

## Farm Economic Analysis

Farm Economic Analysis - A 2000 PFI on-farm research project

**Farm:** One Step at a Time Gardens, 1465 120th St., Kanawha, IA 50447

**Farmers:** Jan Libbey & Tim, Andrew, and Jessica Landgraf

**Tool: Standardized Analysis of Farming Economic Benefits**  
developed by David Washburn of Red Cardinal Farm, Stillwater, MN

Tim and Jan at their September field day.



Washburn's tool involves using eight "economic facts" to generate eleven "economic ratios". The tool is to

- Increase understanding of a farm's economics
- Help with comparisons between two different fiscal years on the same farm in monitoring progress toward financial goals.
- Provide a tool for comparison between different farming operations
- Allow meaningful comparisons without revealing the actual dollar amounts where privacy is a concern
- Aid in evaluating relative efficiency based upon scale of operation.

**Goal of economic analysis project:** evaluate the economic condition of our direct marketing operation.

This has been our second season using Washburn's economic analysis tool with our data. This tool was shared in a 1998 Upper Midwest Organic Farming Conference Workshop. The workshop was presented by two farms - Spring Hill Farm and Common Harvest (identified as SHF and CH, respectively, in the charts below). These two farms' data provide us benchmarks for comparing to our own data from One Step at a Time Gardens (OSTG in the charts below). Both SHF and CH farms serve larger population centers, are larger scale (SHF data was based on farming 3.5 acres and CH, 7 acres), and have a longer history of operation than our own farm. Our OSTG farm is located in a very rural part of northcentral Iowa, we farm 1.5 acres, serve 33 CSA families and two small farmers markets. The 2001 season will be our sixth.

We used Washburns' tool to compare both between the three farms and between two different years on our own operation.

### Overview:

#### Comparison between farms

The areas of greatest similarity between the three farms are related to production practices. In comparison to the two benchmark farms, this affirms our productivity of land use and labor utilization.

ECONOMIC RATIOS	OSTG 1999	OSTG 2000	SHF 1997	CH 1997
Gross Income to # Acres Farmed (\$/acre)	\$9,885	\$10,982	\$13,714	\$10,429
Total Person Days to # Acres Farmed	99.8	91.1	114.3	82.6
Total People/Acre/Season using Full Time Equivalency (FTE) †	1.08	1.18	0.94	1.30
Gross Farm Income to FTE ‡	\$10,642	\$12,963	\$12,900	\$13,577

† Total people/acre/season using Full Time Equivalency (FTE) – one measure of productivity related to the land used and labor required. (FTE is based on 10-hour days, 5 days per week, 4.3 weeks per month from May 1 – Sept. 30).

‡ Gross farm income to Full Time Equivalency (FTE) – a quick analysis of relative productivity of labor between farms, but tells only part of the story.

As we look at the areas of difference, the three farms differ most in income generation (market) and scale. In comparison to the two benchmark farms, the amount of income we spend on fixed costs consumes a larger portion of our gross income. In order to generate larger gross income from which to take those fixed costs, we need to sell more produce and/or get a higher dollar for what we do sell.

ECONOMIC RATIOS	OSTG 1999	OSTG 2000	SHF 1997	CH 1997
Farmer Income to # Acres Farmed †	\$2,154	\$2,143	\$7,429	\$5,286
Net Farm Income to FTE ‡	\$4,058	\$4,511	\$8,761	\$9,225
Net Farm Income to Gross Farm Income §	38%	35%	68%	68%
Farmer Income to Net Farm Income ¶	57%	56%	80%	75%
Farmer Income to Length of Farm Season # (\$/week)	\$93	\$100	\$619	\$881
x 52 weeks (\$/year)	\$4,853	\$5,200	\$32,190	\$45,810
Payroll Expense + Farmer Income to GFI ††	37%	39%	68%	63%

† Farmer income to # acres farmed – tells how much “take home” pay per acre.  
 ‡ Net farm income to FTE – shows how efficient is the use of labor for generating net income.  
 § Net farm income to gross farm income – measures efficiency of converting gross income to “take home pay”. Larger number, operation is more efficient.  
 ¶ Farmer income to net farm income – compares how much spent on assets vs. income. As a farm matures, one would expect the ratio to move above one and continue to grow year to year.  
 # Farmer income to length of farm season – The result is the dollar amount earned per week.  
 †† Payroll expense + farmer income to gross farm income – This is the percentage that actually directly benefits the people who work the farm, as opposed to off the farm suppliers. David Washburn uses 100% as an indicator of achieving sustainability. However, if we understand interdependence to be a valuable characteristic, this measure doesn't define sustainability for the community.

**Farm to Farm Comparison Summary**

The similarities between our farm and the two benchmark farms affirms our land and labor use. The differences between our farm and the two benchmark farms are rooted in income generation (market) and scale. The data indicates that we face two significant dynamics: the challenge of an underdeveloped local market and a small size that gives us an efficiency disadvantage.

**Comparison Between Two Different Fiscal Years on the Same Farm**

As we look at the data between 1999 and 2000, we find we did make progress in the area of income generation (market), in spite of a slight drop in CSA membership. Both the gross income/acres farmed and the gross income to FTE (see the chart of similarities) indicate improvement. In 2000, we increased our farmers market pricing to reflect cost of production more accurately. We also expanded sales of a post-season Holiday Box.

One area of notable decrease from 1999 to 2000 was payroll expense to gross farm income. We do not use volunteer or intern labor. We did increase the field hand wage paid and hired an extra person for a short portion of the summer. We have since purchased a cultivating tractor this fall to help alleviate the extra labor we felt we needed to hire this summer.

ECONOMIC RATIOS	OSTG 1999	OSTG 2000	SHF 1997	CH 1997
Payroll Expense to Gross Farm Income	14.80%	19.50%	14.00%	12.50%
(restaurants average 28-35%)				

**Conclusion**

In preparation for the 2000 season, we made a number of changes that have improved our system:

- Improved the logging of data collected - direct computer input
- Attended a 5-day Organic Vegetable Production Workshop in Feb. 2000 that gave us a number of new tools
- Improved our irrigation system
- Purchased a new mower specifically to help manage paths between our vegetable beds
- Scheduled Tim to work on-farm two half days/week June through August to assist with maintenance
- The market factor we face is even clearer after using this tool a second year. We expect market development to continue to be very gradual in northcentral Iowa.
- In preparation for the 2001 season, we plan to continue to improve efficiencies while improving how we serve existing markets and exploring new market opportunities. We are already pursuing two key areas:
- We purchased a tractor to help mechanize our cultivation.
- We are working on CSA box redesign that is in response to member feedback and hopefully will have broader appeal in our area.