Baseline Scenario

Business plan to add one hoophouse to David's Family Farm, L.L.C.

(Note: This is a model business plan to add a hoophouse to a diversified vegetable farm. The names, places and other details are made up but reflect a realistic scenario.)

David Farmer
123 Rural Rd., Farmville, Mich.

Business Plan Contents

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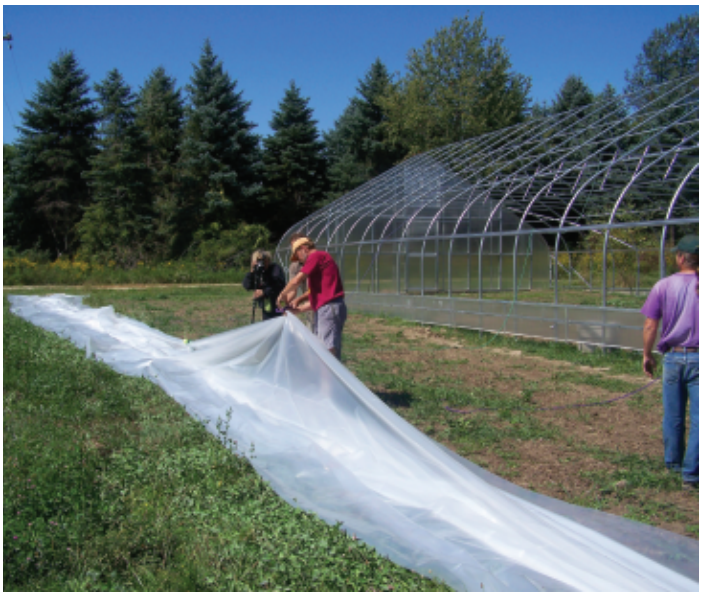


Executive Summary

This business plan proposes adding a hoophouse to our farm operation. We believe it will both bring direct income and give us additional ways to sell our produce. Our farm has operated successfully for 10 years, with an emphasis on selling locally and naturally grown produce to our friends and neighbors.

We anticipate net incomes of $2,851, $5,072 and $8,008 in 2011-2013 and an increase in our net worth of $4,846 as a result of this enterprise. We request a loan through our line of credit for $21,585. With anticipated cash flow, this will keep our cash reserves at or above $100 each month and allow the purchase of the hoophouse and needed materials. By the end of 2013, our balance on the loan will be $479.

Our primary market, a farmers' market in Farmville, will be open year round starting next year, which motivates our desire for the hoophouse. We have spoken to our current farmers' market customers and wholesale buyers (chefs) and read research conducted at MSU, and we believe there will be a strong market for the produce. I took online course and continue to meet with other farmers using hoophouses to educate myself in their use.

Business Description

My wife and I have operated a diversified vegetable farm, David's Family Farm, L.L.C., since 1999. We own about 12 acres in Farmville, Mich., and currently farm about 3 acres. We utilize organic growing methods but are not certified organic, preferring the assurance of our relationship with our customers and our ability to talk to them about how we produce.

Our mission statement is: "To provide fresh, healthy food to our neighbors through direct and other local markets, producing in ways that respect our environment and community, and earning a viable living with a manageable work and stress load."

Our vision is: "A prosperous farm in tune with our community and the environment."

We grow about 30 types of vegetables and small fruits, including salad and cooking greens, tomatoes, roots, strawberries and herbs. We provide much of the labor ourselves, although we hire two interns per year; these are usually young people interested in farming and eager to gain hands-on experience. We value them for their energy and passion as well as direct labor contributions. I got my start as an intern at Ten Hens Farm, and I believe helping young farmers get started is a way to pay it forward. We also hire a few local retirees for the packing shed in peak summer months. My wife has on off-farm job as a schoolteacher to provide us with health benefits and off-farm income.

Most of our sales are through our local farmers' market in Farmville and, as supply allows, in peak season in Nearby City. We have a set of dedicated customers who come to us regularly for their produce needs and with whom we have developed friendships. We also have sales to three local chefs who value our high quality produce and feature it (and their connection to our farm). Every fall we have a harvest festival to which we invite the chefs, farmers' market customers and other neighbors to thank them for their support. The relationships with our customers and the reliable supply of high quality, fresh produce we provide form the foundation of our business.

We were recently contacted by the market manager of the Farmville Farmers' Market, who wishes to keep the market open year round. The market will operate outdoors weekly from June to October and will move indoors to the Farmville Municipal Building lobby and operate twice a month from January to March and four times a month in November, December, March and April. On the basis of recent research from Michigan State University, we believe customers will attend out-of-season farmers' markets if fresh, local produce is available. We have the capacity to grow and store root vegetables, but to fully move on this opportunity, we need a hoophouse to make available fresh salad greens through the winter. We recently toured the Michigan State University Student Organic Farm and visited a farm in our region that has worked with MSU, and we believe that a hoophouse would greatly add to the profitability of our farm. We therefore present this business plan for adding a 96- by 30-foot hoophouse to our farm. We plan to prepare the site in April-July, purchase the structure and erect it in August 2010, begin planting in September 2010 and begin sales in January 2011.

Products and Services

Our products will be fresh, locally grown vegetables grown with organic methods (for example, no chemical fertilizers or synthetic pesticides). On the basis of MSU research, we believe a three-phased planting and harvest approach is best. Major planting periods are early fall (for late fall and winter harvest), late winter (for spring harvest) and late spring (for summer and early fall harvest). The first two are for the "cool-season" crops below; the last will be for "warm-season" crops.

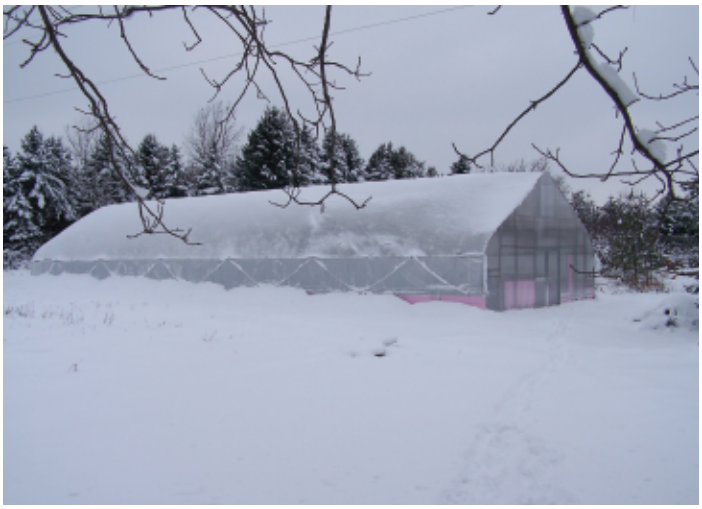
In the finances section, we provide detail on the crops grown — expected yields, prices and revenues. We plan to use the hoophouse year round to supplement what we already produce in our fields and sell to these markets.

Marketing

With the opportunity to sell beyond our current growing season, we will expand our marketing efforts. We currently have an e-mail list with 122 names, to which we send weekly newsletters on what is available, recipes and general news from the farm. We have a Facebook page with 34 "fans" and hope to use the e-mail list to get more. We will put up signs and pass out reminder brochures at our farmers' market stand to alert customers that we'll be staying open and telling them the dates, times and place. I have spoken informally with our regulars, and they are very excited to be able to buy from us year round. The hoophouse will increase our customer loyalty by keeping customers in the habit of buying from us year round. The market manager plans a campaign to publicize the extended market as well.

We have visited the chefs to gauge their willingness to buy produce in winter months, and they are very interested. They particularly want salad greens but will take some herbs and cooking greens, too. They are reluctant to set prices right now but say if our price is only slightly above what they pay for "off the truck," it should work. They agreed to take weekly deliveries on days when I am coming into town for the farmers' markets. I also met with a produce manager and another chef to whom I am not really interested in selling (too far a drive) just to gain more market information. Both expressed general interest in the products.

We will continue the practices that have established our good relationships with the chefs. First and foremost is reliability. They do not want last-minute surprises. We send availability lists and make absolutely certain to fill all orders exactly as requested. I also talk to them before the season about items and varieties they'd like me to grow and give them a heads-up a few weeks in advance about what will be coming into season soon and approximate quantities. I alert them again if anything changes. We bring free samples of new things to regular buyers and samples to new buyers, and we invite all buyers out to the farm to see our operation.



Operations, Management and Human Resources

I will be the primary manager and laborer for the hoophouse enterprise. MSU research says that, on average, growing in one hoophouse takes about 335 hours per year. I plan to use it primarily as a way to have profitable labor opportunities from October to March, as well as to grow fragile but high value early- and late-summer crops. MSU

research also says there can be a steep learning curve because hoophouse production is different from outdoor production. I took the MSU online hoophouse course and plan to complete it while my loan application is under review. Another hoophouse farmer has agreed to answer my questions and allow visits if I need them (we are far enough apart that we do not compete in markets).

Legal

I consulted with my attorney, and have included adequate funds for permits. I will consult with him again as needed. My business is currently organized as a limited liability corporation (L.L.C.), and there is no need to change that. I will increase my insurance to cover the new asset and increased market volume.

Finances

To give a full picture of both my current business (farming without a hoophouse) and the new enterprise I wish to explore (adding a hoophouse), I will present the projected finances of the hoophouse enterprise in a table, then entered into a financial document software package, FinPack (with help from my local Extension educator), as well as a description of the farm as it is now. All FinPack documents are appendices to this document.

After discussions with MSU faculty members using my market research (including discussions with buyers), I have developed a set of tables with projected revenues and fixed and variable costs of the hoophouse enterprise for the first four years of operation.

Table 1. Variable costs.

Direct materials	Year 1	Years 2 to 4	Notes
Seed	$250	$250	
Fertilizer	$40	$40	$40 for 3 cubic yards
Weed control	$50	$50	Sawdust and straw
Insect control	$40	$40	$50 for insecticidal soap
Irrigation	$10	$10	$10 for well water
Electricity	$30	$30	$30/year for electricity for small blower fan (part of kit) to inflate layers
Harvest/packing supplies	$585	$310	Harvest materials include $50 in harvest containers, $250 in salad spinner, $50/year in bags (1,000 bags), $10 in harvest shears, $25 in a scale (not certified but for us to be consistent), $100 in a cooler and $3/week in ice. The salad spinner and scale are reusable.
Boxes	$180	$180	
SUM	$1,185	$910	

Marketing costs. We will go to farmers' markets 18 additional times if we get a hoophouse. The round trip mileage is 30 miles ($15 at 50 cents per mile), stall fees are $20, and we estimate additional wear and tear on our canopy, table, signs, etc., as costing $5 per market. We'll budget $720 (18 times $40) for the extra farmers' markets. The chefs' dropoffs require an extra 5 miles round trip, costing $45 total ($2.50 times 18). Total marketing costs will be $765 per year.

Expected revenue. This table gives the space allocation, crops, expected yields, average prices and revenues for our 2,800-square-foot (2,100 square feet of growing space) hoophouse enterprise. After speaking with MSU experts, we took their yields (called optimum in the table below) and multiplied optimum yields by .80 (80 percent) for a novice farmer. Our projected prices are midway between wholesale and retail and assume wholesale price is about half of retail: for example, salad mix retails for $8/lb and

Table 2. Fixed costs.

Item	Year 1	Years 2 to 4	Notes
Legal	$400	$50	
Accounting	$300	$200	
Education	$1,000	$50	The online course costs $1,000, and I am budgeting another $50 per year for other educational needs.
Technology support	$100	$100	
Insurance	$650	$650	Insurance is for a rider on the hoophouse and extra sales.
Water	$210	$50	For irrigation installation — $210 for year 1 for drip tape, pressure regulators and other reusable materials. $50 to replace parts if needed.
Electric	$1,000	$50	$1,000 to run a line from house to hoophouse, with budget in years 2-4 for parts if needed.
Hoophouse	$12,000	$0	
Supplies	$1,000	$500	Supplies in year 1 include a seeder and broadfork, with budget for extra/replacement if needed.
Site preparation	$1,000	$0	Site preparation entails renting a small backhoe for grading and a trencher for electric and water lines ($1,000).
Permits	$250	$250	
Construction labor	$1,350	$0	We may need to hire additional help to construct ($9/hour for 150 hours).
Payroll tax	$181.80	$0	Construction labor
SUM	$19,441.80	$1,900	

wholesales for $4/lb, so we estimate the average price as $6/lb. We anticipate greater volume sales to retail, so this may be a conservative price. We estimate selling 70 percent of production, and to have 1.5 cool-season crops and one warm-season crop (because of the need to tear out old plants to put in new ones). Finally, we anticipate revenue will grow by 15 percent each year as our skills and markets improve. (See * below in bottom row of Table 3.)

Potential Risks and Pitfalls

I foresee a few risks and possible pitfalls and have plans to address them. First, there is production risk: my yields may be less than anticipated, although I have taken the online course and will continue to research and learn the needed skills. The hoophouse itself mitigates many risks such as climate and diseases.

There is also price and marketing risk, but I have strong relationships with my farmers' market and chef customers, and research shows strong demand for my products Finally, there is risk that I will lack sufficient labor. Much of the major work will take place during off-season months, and if needed, I can hire hourly employees or interns.

Table 3. Expected crops, yields and revenue, year 1.

Cool-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Salad mix	840	0.5	0.4	336	$6	$2,016	$1,411
Spinach	840	1	0.8	672	$4.50	$3,024	$2,117
Lettuce	210	1.5	1.2	252	$0.75	$189	$132
Chard	210	4	3.2	672	$1.50	$1,008	$706
SUM						$6,237	$4,366
Warm-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Tomato	1050	1.9	1.52	1596	$2.25	$3,591	$2,514
Pepper	630	0.35	0.28	176.4	$2.25	$397	$278
Egg-plant	420	0.8	0.64	268.8	$2.25	$605	$423
SUM						$4,593	$3,215
Total year 1*							$9,764

* Assuming one warm season and 1.5 cool season crops per year.

Table 4. Revenue flow over year 2 (2011).[1]

Month	Revenue
Jan	$680
Feb	$680
Mar	$510
Apr	$510
May	$595
Jun	$595
Jul	$1,445
Aug	$1,445
Sep	$1,275
Oct	$680
Nov	$680
Dec	$680
SUM	$9,775

[1] We estimate the same relative distribution (with 15 percent annual increases) in subsequent years.

Table 5. Pro forma budget.

Item	2010	2011	2012	2013
Revenue	0	$9,765	$11,230	$12,914
Direct costs	$1,185	$1,185	$910	$910
Overhead costs	$19,442	$1,900	$1,900	$1,900
Marketing costs	0	$765	$765	$765

Finances of current farm operation. Last year we grossed about $100,000 and netted about $35,000. We continue to pay our mortgage and line of credit each month.

Table 6. Last year's farm budget.

Gross revenue	$100,000
Labor cost	$25,000
Input cost	$8,000
OH costs	$28,000
Marketing	$3,500
Net	$35,500

Hoophouse Business Plan Alternative Scenarios

Alternative Scenario 1: Two Hoophouses

Description

The farmer buys two hoophouses using an existing credit line. The farmer has the same basic markets and assets as "David Farmer" in the original scenario.

Costs and Revenues

Marketing costs are the same as in the original scenario. Farmer makes 18 trips to farmers' market at $40 per trip for mileage, stall fees and wear on equipment. The deliveries to chefs cost an additional $45. Total marketing costs are $765 per year.

Expected revenue

Table on page 10 gives the space allocation, crops, expected yields, average prices and revenues for our two-hoophouse enterprise (4,200 square feet of growing space). The yields, prices and basic assumptions are similar to those in the original business plan. Again, it is assumed the farmer will have one warm-season and 1.5 cool-season harvests, and that revenues increase 15 percent annually.

FinPack financial documents are attached as appendices to this document.

Discussion. Assuming the markets, labor and management are available, two hoophouses can be an even better investment than one.

Table 7. Variable costs, two hoophouses.

Direct materials	Year 1	Years 2 to 4	Notes
Seed	$500	$500	
Fertilizer	$80	$80	$80 for 6 cubic yards
Weed control	$100	$100	Sawdust and straw
Insect control	$80	$80	$80 for insecticidal soap
Irrigation	$20	$20	$20 for well water.
Electricity	$60	$60	$60/year for electricity for small blower fan (part of kit) to inflate layers
Harvest/packing supplies	$1,170	$620	Harvest materials include $100 in harvest containers, $500 in salad spinners, $100/year in bags (1,000 bags), $10 in harvest shears, $50 for two scales (not certified but for us to be consistent), $200 in a cooler and $6/ week in ice. The salad spinners and scales are reusable.
Boxes	$360	$360	
SUM	$2,370	$1,820	

Table 8. Fixed costs, two hoophouses.

Item	Year 1	Years 2-4	Notes
Legal	$400	$50	
Accounting	$300	$200	
Education	$1,000	$50	The online course costs $1000, and I am budgeting another $50 per year for other educational needs.
Technology support	$100	$100	
Insurance	$1,300	$1,300	Insurance is for a rider on the hoophouse and extra sales.
Water	$420	$100	For irrigation installation — $420 for year 1 for drip tape, pressure regulators and other reusable materials. $100 to replace parts if needed.
Electric	$2,000	$100	$2,000 to run a line from house to hoophouses, with budget in years 2-4 for parts if needed.
Hoophouse	$24,000	$0	
Supplies	$2,000	$500	Supplies in year 1 include a seeder and broadfork, with budget for extra/replacement if needed.
Site preparation	$2,000	$0	Site preparation entails renting a small backhoe for grading and a trencher for electric and water lines.
Permits	$500	$500	
Construction labor	$2,700	$0	We may need to hire additional help to construct ($/9hour for 300 hours).
Payroll tax	$363.60	$0	Construction labor
SUM	$37,083.60	$2,900	

Table 9. Expected crops, yields and revenue, year 1.

Cool-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Salad mix	1050	0.5	0.4	420	$6	$2,520	$1,764
Spinach	1050	1	0.8	840	$4.50	$3,780	$2,646
Lettuce	700	1.5	1.2	840	$0.75	$630	$441
Chard	700	4	3.2	2240	$1.50	$3,360	$2,352
Kale	700	3	2.4	1680	$1.50	$2,520	$1,764
SUM				6020		$12,810	$8,967
Warm-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Tomato	2100	1.9	1.52	3192	$2.25	$7,182	$5,027
Pepper	1260	0.35	0.28	352.8	$2.25	$794	$556
Eggplant	840	0.8	0.64	537.6	$2.25	$1,210	$847
SUM				4082.4		$9,185	$6,430
Total year 1*							$19,880

* Assuming one warm season and 1.5 cool season crops per year.

Table 10. Pro forma budget: two hoophouses.

Item	2010	2011	2012	2013
Revenue	0	$19,880	$22,862	$26,291
Direct costs	$2,370	$1,820	$1,820	$1,820
Overhead costs	$37,084	$2,900	$2,900	$2,900
Marketing costs	0	$765	$765	$765
Net	($39,454)	$14,395	$17,377	$20,806

Alternative Scenario 2: Wholesale

Table 11. Variable costs, wholesale.[1]

Direct materials	Year 1	Years 2-4
Seed	$250	$250
Fertilizer	$40	$40
Weed control	$50	$50
Insect control	$40	$40
Irrigation	$10	$10
Electric	$30	$30
Harvest/packing supplies	$585	$310
Boxes	$1,000	$1,000
SUM	$2,005	$1,730

[1] Except for additional boxes, the direct costs are the same as in the original scenario.

Description

The farmer sells wholesale only to various accounts (chefs and retailers) in town and buys a hoophouse so he can sell year round. He makes an additional 26 deliveries each year with the hoophouse.

Overhead costs are the same as in the original scenario.

Marketing costs are assumed to be $465 per year (26 trips to town, 35 miles round trip, 50 cents/mile).

Expected revenue

The yields are the same as in the original scenario. The prices are, on average, lower (because the farmer sells only wholesale), but it is assumed that the farmer sells 90 percent of the produce. Revenues again increase by 15 percent annually.

Table 12. Expected crops, yields and revenue, year 1.

Cool-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 90% sold**
Salad mix	1050	0.5	0.4	420	$4	$1,680	$1,512
Spinach	1050	1	0.8	840	$3	$2,520	$2,268
SUM				1260		$4,200	$3,780
Warm-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 90% sold**
Tomato	1400	1.9	1.52	2128	$1.50	$3,192	$2,873
Pepper	700	0.35	0.28	196	$1.50	$294	$265
Eggplant	0	0.8	0.64	0	$2.25	$0	$0
SUM				2324		$3,486	$3,137
Total year 1*							$8,807.40

* Assuming one warm season and 1.5 cool season crops per year.

Table 13. Pro forma budget, wholesale only.

Item	2010	2011	2012	2013
Revenue	0	$8,807	$10,128	$11,647
Direct costs	$2,005	$1,730	$1,730	$1,730
Overhead costs	$19,442	$1,900	$1,900	$1,900
Marketing costs	0	$455	$455	$455
Net	($21,447)	$4,722	$6,043	$7,562

Discussion: Despite lower marketing costs and greater percentage of produce sold, the wholesale scenario earns less than the original one. Net worth has decreased by $1,195 over four years. One factor not accounted for is the time saved by the farmer by not having to be present at farmers' markets.

Alternative Scenario 3: No Farm

Description

In this scenario, there is no farm — the farmer must purchase land and washing equipment as well as the hoophouse and other materials discussed above. Direct costs, marketing costs and revenues are the same as in the original scenario.

Discussion: With additional up-front expenses, the farmer owes $6,554, but net worth has increased by $3,076 (both figures determined using FinPack). One caveat is that without the established markets assumed in the original scenario, the revenue may be lower as well.

Table 14. Fixed costs, no farm.

Item	Year 1	Years 2-4
Legal	$400	$50
Accounting	$300	$200
Education	$1,000	$50
Technology support	$100	$100
Insurance	$650	$650
Water	$210	$50
Electric	$1,000	$50
Hoophouse	$12,000	$0
Supplies	$1,000	$500
Site preparation	$1,000	$0
Permits	$250	$250
Construction labor	$1,350	$0
Payroll tax	$181.80	$0
Land	$4,000	$0
Property tax	$100	$100
Washing equipment	$500	$0
Sum	$24,041.80	$2,000

Table 15. Pro forma budget, no farm.

Item	2010	2011	2012	2013
Revenue	0	$9,765	$11,230	$12,914
Direct costs	$1,185	$1,185	$910	$910
Overhead costs	$24,042	$1,900	$1,900	$1,900
Marketing costs	0	$765	$765	$765
Net	($25,227)	$5,915	$7,655	$9,339

Fill in Your Own Numbers

Use the information presented in the previous scenarios to complete spreadsheets for your operation.

Variable costs. *Results from business plan.*

Direct materials	Year 1	Years 2 to 4	Notes
Seed	$250	$250	
Fertilizer	$40	$40	$40 for 3 cubic yards
Weed control	$50	$50	Sawdust and straw
Insect control	$40	$40	$50 for insecticidal soap
Irrigation	$10	$10	$10 for well water
Electricity	$30	$30	$30/year for electricity for small blower fan (part of kit) to inflate layers
Harvest/packing supplies	$585	$310	Harvest materials include $50 in harvest containers, $250 in salad spinner, $50/year in bags (1,000 bags), $10 in harvest shears, $25 in a scale (not certified but for us to be consistent), $100 in a cooler and $3/week in ice. The salad spinner and scale are reusable.
Boxes	$180	$180	
SUM	$1,185	$910	

Variable costs. *Your Costs.*

Direct materials	Year 1	Years 2 to 4	Notes
Seed			
Fertilizer			
Weed control			
Insect control			
Irrigation			
Electricity			
Harvest/packing supplies			
Boxes			
SUM			

Fixed costs. *Results from business plans.*

Item	Year 1	Years 2 to 4	Notes
Legal	$400	$50	
Accounting	$300	$200	
Education	$1,000	$50	The online course costs $1,000, and I am budgeting another $50 per year for other educational needs.
Technology support	$100	$100	
Insurance	$650	$650	Insurance is for a rider on the hoophouse and extra sales.
Water	$210	$50	For irrigation installation — $210 for year 1 for drip tape, pressure regulators and other reusable materials. $50 to replace parts if needed.
Electric	$1,000	$50	$1,000 to run a line from house to hoophouse, with budget in years 2-4 for parts if needed.
Hoophouse	$12,000	$0	
Supplies	$1,000	$500	Supplies in year 1 include a seeder and broadfork, with budget for extra/replacement if needed.
Site preparation	$1,000	$0	Site preparation entails renting a small backhoe for grading and a trencher for electric and water lines ($1,000).
Permits	$250	$250	
Construction labor	$1,350	$0	We may need to hire additional help to construct ($9/hour for 150 hours).
Payroll tax	$181.80	$0	Construction labor
SUM	$19,441.80	$1,900	

Fixed costs. *Your results.*

Item	Year 1	Years 2 to 4	Notes
Legal			
Accounting			
Education			
Technology support			
Insurance			
Water			
Electric			
Hoophouse			
Supplies			
Site preparation			
Permits			
Construction labor			
Payroll tax			
SUM			

Marketing costs. *Results from business plans.**

Farmers Markets

Mileage

Number of trips per year	Round trip mileage 30	$/mile 0.5	Mileage cost $270
Stall fees	Number of trips per year 18	Fee/market $20	Stall Cost $360
Wear on equipment	Number of trips per year 18	Cost/market $ 5	Wear cost $ 90
Other costs			0
Other costs			0
Sum Farmers Market Fees			$720
Other deliveries			
Number of trips per year	Round trip mileage 18	$/mile 0.5	Mileage cost $ 45
Other costs			0
Other costs			
Other costs			
Total delivery costs			$ 45
Total marketing costs			$765

* Assuming one warm season and 1.5 cool season crops per year.

Marketing costs. *Your results.**

Farmers Markets			
Mileage			
Number of trips per year	Round trip mileage	$/mile	Mileage cost
Stall fees	Number of trips per year	Fee/market	Stall Cost
Wear on equipment	Number of trips per year	Cost/market	Wear cost
Other costs			
Other costs			
Sum Farmers Market Fees			
Other deliveries			
Number of trips per year	Round trip mileage	$/mile	Mileage cost
Other costs			
Other costs			
Other costs			
Total delivery costs			
Total marketing costs			

* Assuming one warm season and 1.5 cool season crops per year.

Revenue costs. *Results from business plans.*

Cool-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Salad mix	840	0.5	0.4	336	$6	$2,016	$1,411
Spinach	840	1	0.8	672	$4.50	$3,024	$2,117
Lettuce	210	1.5	1.2	252	$0.75	$189	$132
Chard	210	4	3.2	672	$1.50	$1,008	$706
SUM						$6,237	$4,366
Warm-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Tomato	1050	1.9	1.52	1596	$2.25	$3,591	$2,514
Pepper	630	0.35	0.28	176.4	$2.25	$397	$278
Egg-plant	420	0.8	0.64	268.8	$2.25	$605	$423
SUM						$4,593	$3,215
Total year 1*							$9,764

* Assuming one warm season and 1.5 cool season crops per year.

Revenue costs. *Your results.*

Cool-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Sum cool season							
Warm-season crops							
Crop	**Planting area (sq ft)**	**Optimal yield rate (lb/sq ft)**	**Expected yield rate (lb/sq ft)**	**Lb of produce**	**Average price ($/lb)**	**Revenue if all sold**	**Revenue if 70% sold**
Sum warm season							
Sum (assuming one warm and 1.5 cool season crop harvests)							

Pro forma budget. *Results from business plans.*

Item	2010	2011	2012	2013
Revenue	0	$9,765	$11,230	$12,914
Direct Costs	$1,185	$1,185	$910	$910
Overhead costs	$19,442	$1,900	$1,900	$1,900
Marketing costs	0	$765	$765	$765
Net	($20,627)	$5,915	$7,655	$9,339

Pro forma budget. *Your results.*

Item	2010	2011	2012	2013
Revenue				
Direct Costs				
Overhead costs				
Marketing costs				
Net				

The following data were generated for the hoophouse operation in the Baseline Scenario using the University of Minnesota's FINPACK® farm management program.

FINPACK®

Executive Summary

PROJECTED CASH FLOW SUMMARY

		Beg	2010	2011	2012	2013
Total operating inflow			-	9765	11230	12914
Total operating outflow	(-)		7627	3575	3575	3575
Capital purchases	(-)		13000	-	-	-
Capital sales	(+)		-	-	-	-
New credit	(+)		-	-	-	-
Loan payments	(-)		858	1259	919	-
Net cash flow	**(=)**		**-21485**	**4931**	**6736**	**9339**
Beginning cash balance	(+)		-	100	100	100
Operating loan borrowings	(+)		21585	2183	2088	1870
Operating loan prin pymts	(-)		-	7114	8824	11309
Ending cash balance	(=)		100	100	100	-
Beg operating loan bal			-	21585	16654	9918
Peak operating loan bal			21585	23768	18742	11787
End operating loan bal			21585	16654	9918	479

CHANGE IN WORKING CAPITAL

Change in cash			100	-	-	-100
Inventory changes	(+)		-	-	-	-
Change in opr loan bal	(-)		21585	-4931	-6736	-9439
Change in oth cur loans	(-)		-	-	-	-
Est change in working cap	(=)		-21485	4931	6736	9339

INCOME STATEMENT

Gross cash farm income			-	9765	11230	12914
Inv change-income items	(+)		-	-	-	-
Gross revenue	(=)		-	9765	11230	12914
Cash farm opr expense			7627	3575	3575	3575
Interest expense	(+)		858	1259	919	-
Depreciation	(+)		2600	2080	1664	1331
Inv change-expense items	(+)		-	-	-	-
Total farm expense	(=)		11085	6914	6158	4906
Net farm income			-11085	2851	5072	8008

NET WORTH CHANGE

		Beg	2010	2011	2012	2013
Net farm income			-11085	2851	5072	8008
Family living expense	(-)		-	-	-	-
Income and SS tax	(-)		-	-	-	-
Earned net worth change	(=)		-11085	2851	5072	8008

TERM DEBT COVERAGE

Net farm income from oper			-11085	2851	5072	8008
Depreciation	(+)		2600	2080	1664	1331
Personal income	(+)		-	-	-	-
Family living expense	(-)		-	-	-	-
Income and SS tax	(-)		-	-	-	-
Interest pd on term debt	(+)		-	-	-	-
Cap debt repay capacity	(=)		-8485	4931	6736	9339
Term debt payments			-	-	-	-
Term debt coverage			-	-	-	-

FARM FINANCIAL STANDARDS MEASURES

Liquidity					
Current ratio	-	0.0	0.0	0.0	-
Working capital	-	-21485	-16554	-9818	-479
Working capital to gross	Und	Und	-169.5	-87.4	-3.7
Solvency (market)					
Debt to asset ratio	-	205.6	197.8	146.8	9.0
Equity to asset ratio	100.0	-105.6	-97.8	-46.8	91.0
Debt to equity ratio		Und	Und	Und	0.10
Profitability (market)					
Rate of return on assets		-194.8	43.4	79.0	132.6
Rate of return on equity		Und	Und	Und	950.8
Operating profit margin		Und	42.1	53.3	62.0
Net farm income		-11085	2851	5072	8008
EBITDA		-7627	6190	7655	9339
Repayment Capacity					
Cap debt repay capacity		-8484.7	4930.8	6736.3	9339.0
Cap debt repayment margin		-8484.7	4930.8	6736.3	9339.0
Repayment margin		-8684.7	4770.8	6608.3	9236.6
Term debt coverage		-	-	-	-
Rep margin coverage ratio		-42.42	30.82	52.63	91.20
Efficiency					
Asset turnover (mkt)		-	103.2	148.0	213.8
Operating expense ratio		Und	36.6	31.8	27.7
Depreciation ratio		Und	21.3	14.8	10.3
Interest expense ratio		Und	12.9	8.2	-
Net farm income ratio		Und	29.2	45.2	62.0

Shocks - Change in Net Farm Income

10% decrease in prices	-	-	-	-
10% increase in expenses	-763	-358	-358	-358
3% increase in interest r	-483	-617	-443	-196

	2010 Jan-Dec	2011 Jan-Dec	2012 Jan-Dec	2013 Jan-Dec
CASH INFLOWS				
Beg cash bal	-	100	100	100
CoG G Profit	-	9765	11230	12914
Total inflow	-	9865	11330	13014
CASH OUTFLOWS				
Cust hire	7627	3575	3575	3575
Min end bal	100	100	100	-
Tot. outflow	7727	3675	3675	3575
Opr. surplus	-7727	6190	7655	9439

CAPITAL PURCHASES

Bldgs & impr	12000	-	-	-
Machinery	1000	-	-	-
Tot. cap pur	13000	-	-	-

LOAN PAYMENTS

Tot loan pay	-	-	-	-
Surp. or def	**-20727**	**6190**	**7655**	**9439**

ANNUAL OPERATING LOAN TRANSACTIONS & BALANCES

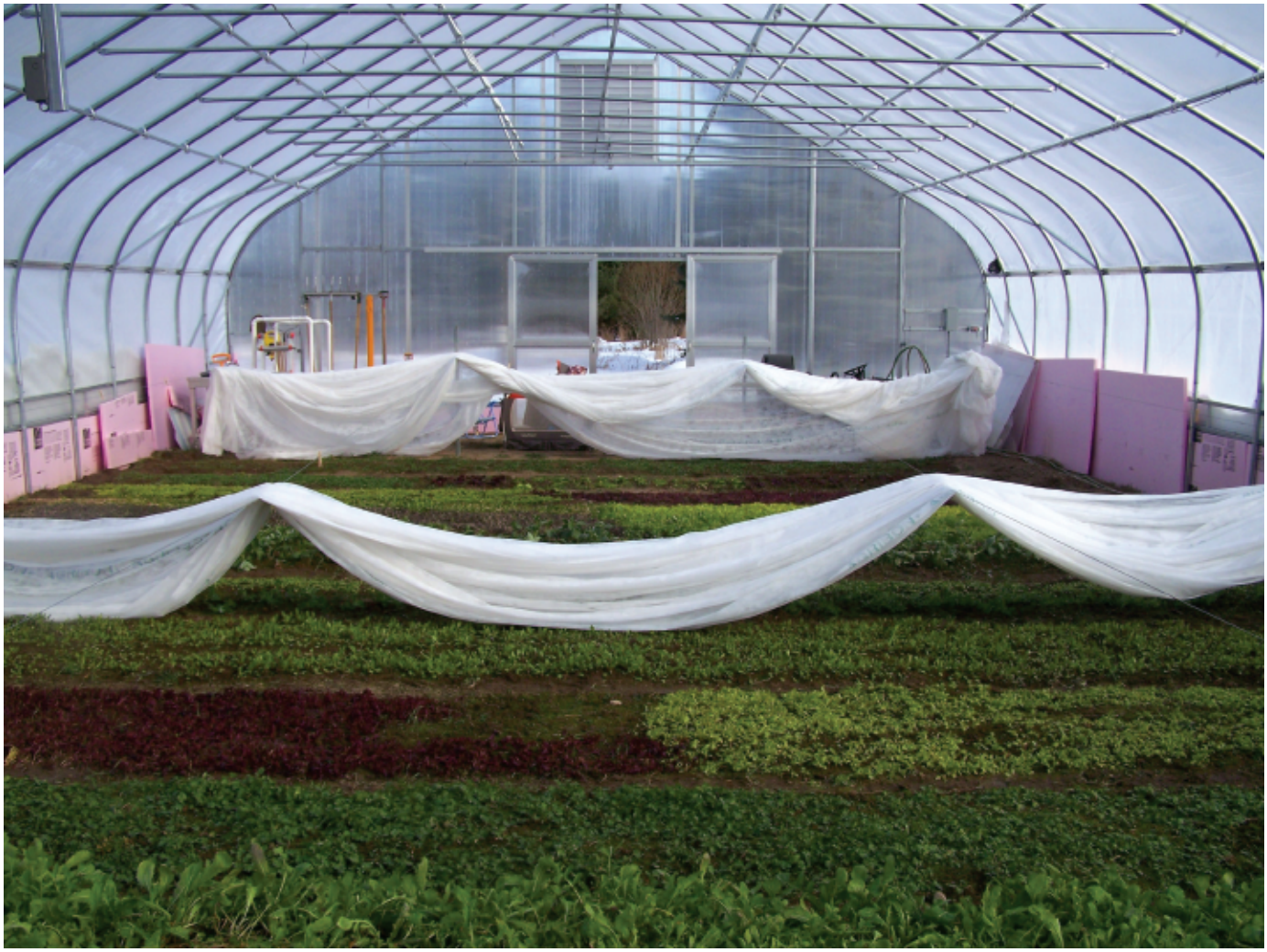
Beg AO bal	-	21585	16654	9918
AO borrowing	21585	2183	2088	1870
AO int. pay	858	1259	919	-
AO prin. pay	-	7114	8824	11309
End AO bal.	**21585**	**16654**	**9918**	**479**
Accrued int.	-	-	-	-
End cash bal	100	100	100	-

BALANCE SHEETS

		Projected			
	1/1/2009	1/1/2011	1/1/2012	1/1/2013	1/1/2014
ASSETS					
Current Assets					
Cash and checking	-	100	100	100	-
Total current assets	-	100	100	100	-
Intermediate Assets					
Machinery	-	800	640	512	410
Total intermediate assets	-	800	640	512	410
Long Term Assets					
Bldgs & improve.	-	9600	7680	6144	4915
Total long term assets	-	9600	7680	6144	4915
Total farm assets	-	10500	8420	6756	5325
Personal assets	-	-	-	-	-
Total assets	-	10500	8420	6756	5325
LIABILITIES					
Current Liabilities					
Operating loan(s)	-	21585	16654	9918	479
Total current liabilities	-	21585	16654	9918	479
Intermediate Liabilities					
Total inter. liabilities	-	-	-	-	-
Long Term Liabilities					
Total long term liab.	-	-	-	-	-
Total farm liabilities	-	21585	16654	9918	479
Personal liabilities	-	-	-	-	-
Total liabilities	-	21585	16654	9918	479
Net worth	-	-11085	-8234	-3162	4846
Net worth change		-11085	2851	5072	8008
Total debt to asset ratio	- %	205 %	197 %	146 %	9 %

PROJECTED INCOME STATEMENT

	2010	*2011*	*2012*	*2013*
CASH FARM INCOME				
CoG G Profit	-	9765	11230	12914
Gross Cash Farm Income	-	9765	11230	12914
CASH FARM EXPENSE				
Cust hire	7627	3575	3575	3575
Interest	858	1259	919	-
Total Cash Farm Expense	8485	4834	4494	3575
Net Cash Farm Income	-8485	4931	6736	9339
INVENTORY CHANGE				
Crops and feed	-	-	-	-
Market livestock	-	-	-	-
Accts receivable	-	-	-	-
Hedging accounts	-	-	-	-
Other current assets	-	-	-	-
Prepaid exp. & supply	-	-	-	-
Growing crops	-	-	-	-
Accounts payable	-	-	-	-
Accrued interest	-	-	-	-
Total Inventory Change	-	-	-	-
Net Operating Profit	-8485	4931	6736	9339
DEPRECIATION/CAP. ADJUST				
Machinery	200	160	128	102
Bldgs & impr	2400	1920	1536	1229
Total Depreciation	2600	2080	1664	1331
Net Farm Income	**-11085**	**2851**	**5072**	**8008**



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