

The Economic Contribution of the Vermont Maple Industry



Prepared for: the Vermont Maple Sugar Makers Association

By: Florence Becot, Jane Kolodinsky, PhD and David Conner, PhD

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About the Center for Rural Studies



The Center for Rural Studies (CRS) is a nonprofit, fee-for-service research organization that addresses social, economic, and resource-based problems of rural people and communities. Based in the College of Agriculture and Life Sciences at the University of Vermont (UVM), CRS provides consulting and research services in Vermont, the United States, and abroad. The research areas are divided into five main areas: Agriculture, Human Services and Education, Program Evaluation, Rural Community and Economic Development, and Vermont Community Data. The mission of CRS is to promote the dissemination of information through teaching, consulting, research and community outreach. Primary emphasis is placed upon activities that contribute to the search for solutions and alternatives to rural problems and related issues. Bringing decades of experience to its work, CRS recognizes that answers to critical and timely questions often lie within a community or organization.

For any questions or comments about this report, please contact Florence Becot, Research Specialist at the Center for Rural Studies at 802-656-9897 or at fbecot@uvm.edu.

The Center for Rural Studies is located at: 206 Morrill Hall, Burlington, VT 05405.



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Summary of Findings

Vermont maple producers are the top producers in the US and the sector has grown tremendously in Vermont over the years with a 131% growth in production between 1992 and 2014. Maple is a key enterprise for Vermont. It is the fourth most valued agricultural commodity and it is the second most valued crop closely behind greenhouses and nurseries. The Vermont maple industry is not limited to the producers but includes key sectors: packers and processors, equipment manufacturers, equipment dealers and installers.

In 2013, the Vermont maple industry contributed between \$317 and \$330 million in sales to the state of Vermont. The total effect sales multiplier is 1.49 meaning that for every dollar in sales generated by the maple industry another \$0.49 circulated in the local economy. Additionally, the Vermont maple industry contributed between \$140 and \$144 million in value added which in this case mostly includes wages and profits. With a total effect multiplier for value added of 1.69, for every dollar contributed in wages and profits another \$0.69 was added to the local economy. Last, the industry contributed between 2,734.93 full time equivalent (FTE) positions and 3,169.23 FTE. If we look at the number of jobs, knowing that one person can have more than one job, the range of jobs supported by the maple industry is between 3,192.1 and 4,519.7. The total effect employment multiplier was 1.25 and for every job in the maple sector another 0.25 was supported in the rest of the local economy.

Maple and the maple industry are synonymous with Vermont with its sugar houses and mountain sides with colorful leaves in the fall. The maple industry, beyond producing maple products, contribute to the image of Vermont and to its tourism. This report focuses on the economic contribution of the maple production supply chain from equipment manufacturing, equipment sales, installation to sugaring, packing and production of maple products. Though putting a dollar amount on the contribution of the maple industry to tourism in Vermont would be a complex task, and beyond the scope of this report, the contribution is likely very significant. The maple industry also contributes to Vermont by the way it has shaped and will continue to shape the landscape. For instance, technological advances and market structure evolutions will most likely change the face of the industry and the landscape which will further impact the Vermont economy.



Introduction

Vermont is the largest maple producer in the United States accounting for 42% of the production (USDA - National Agricultural Statistics Service, 2015). In Vermont, maple is a key agricultural enterprise. Based on cash receipts, maple is the fourth most valued agricultural commodity in Vermont and when livestock is removed, maple is the second most valued agricultural commodity closely behind the greenhouse and nursery industry (USDA - New England Agricultural Statistics, 2013). According to the latest census of agriculture, there were 1,553 maple producers in 2012 while the maple industry estimates that the number of producers actually ranges between 1,800 and 3,000. Vermont maple production has grown tremendously over the years, going from 570,000 gallons in 1992 to 1,320,000 in 2014, representing a 131% growth, while the value of maple production, not accounting for value added products, has grown from \$19,755,594 in 1992 to \$49,432,000 representing a 150% growth (USDA - National Agricultural Statistics Service, 2015; Vermont Sustainable Jobs Fund, 2011).

In addition to maple producers, the industry includes 24 licensed packers and processors (businesses that purchase at least 1,000 gallons of maple syrup in a year; number from Vermont Agency of Agriculture) and more than 100 businesses representing maple-specific equipment manufacturers, dealerships, and installers of sap collection infrastructure (estimate from the Vermont Maple Sugar Makers Association).

While maple is a key industry for Vermont from historical, cultural, agricultural and economical perspectives, to date of this report, there was no clear understanding of its actual economic contribution to the state. In the spring of 2014, the Vermont Maple Sugar Makers Association (VMSMA) contacted the Center for Rural Studies (CRS) at the University of Vermont to conduct an analysis of the contribution of the maple industry to Vermont's economy. Over several months, CRS collected data from the industry and this report summarizes the findings. The report is organized in the following manner. We first present an updated profile of the Vermont maple producers including general and economic characteristics based on the results of a survey of maple producers. We then describe what economic contribution studies are and the procedures used before we present the results of the economic contribution study of the Vermont maple industry to the state of Vermont.



Maple Syrup Producers' Profile

Data collection and data analysis

In collaboration with VMSMA, CRS designed a survey instrument to collect information from maple producers about their operations including 2013 production levels, expenditures and sales, labor, marketing and equipment. A paper survey was mailed to 2,952 producers in Vermont during the third week of August 2014 and reminder postcards were mailed a couple of weeks later. The list of addresses were from the Vermont Maple Sugar Makers Association (1,111 names), and the University of Vermont Extension (2,398 names). The two lists were merged and duplicates were removed. The list from UVM Extension included organizations that are not directly involved in the production of maple products such as service providers (state and federal agencies), financial institutions and educational institutions. Out of the 2,952 survey mailed, 130 were returned due to bad addresses, 166 were not or no longer were maple sugar producers, and a total of 298 completed surveys were returned. The results based on a group of this size have a margin of error of plus or minus 5.1 percent with a confidence interval of 95 percent. This means that we can be 95 percent certain that our results are within plus or minus 5.1 percentage points of the true population value.

Once the returned surveys were entered in a database we conducted univariate and bivariate analysis to summarize the data. Bivariate analysis is conducted by comparing the responses to questions from different groups. For instance gallons produced by the number of taps. The results from different groups of respondents are considered statistically significant if the values of the statistical tests used during the bivariate analysis are inferior or equal to 0.1. In this study we used χ^2 and F tests. The results of the statistical tests are reported using the following convention. Statistical significance: * = 0.10 level (10%), ** = 0.05 level (5%), *** = 0.01 level (1%). Statistical significance means that the response to the same question by different groups of producers is not likely to have happened by accident or by chance.

There were two open-ended questions at the end of the survey where respondents could provide their opinion on the biggest opportunities and threats to the maple industry in the next five years. These questions were analyzed by two researchers who read all of the responses and categorized the answers using keywords based on the responses. The number of categories based on keywords was then reduced to avoid redundancy and overlaps and comments were re-categorized to match the new categories. There was also an opportunity to provide comments. These were not analyzed but are available as an appendix.

The research instruments and methods used for this study were reviewed and approved by the University of Vermont Committee on Human Research in the Behavioral Sciences. This means that protocols were in place to ensure that the responses remained anonymous and the data collected was confidential.

Maple Producers Characteristics

In 2013, an average maple producers had 3,451 taps and produced 1,221 gallons of syrup. However, producers are a diverse group: there are very small-scale producers and very large-scale producers. The average numbers for the entire industry are therefore pulled by the extremes. A measure used to get a sense of the middle is the median¹. The median number of taps was 1,175 taps and 295 gallons per producer. The high standard deviations² (6,661.2 for the number of taps and 4,003.5 for the number of gallons) further illustrate the fact that production levels in Vermont are diverse with extremes from very small-scale producers to very large-scale producers (Table 1).

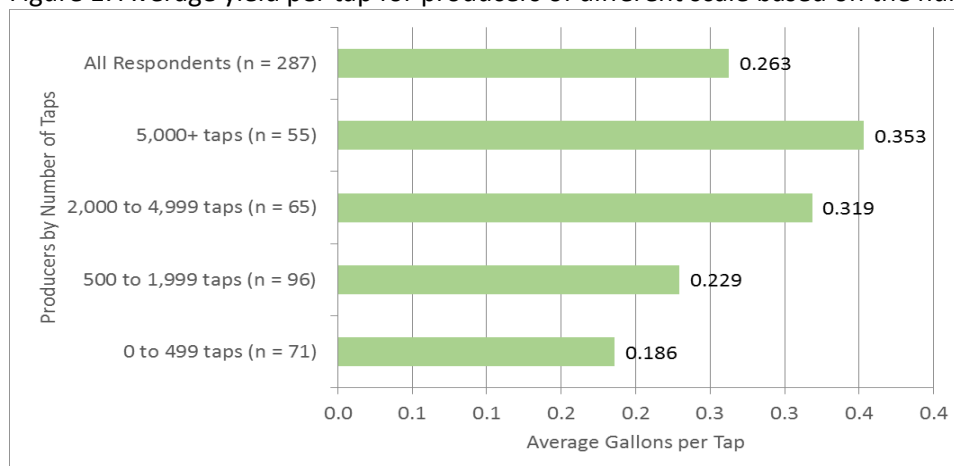
Table 1. Number of taps and number of gallons of syrup produced in 2013 (n = 298)

	Average	Median	Standard deviation	Minimum	Maximum
Number of taps	3451.1	1,175.0	6,772.8	0.0	66,000.0
Number of gallons	1,221.7	295.0	3,018.2	0.0	36,800.0

To present a more complete and nuanced picture of the industry, the rest of the survey responses are reported for all of the respondents as well as for groups of producers based on their operation size (the number of taps).

The number of taps and number of gallons produced were used to calculate the average yield in 2013. The average yield was 0.263 gallon per tap with the bigger operations having a higher yield (Figure 1). Producers with over 5,000 taps had an average yield of 0.353 gallons per tap while producers with 0 to 499 taps had an average yield of 0.186 gallons per tap.

Figure 1. Average yield per tap for producers of different scale based on the number of taps (n = 287)



Notes. F = 27.275, statistical significance at the 0.01 level.

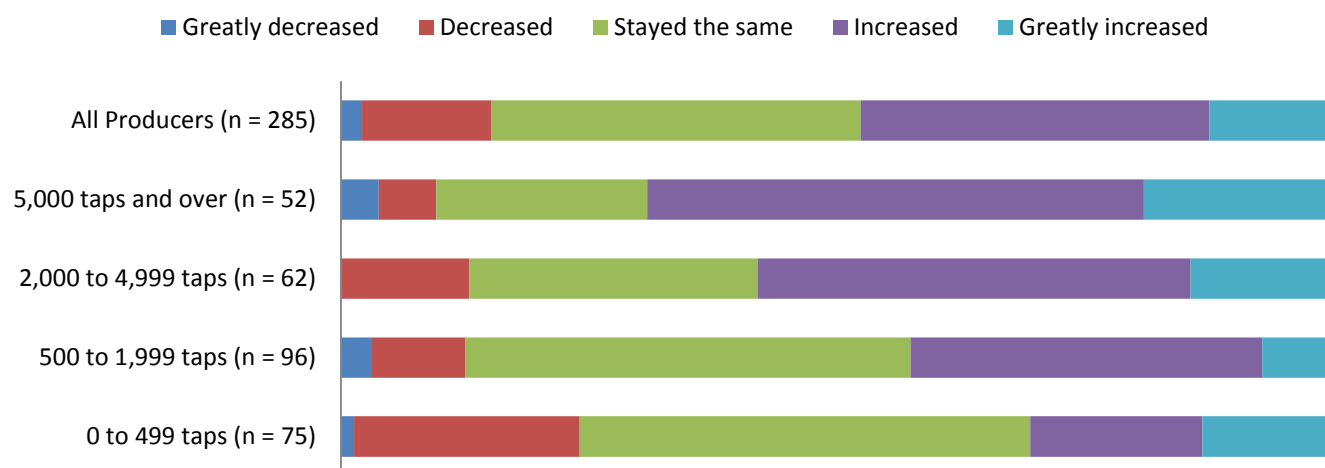
¹ The median determines the point where 50% of the producers are above and 50% of the producers are below.

² The standard deviation is the measure of spread of the responses in relation to the mean value. The larger the standard deviation the more the responses are spread apart. The smallest the standard deviation, the closest the responses are to the mean.

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In the last five years, 47.7% of the producers reported that maple production increased or greatly increased and 37.2% of the producers reported that the production stayed the same. Figure 2 shows that bigger-scale operations saw a greater production increase while smaller-scale operations saw production remaining constant. Also of note, the producers with 0 to 499 taps reported the highest proportion (22.7%) of decreased production.

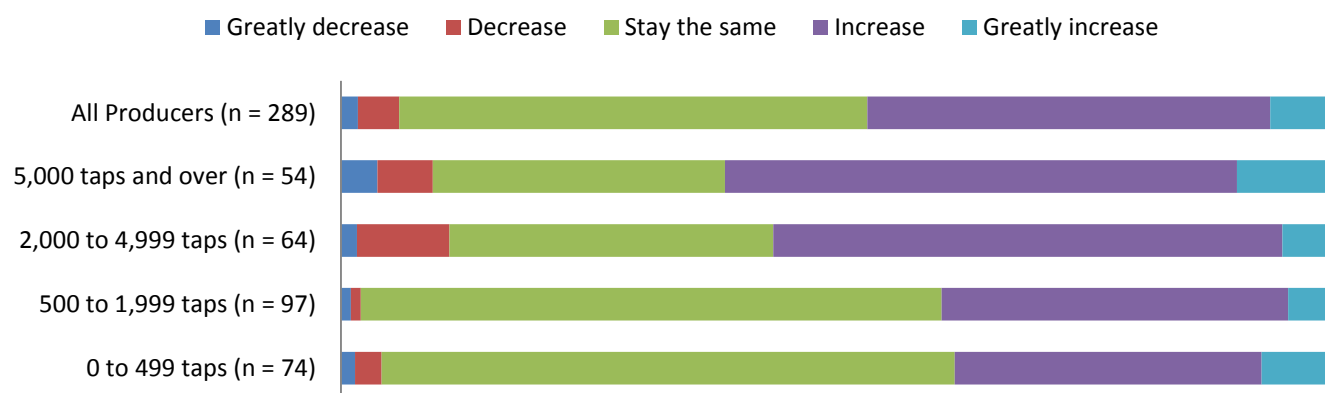
Figure 2. Perceived change in production over the last five years in percent (n = 285)



Notes. $\chi^2 = 34.203$, statistical significance at the 0.01 level.

Looking at the anticipated changes in the next five years, producers are split between constant production (47.4%) or increasing production (40.8%) (Figure 3). Similarly to five year production trends, larger-scale producers will increase their production in greater quantities: for producers over 2,000 taps about 51% will increase their production while about 30% of the producers between 0 and 1,999 taps will increase their production.

Figure 3. Anticipated change in production over the last five years in percent (n = 285)

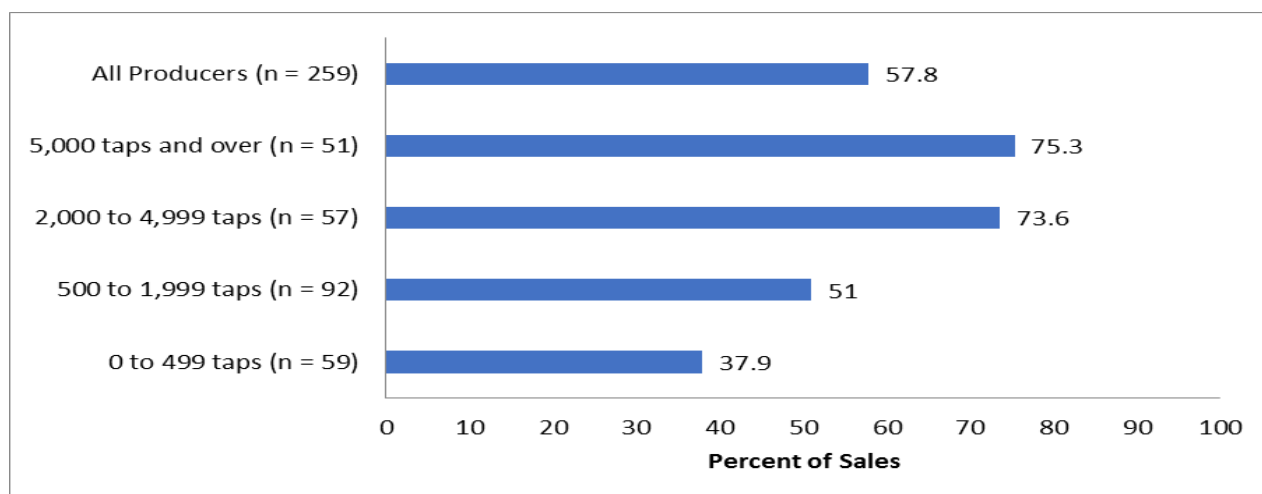


Notes. $\chi^2 = 27.311$, $p = 0.007$

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On average, maple production represented 57.8% of the total gross agricultural and forestry sales of the respondents and the larger scale the operation, the larger the proportion of gross sales are from maple sales (Figure 4).

Figure 4. Percentage of sales from maple production (n = 259)



Notes. F = 12.936, statistical significance at the 0.01 level.

In addition to maple, producers are engaged in diverse agricultural and forestry operations (Table 2). The most frequent agricultural and forestry operations include meat (16.1% of the respondents), wood/timber (13.1% of the respondents), vegetables (12.9% of the respondents), eggs (11.4% of the respondents) and hay (11.1% of the respondents). Farming was the primary occupation for 31.1% of the respondents, 54.4% of the respondents also had off-farm occupations and 19.4% reported being retired.

Table 2. Agricultural and forestry products produced by respondents in addition to maple in percent (n = 298)

Agricultural/forestry product produced by respondents	0 to 499 taps (n = 77)	500 to 1,999 taps (n = 100)	2,000 to 4,999 taps (n = 65)	5,000 taps and over (n = 56)	All producers (n = 298)
Meat	15.6	17.0	16.9	14.3	16.1
Wood/timber	13.0	14.0	12.3	12.5	13.1
Vegetables	18.2	12.0	12.3	3.6	12.1*
Eggs	19.5	11.0	9.2	3.6	11.4*
Hay	7.8	17.0	7.7	8.9	11.1
Fruits	14.3	3.0	9.2	7.1	8.1*
Dairy	5.2	11.0	9.2	5.4	8.1
Other	6.5	4.0	3.1	5.4	4.7
Grains	0.0	1.0	0.0	1.8	0.7

Notes. The total adds up to more than 100% as producers might produce more than one product beyond maple. Other includes: honey, smoked cheeses, cider, mushrooms, compost, wine, flowers.

*indicates statistical significance at the 0.1 significance level or lower.

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In terms of maple products produced, maple syrup tops the maple production and 90.6% of the producers produce syrup. Other maple products sold include maple cream (13.8% of the producers), maple candies (11.1% of the producers), sap (8.1% of the producers), other maple products such as maple seasoning or maple butter (4.7% of the producers) and maple sugar (3.4% of the producers). There were variations in the type of products by the operation size. Over 90% of the producers with over 500 taps produce maple syrup while 79% of the operations under 499 taps produce maple syrup (Table 3).

Table 3. Type of maple products that producers of different size sell in percent

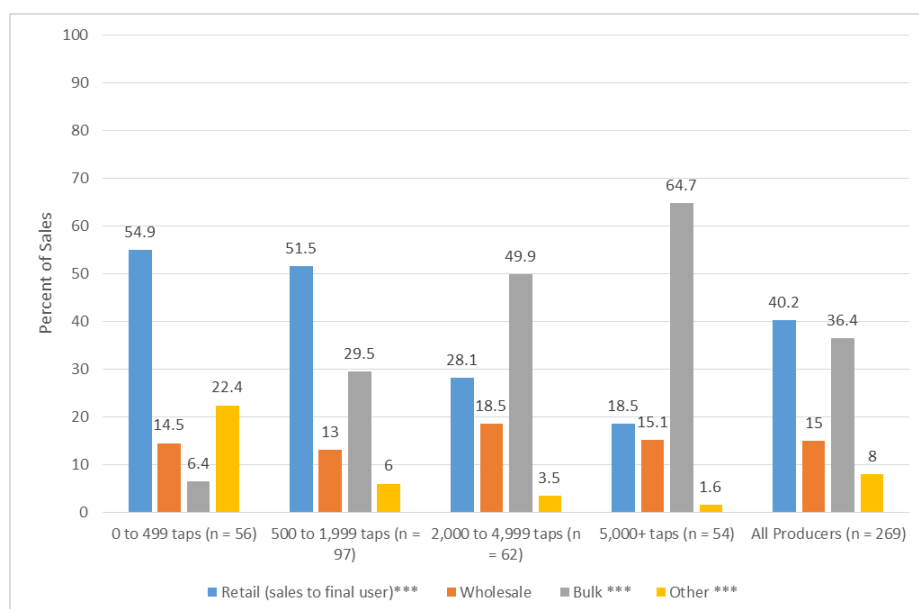
Types of maple products sold	0 to 499 taps (n = 77)	500 to 1,999 taps (n = 100)	2,000 to 4,999 taps (n = 65)	5,000 taps and over (n = 56)	All producers (n = 298)
Maple syrup	79.2	94.0	93.8	96.4	90.6
Maple cream	2.6	10.0	15.4	33.9	13.8
Maple candies	2.6	7.0	10.8	30.4	11.1
Sap	7.8	11.0	9.2	1.8	8.1
Other maple products	2.6	3.0	7.7	7.1	4.7
Maple sugar	0.0	4.0	4.6	5.4	3.4

Notes. Other maple products include: maple seasoning, maple butter, maple vinegar, granola, maple mustard. Total of all products per column is higher than 100% as producers could choose more than one answer.

Overall, maple production is sold to two main market channels: retail, which is defined as sales to the final users, and bulk, which is defined as sales to packers. Forty percent of the maple production was sold to retail and 36.4% was sold as bulk. The smaller market channels were wholesale (sales to a distributor or retailer) which represented 15% and sales to other channels (such as sales to other producers, personal use and donations) which represented 8% of the sales. Looking at different scales of operations, as shown on figure 5, the bigger scale the operation and the higher the proportion of the production sold to bulk. On the other end, the smaller scale the operation and the higher the proportion of the production sold to retail.

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Figure 5. Market channels for maple products in 2013 in percent (n = 269)



Notes. ***indicates statistical significance at the 0.01 significance level.

Producers were asked what they perceive to be the biggest threat to the maple industry in the next five years as well as the biggest opportunity. The responses to these questions were open ended and through a classification process nine main threats and seven main opportunities were identified. The two biggest threats were related to the environment (climate change, changing weather patterns and Asian beetles) and overproduction (Table 4). The biggest opportunities for the industry were market changes and marketing. Producers noted consumers' interest in natural food and the ability to reach new markets such as Asia and Europe (Table 5). Codes used to categorize the responses are available in Appendix A and complete responses from survey respondents are available in Appendix B. The comments from survey respondents are available in Appendix C.

Table 4. Biggest threats to the maple industry in the next 5 years in percent

Biggest threats	0 to 499 taps	500 to 1,999 taps	2,000 to 4,999 taps	5,000 taps and over	All producers
Competition	9.1	4.0	9.2	10.7	7.7
Marketing	6.5	5.0	10.8	5.4	6.7
Production	6.5	12.0	1.5	7.1	7.4
Pricing	3.9	7.0	6.2	10.7	6.7
Legal issues	14.3	20.0	7.7	16.1	15.1
Environmental issues	48.1	45.0	44.6	41.1	45.0
Growth of the industry	3.9	9.0	13.8	14.3	9.7
Maple industry	7.8	12.0	7.7	12.5	10.1
Overproduction	14.3	35.0	52.3	58.9	37.9

Notes. The total adds up to more than 100 as respondents could list more than one threat.

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Table 5. Biggest opportunities to the maple industry in the next 5 years in percent of respondents

Biggest opportunities	0 to 499 taps	500 to 1,999 taps	2,000 to 4,999 taps	5,000 taps and over	All producers
Market changes/marketing	57.1	57.0	53.8	64.3	57.7
Production	10.4	8.0	10.8	3.6	8.4
Product	14.3	12.0	18.5	19.6	15.4
Industry development	9.1	5.0	10.8	7.1	7.7
Environmental	5.2	4.0	1.5	3.6	3.7
Legal	1.3	4.0	1.5	0.0	2.0
Other	0.0	1.0	0.0	0.0	0.3

Notes. The total adds up to more than 100 as respondents could list more than one opportunity.

Economic Characteristics of Maple Producers

Expenditures on equipment, material, supplies, labor and taxes in 2013 are presented in Table 6 along with total sales. The magnitude of expenses varies greatly based on the size of the operations.

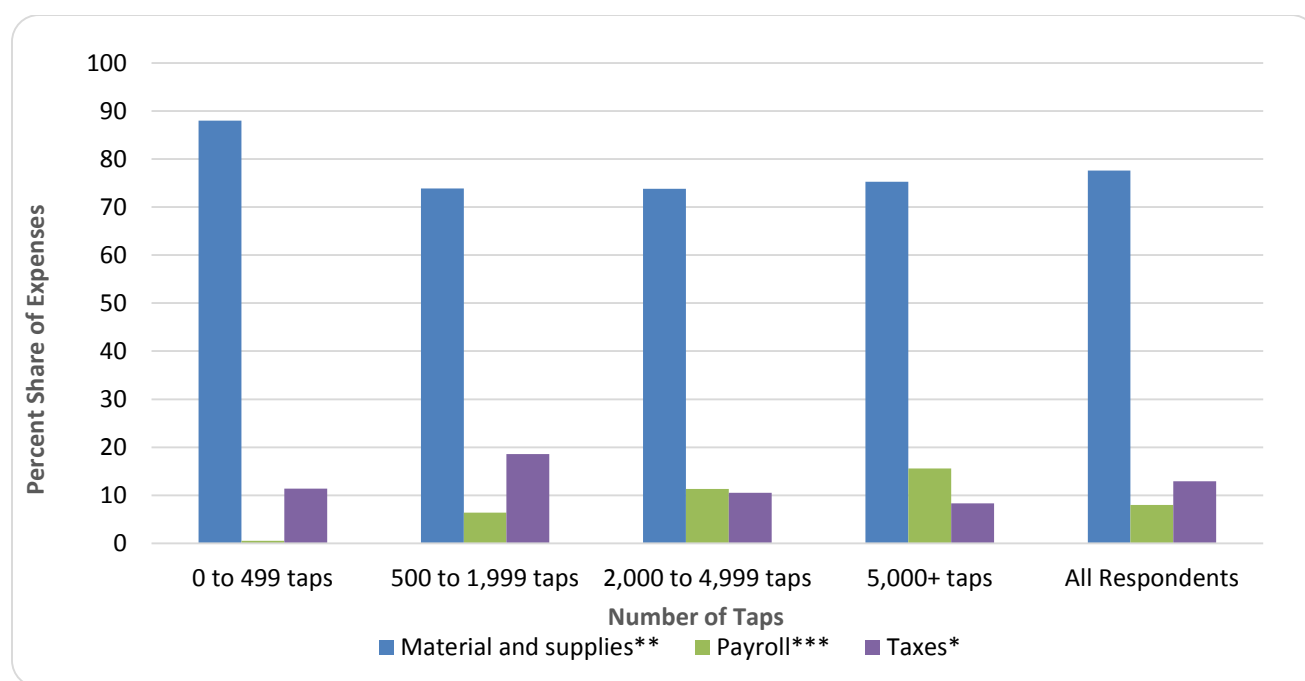
Table 6. 2013 Expenditures on equipment, material, supplies, payroll and taxes and sales in dollar

Expenditures	0 to 499 taps	500 to 1,999 taps	2,000 to 4,999 taps	5,000 taps and over	All producers
Equipment, material and supplies (n = 263)	11,003.0	14,125.0	25,702.1	96,070.0	31,852.9***
Payroll (n = 219)	50.0	2,778.5	4,618.9	23,594.7	6,824.1***
Taxes (n = 190)	468.9	2,063.9	3,080.7	7,919.7	3,068.6***
Total expenses (n = 163)	3,062.4	29,059.3	42,076.1	136,267.1	49,461.3
Total sales (n = 262)	6,461.7	23,075.1	32,107.5	156,926.0	46,687.3***

Notes. ***indicates statistical significance at the 0.01 significance level.

A comparison of the weight of the different types of expenses is possible by looking at the proportion of expenses on material and supplies, payroll and taxes (Figure 6). Expenditures on material and supplies represent the biggest share of expenses ranging from 88.0% of expenses for operations between 0 and 499 taps to 73.8% for operations between 2,000 and 4,999 taps. The smaller-scale operations almost have no payroll expenses (0.5% of total expenses) while the bigger-scale operations spend 15.6% of their expenses on labor. Last the proportion of total expenses spent on taxes is lowest for the biggest-scale operations (8.3% of expenses) and highest for operations that have between 500 and 1,999 taps.

Figure 6. Share of expenses by number of taps in percent (n = 161)

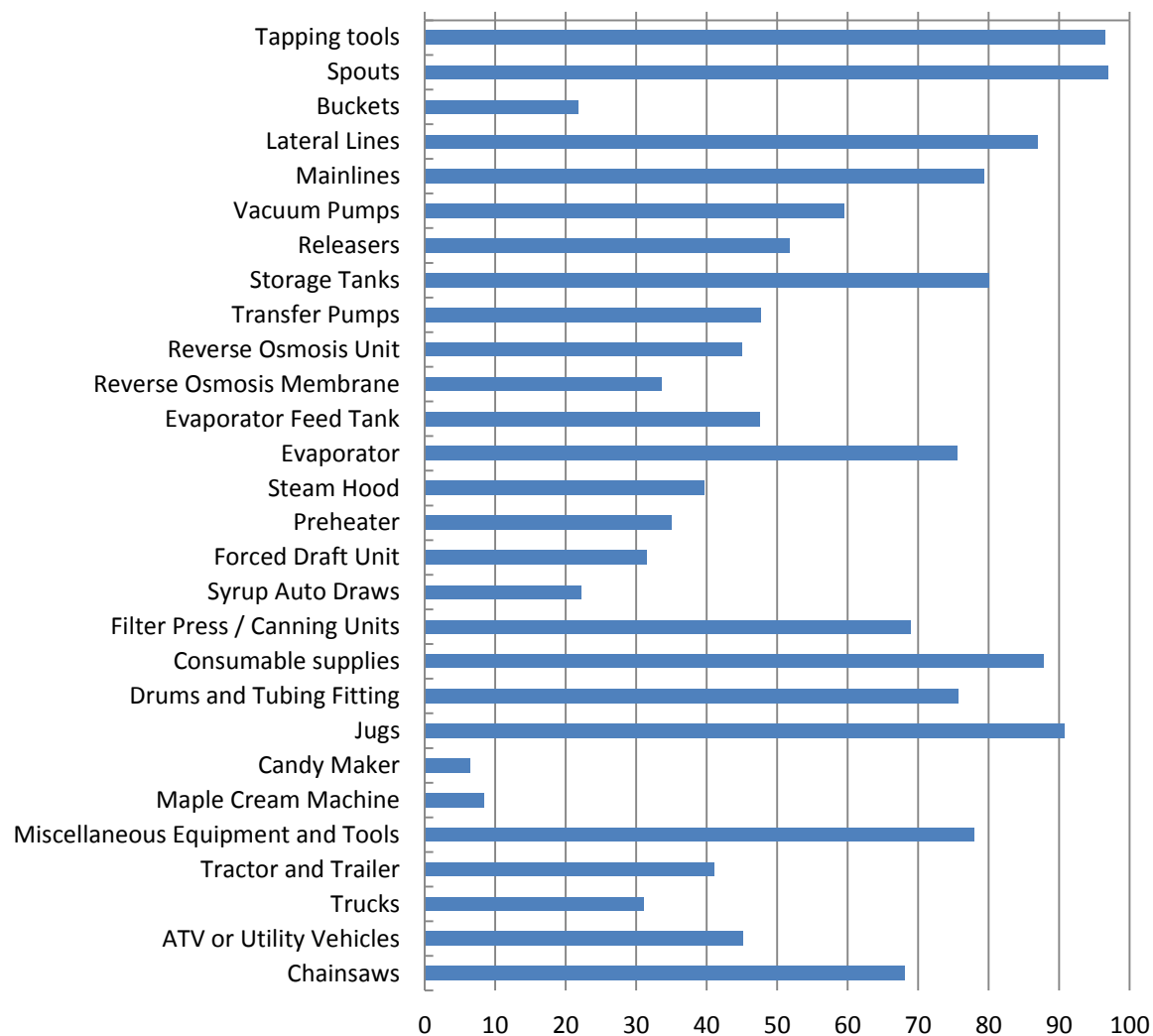


Notes. **indicates statistical significance at the 0.1 significance level or lower.

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Expenses for equipment, materials and supplies represented the largest expenses for maple producers. The average use of equipment, material and supplies by producers is presented in Figure 7. 66.4% of the equipment and supplies are purchased from maple equipment dealer/manufacturer, 19.3% are purchased from other such as private sales and auction, 7.4% from hardware stores and 1.9% online. Additionally, 80.6% of the equipment and supplies purchases were made in Vermont, followed by 8.8% in New Hampshire, 1.4% in Quebec, 0.8% in New York State, 0.2% in Maine and 1.9% in other states (Figures 8 and 9).

Figure 7. Use of equipment, material and supplies by producers in percent (n = 298)



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Figure 8. Point of purchase for equipment related to maple production in percent (n = 298)

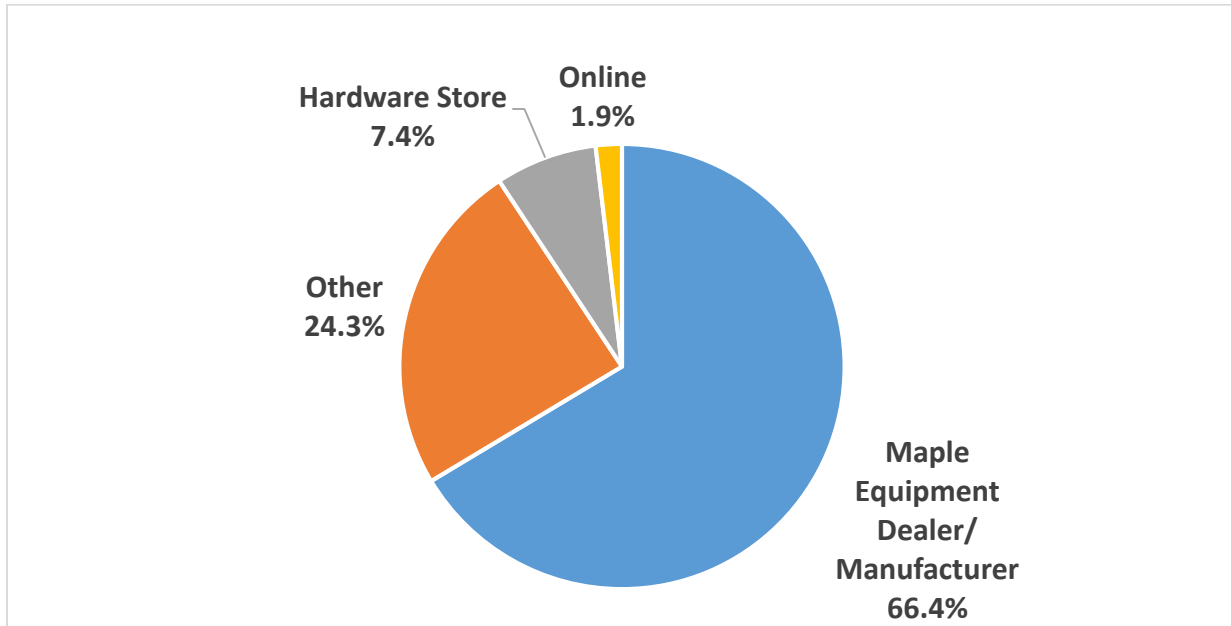
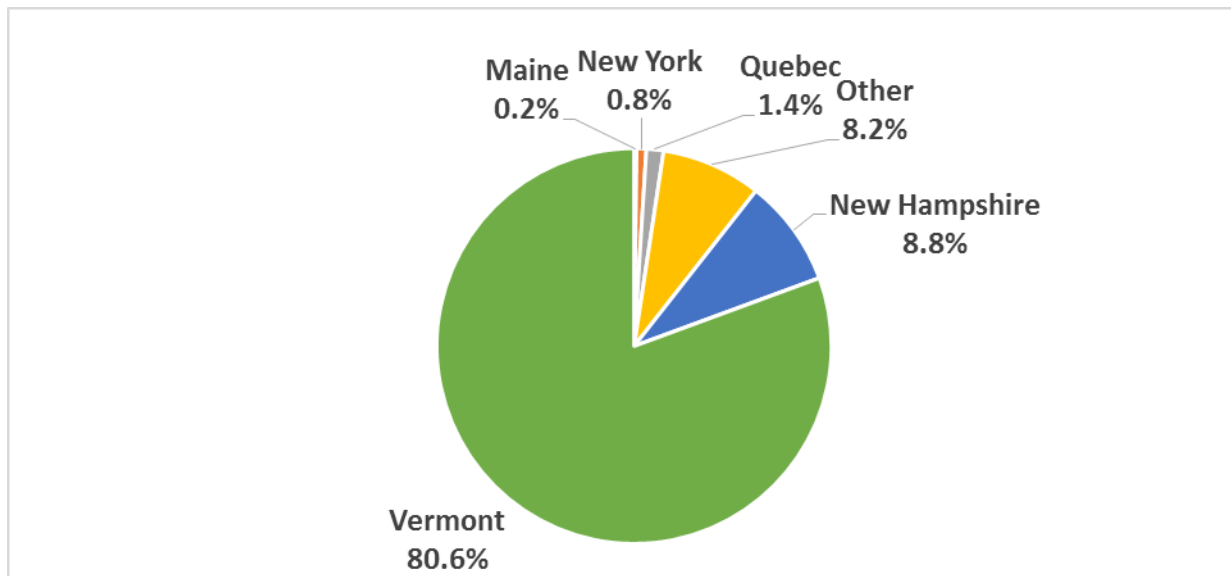


Figure 9. State of purchase for equipment related to maple production in percent (n = 298)



The average number of paid workers per operation was one with smaller-scale operations having almost no paid help throughout the year and during the season (Table 7). Minimum and maximum number of paid workers are included in the table to give an indication of the magnitude of the variation of the number of workers across the different scale of operations. It is important to note that fewer operators (101) responded to this question suggesting that most operations do not have paid labor. The high

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percentage of respondents who said that they had unpaid labor in 2013 (89.9%), including themselves, family members, and neighbors, seem to confirm this claim.

Table 7. Number of paid workers including owner operator (n = 101)

Number of paid workers	0 to 499 taps	500 to 1,999 taps	2,000 to 4,999 taps	5,000 taps and over	Total
Full time year-round					
Average	0.1	0.7	1.2	1.2	1.1*
Minimum	0.0	0.0	0.0	0.0	0.0
Maximum	1.0	3.0	5.0	5.0	5.0
Part time year-round					
Average	0.3	1.1	1.1	1.0	0.9*
Minimum	0	0	0	0	0
Maximum	1.0	7.0	3.0	2.0	7.0
Full time seasonal					
Average	0.1	0.6	0.6	2.1	0.9*
Minimum	0	0	0	0	0
Maximum	1.0	3.0	2.0	4.0	4.0
Part time seasonal					
Average	0.7	1.1	1.2	2.2	1.3*
Minimum	0.0	0.0	0.0	0.0	0.0
Maximum	8.0	4.0	5.0	8.0	8.0

Notes. *indicates statistical significance at 0.1 level or lower.



Economic contribution of the Vermont Maple Sector

What is an economic contribution study?

An economic contribution study measures the economic activity from existing businesses and industries and places a value on their contribution to the local economy, in this case the state of Vermont. This type of study calculates the amount of money that cycles through the economy as a result of these businesses or industries. For this study, we are looking at the economic activity of the maple industry supply chain including maple products producers, packers, equipment makers, equipment manufacturers, and installers in Vermont.

Economic contribution studies should not be confused with economic impact studies. From a theoretical perspective, economic contribution and economic impact studies are two different types of studies. An economic impact study allows to make estimates of possible scenarios on the studied economy. For instance, what would the impact be on the economy if a major plant decided to double its production or if a plant decided to close its doors? Since we are looking at an existing industry, the economic contribution studies method is most appropriate because it calculates how much economic activity in Vermont is associated with the maple industry.

The economic contribution of an industry accounts for three effects in the economy: the direct, indirect and induced effects. Taking a sugar operation as an example:

The **direct effect** results from the expenditures in goods, services and labor associated with running the operation. For instance, a sugar operation hires one part-time worker in the spring to help in the sugar house.

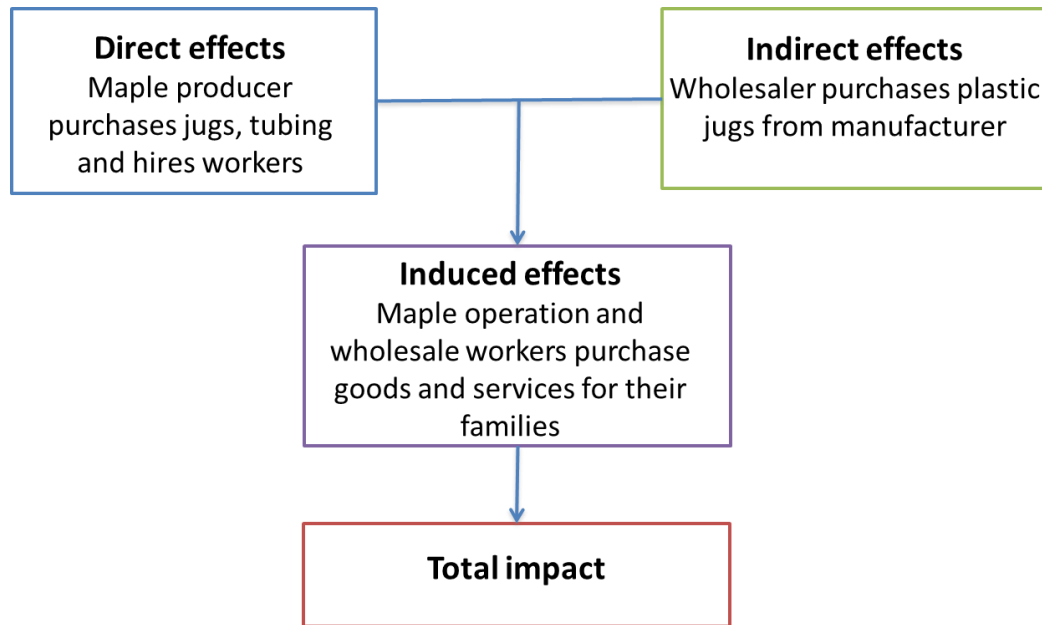
The **indirect effect** results from the suppliers of the sugar makers purchasing goods and services and hiring workers to fill the order from the sugar maker. For instance, an equipment manufacturer purchasing stainless steel to build an evaporator pan purchased by a sugar maker.

The **induced effect** results from the effects of the changes in household income due to the economic activity from the direct and indirect effects. Here we are looking at how employees from sugar operations or from an equipment plant spent their pay check, for instance, buying food at the grocery store or paying the mortgage on their house.

The sum of the direct, indirect and induced effects is the total contribution (Figure 10). In a contribution study, the direct effect includes the economic activity of the businesses in the maple syrup supply chain, it does not look at the amount of production that stayed in the state and the amount that left.

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Figure 10. Representation of economic contribution studies and the effects measured



For each of the effects (direct, indirect and induced), the results will include the output for the effect, also referred to as total sales, value added, labor income and employment.

Output/total sales: The output/total sales are usually the largest numbers. However, they do not represent the best measure as “double counting” usually occurs because the output number includes the total amount of sales revenue from all industries. In the case of the study, the maple products can be sold multiple times. For instance, when the maple producer sells the syrup to the packer, when the packer sells the syrup to a retailer, and last when the final customer purchases the syrup from the supermarket.

Value added: The value added number is considered to be a more conservative and accurate measure of the economic activity. It is a similar measure to the gross national product (GDP) and it includes wages paid to employees, profit accrued by the business owner, dividends paid to investors, interests, or rents, and indirect excise tax as well the sales and excise tax paid by individuals to the government.

Labor income: Labor income is a subset of the value added and it measures the value added produced by the labor component. It includes employee wages and the owner profits.

Employment: Employment is the number of jobs supported by the economic activity, not the number of people employed (a person can have more than one job) and is measured in annual average jobs. It includes salaried employees and self-employed and a job can be full time or part time.

Model, Data and Scenarios for the Economic Contribution Study

Model for Economic Contribution Study

Economic contribution studies are conducted using input-output and Social Accounting Matrix (SAM) models which model the whole economy under study including inter-industry linkages. The SAM model adds non-industrial financial flows in addition to the typical input-output elements including industry-institution transfers and inter-institution transfers. The software package and database, IMPLAN (Impact Analysis for PLANing), is commonly used to conduct economic contribution studies. Data for the IMPLAN database are supplied by the US Department of Commerce, US Department of Labor Statistics, US Department of Agriculture and other Federal and State government agencies. The benefits to using IMPLAN include a simplified process to create regional models and analyze the impacts, consistent methodology for calculating effects, and creating reproducible results (Day, n.d.). An important benefit of IMPLAN is the ability for users to alter the underlying structure of the data, the model, and the means of assessing impact (Deller, 2009). The limitations of IMPLAN stem from the fact that IMPLAN is a static model that does not take into account price elasticities and changes in consumer or industry behavior. The time required for all effects to be completed is also unspecified.

In the IMPLAN version we used, the economy, including transactions between industries, institutions and households, is represented by 440 sectors that are based on the North American Industry Classification System (NAICS) codes. For instance, the agricultural sector is represented by 19 sectors including vegetable and melon farming, fruit farming and cattle ranching and farming. However, maple and hay are in the same sector called 'other crop'. Therefore in order to conduct the contribution study of the maple industry we made the modifications to create the maple sector using an IMPLAN customization framework used in other studies (Schmit, 2013; Becot and Conner, 2014).

Using a default sector in IMPLAN that does not have any production in Vermont³, we created the maple farming sector using data that we collected by doing interviews with Vermont maple producers as well as data from the survey discussed in the previous section. In order to create a new sector in IMPLAN, two types of information were needed: 1) the expenditure patterns which included the type of expenditures, from what sector they are bought, and the geographic location; and 2) the size of the sector, represented by the sector's sales, expenditures, payroll, number of workers and taxes. Once the 'maple farming' sector was created in IMPLAN, we removed the expenditures, sales, payroll, taxes and number of workers from the "other crop" sector, where it is included in the default model, in order to avoid duplicate figures in the maple sector.

Data from maple producers

Interviews were used to gather information on the expenditure patterns of maple producers including what they purchase and from where, including point of purchase (i.e. directly from producer/manufacturer, from a wholesaler or from a retailer) and State of purchase. The goal of these interviews was to obtain an average for the expenditures on input and labor, and to extrapolate these

³ In this case we used the tobacco farming sector.

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averages to the population of maple producers in Vermont for the economic contribution analysis. Interviews to collect this type of information are laborious as they require the producers to give very detailed and somewhat sensitive financial information. VMSMA gave the name of fifteen maple producers, all were contacted and ten agreed to be interviewed. The interviews were conducted over the phone or in person between November 2014 and January 2015 and lasted on average one hour. They were audio recorded and notes were taken during the interviews. Producers were asked to provide input and output data from 2013 (the year of study) including sales, operating expenses, payroll and number of paid workers.

Data from the maple producer surveys were used to gather information on the size of the industry including total expenditures, sales, payroll, taxes and number of workers. The results from the surveys were extrapolated to the entire maple producers sector, which totaled 1,553 producers in Vermont according to the last census. The 298 responses to the survey constitute a representative sample of the maple producer industry with a margin of error of plus or minus 5.1 percent and a confidence interval of 95 percent. When extrapolating the survey data to the entire industry, we used the size categories that could be matched with those used in the census of agriculture (1 to 499 taps; 500 to 1,999 taps; 2,000 to 4,999 taps; 5,000 taps and over) and the number of farms in each of these categories at the state level (respectively, 509 – 509 - 310 and 225 operations). We then used the averages from the survey for each of these categories based on the number of taps and multiplied by the number of farms in these categories. Using the same procedure, we modeled a maple sector with 1,800 maple producers because VMSMA estimates that the number of producers is higher than reported in the census of agriculture, with a possible range between 1,800 and 3,000 producers.

Data from packers/processors, equipment manufacturing, equipment sales and installation

For the other sectors of the Vermont industry, including packers/processors, equipment manufacturing, equipment sales and installation, we used the matching existing sectors in IMPLAN. These include food manufacturers, equipment manufacturing, retail and agricultural services. The data needed from these businesses were limited to their size including total expenditures, sales, payroll, taxes and number of workers. To collect information from packers/processors, equipment manufacturers and equipment dealers and installers, a telephone survey was conducted in April and May 2015 as well as an in-person interview in February 2015. VMSMA provided a contact list of 24 businesses considered to be the biggest actors in their respective sectors. All of the businesses were contacted at least three times by phone and by email, 17 provided responses and we were able to use 15 of the responses. Two of the respondents to the phone survey were solely maple producers and were therefore included with the survey responses from the other maple producers. The questions asked were related to sales, expenditures, taxes, number of employees and payroll. Because the sample size from the phone survey was too small, we were not able to make extrapolations to account for all of the packers/processors, equipment manufacturing, equipment sales and installation in Vermont. It is therefore a limitation of this study that, while we account for the entire maple producers sector in the economic contribution study, the contribution from the other businesses is limited to the ones who have given us data.

Due to the small number of packers/processors, equipment manufacturing, equipment sales and installation who gave their information, the data collected from the 15 respondents to the phone survey will not be reported for each sector in this report, but rather as a total to preserve confidentiality of the respondents' information. The data for each sector was used in the calculation of the economic contribution of the industry.

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Model scenarios

We followed the 'Multi-Industry Contribution analysis' procedure from the IMPLAN knowledge database including modifying commodity production and modifying trade flows. Additional procedures in IMPLAN to set up the model included aggregating some of the sectors to work with the data available and the limited granularity of information, as well as margining purchases from wholesalers and retailers. These purchases minus the margin were attributed to the appropriate sectors when the data was available.

We ran two scenarios; one with 1,553 maple producers and one with 1,800 producers. For each one of these scenarios, we looked at the contribution of the maple producers alone, the contribution of the other maple related businesses (packers/processors, equipment manufacturers, equipment dealers and installers), and the contribution of all of the businesses together. The data used to run the two different scenarios are provided in Tables 8 and 9.

Table 8. Data used for the first scenario with 1,553 producers

Sectors	Industry Sales	Employment	Employee Compensation	Proprietor Income
Maple producers (sector size 1,553)	\$56,672,661.00	2,994.10	\$8,104,191.24	\$2,805,296.97
Other maple related businesses	\$156,264,800.00	221.00	\$32,611,556.00	\$17,574,753.17
Total	\$212,937,461.00	3,215.10	\$43,715,747.24	\$20,380,050.14

Table 9. Data used for the second scenario with 1,800 producers

Sectors	Industry Sales	Employment	Employee Compensation	Proprietor Income
Maple producers (sector size 1,800)	\$65,707,725.00	3,470.00	\$9,396,204.67	\$3,252,532.38
Packers/processors	\$156,264,800.00	221.00	\$32,611,556.00	\$17,574,753.17
Total	\$221,972,525.00	3,691.00	\$45,007,760.67	\$20,827,285.55

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Scenario 1 with 1,553 producers

Economic contribution:

Under the 1,553 producer scenario, the total contribution of the maple industry in sales was \$317 million in 2013, with \$80 million coming from the maple producers and \$237 million coming from the other maple related businesses (Table 10). This number includes the direct (economic activity directly related to the production of the maple industry), indirect (economic activity in sectors that produce goods and services for the maple industry), and induced effects (economic activity from household working in the maple industry and in sectors that provide goods and services to the maple industry).

The more conservative and accurate measure of economic contribution of an industry is the value added, which includes wages, profits, dividends, interests, rents and excise taxes (from the indirect and induced effects). The maple industry contributed a total of \$140 million in value added in 2013 with the maple producer sector contributing \$29 million and the other maple related businesses representing \$111 million.

The maple industry contributed 4,021 jobs to the Vermont economy in 2013. The greatest number of jobs was contributed by the maple production sector, 3,192.1 jobs representing \$19 million in total labor income and approximately 2,734.93 full time equivalent (FTE) positions. However the total labor income contribution was the highest for the other maple related businesses with \$78 million dollars and 828.5 jobs representing approximately 788.79 FTE. This indicates that wages and/or profits are higher in the other maple related businesses while the maple production sector is labor intensive and/or with smaller profits.

Multiplier effect:

Another measure of the contribution of an industry is the multiplier effect. The total multiplier effect is calculated by dividing the total effect from the direct effect and it shows how much a dollar or a job in the initial industry adds to the economy. Looking at the total multiplier effect for the maple industry value added: for every dollar contributed by the maple industry in value added, such as wages, profit, another \$0.69 is added to in the economy. Similarly, for every job in the maple industry 0.25 jobs are supported in the Vermont economy.

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Table 10. Scenario 1: Economic contribution of the Vermont Maple industry with 1,553 producers

	Employment	Labor Income	Value Added	Sales
Maple Producers				
Direct Effect	2,994.10	\$10,909,489	\$13,934,744	\$56,672,661
Indirect Effect	125.90	\$5,180,336	\$8,955,851	\$14,217,492
Induced Effect	72.00	\$2,797,461	\$5,218,023	\$8,750,474
Total Effect	3,192.10	\$18,887,286	\$29,108,619	\$79,640,628
Other maple related businesses				
Direct Effect	220.8	\$53,186,312	\$67,634,733	\$156,264,803
Indirect Effect	309.1	\$13,412,145	\$21,561,446	\$44,810,174
Induced Effect	298.5	\$11,593,076	\$21,630,841	\$36,270,788
Total Effect	828.5	\$78,191,533	\$110,827,019	\$237,345,765
Whole maple industry				
Direct Effect	3,215.00	\$64,095,801	\$82,569,477	\$212,937,469
Indirect Effect	435	\$18,492,482	\$30,517,298	\$59,027,668
Induced Effect	370.5	\$14,390,537	\$26,848,864	\$45,021,262
Total Effect	4,020.600	\$97,078,819	\$139,935,639	\$316,986,399
Total effect multiplier	1.25	1.51	1.69	1.49

Top 10 industries impacted by the maple industry:

With an economic contribution study we are also able to look at other industries that are the most impacted by the industry or business under study (Table 11). We found that the three sectors with the highest contribution in terms of value added to the state are the food manufacturing sector, maple production sector and the retail (equipment) sector. To ensure the confidentiality of the responses from the other maple related businesses we suppressed the data from Table 11. These sectors are directly related to the maple industry. Other sectors that are not directly related to the maple industry but that benefited from the maple activity are include: agriculture and forestry, professional and scientific services, food services industry, retail, non-food manufacturing, real estate establishments and support activities for agriculture and forestry.

Table 11. Scenario 1: Top 10 industries impacted by the economic activity of the maple industry ranked by value added

Sector	Employment	Labor Income	Value Added	Sales
Food manufacturing	R	R	R	R
Retail – equipment	R	R	R	R
Maple production	2,994.1	\$10,909,489	\$14,934,745	\$56,672,666
Agriculture and forestry	102.1	\$4,264,404	\$6,129,435	\$16,868,955
Professional and scientific services	74.1	\$3,957,378	\$4,831,764	\$7,732,678
Real estate establishments	40.2	\$612,929	\$4,492,804	\$6,190,024
Non-food manufacturing	R	R	R	R
Support activities for agriculture and forestry	R	R	R	R
Retail – building materials	46.8	\$1,896,704	\$2,638,550	\$3,800,890
Food services and drinking places	64.9	\$1,415,753	\$1,995,138	\$3,755,868

Notes. “R” means that the data is repressed as it would not ensure confidentiality of responses from the other maple related businesses

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Scenario 2 with 1,800 producers

Economic Contribution:

Under the second scenario, we calculated the economic contribution of the maple industry with 1,800 producers. Numbers for the other maple related businesses remaining the same as scenario 1. Under this scenario, the total contribution of the maple industry in sales for the entire maple industry was \$330 million in 2013 with the maple production sector representing \$92 million versus \$79 million under the first scenario (Table 12). The contribution from the maple industry in value added to the state is \$144 million; the share of the maple producer sector to the value added is \$34 million vs. \$29 million under the first scenario. The maple industry contributed 4,519.70 jobs with 3,699.00 from the maple producer sector vs. 3,192.0 under the first scenario. The 3,699.00 jobs in the maple production sector represented 3,169.23 FTE.

Multiplier Effect:

The multiplier effect shifted slightly since the size of the maple producer sector changed while the size of the other industries did not change. Under the second scenario, the sale multiplier is 1.48: for every dollar in sales in the maple industry another \$0.48 in sales was generated in the local economy. The value added multiplier is 1.70 meaning that for every dollar generated by the maple industry in wage, profit or dividends another \$0.70 is added. Last, the employment multiplier is 1.22 and for every job in the maple industry another 0.22 jobs are supported.

Table 12. Scenario 2 Economic contribution of the Vermont Maple industry with 1,800 producers

	Employment	Labor Income	Value Added	Output
Maple Producers				
Direct	3,470.0	\$12,648,738	\$17,315,722	\$65,707,725
Indirect	146.0	\$5,999,944	\$10,373,875	\$16,469,039
Induced	84.0	\$3,242,216	\$6,047,712	\$10,141,839
Total	3,699.0	\$21,890,898	\$33,737,309	\$92,318,604
Other maple related businesses				
Direct	220.8	\$53,186,312	\$67,634,733	\$156,264,803
Indirect	309.1	\$13,412,145	\$21,561,446	\$44,810,174
Induced	298.5	\$11,593,076	\$21,630,841	\$36,270,788
Total	828.5	\$78,191,533	\$110,827,019	\$237,345,765
Whole maple industry				
Direct	3,690.8	\$65,835,050	\$84,950,455	\$221,972,528
Indirect	446.9	\$19,428,432	\$31,962,140	\$61,300,574
Induced	381.9	\$14,837,580	\$27,683,187	\$46,420,400
Total	4,519.7	\$100,101,062	\$144,595,782	\$329,693,502
Total effect multiplier	1.22	1.52	1.70	1.48

Top 10 industries impacted by the maple industry:

The industries that are the most impacted by the maple industry in Vermont in terms of jobs are the maple production sector with 3,470 jobs followed by the agriculture and forestry sector with 94.6 jobs and the packer/processor sector with 79.8 jobs (Table 13). Similarly to the first scenario, the sector that sees the highest contribution in terms of sales is the packer/processor sector with \$108 million in sales

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followed by the maple production sector \$66 million and the retail sector \$31 million. The three sectors with the highest contribution to value added are maple production, food manufacturing and the retail (equipment) sector. In terms of jobs, the highest number was in maple production followed by agriculture and forestry and food manufacturing.

Table 13. Scenario 2: Top 10 industries impacted by the economic activity of the maple industry ranked by value added

Sector	Employment	Labor Income	Value Added	Sales
Food manufacturing	R	R	R	R
Maple production	3,470	\$12,648,738	\$17,315,722	\$65,707,725
Retail – equipment	R	R	R	R
Agriculture and forestry	94.6	\$4,307,574	\$6,194,567	\$16,993,587
Professional and scientific services	75.6	\$4,038,536	\$4,930,853	\$7,891,258
Real estate establishments	41.8	\$636,382	\$4,664,712	\$6,426,873
Non-food manufacturing	R	R	R	R
Retail – building materials	53.5	\$2,167,083	\$3,014,681	\$4,342,999
Food services and drinking places	66.7	\$1,455,747	\$2,051,499	\$3,861,968
Building contractors	37	\$1,511,724	\$1,627,462	\$3,196,019

Notes. “R” means that the data is repressed as it would not ensure confidentiality of responses from the other maple related businesses



Conclusion

Vermont maple producers are the top producers in the US and the sector has grown tremendously in Vermont over the years with a 131% growth in production between 1992 and 2014. Maple is a key enterprise for Vermont. It is the fourth most valued agricultural commodity and it is the second most valued crop closely behind greenhouses and nurseries. The Vermont maple industry is not limited to the producers but includes key sectors: packers and processors, equipment manufacturers, equipment dealers and installers.

This report presented an updated profile of the Vermont maple producers and estimated the economic contribution of the Vermont maple industry to the Vermont economy. The economic contribution was calculated by using financial data from producers, packers and processors, equipment manufacturers, equipment dealers and installers. Two scenarios were analyzed. In the first scenario, we calculated the economic contribution of the Vermont maple industry with 1,553 producers which corresponds to the number of producers in the 2012 Agricultural Census. In the second scenario, we calculated the economic contribution of the Vermont maple industry with 1,800 producers which corresponds to the lower bound estimate of producers by VMSMA.

The Vermont maple industry contributed between \$317 and \$330 million in sales in 2013. The total effect sales multiplier is 1.49, meaning that for every dollar in sales generated by the maple industry another \$0.49 circulated into the economy. Because double counting is likely when we look at businesses along a supply chain, the value added contributed by the industry is a more conservative and accurate measure of economic contribution to the state. We found that in 2013, the Vermont maple industry contributed between \$140 and \$144 million in value added, which in this case mostly includes wages and profits. With a total effect multiplier for value added of 1.69, for every dollar contributed in wages and profits another \$0.69 was added to the local economy. Last, the industry contributed between 2,734.93 full time equivalent (FTE) positions and 3,169.23 FTE. If we look at the number of jobs, knowing that one person can have more than one job, the range of jobs supported by the maple industry is between 3,192.1 and 4,519.7. The total effect employment multiplier was 1.25 and for every job in the maple sector another 0.25 was supported in the rest of the local economy.

Recent studies in Quebec and Maine have looked at the economic contribution of the maple industry to their economies (Gabe, 2014; Jacques et al., 2010). While these studies used different data sources, different economic models and methods, looking at their multipliers provides some information as to how the Vermont maple industry might compare with the maple industry in other regions. The multipliers presented in table 14 are for the maple production sector only as data for the rest of the industry was not comparable with those collected for the Vermont study, or the data was not available. It should also be noted that the Maine study included some aspects of tourism from the yearly open house.

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Table 14. Employment, labor income and value added multiplier from economic contribution studies of the maple syrup production industry in Vermont, Quebec, Canada and Maine

States	Vermont, 2014	Quebec, 2009 ^z	Maine, 2013 ^y
Employment multiplier	1.06	1.49	1.41
Labor income multiplier	1.73	N/A	1.45
Value added multiplier	1.95	2.20	N/A

Notes. ^z Jacques, L.-S., Mondon, M., Nolet, J., LeBreton, M., Doyon, M., & Vincent, M. (2010). Economic impacts of the maple syrup industry in the province of Quebec and in Canada. Quebec, CA: Eco Ressources Consultants. ^y Gabe, T. (2014). Economic impacts of Maine's maple industry *Staff Paper* (Vol. 614). Orono, ME: University of Maine.

The employment multiplier was the highest in Quebec where, for every job supported in the maple production sector, another job is supported in the rest of the provincial economy. The labor income multiplier was higher in Vermont than it was in Maine while the value added multiplier was higher in Quebec (2.20) than it was in Vermont (1.95).

In terms of the size of the maple production industry, the Quebec maple production industry contribution in value added was \$122.2 million dollars in direct impact and \$269.8 million in total impact⁴ (Jacques et al., 2010), while the Vermont maple production industry's contribution in value added was between \$13.9 and \$17.3 million in direct effect and between \$17.3 and \$33.7 million in total impact. In Maine, the maple production industry contributed \$28.4 million in sales in direct effect and \$49.8 million in sales in total effect (numbers were adjusted for inflation) (Gabe, 2014). In comparison, the Vermont's maple production industry contributed between \$56.6 and \$65.7 million in direct sales and between \$79.6 and \$92.3 million in total sales. As mentioned before, these numbers must be compared cautiously and are at best a rough comparison due to the use of different data sources, economic models and methods used for data analysis.

Any study has limitations and it is important to highlight them. In this study the limitations are related to two aspects: the model used to calculate the contribution and the data collected. In terms of the model used to calculate the contribution, the number of producers who provided detailed financial information could be considered small. As a consequence a stronger and more representative maple sector could be built by collecting data from a greater number of producers. For the other maple related businesses, existing sectors in the model were used, such as food manufacturing, equipment making, retail and support activities for agricultural enterprises. A more precise measure of the impact of these businesses could be calculated but this would require data collection of detailed financial data on expenditure patterns income and sales.

In terms of the data collected, a representative sample of maple producers was reached which allowed us to make extrapolations to the whole sector. However, the number of responses from the other maple related businesses were not representative and we could not extrapolate the results to represent all of the businesses. This means that the results presented in this report represent a lower-bound and the

⁴ The value added numbers were adjusted for price inflation and converted to US dollar for comparison purposes.

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study results would be higher with a greater number of responses. Another data limitation stems from the fact that all of the data collected through the interviews and surveys were self-reported by all respondents. This means that respondents were asked for their numbers but no records such as financial statements or tax forms were verified.

Maple and the maple industry are synonymous with Vermont with its sugar houses and mountain sides with colorful leaves in the fall. The maple industry, beyond producing maple products, contribute to the image of Vermont and to its tourism. This report focused on the economic contribution of the maple production supply chain from equipment manufacturing, equipment sales, installation to sugaring, packing and production of maple products. Though putting a dollar amount on the contribution of the maple industry to tourism in Vermont would be a complex task, and beyond the scope of this report, the contribution is likely very significant. The maple industry also contributes to Vermont in the way that it has shaped, and will continue to shape, the landscape. Technological advances and market structures evolutions will most likely change the face of the industry and the landscape which will further impact the Vermont economy.



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Appendix

Appendix A

Categories used to classify answers to questions on treats and opportunities to the maple industry in the next five years

Treats

Competition

- Domestic and foreign competition
- Underdeveloped market
- Product competition

Marketing

- Commercialization
- Current marketing practices
- Losing VT brand
- Consumer ignorance

Production

- Overproduction/commoditization
- Production methods
- Product quality
- Production costs
- Lack of bottlers
- Grading system
- Land issues

Pricing

- Price fixing
- Price fluctuations
- Overpricing
- Product prices
- Exchange rates

Legal issues

- Label regulation
- Food Safety
- Taxes
- Overregulation
- Grants
- Equipment theft

Environmental

- Weather
- Tree Health

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- Animals
 - Invasive species
 - Climate change
- Growth of the industry
 - Growth in number of producers
 - Market expansion
 - Market instability
- Maple industry
 - Support for small-scale producers
 - Lack of unity from producers
 - Aging producers

Appendix B

Threats to the industry in the next five years listed by survey:

Over regulation. Expense of expanding and updating.
Need to open state and federal forest lands for sugaring
Volume and state involvement
1) Over supply=lower prices 2) Insects, growth of maple producers affecting price per pound
Asian Beetle
Potentially the Asian longhorn beetle. Also climate change.
Lack of promotion of Real Maple Syrup and Associated products causing a decline in price due to oversupply.
Climate change.
Too much syrup being made-prices fall. Die back off old trees.
Overproduction--too many new big operations
Over-production that will drive down prices.
Junk from China, Over regulation will eventually shut down the industry as it has our Vermont farmers.
Over production, global warming.
Laws that are brought in.
Climate change. Increase in costs for all aspects of sugaring i.e. fuel, equipment, taxes
Too much syrup produced
Tapping small trees and removing too much sap from trees.
The weather. Global Warming
Over expansion without expanding markets next 5 years. Climate change- next 25-50 years
Over production
Over production, overpriced
It is becoming too commercialized--forcing the hobby person out of business. Syrup is losing flavor with all the modern machines. Weather
Invasive species, climate change
The increasing production that exceeds demand.
Weather change
Climate change
Weather
climate
Bad weather, over production capacity by large producers, taxes, gov't regulation, poor crop quality, producers producing excess junk syrup, ineffectual government grants
Overproduction resulting in falling prices
Price drop
That "beetle"!!Global Warming

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Nonnative species, lack of knowledge/caring from non-native humans
Global warming
Equipment theft
Increased regulations and controls
Overproduction- production growing faster than sales
Weather AL Beetle Overproduction
Over sale and taxes
Stable marketplace; not being a voice of one industry global warming/pests/weather
Being able to produce SO much of a product and NOT being able to sell it at a good price.
Climate change and invasive insect damage
Disease and Insects
Weather cycles
Pests, declining maple health, ice storms as a result of more violence weather
Environmental change
?
Over production, and the late season syrup produced and sold with off flavor even if the color is good! To re-educate the public to the new grade system.
Loss of trees due to acid rain and diseased pests
Climate
Over production
The lack of unity among VT producers and the lack of intelligent thinking on marketing strategies. Focusing on competing with other states in production sales instead of trying to promote maple syrup nationally in order to increase overall sales.
Insects Flooding the market w/ syrup
Possible production increase at a rate that is greater than the consumption rate.
Over production.
Climate change and longhorn beetle Overproduction
Over tapping
Cost of production, overregulation, lack of resources for small operations
Changing weather patterns
Failure to develop retail markets
Climate change
Overproduction
More regulations put on the small producers. Asian longhorn beetle.
Global warming
overproduction
Poor weather
Potential price fluctuations that could be caused by decisions made by Quebec syrup producers.

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Over-regulation from US Govt and unfair disadvantages to a small producer like myself from state of VT rules. Regs, fees etc. Competition from mega-sized producers that will leave small producers at disadvantage.
Over production If there is such a demand for syrup and market is expanding why aren't buyers getting to producers to buy their syrup.
Supply out pacing demand, Canada, looseness of "Organic" maple syrup. People are gaining and advantage by calling theirs organic and they do nothing different.
Climate and forest health
Global warming
Asian Longhorn beetle
Over-production. Increased expansion of tap numbers especially from large tax-shelter operations such as Island Pond operation
Insects
1. The threat of the Asian Longhorn Beetle. 2. Too much expansion of maple products both in the U.S. and world wide.
maple syrup price
Over production Maple decline
State regulation
With all the huge operations coming on line, if we lose a big share of our export mkt we're in trouble.
Canada. Big producer take over, lack of representation in state and sugar maker organizations for small producers.
Over production, rapid growth of industry could exceed demand and drop price too, or below cost of production
Weather and insects/disease
Over regulation, potential taxes on agricultural products and adverse changes to VT land use laws.
over production
over supply for the market existing, many poor quality syrup market we have a need to develop a market for real commercial syrup
Over production that outpaces demand forcing the price of syrup to a price where sugarmakers can't make profit
Too much regulation.
Weather change
Regulations. Cost of equipment
Over production
Collusion among packers to hold bulk prices down (price fixing). Property taxes. Nonsense regulations
overproduction, Forest pests over regulation, too many questionnaires
Climate change
Very concerned about Longhorn Beetle. If this hits Vermont, maple industry would be devastated.
government intervention
1. Too much sap/syrup 2. Not everyone belonging to one association- not pulling together
OVER PRODUCTION!GLOBAL WARMING PEST PROBS

The Economic Contribution of the Vermont Maple Industry

Regulations and expense Tree diseases
Price of fuel
Operations too large, increase price sugarbush
You never know.
overproduction
The big operators like Sweet Tree and Bernard and ?? producing a lot of maple syrup in ??
Over production. Too many people are getting into production now there's a little money to be made and it will probably bill it for a long time.
I think acid rain is causing a lot of maple crowns to dye back and put undo stress on the maple trees.
Over producing maple
Threats to sugarbush: ALB; warming trends. Threats to syrup prices: increased supply-esp. (also US-CAN exchange rate) inc. in U.S. such that it destabilizes Quebec's price control.
Climate change Tend caterpillars etc. Vacuum pumps
Climate change. Not as far as species conversion but with increased moisture (erosion, wetter years, lack of good cold winters and 'normal' spring thaws). Invasive plants will continue to thrive in a sugar bush and beyond.
Over supply Free damage- weather, insects
Changing the grade to be nationwide. Weather changes, government grants going only to big producers
Insects and disease to maple trees, new grading system in Vermont will cause problems for small producers
Government.
Asian long horned beetle
1. Over production resulting in lower prices 2. Possible disease infestation 3. Will Quebec Federation remain strong and control supply?
Over production, production of sub standard syrup
Over production and oversupply lowering bulk price
The wholesale price of syrup dropped this spring. It DID NOT drop in retail stores.-Insects
Over production
Bulk prices dropping.
Over production w/out expansion of markets
Overproduction in maple syrup. From the big production.
Global Warming. Huge expansion of new taps.
The new regulations seem to be against the small manufacturer.
Tree disease
Weather could be the biggest factor
Payments and requirements for inspection
over production- lack of marketing
Insects
over production and lack of markets
Overproduction

The Economic Contribution of the Vermont Maple Industry

Damage to trees from extreme weather or insects
Asian beetle and overproduction.
Weather, too much syrup on the market
None
Too much production
Canada
Ash bore invasion, too many taps added which may flood the market and drive down prices. Costs of fuel to high and cost of equipment we use is too high to purchase
Overproduction. Buddy syrup. Over-charging the consumer.
Over pricing Poor quality product getting into market
Over-production of syrup leading to lower prices for producers
Change in weather patternAsian Beetle
Forest heath- I have some high elevation trees I have not tapped since defoliation from drought in 2012. Also spread of Asian Longhorn Beetle.
Sale and development of maple orchards along with logging operations cutting off maples
The biggest problem will come from Corp sugar makers and lack of quality standards. THE FLAVOR OF MAPLE HAS CHANGED!!
price of syrup dropping to many people adding on
overproduction
Bad and slow economy, Climate change Insects
To many people adding to many taps
The tree beetle or health to the Maple trees that will kill the trees
Environmental changes
Global warming
over supply
climate change
Production outpacing demand
weather/insects/climate change
Rapid growth (more taps)=Lower prices
insects, climate change
Asian Long Horn Beetle
Loss of land to tap
Insects/ Global warming- climate change
over producing; drop in bulk prices; competition with other food sweeteners, maintaining demand equal to production, global warming, ensure maple promotion and purity
Overproduction, specifically by those with questionable competence and ethics. Surplus and bad press would kill our business. Invasive insects, especially imported from Asia (Walmart)
tree disease-overproduction-low Canadian dollar
Increase product and larger producers flooding the market causing the smaller producers to have revenue from bulk syrup prices dropping increased regulation pushing waller producers and increase overhead.

The Economic Contribution of the Vermont Maple Industry

overproduction
maple thrip
overproduction combined with slowing wholesale sales
production outpacing sales, de-valuing the US dollar (thank you liberal policies)
some forest pest/invasive (such as asian longhorn beetle)
Growing faster than demand
Canadian syrup
too many huge producers coming on board
Fake maple claims in products and task syrup reducing demand for pure maple therefore creating a surplus.
overproduction
1.Crazy weather2.if it's found that tubing adds undesirable substances(like BPA?) to sap. Too much money going to big producers who do not put it back into local economies
Regulations
1. Failure of state of VT to budget money and actually support VT maple industry and timber industry in general2. Asian Long Horn Beetle
Weather? Weather? Weather?
state regulations threatening small producers, climate change and insects
overproduction
price dropping from overproduction- equipment price rising, FDA and local regulations pushing us little guys out.
VMSMA getting greedy unfair dues by changing different size producers different ??? and giving them the (cut off...) same rights
1. Overproduction and loss of real maple2. price has gotten to the point where it is a luxury food item, Industrialization of the maple business
Climate change, prices falling due to production in Canada and the destruction of the VT "Fancy" brand at the state level
added taps in woods, demand will not keep up with supply
food modernization requirements and weather patterns and equipment costs and fuel costs all impact the return on investment to sugar makers. If this balance becomes unstable, that's a big problem
Cost and oversupply
Over production
Overproduction, lack of central marketing operation
overproduction and lower prices because of It-Some invasive species, e.g., Asian longhorn beetles- Overregulation by state or sugarmakers association
Climate change.
Expansion too rapid.
Bug infestation-Warming weather
Bug infestation
Tree disease

The Economic Contribution of the Vermont Maple Industry

Bigger operations that leads to fall in bulk prices
Price decreases due to overproduction
Vermont: weak CAD [Canadian dollar], Global: Asian long-horned beetle, food safety incident
Over expansion-loss of Vermont brand-weather changes
Increased supply
R.O going too high (20%) so that syrup tastes flat and ruining VT image
Invasive bugs
Ash borer and other invasive species
overproduction-Climate change
Re-generation of young sugar maples
Asian long-horn beetle, Over production
tree health-Climate
overproduction and The market NOT increasing at same pace-Another ice storm
Overproduction
Production outpacing demand and a resulting decline in price as the market floods.
Diseases to the trees
High price of equipment
The weather changes
Global warming
Overproduction
Inspection: there is a limit to how much can be spent on S.S., etc., with 700 taps
Wind damage
Rice syrup, grants fueling more production, Asian longhorn beetle
Climate change, insect infestation
Insects, overproduction, production of late season syrup, consumer opinion that pure maple syrup is a luxury good
Disease
overproduction, low price
Poor product-RO to 20%+-Fast boiling on high efficiency equipment
Over-commoditization (loss of history and culture), New, larger companies threatening old, family-run operations, who cannot afford to continue
weather, Mass production
insect infestation, weather
Weather
Moose, Chipmunks
Corporate/big business consolidation;-Rapid production increases;-Falling prices leading to decrease of small producers
Weather, liability involved with leasing property.
overproduction creating a surplus leading to lower prices and demand

The Economic Contribution of the Vermont Maple Industry

Climate change. Over production, but this is just a suspicion I have leaned on no facts. I am also concerned about the reliance on R.O. to concentrate sugar contents.
Weather-insects- infiltration of sub grade mislabeled syrup
Government control and invasive insects
Asian longhorn beetle
Asian longhorn beetle-overproduction, possibly caused by investment groups-NOT getting marketing dollar from producers or people just selling sap
Overproduction
Not enough bottlers to handle global market demands
Dying trees-weather changes
Pricing making maple products into luxury item but consumers NOT willing to pay-Younger generation NOT interested
producers increasing in size and flooding The market-tree diseases
Large factory industries pushing out small operators
Weather changes
Overproduction
Politicians and lawyers unnecessarily taking controlling of VMSMA
Open ended production increases
Market flooding
weather changes-Over The top regulations
weather changes-insect infestations
Weather
invasive Insects-overproduction
Mass producers pushing out small producers
More regulation
overproduction-Dealing with The same mentality of dairy farmers
Overproduction
Overproduction due to large operations that start with 10,000+taps and going up from there.
Overproduction
overproduction-insect infestations
Price difference between Us and Canada
Climate change
overproduction-Abuse of R.O.s-Insects
Environmental changes-invasive Insects-Soil acidity
Drop in pricing due to increase in new taps installed in US and retail sales by large packers not keeping up with supply. Improper labeling of fake maple syrup products in grocery stores.
Too much state regulation
Global warming
Weather
Overproduction

The Economic Contribution of the Vermont Maple Industry

Climate change
price Controls-Over-expansion of market and sudden drop in prices-price stability
Weather
Climate change-Air pollution-Development
State of Vermont
Overproduction, expansion of industry with concern to marketing, lack of/funding for marketing, internal issues: expand w/o marketing, lacking gov support, ppl in it for \$, lack of natural products
Overproduction compared to market increase

Opportunities for the industry in the next five years listed by survey respondents:

small operators have more opportunity to make quality with the advent of more and better technology from research.
Big maple producer to fold? fail?
Keep bushes healthy if possible and produce some or less product
Very exciting to see all the growth, we welcome it. Producers need to seize the opportunity to market.
The expanding worldwide market
Finding new markets for syrup and products which may entail the creation of new products.
More efficient and safer tapping methods. Conservation in this industry is key.
Advanced technology up and down years, hold prices steady or increase
Try to find more markets. Sell only good products to public and packers.
Marketing more maple syrup in the U.S. and around the world because of the natural qualities of syrup.
Over regulation will eventually shut down the industry as it has our Vermont farmers.
New Markets
N/a
Expanding the maple product more globally.
It certainly isn't the new grading system
Find other uses for maple products (or buy products) such as permeate, maple sap, off flavored bubbly syrup as a result of sudden warm-up spills that are becoming more frequent.
Growth in marketing/sales
Expanding markets
A lot of new technology coming down the line, but only available to high end users.
Pushing the "local", all natural benefits, marketing
Use of vac systems
Expanding markets in US and overseas
Sales (most important) and production

The Economic Contribution of the Vermont Maple Industry

There is a huge opportunity to expand retail sales so long as syrup prices are STABLE and produce quality remains high.
Expanding markets in the US and overseas, focusing on the health benefits and versatility of the products.
Growing demand
Overseas market
Increased value-added products, opportunity to think outside the box. maple container- ex: sap water
Eliminate maple pests
Advances marketing, creating new user experiences and broadcasting the message domestically and international.
Increase publicity and new uses for maple products
Expanding markets- more work should be done in this area
Stop buying off flavored syrup if not market for it
Stop marketing things people don't need or use.
To grow the market even if just in U.S. to U.S. residents
The overseas market
Developing new markets
Larger market
Larger markets
To replace the not good for you sweeteners in the marketplace
online
?
To expand exports.
new markets
Promote maple products
Expanding markets
To give the millions of Americans who have never tasted pure maple syrup a taste of pure maple syrup. And it is not that critical that it is Vermont pure maple syrup.
Expanding world markets
Developing new uses for maple products, increased production as a means to derive income from our forest in a sustainable way... as long as demand also increases at the same rate.
New maple products
Natural foods/replacement for high fructose corn syrup.
Supply and demand
The expanding market and increased attention that maple syrup is getting.
Developing retail markets
Don't know
Need to expand markets
If the state should open up some of its land, to be able to tape on the land, as well as government land.
Standardized grading

The Economic Contribution of the Vermont Maple Industry

Good prices
Capitalizing on the unique value of VT maple syrup products via internet use, and avoiding the over burdening rules, regulations, inspection and certifications, while keeping good food standards deployed logically.
Sell to China and Japan. Rising middle class and love of the "finer things".
VT products quality marketing
Better market place
Expansion of demand for maple products nationwide and worldwide.
Verification of the health and benefits of maple syrup over other sweeteners. I.e. Benefits for diabetics or hypoglycemics.
Quality and growing market
The marketing of maple products both in the U.S. and world wide.
2/16" tubing
Because of the shift from processed sugar to natural products, I believe by promoting Maple in that aspect- there could be a huge potential domestic mkt.
Increased market 1) Local 2) Wider
We must rapidly expand marketing or we will face problems like maple has had in Canada or like our own dairy industry
Global (and domestic) demand, especially for darker grades
One line marketing world wide.
over supply for the market existing, many poor quality syrup market we have a need to develop a market for real commercial syrup
Increase the per capita use of maple throughout USA
New technology
Expanding to a broader region.
Sell more syrup
Global sales including Asian Tigers.
Good marketing for bulk distributors
With good marketing and promotion of maple, the industry will continue to grow. Because there are new installations every year and more syrup is produced, the prices could go down.
World marketing
To sell to new clients in the US that have never tried real syrup before.
Demand for the product
Worldwide sales
Excellent food product
?
expand world markets
we should work with Canada as not to overproduce and keep a fair price for the consumer, packers and producers
The opening of state land for maple producers to tap.
Younger producers

The Economic Contribution of the Vermont Maple Industry

Increasing global markets esp. Europe and Asia.
Export - our overseas friends and family love syrup but can't get it in Europe- Why not? More producers
Increase in marketing resulting in higher level local and global demand
None
Marketing
VT being the biggest in the USA
Increase marketing to spread the good word of maple as a natural/local sweetener
increase sales worldwide
finding new markets to keep prices up
-Keep wholesale price high- create a large overseas market- Market the "Heath" benefits of Maple!!!
More sales
I don't know where VT farms and small business people would be without the sugar industry in the last 10 years. The recession hit us hard, and without good syrup prices, we would be much worse off.
Expanding markets
Packers working to establish new global markets. Increased production putting more money into the economy.
Put sugar industry back hands of Association.
Desire for quality. Natural Food
?
Quality of VT syrup
Global markets
Advanced technology and new techniques
Lower our production costs so prices can stay lower.
Customer demand for natural sweeteners.
Expansion into new markets because of amounts available.
If over producing causes the price of syrup to drop more people will be able to buy it.
Global promotion of maple products
Expanding markets
Do what we do best. Have the best in the world.
Tap every tree in VT
Becoming more up to date with our marketing newer ideas to use our products in (???)Better ideas to save our energy costs to the producer.
Expansion into Europe/ World market
Increase good stewardship of maple stands and stress sustainable practices.
Global sales
Am seeing more producers with 10-100 thousand taps because of new technology. Hopefully new markets will occur to offset amount of syrup being made.
State of Vermont allowing tapping of maples in state owned land. Also, grants to make production operations more "Green" solar panels, pellet evaps, gasification evaps. etc...
natural product, healthy expand market

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expanded marketing
Overseas market
Do not know
Do research and prove the benefits to eating and using Maple Syrup. I feel maple syrup does not spike sugar, that could be a huge market for diabetics and people who want to eat healthy.
New sap harvest technology
New technology
more markets for our syrup
marketing opportunities on-line and overseas
Develop new markets foreign and domestic
growing market
Market expansion in domestic and foreign countries.
Research and development. Insect Control. Public awareness through direct contact to answer questions and proved sampler. Product diversity- new consumable products invented, health benefits of maple products
Online Sales, I wish VSMA would host a website where all producers could create an online store. Complete with a payment system. VSMA could buy the Add words that helps people find the website (Just a thought)
Branding Vermont
expand marketing and promotion to secure growth in sales of maple products; consumer education; producing quality through collaborative efforts with all in industry working together
New products using maple components.
promotion
expanding markets
expanding wholesale sales to use up all extra production coming on line-overseas sales
Targeting health food markets and ingredient markets particularly outlets for low quality syrup
expanding markets to meet growing supply
Promotion of American maple syrup around the world.
Having consumers demand pure maple in their products and using 100% pure maple as their nutritious sweetener of choice.
expanding foreign market
to promote as a health-promoting food!
International spheres
Expand informational marketing of maple products
Expanding the market outside New England, worldwide marketing
localvore sales
awareness
overseas market increasing
go broke
there is an opportunity to differentiate your real maple product that tastes like maple

The Economic Contribution of the Vermont Maple Industry

Overseas markets for value added products, teaching our children and young people the joys and traditions of sugaring
Getting maple marketed to places as a substitute for conventional sweeteners
The public becoming aware of the goodness of our production, it's not just a treat, it's healthy
More overseas marketing
There is a tremendous opportunity to promote maple outside the maple belt. The industry needs to do some quality marketing.
Opening up new markets for maple
Promotion as a natural sweetener.
Use of the expansion.
overseas exports
Selling retail if there's a good market
Selling abroad and expansion
Global market
Converting pancake syrup users to pure maple syrup users
Broader (international) marketing
Promotion of health benefits
New methods of promoting VT syrup, e.g. energy boosting packets for athletes.
Continued advertising
Expanding market outside of New England.
International sales efforts
overseas sales-Natural and organic food sales in US
Organic food market
Market expansion
More demand for maple
Expanding domestic and international markets.
Increased sales to other countries and states
New vacuum systems
The Vermont name/brand
focusing on quality of product with major emphasis on flavor
Weather change
All natural sweetener
sustaining small producers (>1000gals/year) in retail sales and production value
Access to global markets
More advertising to promote maple syrup domestically to expand industry and guarantee fair price to producers
Promotion
Consumer demand
Expanding market

The Economic Contribution of the Vermont Maple Industry

-Market share growth coming from the 'fake' segment (e.g., Butternut Mountain Farm squeeze bottle)-Growth of the premium segment in US and global markets
Public awareness of product through internet and PR.
New equipment that increases production
Food network movement
International markets, e.g. China and India
Health conscious consumers
lower fuel prices
Create new products and promote existing. Vermont has an 'edge' for taste and quality. Have to preserve that.
Finding more ways to recycle plastic tubing
Our country is still free, but gov't is closing in...
Syrup- Overseas market, markets from R.O water "permeate"
Significant health benefits-Value added products and working with Value added producers using maple in their recipes
Maple spirits and maple sap water
Better ways to market syrup
Expanding global markets
Buy Local theme-Smaller operators are better
Price boom
Online sales-Value added products
Good weather
Open ended production increases if new markets are developed
Market expansion
Getting the word out
Opening to global markets, particularly China-Increased PR in southern US
Retired farmers willing to lease sugar bush forests to new maple producers
Overseas sales
Good promotion, research, development
Establishing one syrup grading system for all states
New markets
More ads out west to encourage consumer purchasing.
Expansion of market overseas and in southern hemisphere. Increased awareness by consumers that pure maple syrup is a healthy alternative for cooking and sweeteners.
Expanded market for all natural sweeteners
International sales/exposure
Sales in other countries
beverage industry
overseas markets-New methods of using maple syrup within organic cooking methods
International sales

The Economic Contribution of the Vermont Maple Industry

change in people behavior, expanding market for people who claim they are using maple when they are not

Overseas sales, use web to our advantage
--

Appendix C

Comments from survey respondents

Some responses were edited to remove personal information

Need to open state and federal forest lands for sugaring
If everyone keeps betting bigger, the price per # will be down like milk. Shouldn't we have learned something from dairy producers.
Question 18 is confusing. Are you asking about total sales in VT from overall sales? If so, you would not get a total of 100%. Another way to look at this question is--of your total VT sales, what portion were in each segment. Then you can get to 100%.
I would like to know more about grants available.
11. *Number includes sales from about \$6,000 worth of purchased syrup (bulk). This purchase is included in expenditures for Q10.
Do we know how much profit Canada is making off from Vermont by buying bulk and selling back retail?
Part of the reason our expenditure was so high in 2013 is we expected a grant \$____ reverse osmosis (RO) machine from USDA/NRCS. We never got the grant. We have the energy audit--was recommended new RO. No money. After the fact. Why offer a grant that doesn't come through. Really upsetting.
I think a lot of the questions were foolish. Have been a sugar maker for years, we are always upgrading and somethings are used for a long time. Why do we need to remember all the years?
We have had a sugaring operation at this location since 1943. The storm in Dec 2013 took down most of our tubing and damaged many maple trees. No sugar production in 2014. We will resume sugaring if we can manage to replace and pay for new tubing in the sugar bush. Retired dairy farmers. Son is now leasing dairy farm.
_____ was also included in these results. We sugar together as one operation.
I give away my syrup because syrup prices are way too high, average people can't afford it.
Does not apply to the small and hobby syrup producers.1. Hobby only7. Bad weather. Most years produce 60-65 gal/year
Marketing, marketing, marketing
Good Job!!
Another concern that I have is gov't grants. After looking into these it appears to me they are a waste. Most of the folks utilizing them were able to buy the machinery without the gov't help. I have looked through the process and am appalled at how inefficient it is and how wasteful.
My husband drove tractor to gather sap in 2013. His son and son-in-law did ALL the rest of the sugaring. Husband died ____ 2014. Son and son-in-law did not sugar in 2014 cause of depth of the snow, but plan to in future years. Even expect to build a new sugar house, but probably not tap more than 1200 taps.
The industry should sponsor an ad campaign like "Got Milk" or replicate the cranberry grower association with a brand like Ocean Spray or at least a unified marketing theme i.e. "tales from the bush"
Having just finished our 205th year of making syrup on this farm. In 36 yrs I have not being able to syrup away to the massive expansion since 2008. Hearing my grandfather saying to me as I wanted to expand. What are you going to do with all that syrup.
I could not fill out this because I sold sap and I am increasing from 1,000-6,000 taps this year. Still selling the sap.

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I work full time and syrup another 3-4 hours a day building my maple business over the last 18 years- I have put all fund back into the business, plus.
Thank you
My wife and I operate a habit operation, do not intend to ever make a profit. We do not tap every year. In 2013, for example, we were unable to sugar due to knee problems for both of us.
We are more of a hobby operation
Vermont producers need to be less self-centered about annually selling all the maple produced in Vermont and get more focused on increasing total sale of all maple regardless of where it was produced. The more people nationwide that fall in love with maple, the more maple will be sold and the more Vermont maple will be sold.
Perhaps the market channel question could be worded better: our sales all originate here are the farm, about 10-15% are walkins and the rest is mail order (phone and internet) most destined outside Vermont.
Like dairy farming, I fear the small operation will be squeezed out. Regulations and getting "gouvernement" involved will be the death of small time operators who just want a way to pay property taxes, fertilizers... We have invested most of our retirement for a "hobby" to be regulated and how to do it. Help is minimal, cost is much!!!
The questions seem based on 2013 production, but there's been a big increase in production each year; for instance, in 2013 we had 3500 taps; made 1800 gal. In 2014, we had 7500 taps and made about 3400 gal. Many producers we know have done the same.
I don't have much to give you yet. I am starting a sugaring operation soon. The is 2/3 built. When it's done, I will have web cameras and invite the public. The purpose is as much about education and the environment as it is about making syrup.
Very few people can afford to buy everything new in one year.
My operation strictly sells saps to other producers. Tropical storm Irene damaged lines and tanks and operation has been idle since. Anticipate tapping again for 2015 season.
I am concerned about the disadvantage which to me, looms for the small producers vs the mega-sized producers. For example, the cost of registrations, certifications and so forth. Especially in Vermont. .
Have a place for smaller farm representation in state and sugar maker organizations.
I would be interested to know how many producers gain their income from maple production only. The reason I am decreasing is old age and nearing retirement and hard to get GOOD help
I set up sugaring operation in 2013 from SCRATCH. The total expenditure for sugaring, equipment, sugar house, pipeline etc was about \$400,000. Had 7,000 taps this spring, will have 11,000 next spring.
Thanks for studying this. I would be glad to discuss further. I look forward and appreciate your help.P.S. keep responses anonymous.
Since 2013 was such a favorable year for production compared to 2014 in Champlain Valley, production data is likely to be unrealistic to sustain!
Obviously from my answers you can tell that we sell none of our syrup. What we produce we give away or use ourselves. This is the case with hundreds of hobby sugar makers. How does your survey account for people like us?!\
To sell to new clients in the US that have never tried real syrup before.
almost all of my equipment came from Canada but was from C.D.L. and Lapierre but was purchased in VT
Only big producers seem to get all the grants. The little guy gets left behind as always. I would like to increase my RO so I could decrease my fuel cost. But I'm told no money. Because someone else is more important. As always.

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I think Vermont should have left the grading system alone. Especially for the smaller producers.
Q7. 22,200 gal sap. Primarily sold sap, only boiled 2,000 gal.
Have a good day!
Thank you and the VMSMA for your interest in our industry. I think sugar making has had a great deal to do with the good financial state of all Vermonters. Thank god for the last 10 years!
The 2014 season was my first year on my own so the 2013 questions aren't applicable. So...I don't know if this is a help.
I'm a builder 10% of my work is building sugar houses, RO rooms, Sap Processing, Cement foundations, Maple products processing buildings. What about that on the economy? This is big dollars and are maple driven!
Started project as hobby that got out of hand. Employ our younger son so he can become a pastor in local church
No
Inspection requirements go way too far!
We are a start up operation with have approx 3000 taps when we are done.
To many people getting into sugaring that don't know what they are doing and are giving maple a bad name in some areas!!
We have sort of a niche market- able to retail our 300 gals from wood fired evaporator. No RO.
Do more research on the benefits of using maple syrup instead of cane sugar and other sweeteners. Market this for drinks and food.
sorry it's late
thanks
It came from a tree.It's healthy for me.and it's gluten free!no need to believe me.Just try it, you'll see!
13-"don't know but we did claim all earnings"16-next to 0% "all went to NH"comment-I don't like the idea that this study would help to determine federal and state subsidy and GRANT levels. No grants! No subsidies! Spend the money killing Asian Longhorn beetles
13- "mostly from my furniture company-\$_____
Question eighteen needs clarification. You should have included construction of new buildings including ground work, concrete, building materials and labor- we spend as much money on that as buying sugaring supplies.
I would say, from anecdotal evidence, that on dollar in the pocket of a small producer is more valuable to VT than many dollars in a large producer's pocket: many of the large producer's receipts go straight out of state (oil,diesel, vehicles, etc. etc.)
Leasees fill out remaining info on their own supply form:"plus 12-15 K to be tapped in 2015"
i think that VMSMA thinks that all sugar makers that have more taps have more money. The truth is that's only the case when they start with money. Other than that they just have more sets(true fact)
the biggest threat is the industrialization of the business. the product many are producing is not maple syrup. it is an industrial sweetener. when you think good maple tastes like vanilla then you have a serious problem.
All producers should contribute to a central marketing operation. If it were not for the strategic reserve and quota system in Canada holding prices you would not see the proliferation of new and expanding maple operations in VT.
In addition to equipment, supplies and wages, please include things like brochure printing, advertising, web costs, and PR costs that contribute to the economy.

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Sugaring is going down the same road as dairy farming. We are moving towards two types of operations: large producers using lots of technology, paid help and lots of taps, and small producers using old technology, help from family/friends, and a small number of taps.
This is a family sugaring operation we all enjoy in between our full time businesses'. Our syrup is used for gifts, retail sales and personal use.
I have been a backyard sugarmaker for 40 years and come from a long line of sugarmakers and farmers. I have real mixed feelings about the new grading system and I also worry of the industrialization of sugaring. I CAN tell the difference in taste between R.O. and 'old fashioned' wood fired, boiled down syrup. Mine is better!
I would like to see more state and federal land be available for maple sugaring.
Price of equipment and supplies coupled with short labor supply means product prices will drive syrup off the general market
I am looking to start a Christmas tree farm, and honey bees. Does UVM research have any literature or help for those also?
With the influx of people getting "in to " sugaring, will this study help to maintain a stable price for our products?
Hard to give you an accurate accounting of my business costs and sales as we are expanding every year (and getting more efficient every year). We saw decent growth between 2013 and 2014 and as a result our overall tap numbers and contributions to the VT economy are larger than I am reporting here for 2013 data. I would suggest doing this study for a few consecutive years to help track growth and other trends.