

THE IMPACT OF AGRICULTURE ON NEW HAMPSHIRE'S ECONOMY IN FISCAL YEAR 2011

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Introduction

It is estimated that there were \$647 million sales and other receipts by the agriculture sector during fiscal year 2011, which is about one percent of the gross state product of New Hampshire. The sector employed 12,076 people, which is equal to 1.5% of total employment of the State. Of the \$647 million sales, \$275 million were from the traditional farming industry, which employed 6,413 people. The other \$372 million in sales came from the agriculture-related tourism industry. The latter employed 5,663 people. Spending by travelers increased during fiscal year 2011, as more people visited the state due to fewer rainy days in the summer of 2010 and lower gas prices. On the other hand, the traditional farming industry declined between fiscal year 2009 and 2011 as crop sales fell significantly.

These figures were estimated based on various sources of federal data sources about the state's agriculture, including the U.S. Bureau of Economic Analysis (USBEA), the 2007 Census of Agriculture, and the U.S. Department of Agriculture (USDA). The USDA collects agricultural production and sales information about New Hampshire's agricultural industry, which it publishes annually. In particular, the USDA's New England Agricultural Statistics provide a wide variety of information on agriculture for all six states in the region, including New Hampshire. Relying on information about agriculture from the USDA, the Census Bureau publishes much more detailed information in the Census of Agriculture once every five years. The New Hampshire Department of Agriculture also relies on these data from the USDA for its marketing program. Another very important source of information for the analysis in this document is the USBEA. This agency has access to the U. S. Internal Revenue Service's Schedule C (self-employment) data base; thus, it can be used to calculate the total number of people employed and their earnings for both self-employed and employed workers in agriculture. The USBEA also publishes information about farming activities in the state on an annual basis, using information from the USDA and other sources. Where necessary, we also used the Quarterly Census of Employment and Wages (QCEW) published by the U.S. Bureau of Labor Statistics. The QCEW does not provide a complete picture of the industry, as it does not have information on proprietary farms; however, it is a good source of data to get a reading on current trends in the industry. It has the latest data on employment and wages at finer industry levels. While collecting federal data on traditional farming has been easier in recent years, it was not an easy task to measure impacts of agriculture-related tourism, for some of the data that were used in the studies for fiscal years 2009 and 2005 were not available for fiscal year 2011. In these cases, other tourism data were used to make estimates; these include seasonal and annual publications of the New Hampshire Visitor Surveys and the travel barometers compiled by the Institute for New Hampshire Studies (INHS).

An all-inclusive definition of agriculture remains problematic, however. While almost all agriculture in New Hampshire is included in the Census of Agriculture, there are at least three agriculture related activities that are undertaken in other sectors. First is the Agricultural Services

economic sector. This non-government sector provides services (other than machinery repair) to farms. The U. S. Census Bureau's County Business Patterns for 2009 shows that there are about 82 employees in this sector (excluding support activities for forestry) who perform contract work on farms and are engaged in planting, maintaining, and harvesting crops. The USDA's New England Agricultural Statistics 2011 reported that there were about \$43 million in sales in this sector for the calendar year 2010. They were not included in the Census of Agriculture and annual USBEA reports. Second, the New England Nursery Association reported that there were \$113 million in horticultural products grown in greenhouses, fields, and nurseries in New Hampshire in 2007. Only \$73 million of this amount was included as farm sales in the 2007 Census of Agriculture and USBEA reports. The other \$40 million was for plants grown by wholesale and retail trade businesses, including garden supply centers and nurseries. Agricultural services (excluding support activities for forestry) and horticultural plant sales have been included in this report. Third, wineries are considered to be manufacturers by the federal government, even though all of the wineries in New Hampshire grow grapes. Detailed manufacturing data from the US Census Bureau has enabled an estimate of the size of the winery industry in New Hampshire by the INHS. Wineries have been grouped with other horticultural plant sales in this report.

This following report examines fiscal year 2011, using the methodologies in the fiscal year 2009 report. An exception is that this report excludes support activities for forestry (NAICS 1153) from agricultural services (NAICS 115) provided on farms. Despite the similarities in methodologies, an exact **comparison** between the two reports may be difficult, due to revisions made to the federal data over the two year period, and changes made to the economic model used to measure economic impacts. For this reason, it is important to note that *estimated figures for fiscal year 2009 in this study may not be the same as the reported figures in the previous report INHS prepared for fiscal year 2009.* Some figures for fiscal year 2009 were re-estimated to reflect revisions of federal data. Further, this report differs from reports for fiscal year 2002 and 2005, as follows: The key differences are that wineries and agricultural services were not included in the 2002 and 2005 reports. Also, horticulture has been treated differently in the three reports. In the 2002 report, all horticultural activities reported by the New England Nursery Association were included. In the 2005 report, landscape maintenance activities were not included. In this fiscal year 2011 report, landscape maintenance, site construction activities, and the resale of horticultural plants raised by other businesses are not included.

Traditional farm-based agriculture in New Hampshire saw a decline in sales and employment between fiscal year 2009 and 2011. In addition, the sale of **horticultural plants** raised by retail and wholesale garden supply centers and nurseries has dropped rapidly since 2005. While sales in livestock production increased slightly, much of the rest of the farming sector was in decline over this period. While direct sales of farm products to consumers via farm stands, farmers markets, the community supported agricultural (CSA), and restaurant purchase programs continued to rise in their share in total sales, the percentage of fruit and vegetable farms in the state using direct to businesses such as retail and wholesale markets continue to remain behind other New England states. For example, while only 18% of fruit and vegetable farms in New Hampshire engaged in direct-to-retail marketing practices (such as sales to supermarkets, restaurants, and institutions), 30% of the farms in Vermont used direct-to-retail marketing. In

contrast to the decline in traditional farming, spending in agriculture-related tourism increased between the fiscal year 2009 and 2011. In particular, agriculture scenery tourism did much better than two years ago. The number of travelers who engaged in agriculture scenic drives increased due to fewer rainy days and falling gas prices, although spending per trip decreased due to lingering recession. The winery sector is also growing, as indicated in an increase in the number of establishments in the sector. As a result, while traditional farming and horticultural cultural plant sales have decreased between fiscal years 2009 and 2011, agriculture related tourism activities have increased and the total combined economic impact of agriculture has increased between fiscal years 2009 and 2011.

The economic model used in the following analysis to measure sales and employment impacts of agriculture, horticultural plant sales, wineries, and agriculture-related tourism on the state's economy is a fiscal year 2011 model prepared specifically for this study by the Institute for New Hampshire Studies (INHS), by Daniel Lee, Ph.D. This model is based on data primarily from the USBEA and is very similar to its RIMS II model of the state's economy, but incorporates more consolidation of industry sectors. In addition to measuring the multiplier impacts, this model can be used to calculate state and local government tax revenues. After reviewing the economic impact of agricultural production and horticultural plant and winery sales, this report will look at the impact of agriculture-related tourism.

The Impact of Agricultural Production

Total sales receipts of farms for fiscal year 2011 period was estimated to be \$219 million, based on information from the USBEA. This was down by 7.9% compared to the \$238 million in sales during fiscal year 2009. Agriculture had a decrease in employment since fiscal year 2009, as most goods-producing industries did. Mining was the only goods-producing industry that had an increase in employment over this period. This \$219 million in sales included \$52 million in horticultural plants that sold directly to households and to non-farm businesses. Agricultural, or farm, sales include farmers markets, farm stands, CSA sales, sales to manufacturers, wholesalers, and retailers, plus sales to other farmers. On-farm manufactured food products, such as jams and jellies, were also included as agricultural sales. This \$219 million was equal to 0.3 percent of the estimated Gross State Product for New Hampshire for the fiscal year 2011 period.

The USBEA reported that there were 5,095 people engaged in farming on a full or part-time basis, including self-employed people, during fiscal year 2011. There were also an estimated 82 agricultural services contract workers who were not actual employees of the farms who worked on the farms, for a total of 5,177 employees. This was 0.6 percent of the state's employment during fiscal year 2011.

This employment provided an estimated \$28 million in wages, salaries, and self-employment earnings. This was 0.05 percent of all such earnings for the state, and reflects the part-time and seasonal nature of this work, as well as the relatively low hourly wage rates provided. Out of the \$219 million in sales, there were \$28 million paid in taxes, primarily in the form of property

taxes to local governments. State and local government taxes and fees paid by farmers have been growing at an even faster rate than agricultural sales between fiscal years 2005 and 2011.

The economic model was used to calculate the multiplier (both indirect and induced) impact of the \$219 million in direct agricultural sales on the rest of the state's economy. Indirect impacts are those impacts on supplier businesses and organizations, plus taxes paid to governments located within the state's borders. Induced impacts are those due to the spending by households to purchase the products of the industry as well as the spending of wages and other earnings of the employees of that industry. An additional \$417 million was added to the state's economy from the original sales of \$219 million by the agricultural sector. The multipliers for the agricultural sector in the model are higher for fiscal year 2011 than they were for fiscal year 2009 as there is a greater share of household income in sales and a lower share of purchases from out-of-state agriculture supply industries. This multiplier effect resulted in an additional 2,136 full time equivalent jobs and an additional \$85 million in household income. State and local governments received an added \$20 million in tax receipts.

Therefore, the total impact of this agricultural sector was \$636 million in total transactions, equal to 1.0 percent of Gross State Product. There was total employment of 7,313, or 0.9 percent of the state's total jobs. There was \$113 million in total household earned income, which was 0.2 percent of all earned income. Finally, there was \$48 million in local and state tax receipts. Of this amount, it was estimated that local government property taxes and fees equaled \$32.3 million, and state tax and fee receipts totaled \$16.1 million, including rooms and meals taxes of \$0.26 million. Thus, the primary source of revenues to state government was due to the multiplier effect.

The Impact of Horticultural Plant Sales and Wineries

There was an additional estimated \$50 million from the sale of horticultural plants grown by the same business that sold them (not included in the previous section). The New England Nursery Association, Inc. contracted with faculty at the Universities of Vermont and Maine to conduct annual surveys of this industry across New England. Its most recent study, for calendar year 2007, stated that horticultural businesses located in New Hampshire had \$276 million in sales. This was down significantly from the \$522 million in estimated sales reported for 2005. Although this study was not published for calendar year 2009 as scheduled, data from the USBEA and the QCEW suggest that there were significant declines in all parts of the horticulture industry, including the sale of plants, landscape construction, and landscape maintenance. The value of plants raised by the horticultural industry declined from an estimated \$111 million during fiscal year 2009 to an estimated \$102 million in fiscal year 2011. Of this \$102 million in sales for fiscal year 2011, \$52 million was raised on farms and is included in the previous section. The remaining \$50 million was for plants raised by wholesale and retail trade garden supply centers and nurseries, and is included in this section. These sales were down significantly from fiscal year 2009 when there were \$56 million in the sale of plants grown by garden centers and nurseries, according to data from the New England Nursery Association, Inc. Plants that had been grown by other businesses and then sold, sales by florists and receipts of

landscape construction, and landscape maintenance businesses are not included in this section of the report.

This section of the report also includes the state's wineries, which are considered by the federal government to be manufacturers under the NAICS system. Based on information in the U. S. Census Bureau's 2007 Census of Business, it is estimated by INHS that there were \$6.3 million dollars in sales, 28 employees, and household incomes of about \$800,000 from the state's wineries during fiscal year 2011. All of the state's wineries grow grapes, although most also import grapes, grape juice, and some other fruits and juices from other states to make their wines. The larger wineries have tasting rooms which also offer retail sales to tourists and other households. For purposes of the economic model and information reported below, the number of jobs and household income for other horticultural plant sales were based on ratios from the agricultural sector. All other ratios and multiplier relationships, where original data was not available from federal agencies, used the USBEA ratios for the retail trade sector in the INHS model for both other horticultural sales and wineries.

The total of \$56.0 million in other horticultural plant sales and wineries sales was equal to 0.1 percent of Gross State Product for state fiscal year 2011. This \$56 million in sales resulted in an estimated 1,236 jobs. This was equal to 0.15 percent of all employment in the state during fiscal year 2011. Household earnings were estimated at \$7.2 million. This was 0.01 percent of all earned household income. Tax receipts from these two sectors were estimated as \$6.8 million, of which \$5.3 million was estimated to be for local government property taxes and fees, and \$1.5 million in state taxes and fees.

The multiplier effect of the \$56 million in other horticultural plant and winery sales was an additional \$104 million in indirect and induced transactions, for a total monetary impact of \$160 million. This was equal to 0.25 percent of the Gross State Product. There was an addition of 499 employees, for a total of 1,736 employees, or 0.21 percent of all jobs in the state. Household earned income increased by \$21 million from the multiplier effect, to a total earned income of \$28.4 million. This was equal to 0.05 percent of all earned income statewide.

Finally, there was an additional \$5.0 million paid in state and local taxes due to the indirect and induced multiplier effect. Of this amount, \$2.3 million was in local government property taxes and fees and \$2.6 million in state tax receipts, including \$0.1 million in rooms and meals taxes. Total taxes and fees paid that resulted from the original \$56 in direct spending, plus the indirect and induced effects, equaled \$11.8 million, of which \$7.7 million was in local government property taxes and fees, and \$4.1 million in state tax receipts, including \$0.1 million in rooms and meals taxes. As was the case for the agricultural sector impacts described above, most state government revenues resulted from the indirect and induced rounds of spending, rather than from the original direct spending.

The Total Impact of Agricultural, Horticultural Plant Sales and Wineries

The total direct sales of agriculture, horticultural plants, and wineries were estimated to be \$275 million for fiscal year 2011. This was 0.43 percent of the Gross State Product. The total employment was estimated as 6,413 jobs, or 0.78 percent of the state's total employment. The total household earned income from this employment was estimated at \$35.0 million, or 0.07 percent of the state's total household earned income. The direct taxes and fees paid by these businesses to state and local government within New Hampshire included \$28.3 million to local governments and \$6.9 million to the state government, for a total of \$35.2 million in taxes and fees.

When the indirect and induced impacts outlined in the preceding paragraph are added to the direct impacts, there were \$796 million in total monetary transactions. This was equal to 1.3 percent of the Gross State Product. These monetary transactions resulted in 9,049 jobs, which was 1.1 percent of total employment in the state. Total household earned income was \$141.7 million from the direct, indirect, and induced impacts, which was 0.27 percent of all household earned income. Finally, the total taxes paid to state and local governments equaled \$60.2 million, of which \$40.0 million was in local government property taxes and fees, and \$20.2 million was in state tax receipts, including \$0.3 million in rooms and meals taxes. Thus, the state government received most of its taxes through the indirect and induced effect. The major source of state taxes was the business profits and/or business enterprise tax.

Introduction to Agriculture-related Tourism

The following sections describe those aspects of tourism that depend directly or indirectly on the activities of the state's agricultural industry. The sale of agricultural products to tourists has not been included in the sections below, as they have already been incorporated into the calculations of the previous sections. The first section describes the economic impact of the state's eleven agricultural fairs. The state's Department of Agriculture plays an active role in these fairs, as do many of the state's farmers. The second section describes what can be defined as true agricultural tourism, which is when tourists visit farms and/or make purchases of farm products and locally processed food products at farmers markets, roadside stands, and at retail stores. The third section describes the economic impact of tourists who intentionally drive through agricultural areas to view the scenery, but are not making any purchases of farm products. A fourth section summarizes these tourism impacts that are related to agriculture.

Agricultural Fairs Impact

The report prepared for the New Hampshire Association of Fairs and Expositions for fiscal year 2002 found that visitors to the fairs and the fair exhibitors and operators spent an estimated \$40,591,550 at or near to the fair grounds while these fairs were in progress, including an estimated \$400,000 in direct purchases from farmers. This generated an estimated \$40.2 million in spending by tourists resulting from the fairs in summer and fall of 2001, not including

purchases from farmers. There was an estimated 20.6 percent decrease in attendance at fairs during the summer and fall of 2008 from the levels of summer and fall of 2001, based on a sampling of fairs that provided 2008 attendance data. Although, the attendance data for the summer and fall of 2010 were not available, the attendance was estimated to be higher in the summer and fall of 2010 than in the summer and fall of 2008, due to sunny weather. The summer of 2010 had the smallest number of rainy days in recent years. However, people who did attend the fair are estimated to have spent less per trip, as the economy in both New Hampshire and Massachusetts struggled to recover from the Great Recession. Employment declined by 2% in New Hampshire between fiscal year 2009 and 2011, and by 1% in Massachusetts. This decline in spending is reflected in lower rooms and meals revenues and car rentals over this period. As a result, it is estimated that there was \$37.1 million in spending during fiscal year 2011 resulting from the fairs, not counting purchases from farmers. This was slightly less than the \$37.4 million in spending during fiscal year 2009 and \$41.9 million spent during fiscal year 2005.

The \$37.1 million in direct spending at the eleven agricultural fairs in fiscal year 2011 resulted in household incomes of \$13.4 million and 521 non-farm jobs. The direct spending produced \$3.4 million in state and local government revenues, including \$1.3 million in local government property taxes and fees, \$1.2 million in rooms and meals taxes, and \$0.9 million in other state government revenues.

The indirect and induced impacts of \$37.1 million in direct spending was an additional \$74.9 million in monetary transfers, including \$14.0 million in household revenues, and \$3.7 million in state and local government revenues. An additional 386 jobs also were created.

The total impact of the agricultural fairs (not including purchases of farm products and spending by farmers) was \$112.0 million in transactions, 907 jobs, \$27.4 million in household income, and \$7.1 million in state and local government receipts. The government receipts included \$2.3 million in local government property taxes and fees, \$1.2 million in rooms and meals taxes, and \$3.6 million in other state government taxes, fees, liquor store sales, State Parks receipts, and tolls.

Agricultural Tourism Impact

For fiscal year 2011 it is estimated that there were 1.7 million trips taken by tourists that had \$211 million in total spending, including \$43 million in purchases of farm products at road side farm stands and farmers markets. The \$43 million in farms products purchases during fiscal year 2011 are included in earlier sections of this report and represent an increase from the estimated \$35 million spent of farm products in fiscal year 2009. These tourists spent \$168 million during these trips on non-farm expenses, down from \$171 million in fiscal year 2009. The recession and a change in spending habits have caused the average for total trip spending to drop dramatically for those who spent money at farms. Increasingly, more purchases of farm goods are made by tourists on day trips. Also, tourists on overnight trips stayed for shorter periods of time and spent less on each trip. Thus, while the number of total trips increased, spending per trip decreased. This tourism spending estimate does not include shopping trips by (non-tourist) local residents to

make food purchases at roadside farm stands and farmers markets, nor does it include community supported agriculture (CSA) purchases.

This \$168 million in direct spending by agricultural tourists resulted in 2,581 non-farm jobs and household incomes of \$55.6 million. This direct spending produced \$15.5 million in state and local government revenues, including \$5.9 million in local government property taxes and fees, \$5.4 million in rooms and meals taxes, and \$4.3 million in other state government revenues.

The indirect and induced impacts of the \$168 million in direct spending were an additional \$339 million in monetary transfers, including \$68.4 million in household revenues, and \$16.7 million in additional state and local government revenues. An additional 1,524 jobs also were created. The total impact of this agricultural tourism (not including the purchase of farm products) was \$507 million in transactions, 4,105 jobs, \$124.0 million in household income, and \$32.1 million in state and local government receipts. Government receipts included \$10.4 million in local government property taxes and fees, \$5.6 million in rooms and meals taxes, and \$16.2 million in other state government taxes, fees, liquor store sales, State Park receipts, and tolls.

Agricultural Scenery Tourism Impact

One of the most common forms of recreational travel is the “scenic drive.” TNS Associates provides traveler information for the United States, including New Hampshire, for the time period of September 2009 to August 2011. The two year time period was chosen to allow for a larger sample, thus insure greater statistical accuracy. TNS Associates maintains a national panel of households who live in all 50 states and report on their travels monthly. The Institute for New Hampshire Studies contracted with TNS Associates for this survey data and the survey results showed that twenty-one percent of all tourists and business travelers in the state were engaged in rural sightseeing. If one assumes that only half of all rural sightseeing includes scenic drives through agricultural areas in the state, then ten percent of all visitors to New Hampshire annually engage in this activity. This was a higher level of participation by tourists than the estimate that six percent of all tourists and business travelers in the state were engaged in agricultural scenic tourism, used by INHS in preparing the fiscal year 2009 Impact of Agriculture report. The 2010 visitor surveys conducted by INHS for the Division of Travel and Tourism Development showed that sightseeing and scenic drives were the second and the third most popular activities undertaken by tourists visiting New Hampshire. The surveys also showed that most scenic drives occurred during the fall, followed closely by the summer, with smaller numbers of participants during the spring and winter.

The Institute for New Hampshire Studies (INHS) estimated that there were 33.99 million trips of individual tourists and business travelers in the state during fiscal year 2011. Thus, there were an estimated 3.55 million trips by individuals where viewing agricultural scenery was an important trip activity. Excluding the 1.7 million trips to purchase agricultural products included in the previous section, then there were an estimated 1.85 million trips by individuals to view agricultural scenery, with no purchase of agricultural products, during fiscal year 2011, up from the 1.43 trips during fiscal year 2009. It has been assumed by INHS in preparing this section of

the report that a larger share of agricultural scenery trips was one-day in duration than was the case for tourist travel during fiscal year 2005. As a result, it has been assumed that only nine percent of all “visitor days” spent in the state included the viewing of agricultural scenery, with no purchase of farm products. This produced a conservative estimate of the economic impact of such trips. INHS estimates that there were 52.9 million visitor days in the state during state fiscal year 2011. Nine percent of this total minus those trips where agricultural purchases were made equals 2.09 million visitor days in fiscal year 2011, up from 1.72 million visitor days during fiscal year 2009. This travel produced total estimated direct spending of \$166.8 million, up from \$143.3 million in fiscal year 2009, as spending per visitor day decreased from \$83.34 per day during fiscal year 2009 to \$79.89 during fiscal year 2011. This decrease in spending per visitor day was due to the sluggish economy and high unemployment.

The \$166.8 million in direct spending by these agricultural scenery tourists resulted in 2,561 jobs and household incomes of \$55.2 million. This direct spending also produced \$15.3 million in state and local government revenues, including \$5.8 million in local government property taxes and fees, \$5.3 million in rooms and meals taxes, and \$4.2 million in other state government revenues.

The indirect and induced impacts of \$166.8 million in direct spending was an additional \$336.4 million in monetary transfers, including \$67.9 million in household revenues, and \$16.5 million in state and local government revenues. An additional 1,511 full time equivalent jobs were created. The total impact of this agricultural scenery tourism was \$503.2 million in transactions, 4,072 jobs, \$123.1 million in household income, and \$31.9 million in state and local government receipts. Government receipts included \$10.3 million in local government property taxes and fees, \$5.5 million in rooms and meals taxes, and \$16.0 million in other state government taxes, fees, liquor store sales, State Park receipts, and tolls.

Total Agriculture-related Tourism Impacts

There was a total of \$372 million in direct spending by these agriculture-related tourists at agricultural fairs, visiting/shopping at farms or farmers markets on their trip, or taking scenic drives through agricultural areas during fiscal year 2011. This was up from a total of \$352 million during fiscal year 2009 due to the increase in the number of trips, particularly for agricultural scenic drives as a result of sunny weather and lower gas prices during the summer of 2010. However, the resultant increase in spending was partially offset by less spending per trip for those who visited the fairs, those who shopped at farms and farmers markets, and those who engaged in agricultural scenic drives.

Total agricultural tourism spending was \$372 million for fiscal year 2011, or 0.59 percent of the Gross State Product and 8.8 percent of all tourist and business traveler estimated spending in New Hampshire during state fiscal year 2011. This was up from 8.2 percent of total tourism spending for fiscal year 2009, and reflects the increase in agricultural scenery tourism. This spending resulted in 5,663 jobs, which was 0.7 percent of all full time employment in the state. This direct spending resulted in household incomes of \$124 million, which was 0.24 percent of

all earned household income. This direct spending also produced \$34 million in state and local government revenues, including \$12.9 million in local government property taxes and fees, \$11.8 million in rooms and meals taxes, and \$9.4 million in other state government revenues.

The indirect and induced impacts of the \$372 million in direct spending was an additional \$750 million in monetary transfers, including \$150 million in household revenues and \$37 million in state and local government revenues. An additional 3,421 jobs also were created.

The total impact of this agricultural-related tourism was \$1,122 million in transactions, or 1.8 percent of the Gross State Product. A total of 9,083 jobs was created, or 1.1 percent of all of the state's employment. There was \$275 million in household income, which was 0.53 percent of the state's household earned income. The total of \$71 million in state and local government receipts included \$23.0 million in local government property taxes and fees, \$12.4 million in rooms and meals taxes, and \$35.7 million in other state government taxes, fees, liquor store sales, State Park receipts, and tolls.

Summary of All Economic Impacts

The \$647 million in direct spending by agriculture, horticulture plant sales, wineries, and agriculture-related tourism was 1.0 percent of the Gross State Product. This spending resulted in 12,076 jobs, which was 1.5 percent of all employment in the state. This direct spending resulted in household incomes of \$159 million, which was 0.31 percent of the state's household earned income. This direct spending produced \$69 million in state and local government revenues, including \$41.2 million in local government property taxes and fees, \$11.8 million in rooms and meals taxes, and \$16.4 million in other state government revenues.

The indirect and induced impacts of the \$647 million in direct spending was an additional \$1,271 million in monetary transfers, including \$257 million in household revenues, and \$62 million in state and local government revenues. An additional 6,056 jobs were also created.

The total impact of this agriculture, horticulture plant sales, wineries, and agriculture-related tourism was \$1,919 million in transactions, or 3.0 percent of the Gross State Product. A total of 18,132 jobs were created, or 2.2 percent of the state's employment. There was a total of \$416 million in household income, which was 0.80 percent of the state's household earned income. The total of \$131 million in state and local government receipts included \$63.0 million in local government property taxes and fees, \$12.7 million in rooms and meals taxes, and \$55.6 million in other state government taxes, fees, liquor store sales, State Park receipts, and tolls.

Short-Term Trends in the Impacts of Agriculture

Between fiscal years 2009 and 2011, there was a significant decrease in the value of products sold by the state's farms. This reversed a positive trend between fiscal years 2005 and 2009. While livestock production has had a slight increase in sales, crop production has had decreasing

sales. The Agriculture economic sector, or farming, declined in employment by 0.3% between fiscal year 2009 and 2011, as most goods-producing industries did. During the same period, total employment in the state decreased by 1.8%. There has been no change in the number and average size of farms in the state during recent years.

The multiplier impacts from direct agricultural sales increased between 2009 and 2011, as a larger share of the agriculture sector's sales were made within the state rather than to out-of-state manufacturers, wholesalers, and retailers. The increasing ties between the state's farms and its households and businesses are leading to an increase in the economic impact of farming on the state's economy through the indirect and induced multiplier effects, which helped offset a decline in the total sales of farm-based agriculture. While direct sales of farm products to residents and to tourists has grown significantly between fiscal years 2002 and 2011, there was room for improvement for direct-to-retail (to supermarkets, restaurants, hospitals, schools, and so on) and direct-to-wholesale markets (to supermarket chain buyers, wholesalers brokers, processors, and so on). For example, only 18% of New Hampshire farms used direct to retail as a marketing venue in calendar year of 2011, while 30% of Vermont's farms did.

The value of horticulture plants grown and then sold by wholesale and retail garden centers and nurseries continued a significant decline between fiscal years 2009 and 2011. Both households and the construction industry reduced purchases of these horticulture and nursery products as the overall economy and, particularly the housing market, struggled to recover from the 2007 recession. USBEA data showed that sales in 'greenhouse, nursery and mushroom products' declined by 8% in this period. QCEW data indicated that the covered employment and wages declined by 6% and 3%, respectively, between fiscal year 2009 and 2011. Landscape construction and the sale of plants grown by other businesses is not included in this fiscal year 2011 report, but was included in the fiscal year 2009 report.

The state's winery business started in the 1970's, in terms of those wineries still in business today. This industry, while still small, continued to grow during the last two years. According to the QCEW, the number of establishments growing grapes and/or manufacturing wines that hire employees covered under the federal and state unemployment insurance more than doubled between fiscal year 2009 and fiscal year 2011. However, the lack of federal data on this industry has made it difficult to measure the full extent of its growth. Because it is still a small industry and is classified under manufacturing, the agriculture component of this industry is not found in the census of agriculture, except for independent vineyards that sell to wineries. However, such vineyards are not as common in New Hampshire as they are in the major wine producing states. Several wineries now have tasting rooms and actively advertise for tourists and local residents to visit and make purchases. A few wineries sell through the state liquor stores, and an effort is underway to permit New Hampshire wineries to sell their wines at farmers' markets. This is an industry poised for further growth.

Spending at agricultural fairs decreased by 0.74 percent between fiscal years 2009 and 2011, which was estimated by changes in rooms and meals revenues in summer and fall during the same period. The slight decrease in spending during the summer and fall months of 2010 is

attributed primarily to the lingering recession and increasing unemployment in the region. Good weather invited more visitors, but spending per trip was down due to economic hardships. Total spending by tourists during trips to make agricultural purchases also decreased slightly over this two year period, although they did spend more making purchases at farm stands and farmers markets. Spending by tourists on scenic drives through agricultural areas increased due to favorable weather and falling gas prices. As a result, it is estimated that total spending by tourists visiting agricultural fairs, farms, farmer's markets, and scenic drives through agricultural areas increased by 5.6 percent between fiscal years 2009 and 2011. This increase can be attributed to the weather and falling gas prices, which raised the number of visitor trips. But the resultant increase in spending was partially offset by decreasing average trip duration and average trip spending due to economic hardships.

In terms of total economic impacts (and recognizing that there have been changes in methodology and new data sources used to prepare this report), there has been a 8.5 percent rise in the economic impact of all forms of agriculture and agricultural tourism. This rise in total impacts is due to an increase in agriculture scenery tourism and a stronger multiplier impact. However, the total sales of farm-based agriculture have contracted by 8.5 percent between fiscal years 2009 and 2011. The major decrease has been in the sale of crop production, as most crop categories saw a decline by more than 10% between fiscal year 2009 and 2011.

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www.agcensus.usda.gov. This U. S. Department of Agriculture website provides access to the 2007 Census of Agriculture as well as to annual agriculture industry reports for states and counties.

www.agriculture.nh.gov. This is the home page of the New Hampshire Department of Agriculture. It provides access to agricultural statistics for the state as well as information on agricultural tourism and other subjects. Topics include lists of agricultural fairs, farm stands, farmers markets, PYO farms, and CSA farms.

www.bls.gov/cew. This is the U.S. Bureau of Labor Statistics website. It contains a wide variety of economic information about the nation, the states, counties and metropolitan areas, including employment and inflation. This site provides access to the Quarterly Census of Employment and Wages that publishes a quarterly count of employment and wages reported by employers covering 98 percent of U.S. jobs, including New Hampshire. Although it doesn't include information on proprietors, it does have the latest economic information at finer industry levels.

www.bea.gov. This is the U.S. Bureau of Economic Analysis website. It contains a wide variety of economic information about the nation, the states, counties and metropolitan areas, including Gross State Product. This site provides information on agricultural employment and earnings in New Hampshire. It also provides access to articles and statistics in the monthly Survey of Current Business.

www.census.gov. This is the U. S. Census Bureau website. The 2007 Census of Business for New Hampshire and provides information on all industries except agriculture. County Business Patterns is also on this Census Bureau website and does contain information on agriculture.

www.nass.usda.gov. This is the U. S. Department of Agriculture website. The National Agricultural Statistics Services provides access to New England Agricultural Statistics for the six states in the Region including New Hampshire and provides a wide variety of information on agriculture, including property taxes paid by the agriculture, weather, sales, and employment.

www.plymouth.edu/inhs. This is the Institute for New Hampshire Studies website and contains a wide range of statistics and reports about tourism in New Hampshire.

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