Economics of Agricultural Overtime Pay in Oregon

Potential Effects on Farms and Farmworkers

December 2021

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About Highland Economics:

Highland Economics is a small, woman-owned firm specializing in the economics of natural resources and the environment, business planning and feasibility assessment, and the socioeconomic impact of industries, policies, or management actions. We are a team of five economists, all with masters or doctorate degrees in natural resource and agricultural economics, based in Portland, Oregon and Missoula, Montana. We work with non-profits, agricultural interests, tribes, water districts, private companies, and local, state, and federal agencies on a wide range of land, air, water, recreation, agriculture, and habitat issues. This study was led by principal and senior economist Barbara Wyse, who has nearly 20 years of experience analyzing the economics of agricultural production and the socioeconomic impacts of proposed actions or regulatory changes. We aim to provide rigorous, even-handed analysis that uses economic insights to transform complex data into clear and actionable information. We often serve as expert witnesses on economic issues, including numerous cases on agricultural economics and demographic analysis for the U.S. Department of Justice.

This economic analysis was prepared for:

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With funding from a coalition of agricultural organizations, including:
Oregon Farm Bureau Federation
Oregon Association of Nurseries
Oregon Business and Industry
Oregon Dairy Farmers Association
Oregon Seed Council
Columbia Gorge Fruit Growers
Associated Oregon Hazelnut Industries
Oregon Wheat Growers League

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EXECUTIVE SUMMARY

Legislation recently introduced in Oregon, House Bill 2358 A, proposed to change the standards for overtime pay for Oregon farmworkers. The bill would phase in requirements for overtime pay, with overtime pay of one and one-half time regular pay required for hours worked in excess of 55 per week in the year 2022, in excess of 48 hours per week in the year 2023, and in excess of 40 hours per week in 2024. The bill would set up a fund to compensate eligible agricultural employers for overtime pay paid during the transition period of 2022 to 2024.

This report presents an overview of current economic conditions for farms and farmworkers in Oregon, the challenges facing Oregon agriculture, and an analysis of the potential effects in Oregon of agricultural worker overtime pay. Specifically, the report discusses how overtime pay may affect agricultural worker income, jobs and health; farm production costs and overall farm economic viability; and agricultural land use and land conversion in the State of Oregon.

APPROACH, SCOPE, & REPORT CONTENTS

The analysis approach was shaped to use all available sources of information that could shed light on the potential effects of Oregon's proposed agricultural overtime pay requirement. Key data sources include:

- Published data from local, state, and government agencies;
- Published social and economic studies on agricultural production, worker pay, and agricultural worker conditions, many of which were published by Oregon universities;
- Economic literature on the effects of overtime pay on worker compensation, worker hours, and total employment levels;
- Interviews with farm labor contractors in Oregon; and with farm industry experts and farm labor representatives in California where an agricultural overtime law has been implemented; and
- A survey designed, administered online, and analyzed for the purposes of this study.

As there are significant gaps in existing data sources regarding agricultural labor and the effects of agricultural overtime on producers and farmworkers, this study included designing and implementing a survey of Oregon agricultural producers. Two surveys[1] were designed and implemented for this study, one for Oregon crop producers and one for Oregon livestock producers. While not designed to be statistically representative, surveyed operators are estimated to produce at least 10% of the acreage or livestock number of nearly all of the top value agricultural commodities in the state. As such, the survey is thus expected to provide good insight into the likely effects on, and responses to, agricultural overtime by Oregon producers. Since agricultural overtime is a pending, potential change

[1] These surveys are attached in Appendix A and Appendix B.

rather than a change that operators have had experience in adjusting to, the approach of this study is to use the survey in combination with other data sources and information to identify potential effects.

Based on detailed analysis of these data sources, the study aims to provide an indication of the types and magnitudes of effects on Oregon farms, Oregon farmworkers, and Oregon agricultural lands.

This report has seven sections. Following an introduction in **Section 1**, the next three sections (**Sections 2, 3, and 4)** provide summary information on the following three topics, respectively: Oregon agriculture, challenges facing Oregon agriculture, and agricultural labor in Oregon (including challenges specific to farmworkers). **Section 5** presents information from a wide range of data sources regarding farm producer responses and effects on agricultural workers of agricultural overtime, including: the survey of Oregon farm operators conducted for this study, interviews with Oregon farm labor contractors, available information on the effects of agricultural overtime pay in California, and information from the economic literature on the effects on overtime across industries. **Section 6** draws on the data and sources presented throughout the document to conclude with an overview of the range of the potential economic impacts on farmworkers and farm producers of agricultural overtime pay. This section also presents highlights potential impacts on agricultural land consolidation and conversion. **Section 7** presents the report bibliography while two appendices provides the survey questions for each of the two surveys conducted for this study.

OREGON AGRICULTURAL COMMODITIES ARE VALUABLE & LABOR-INTENSIVE

The vast majority of the economic value of crop production in the State of Oregon are from specialty crops.[2] There are more than 220 agricultural products produced in Oregon. With the exception of wheat, hay, and grain corn, all of Oregon's top agricultural crops by value are specialty crops: greenhouse and nursery, grass seed, potatoes, wine grapes, cherries, hazelnuts, blueberries, onions, Christmas trees, pears, hops, sweet corn, and apples (Oregon Department of Agriculture, 2021). In fact, specialty crops account for nearly 70% of all Oregon crop production value. Other top agricultural commodities by value include cattle and calves and milk production.

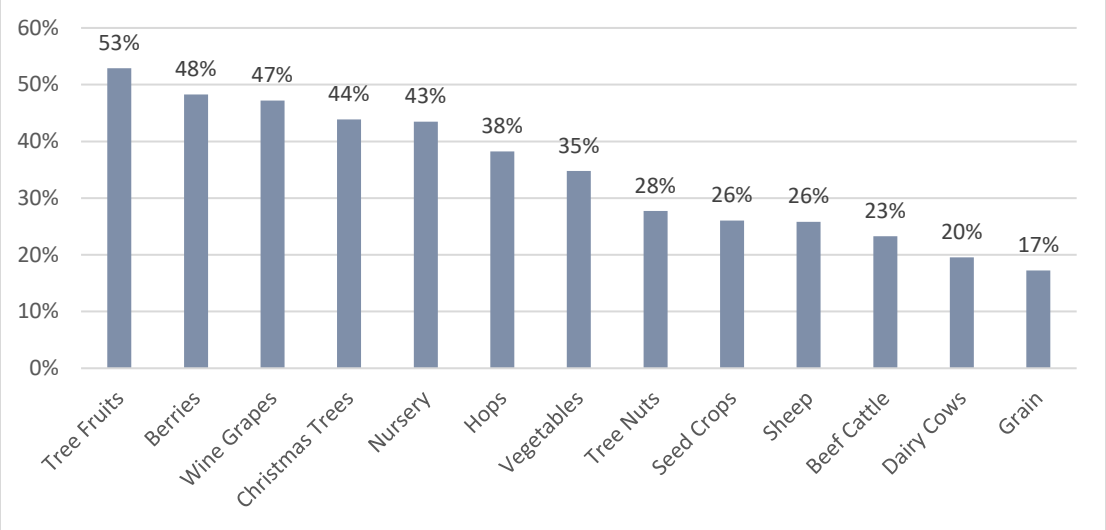
This is particularly relevant as specialty crop production relies on farm labor more than other types of crop production. Nationwide, in 2018, hired farm labor expenses (including employees and contract labor) on specialty crop farms accounted for 39% of total cash expenses compared to the average of 13% for all farms, or three times higher than the average for all farms (Economic Research Service, US Department of Agriculture, 2020). Compared to other farm types, dairy farms nationally had the next highest hired farm labor expenses after specialty crops at 14% of all cash expenses (in our survey of Oregon producers, dairy farmers indicated that labor as a percentage of their costs was higher, at 20%).

The bottom line is that because of the share of labor-intensive specialty crops grown and the size of our dairy sector, Oregon agricultural production is more labor-intensive than typical agricultural production elsewhere in the United States. **Figure ES-1** summarizes labor as a proportion of cash costs

[2] Section 101 of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. 1621 note), amended under section 10010 of the Agricultural Act of 2014, Public Law 113-79 (the Farm Bill), defines specialty crops as, "Fruits and vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture). Eligible plants must be cultivated or managed and used by people for food, medicinal purposes, and/or aesthetic gratification to be considered specialty crops" (Agricultural Marketing Service, US Department of Agriculture, n.d.).

for Oregon farm producers responding to the survey**. Tree fruits, berries, wine grapes, Christmas trees, nursery, hops, and vegetables (together representing nearly 70% of total crop value in Oregon) all have labor costs accounting for 35% or more of total cash costs.**

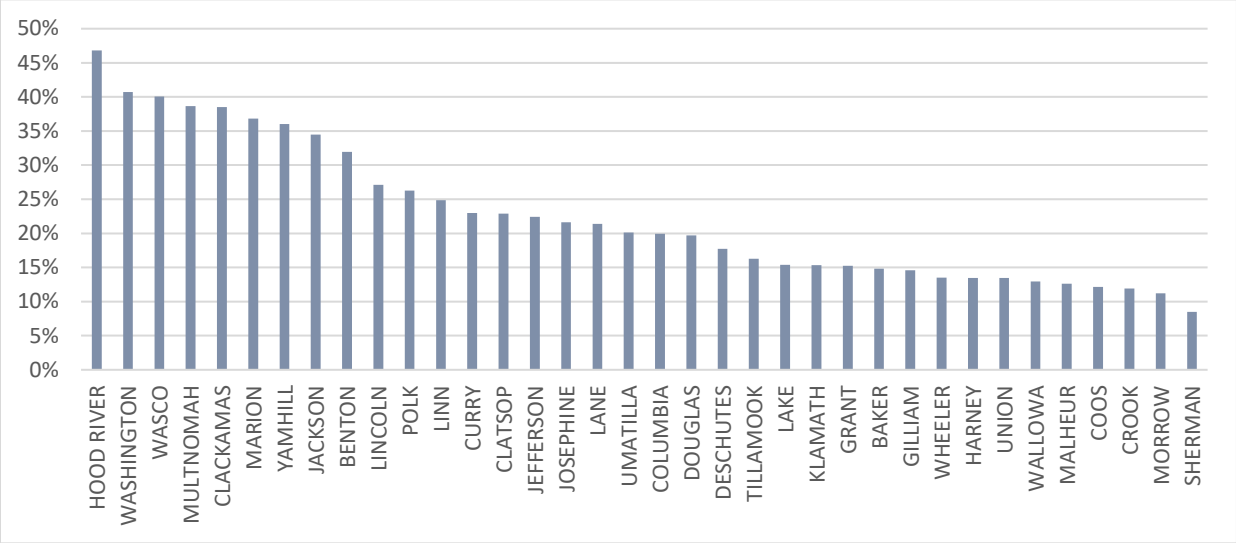
Figure ES-1: Labor as a % Of Cash Costs for Oregon Producers



Source: Highland Economics survey of Oregon farm operators conducted for this study.

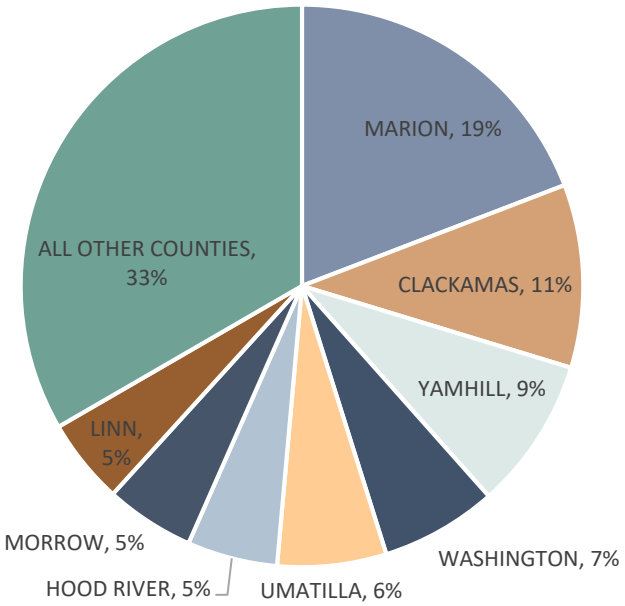
Due to the predominance of specialty crops in the Columbia Plateau and the Willamette Valley, these regions of the state generally have high labor costs as a proportion of total expenses and may be most affected by changes in labor costs (see Figure ES-2). These are also the regions of the state with the highest number of farm laborers and that produce the vast majority of the agricultural value in the state. **In 2017 two-thirds (67%) of all farm labor expenses (for contract labor and hired labor) in the State of Oregon were paid by farms in eight out of the 36 Oregon counties (see Figure ES-3): Marion, Clackamas, Yamhill, Washington, Umatilla, Hood River, Morrow, and Linn (Census of Agriculture, 2017).** In sum, these are the regions that would be most affected by an agricultural overtime requirement.

Figure ES-2: 2017 Hired & Contract Labor as a Percent of All Farm Expenses, by County



Source: Highland Economics analysis of Census of Agriculture data

Figure ES-3: 2017 Hired & Contract Labor Costs, Percent of State Total by County



Source: Highland Economics analysis of Census of Agriculture data

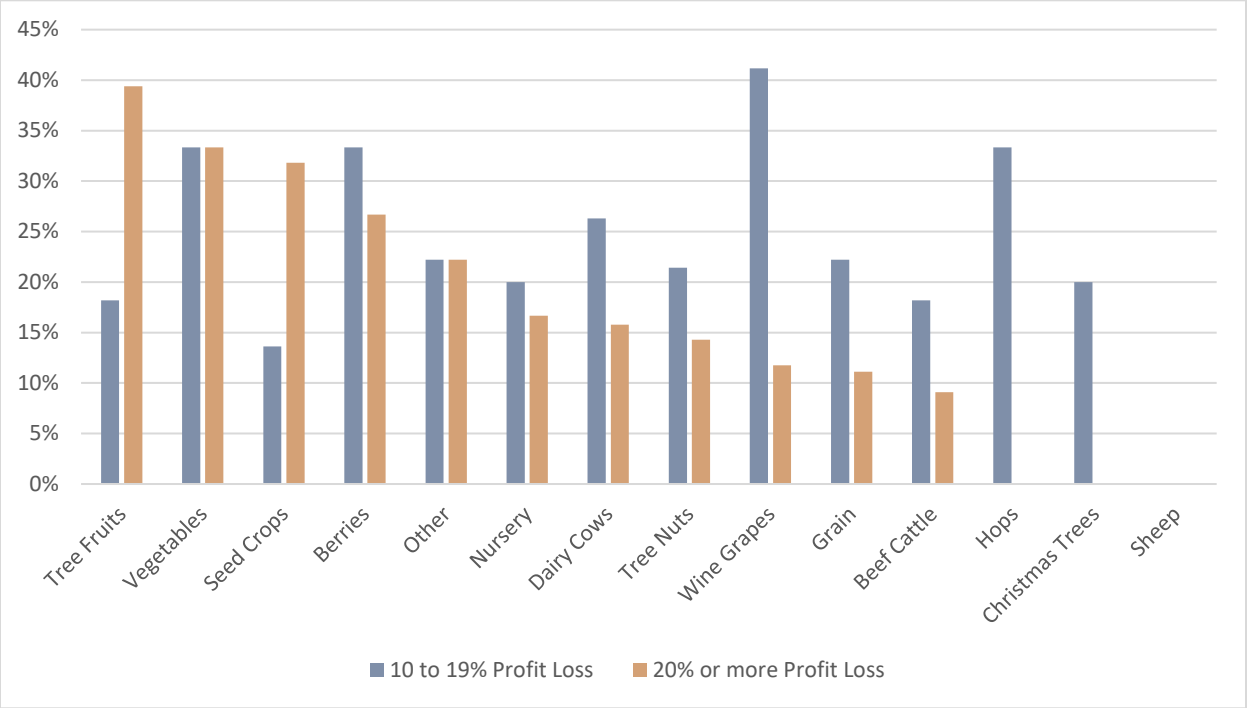
Oregon Agriculture is Facing Many Challenges

Challenges facing Oregon agriculture include drought and severe weather conditions, market access (affected by trade relations and the COVID-19 pandemic), shortages of skilled agricultural labor, agricultural land use and conversion of Oregon farmland, and farm succession as farm operators age and

farms will need to transition to the next generation. Effects of these challenges on agriculture are summarized here.

As shown in **Figure ES-4, cumulatively, these challenges over the last 18 months have affected nearly all Oregon livestock and crop operations.** Aside from Christmas tree operators, at least 25% of surveyed operators in all commodity sectors suffered lost profits in excess of 10% over the last 18 months due to these challenges. **Half to two-thirds of vegetable, berry, tree fruit, and wine grape farms responding to the survey reported profit losses of over 10% in the last 18 months due to these factors. Severe losses (over 20% or more of profits) were particularly high in the tree fruit, vegetables, and seed crop industries**. As expected in any industry with wide diversity in operating conditions and products, some growers also experienced increased profits in the last year and a half.

Figure ES-4: Cumulative Adverse Effects on Oregon Farm Profits Over Last 18 Months from Severe Weather, COVID-19, Regulations, Trade Relations, & Labor Shortages



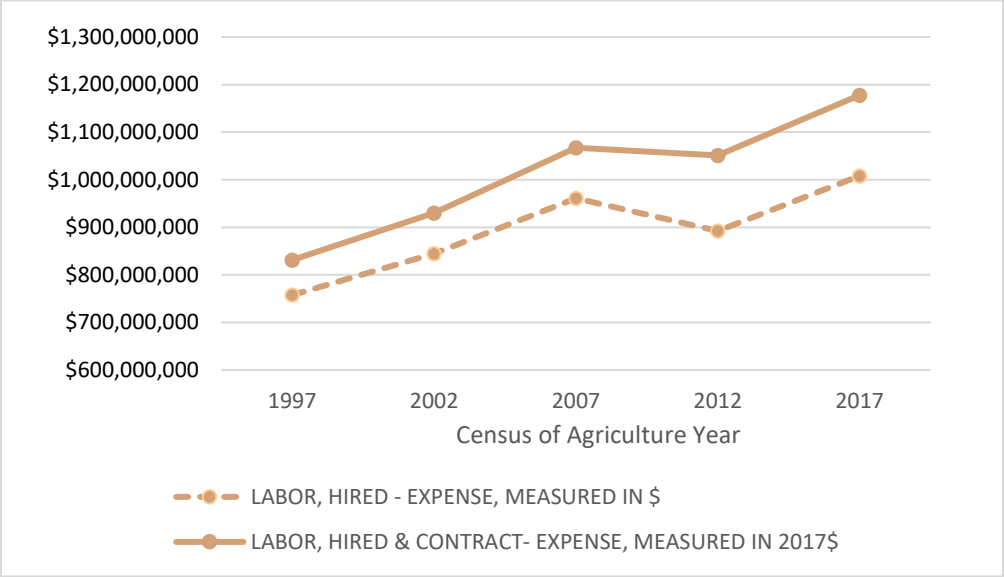
Source: Highland Economics survey of Oregon farm operators conducted for this study.

Rising Labor Costs and Labor Shortages are Reducing Farm Profits

On top of these recent challenges, nationwide the prices of agricultural inputs (i.e., farm costs) are rising faster than the prices received for farm products (US Department of Agriculture, National Agricultural Statistics Service, 2021). **Overall, in the period 2011 to 2021, prices received by farmers have increased by approximately 9%, while prices paid by farmers have increased by 16%, cutting into farm profit margins.** Of all the farm expense categories (including feed, seeds, fertilizer, chemicals, machinery, services, rent, etc.), labor wage rates have increased the most in the last 10 years. From 2011 to October 2021, farm wages paid nationally have increased 41.5%.

Farm labor costs in Oregon are following the national trend: according to data from the US Census of Agriculture, reported hired farm labor workers in Oregon have been decreasing over the last several decades while farm labor expenses have been increasing**. Even adjusting for inflation, farm labor expenses in Oregon (including hired and contract labor) increased by 42% from 1997 to 2017 (see Figure ES-5)**.[3]

Figure ES-5: Oregon Farm Labor Expenses

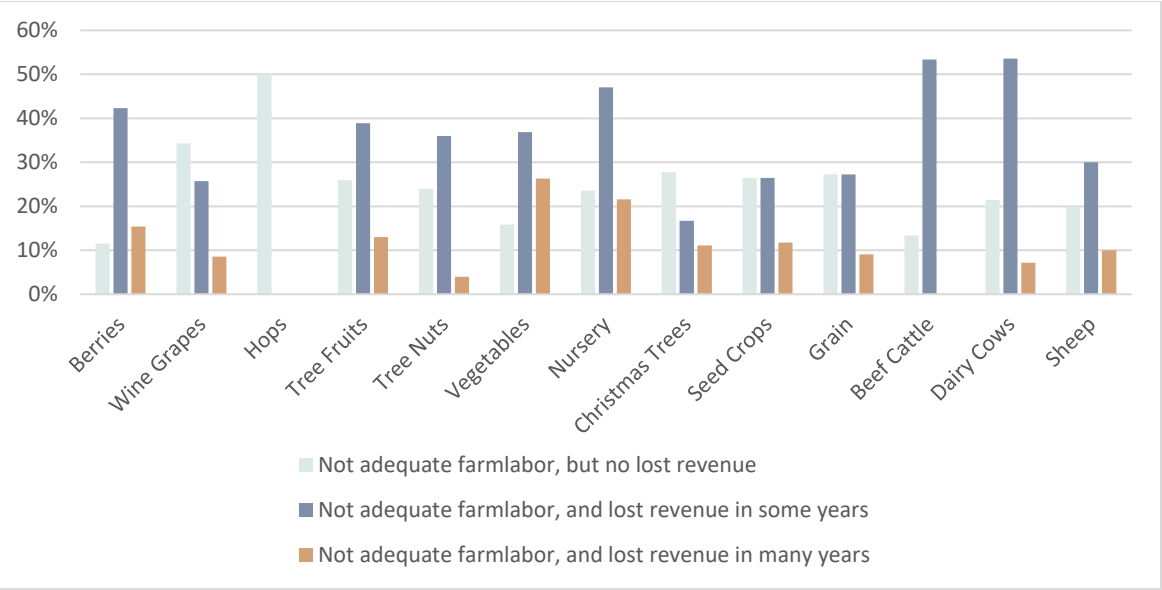


Source: US Census of Agriculture 1997, 2002, 2007, 2012, 2017

Farm labor shortages are adding to the labor-related challenges for farmers. Across all operations responding to the survey for this study, only approximately one-quarter (26% of crop operations and 27% of livestock operations) responded that they had adequate farm labor to complete tasks during peak periods. **Across all surveyed operations, approximately 50% (47% of crop operations and 54% of livestock operations) reported reduced revenues due to inadequate labor supply**, with some operations reporting reduced revenues in many years. Lost revenue due to farm labor shortages is particularly high in the vegetables, nursery, tree fruits, berries, dairy and beef cattle sectors, with over 50% of farms in these sectors reporting lost revenue in at least some years due to labor shortages.

[3] Note that this is adjusted for inflation while the national labor cost increases from NASS of 41% over the last ten years are not adjusted for inflation.

Figure ES-6: Operator Survey: Effects of Farm Labor Shortages on Farm Revenue



Source: Highland Economics survey of Oregon farm operators conducted for this study.

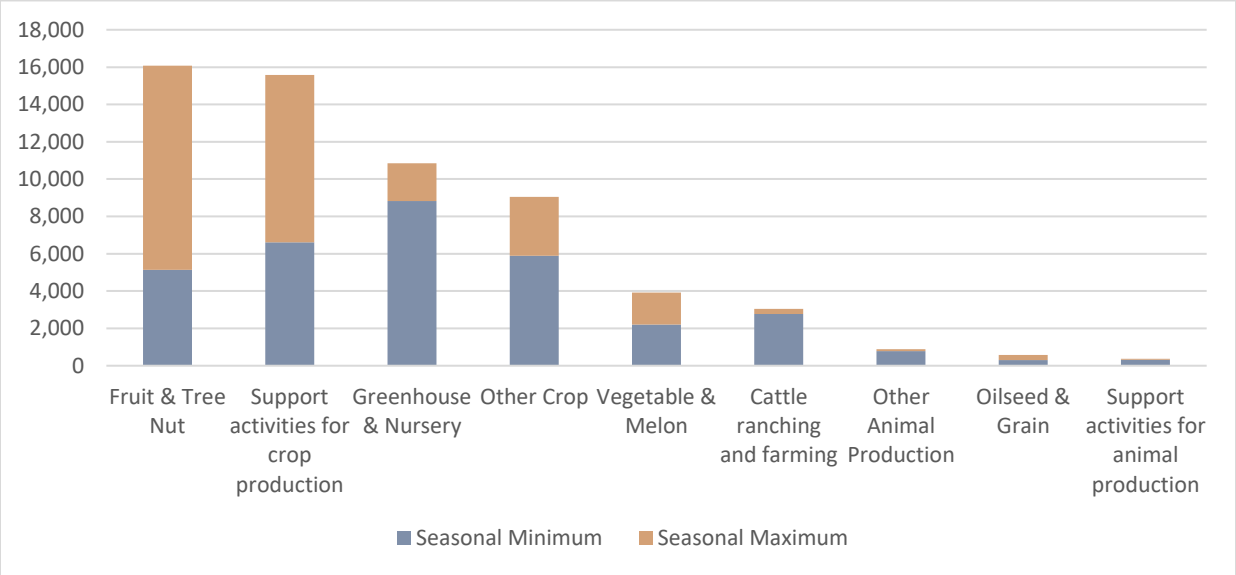
OREGON FARMWORKERS ALSO FACING CHALLENGES: SEASONAL WORK, LOW ANNUAL PAY, HEALTH DISPARITIES, BUT COMPETITIVE HOURLY PAY

Farmworkers in Oregon are predominantly Hispanic, comprised nearly equally of men and women, and approximately half or more have children under 18 years of age. Due to the seasonality of farmwork, the number of farmworkers employed throughout the year varies widely, as shown in **Figure ES-7**. In July of 2020 (July is the peak agricultural season statewide) there were 59,300 farmworkers in crop and animal production and support services (as estimated by the Bureau of Labor Statistics Quarterly Census of Employment and Wages, or QCEW).[4] Based on the survey conducted for this study of Oregon farm operators, over 70% of workers are seasonal in the fruit (tree fruits, berries, and wine grapes), nuts, Christmas trees, and hops crop sectors. Livestock farms had the fewest seasonal workers, but even on

[4] Farmworkers estimated by the QCEW are those covered by state unemployment insurance laws, which is a requirement for nearly all farmworkers.

surveyed sheep and beef cattle operations, over one-third of employment is seasonal. Surveyed dairy operations had the least proportion of seasonal workers, with just 7% seasonal.

Figure ES-7: Oregon Farmworkers in 2020



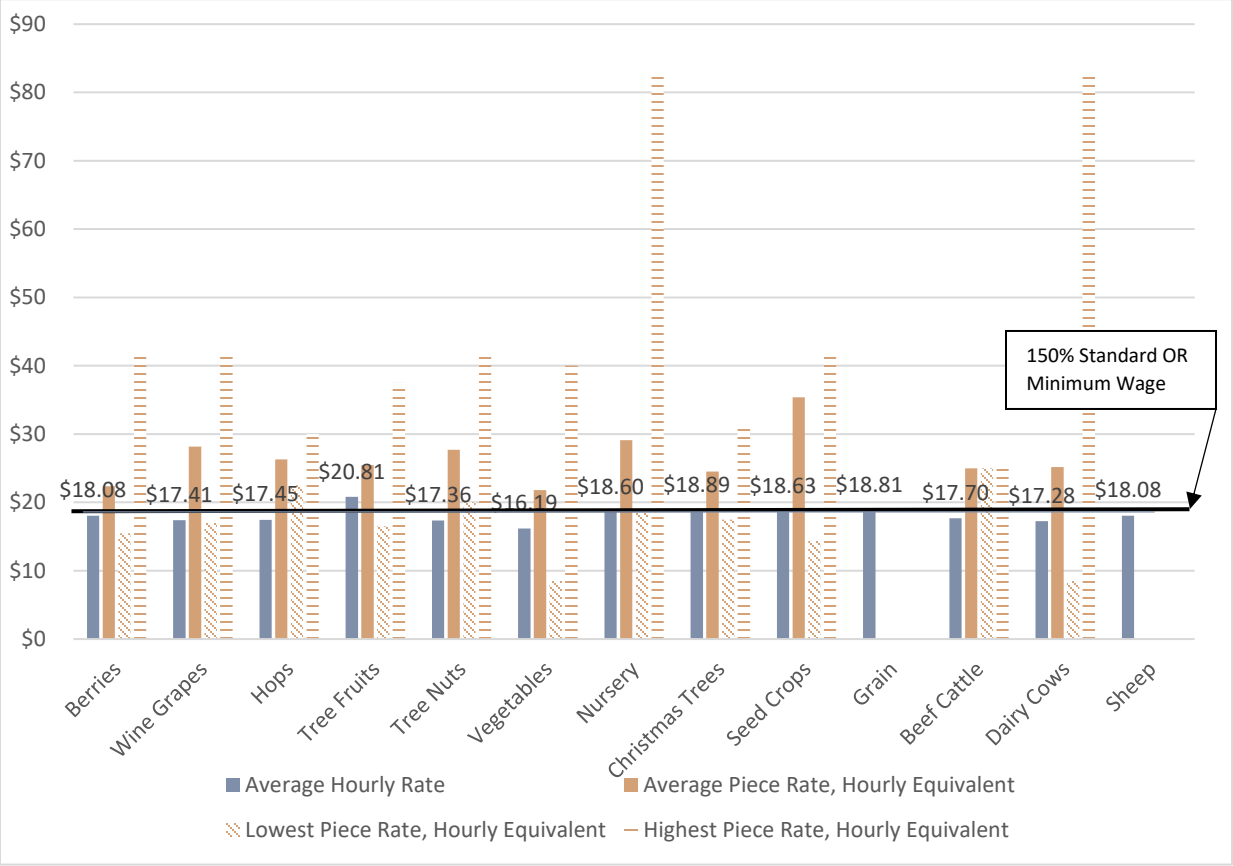
Source: Bureau of Labor Statistics, Quarterly Census of Wages and Employment (QCEW)

Oregon farmworkers, including contract and hired workers, earned over $1.5 billion in 2020 (QCEW, 2021), employed on approximately 10,300 farms across the State of Oregon (USDA Census of Agriculture, 2017). In terms of current average hourly wage rates, data from the 2020 and 2021 Farm Labor Survey for the Pacific Region (Oregon and Washington) indicate that average hourly wage rates across all hired farmworkers in January of 2021 were $17.44, in April of 2021 were $16.90, and in July of 2020 were $16.87 (US Department of Agriculture, 2021). The survey of Oregon producers conducted for this study found a similar but slightly higher average pay rate for agricultural workers of approximately $18 per hour across specialty crop and livestock farms. For comparison, across all occupations in Oregon in May 2020, the median hourly wage was $21.04.

These multiple data sources indicate that average hourly wages in agriculture are competitive with average hourly wages in alternative employment sectors. However, the seasonality of farmwork translates into low overall annual income for many farmworkers. While data on annual income for farmworkers are limited, data from the QCEW indicate that the average annual farm wages per farmworker (averaged across all commodity types) may be in the range of $26,000 to $36,000, on average, with the seasonality of farmwork reducing the total farm wages earned by many farmworkers. These wage estimates only include farm wages and do not include any income earned by farmworkers in other industries at other times of the year. These Oregon-specific wage estimates based on QCEW data are higher than the average annual wages in 2017-2018 reported by the National Agricultural Worker Survey for farmworkers in the eight-state Northwest region of $20,000 to $24,999. In addition to the effects of rising wages in the intervening four years, the disparity may reflect differences in agricultural employment in this broader region relative to Oregon.

The Oregon minimum wage outside the Portland metro area urban growth boundary is either $12.75 or $12.00 per hour, depending on the county. At the minimum wage rate, the overtime pay level at 150% of base pay would be $18/hour to $19.13/hour. As shown in **Figure ES-8**, this wage rate is near the reported current average wage rate paid to agricultural workers in the surveyed farm sectors (which, as shown in Figure ES-6 may vary from approximately $16.19 to $20.81 per hour). In other words, pay of 150% of the standard minimum wage is already received by many farmworkers (see the bars exceeding the 150% of standard minimum wage horizontal black line in Figure ES-8). However, at an $18 average base pay rate, pay at 150% of current base pay would equate to $27 per hour, at pay rate at which only productive piece rate workers are generally paid currently. For many specialty crop farm sectors where piece rate work is important, an overtime rule could result in very high pay rates that may exceed the economic means of growers (i.e., may be financially infeasible for growers).

Figure ES-8: 2021 Hourly Pay Rates (Or Hourly Equivalent if Piece Rate)*



Source: Highland Economics survey of Oregon farm operators conducted for this study.
**Average across farmworkers represented in survey, not average across operations (said differently, this is a weighted average, weighted by the number of farmworkers at the operation).*

As noted above, farms and farmworkers have had to face challenges related to COVID-19, wildfires, smoke, and extreme weather. A 2020 study found that over two-thirds of surveyed Oregon farmworkers faced a significant loss of work and income during the COVID-19 pandemic, with over half of surveyed farmworkers losing weeks or even months of work (COVID-19 Farmworker Study, 2020) (Martinez, et al., 2021). The loss of wages and work created significant challenges for farmworkers with almost 60% of

respondents having difficulties paying for food, rent, or gas/electricity (Martinez, et al., 2021) and 54% of respondents using food banks to supplement lost wages. Oregon farmworkers are especially vulnerable to harm from excessive heat, wildfires, and COVID-19; and the Centers for Disease Control and Prevention ranks agriculture among the most hazardous industries with a high risk of occupational injuries.

Evidence of Effects on Farms & Farmworkers of Agricultural Overtime Pay

Among other sources of data, this study looked to the evidence from other states on the effects of agricultural overtime. Several other states have passed agricultural overtime pay requirements; however, most of these laws are either limited in scope or have only been recently passed so provide limited insight into the effects of the proposed Oregon legislation. Agricultural overtime pay is limited to the following states:

- Minnesota requires overtime after 48 hours a week for most hourly agricultural employees;
- New York and Maryland require overtime compensation for hours worked over 60 hours in any calendar week;
- Colorado recently passed legislation for agricultural overtime, with overtime thresholds after a phase-in period of 48 hours to 56 hours per week, depending on the seasonality of the farm workforce and the operation size, as well as a paid 30-minute rest period for hours worked over 12 and an additional hour of pay for a workday of more than 15 hours of work;
- Washington State recently passed legislation that by 2024, the overtime threshold for all agricultural workers will be 40 hours per week; and
- California passed legislation in 2016 that will ultimately require overtime pay for agricultural workers working more than 8 per day or 40 hours per week; this law is still being phased into effect.

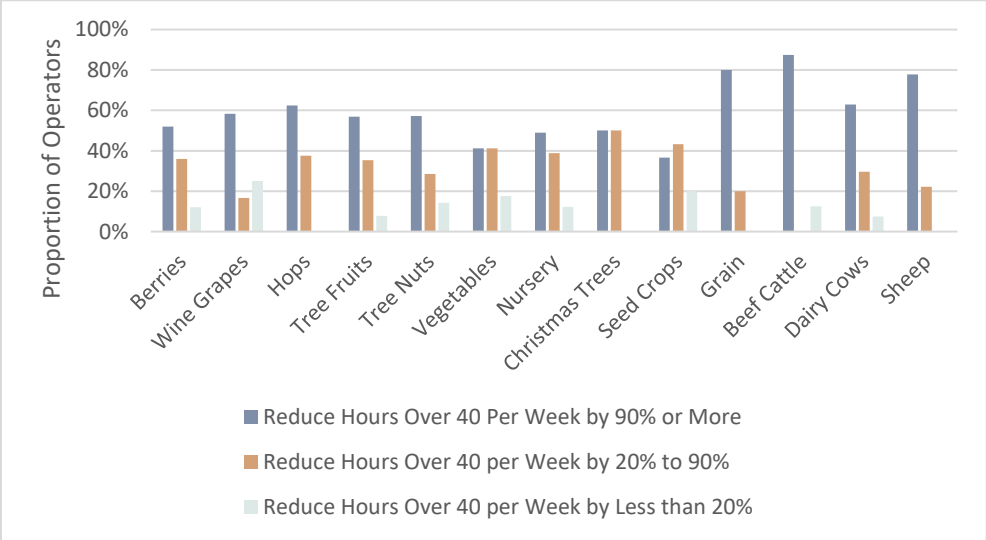
The state with the most relevant data is California. **To date, the experience in California indicates that the overtime law is contributing to changes in the industry that were underway prior to the law's implementation,** which include farm consolidation, a switch from high-labor to low-labor crops, increased mechanization, increased use of farm labor contractors and H-2A guest workers, and reduced agricultural production. According to interviews conducted with representatives from both farmworker advocacy organizations and farm advocacy organizations (the California Farm Bureau, California Farmworker Foundation, the California Association of Winegrape Growers) and a UC Davis survey of 115 California farmworkers, the effect of the overtime mandate on farmworkers has been mixed and mostly negative**. All sources indicate that farmworker hours have been reduced.** However, there is not a consensus on how total worker income has been affected, particularly as there are higher wages in the state due to increased minimum wage and labor shortages. Workers who have lost hours are also finding ways to adapt and retain their total amount of desired work time through working for multiple employers, both in the agricultural industry and outside it. An unexpected adverse effect on some workers whose wages have risen is that they no longer qualify for income-based public assistance programs, such as affordable (Section 8) housing and public health insurance (Medi-Cal). So, despite their incomes increasing, these workers are financially worse off**. In general, across California farmworkers, the law appears to have had disparate and mixed effects: for some, it likely resulted in**

increased total income, for others it resulted in similar income with fewer hours worked, while for others it decreased income or added difficulty to their work life by necessitating multiple jobs to attain the same amount of work, or decreased the level of social assistance received.

Farm labor contractors in Oregon interviewed for this study expected the same types of responses by Oregon producers and the same types of impacts on Oregon farmworkers. The economic literature in general on agricultural overtime pay also supports the preliminary evidence from California. Data from economic studies of overtime pay across disparate industries also suggest that employers respond to overtime in various ways to reduce total labor costs. These include: lowering standard hourly wage rates in order to minimize changes in total labor compensation, reducing hours worked, reducing the number of low-wage jobs, and increasing pay for workers who are near the federal salary threshold to be exempt from overtime pay (currently at $684 per week or $35,568 annually). However, despite these employer responses to minimize the effects overtime pay, many studies have found that across industries *some* workers' pay does rise with overtime pay requirements.

Also similar to the experience so far in California, Oregon farm operators surveyed for this study overwhelmingly indicated that they would reduce employee hours, many indicated that they would mechanize/automate (with some facing increased total costs of over 20%, but others indicating mechanization would decrease total costs), and a sizable portion indicated that they would possibly need to reduce the size of their operation or cease farming (which would lead to farm consolidation and possibly development of agricultural land). Regarding hours worked, two-thirds of all crop respondents and 80% of all livestock respondents reported that they would continue employing/paying fewer than 25% of current hours worked over 40 with an overtime rule; in other words, the majority of workers may face a 75% or greater reduction in overtime hours (see **Figure ES-9)**. The actual ability of producers to reduce farm hours to this extent will vary depending on their ability to spread work over a longer period of time, automate/mechanize, switch crops, and make other adjustments.

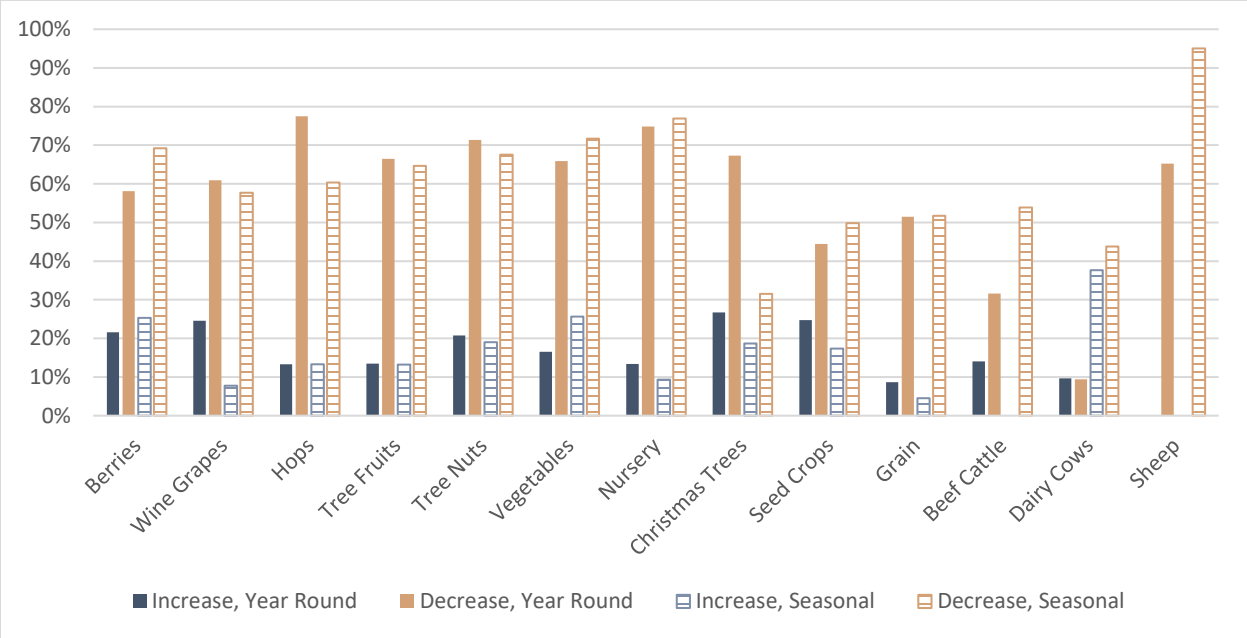
Figure ES-9: Proportion of Operators Expecting to Reduce Hours >40 per Week



Source: Highland Economics survey of Oregon farm operators conducted for this study.

Also similar to the evidence from other sources, in terms of total farmworker compensation, farm operators indicated that the effects on total compensation for both year-round and seasonal workers would be mixed, but with many more farmworkers likely facing reduced total compensation (tan bars in **Figure ES-10**) relative to those that would likely receive higher compensation (navy bars).

Figure ES-10: Operator Expectations on Changes to Total Worker Compensation* with Change with OT Requirement, Weighted by Farmworkers Employed



Source: Highland Economics survey of Oregon farm operators conducted for this study.
**Including bonuses, housing, etc.*

Potential Land Use and Farm Consolidation Consequences

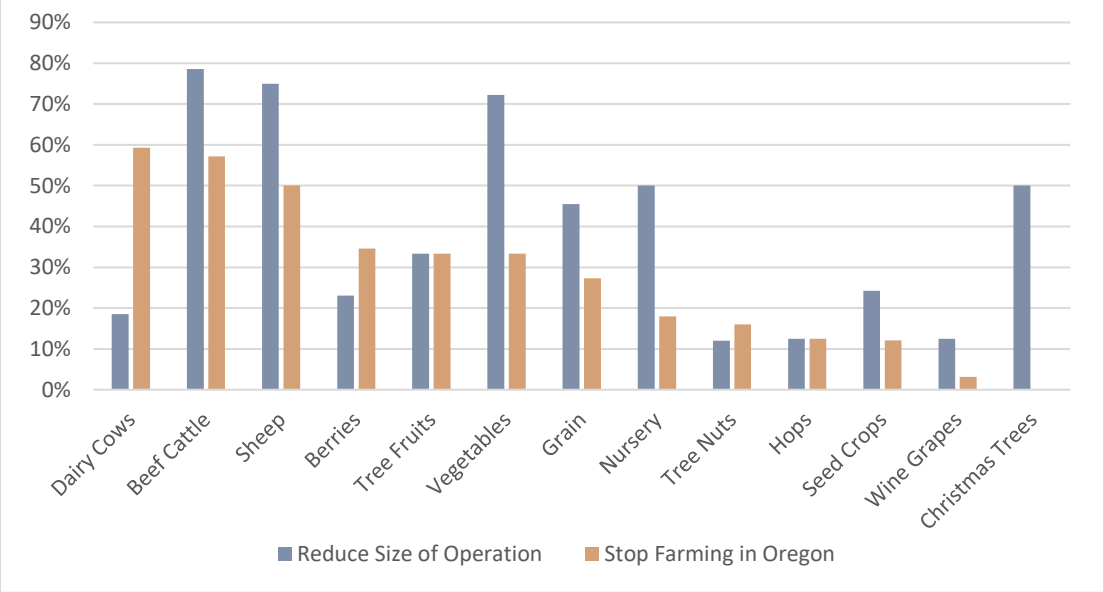
Changes in farm costs and profits can affect overall farm viability, farm consolidation, and agricultural land use. **Figure ES-11** summarizes operator expectations regarding the influence of agricultural overtime on whether they will reduce their operation size or stop farming in Oregon. As shown in the diagram, livestock operators were most likely to respond that they might stop farming in Oregon, while up to a third of berry, tree fruit, and vegetable growers also responded that it might lead them to stop farming. For producers who responded that they might cease farming or reduce operation size, **Figure ES-12** highlights those producers' expectations regarding future use of those lands, including farm consolidation, development of lands, and fallowing of lands.

As shown in Figure ES-12, with the exception of sheep farm and Christmas tree producers, operators expected that some farm consolidation was likely to occur. Certain commodity groups in particular expected consolidation within their sector: tree nuts, wine grapes, dairy cows, berries, seed crops, tree fruits, grain, and nursery. Overtime could increase consolidation for several reasons, including: 1) increased mechanization/automation may increase the farm acres required to be profitable so that farmers can spread fixed costs of farm machinery and mechanization costs over more acres (i.e., economies of scale); 2) higher costs of starting out (such as purchasing of machinery, paying of wages,

etc.) can be a barrier to entry for the next generation of farmers, which is particularly pertinent given that the average age of Oregon farmers is 57.9 years old, indicating that soon many farms will transition to the next generation; and 3) rising costs may make vertical integration of farming, packing, and even processing operations under one corporate umbrella more likely as vertical integration increases a single entity's ability to control prices and costs.

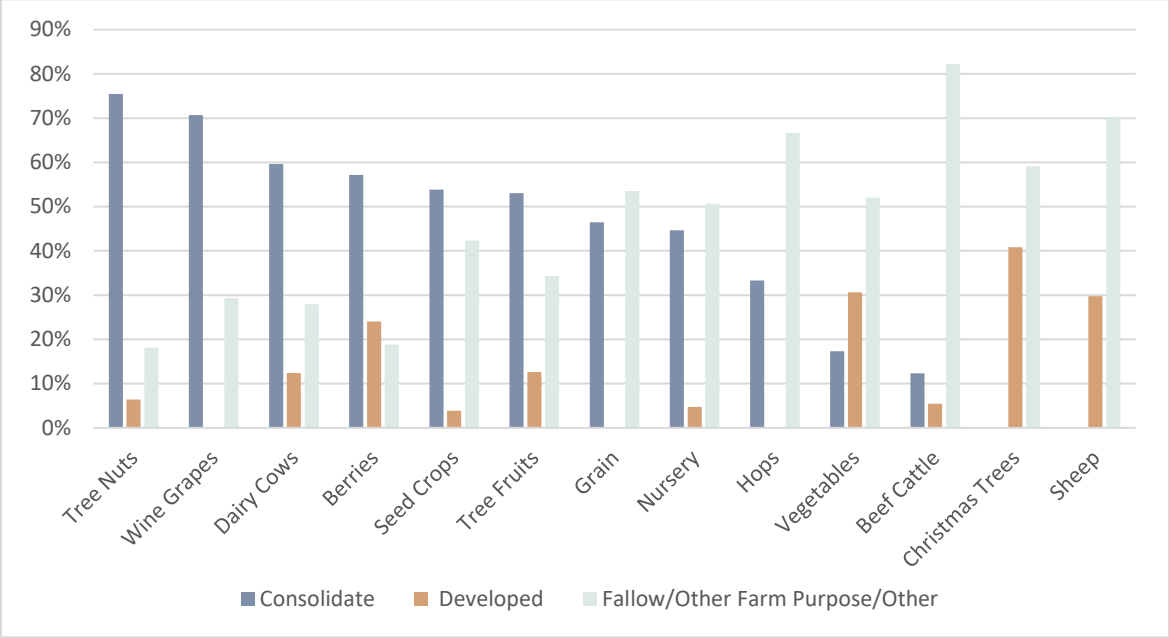
While most farmland in farms where operators cease farming or reduce their operation size would likely remain in farms (consolidated with other farms, lie fallow, or used for some other farm purpose), some land may be developed. Surveyed farm operators indicated that development may be particularly likely for Christmas tree growers, vegetable growers, sheep producers, and berry growers. This is particularly the case for Christmas tree growers, vegetable growers, sheep producers, and berry growers; all sectors highly concentrated in the Willamette Valley, although growers and livestock producers in Hood River, Baker, Polk, Tillamook, Umatilla, Yamhill and Wasco counties also indicated that their land could be developed due to their reducing their farm size or ceasing to farm in response to an agricultural overtime regulation. These counties are generally the areas of Oregon most vulnerable to agricultural land conversion and urban development pressure and have a high concentration of the crops that may be most impacted by the overtime requirement.

Figure ES-11: % Operations Considering Reducing Size/Stopping Farming in Oregon



Source: Highland Economics survey of Oregon farm operators conducted for this study.

Figure ES-12: Operator Expected Effects on Farm Consolidation and Land Use, Lands Owned by Operators Expecting to Reduce Farm Size/Cease Farming*



Source: Highland Economics survey of Oregon farm operators conducted for this study.
**Weighted by acreage of producer.*

CONCLUSIONS

In conclusion, numerous sources provide evidence and information on how farm producers will likely respond to agricultural overtime pay: our Oregon producer survey, interviews with Oregon labor contractors, interviews with agricultural industry and farm labor representatives in California which passed an agricultural overtime law in 2016, and the available economic literature on the effects of overtime on employment and compensation. In general, all sources indicate that we can expect:

- **Employers will reduce farm labor hours** that exceed 40 hours per week to the extent feasible through mechanization, crop switching, and potentially switching to piece rate pay versus hourly to increase productivity with fewer hours.
- **Employers will try to hire additional laborers** to reduce overtime pay, which is likely not possible due to labor shortages unless farm laborers decide to work shifts with multiple employers to maintain hours, with potential adverse effects on worker health and safety.
- **Some employers may try to reduce standard wage rates** to at least partially offset increased compensation from overtime pay, however, some employers also expect to raise wage rates for some workers.
- Economic studies of other industries indicate that overtime pay may actually lead to a reduced demand for agricultural workers, with reduced overall farm labor employment, particularly of low wage employees (due to mechanization and other labor-saving adaptations). However, effects on overall farm labor employment may be minor since there is a shortage of farm labor in Oregon, with many producers reporting lost revenue due to insufficient labor.

- **Overall, the evidence and analysis indicate that effects on farmworker compensation will be mixed,** with some workers receiving higher overall pay (the limited data available indicate that the most likely to benefit may be more skilled/higher paid agricultural workers such as equipment operators), some receiving the same pay for fewer hours worked (but potentially with higher pressure for productivity in those hours), and others receiving lower pay due to fewer hours worked or even jobs being eliminated. Some farmworkers may receive reduced social assistance due to rising wages, which may result in them being financially worse off even with higher wages.
- **Farms will generally not be able to pass on much, or in some sectors any, increased costs to customers.** Many agricultural commodities are traded on national and global markets where producers are price takers not price setters. Producers with differentiable and specialized products, or for which Oregon has notable market share, such as nursery, wines, and Christmas trees, may be able to pass on some costs to consumers, while those with less differentiated products such as dairy milk or grain likely will not be able to pass on any costs.
- **In terms of total farm cash costs, on average across farms in each sector total cash costs could rise by up to 6%, with an absolute maximum increase estimated of no more than 12%.** This is based on the proportion of farmworker hours estimated to be in excess of 40 hours per week and labor costs as a proportion of cash costs in each farm commodity sector. **Existing challenges and threats to farm viability mean that rising costs from agricultural overtime and subsequent reduced profits will most likely result in some producers going out of business and some reduced overall agricultural production.** Although a 1% to 6% increase in cash costs, or even a 12% increase in cash costs may seem small, this can make a difference in an operation being profitable or not. Using data from the US Department of Agriculture on Oregon total net farm income and net farm cash costs for the period 2012 to 2020 from the US Department of Agriculture Economic Research Service, **an increase in 10% of farm cash costs would reduce statewide net farm cash income by 32% to 47%** (USDA Economic Research Service, 2021). An increase of 3% in farm cash costs would reduce net farm cash income by 7% to 14%. In other words, the level of cash cost increase from agricultural overtime could well result in an operation becoming financially infeasible, particularly if it currently has small profit margins and does not have good alternatives to reduce reliance on overtime work. **Figure ES-11** above shows that a sizable proportion of surveyed producers indicated that an agricultural overtime pay requirement could result in them reducing their operation size or ceasing to farm in Oregon. As shown in the figure, a relatively high share of livestock operations in particular expect they might need to cease farming in Oregon under an overtime pay requirement, followed by the crops with the highest expected increases in overall costs due to agricultural overtime (and relatively low expectations on ability to pass on costs to customers): berries, tree fruits, and vegetables.
- **Consolidation of farms due to farms reducing operation size or ceasing farming is a potential outcome**. Rising costs and decreased profit margins can discourage new operators from entering into farming, and can also result in larger operations that can take advantage of economies of scale (lower costs per unit of agricultural product produced) or that can vertically integrate and operate as one entity, replacing an interlinked network of numerous small businesses to produce a product. Certain commodity groups in particular expected consolidation

within their sector: tree nuts, wine grapes, dairy cows, berries, seed crops, tree fruits, grain, and nursery.

- **Finally, with high land values for development in many agricultural regions of the state, particularly the Willamette Valley and the Columbia Plateau, increased costs and decreased profits from farming may lead to increased development of farmlands**. While most farmland in farms where operators may cease farming or reduce their operation size would likely remain in farms (consolidated with other farms, lie fallow, or used for some other farm purpose), some land may be developed. Surveyed farm operators indicated that development may be particularly likely for Christmas tree growers, vegetable growers, sheep producers, and berry growers; all sectors highly concentrated in the Willamette Valley, with approximately 2,000 to 3,000 acres potentially affected in each of the following counties: Multnomah, Clackamas, Columbia, and Marion. Growers and livestock producers in Hood River, Baker, Polk, Tillamook, Umatilla, Yamhill and Wasco counties also indicated that their land could be developed due to their reducing their farm size or ceasing to farm in response to an agricultural overtime regulation.

1 INTRODUCTION

Legislation recently introduced in Oregon, House Bill 2358 A, proposed to change the standards for overtime pay for Oregon farmworkers. The bill would phase in requirements for overtime pay, with overtime pay of one and one-half time regular pay required for hours worked in excess of 55 per week in the year 2022, in excess of 48 hours per week in the year 2023, and in excess of 40 hours per week in 2024. The bill would set up a fund to compensate eligible agricultural employers for overtime pay paid during the transition period of 2022 to 2024.

This report presents an overview of current economic conditions for farms and farmworkers in Oregon, the challenges facing Oregon agriculture, and an analysis of the potential effects in Oregon of agricultural worker overtime pay. Specifically, the report discusses how overtime pay may affect agricultural worker income, jobs and health; farm production costs and overall farm economic viability; and agricultural land use and land conversion in the State of Oregon.

1.1 APPROACH & DATA SOURCES

The analysis approach was shaped to use all available sources of information that could shed light on the potential effects of Oregon's proposed agricultural overtime pay requirement. This includes review and use of: published data from local, state, and government agencies; other published social and economic studies on agricultural production and worker pay; interviews with farm labor contractors in Oregon; and interviews with farm industry experts and farm labor representatives in California where an agricultural overtime law has been implemented. As there are significant gaps in existing data sources regarding agricultural labor and the effects of agricultural overtime on producers, this study included designing and implementing a survey of Oregon agricultural producers. Two surveys were designed and implemented for this study, one for Oregon crop producers and one for Oregon livestock producers. These surveys are attached in Appendix A and Appendix B.

Based on detailed analysis of these data sources, the study aims to provide an indication of the types and magnitudes of effects on Oregon farms, Oregon farmworkers, and Oregon agricultural lands of the proposed agricultural overtime requirement.

1.1.1 Summary of the Survey Conducted for this Study

Table 1-1 summarizes the number of crop survey responses by primary crop grown, as well as the acreage represented by these growers, while **Table 1-2** summarizes the same type of information for livestock survey respondents. Other than for "grain", "beef cattle", and "other" producers, at least 10% of total statewide acreage/livestock head of each of the commodity types analyzed in this report is likely represented in the producer survey (e.g., as shown in the last column of Table 1-1, approximately 39% of statewide berry acreage is represented in the survey and 18% of wine grape acreage). Note that the acreage by crop type grown by surveyed producers is an estimate as the survey asked for producers to identify their primary crop and primary crop acreage; some producers indicated multiple primary crops. For these producers, we divided the 'primary' crop acreage reported by the producer equally amongst the reported primary crops. Also, many producers noted that they grew additional crops as secondary crops, with unknown additional acreage. As such, we expect that the estimates of acreages represented

in the producer survey as presented in **Table 1-1** are conservative for most crop types. The livestock head on surveyed beef cattle, sheep, and other livestock producers are similarly estimated as several of these producers, particularly beef and sheep producers, indicated multiple livestock types.

Nurseries and dairies are particularly well represented, which indicates that producers employing a large share of Oregon farmworkers are also represented in the survey as nursery workers alone account for one-third of all farmworker labor expenses in the state.[5] Nearly all operations specifying grain as a major crop also grew a mix of specialty crops. Therefore, primarily grain operations are not represented in this survey.

The surveys were conducted online, with the Oregon Farm Bureau and farm industry organizations informing their members of the survey and directing them to the survey link.

Table 1-1: Summary of Crop Producer Survey Respondents

State Level	Surveyed # of Operations	State Acreage (2017)	Estimated Acreage of Surveyed Producers' Primary Crop*	Proportion of Acreage Represented
Berries	26	27,034	10,495	39%
Wine Grapes	37	33,320	6,028	18%
Hops	8	7,100	6,943	98%
Tree Fruits	54	39,236	11,626	30%
Tree Nuts	25	69,483	13,440	19%
Vegetables	19	154,056	17,435	11%
Nursery	51	27,469	14,427	53%
Christmas Trees	18	45,283	8,984	20%
Seed Crops	35	434,838	49,997	11%
Grain	11	812,000	10,261	1%
Other	14	3,076,290	26,345	1%
Total (Crop)	246	4,726,109	175,981	4%

**If proprietors picked multiple primary crop types, we distributed the primary crop acreage equally amongst all crop types selected as primary (i.e., if the survey respondent indicated that they had 300 acres of vegetables, hops, and seed crops we assumed 100 acres of each).*

[5] Total 2019 horticultural (nursery and Christmas tree) farm labor expenses according to the 2019 Census of Horticultural Specialties were $395.6 million (including hired and contract labor), while according to the 2017 Census of Agriculture, total 2017 farm labor expenses in the State of Oregon were $1.18 billion.

Table 1-2: Summary of Livestock Producer Survey Respondents

State Level	Surveyed # of Operations	State Head of Livestock (2017)	Estimated Head of Surveyed Producers' Primary Livestock*	Proportion of Head Represented
Beef Cattle	17	525,000	11,932	2%
Dairy Cows	28	125,000	61,491	49%
Sheep	11	155,000	16,945	11%
Other	1	166,000	N/A	N/A
Total	56	971,000	90,368	9%

**If proprietors picked multiple primary livestock, as several beef cattle and sheep producers did, we distributed primary livestock numbers equally amongst all livestock types selected as primary.*

1.2 Report Organization

This report has seven additional sections. **Sections 2, 3, and 4** provide summary information on the following three topics, respectively: Oregon agriculture, challenges facing Oregon agriculture, and agricultural labor in Oregon (including challenges specific to farmworkers). These initial sections extensively rely on data from government agencies, existing publications (many from Oregon universities or academics), and the Oregon farm producer survey conducted for this study.

Section 5 presents information from a wide range of data sources regarding farm producer responses and effects on agricultural workers of agricultural overtime, including: the survey of Oregon farm operators conducted for this study, interviews with Oregon farm labor contractors, available information on the effects of agricultural overtime pay in California, and information from the economic literature on the effects on overtime across industries.

Finally, **Section 6** draws on the data and sources presented throughout the document to conclude with an overview of the range of the potential economic impacts on farmworkers and farm producers of agricultural overtime pay. This section also presents highlights potential impacts on agricultural land consolidation and conversion. A final section presents the report bibliography while two appendices provides the survey questions for each of the two surveys conducted for this study.

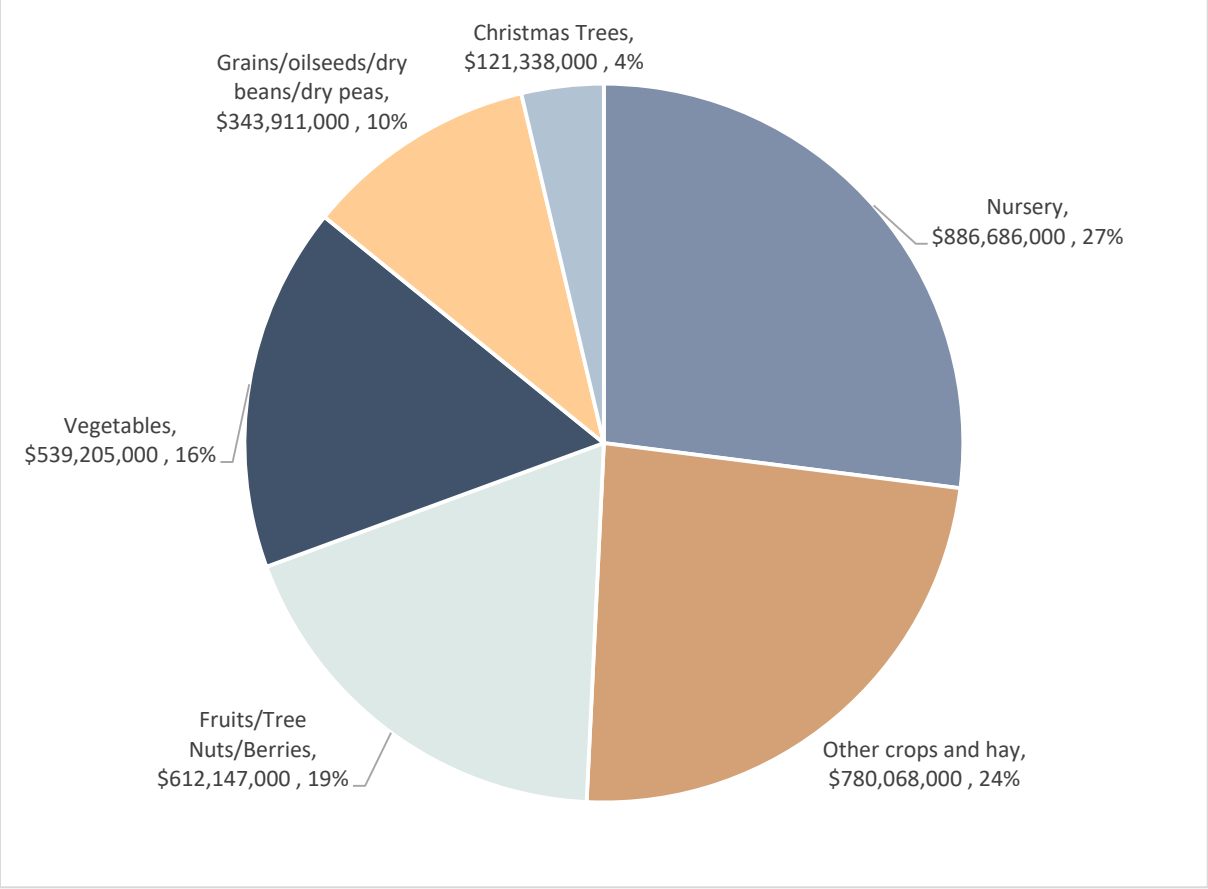
2 Overview of Oregon Agriculture

This section provides a brief overview of Oregon agriculture, including the economic value and overall economic contribution of Oregon agriculture; the importance of specialized, labor-intensive crops in the state; and farm ownership and tenure characteristics of Oregon farms (overwhelming family owned with long tenures by operators).

2.1 Economic Value & Role of Oregon Agriculture

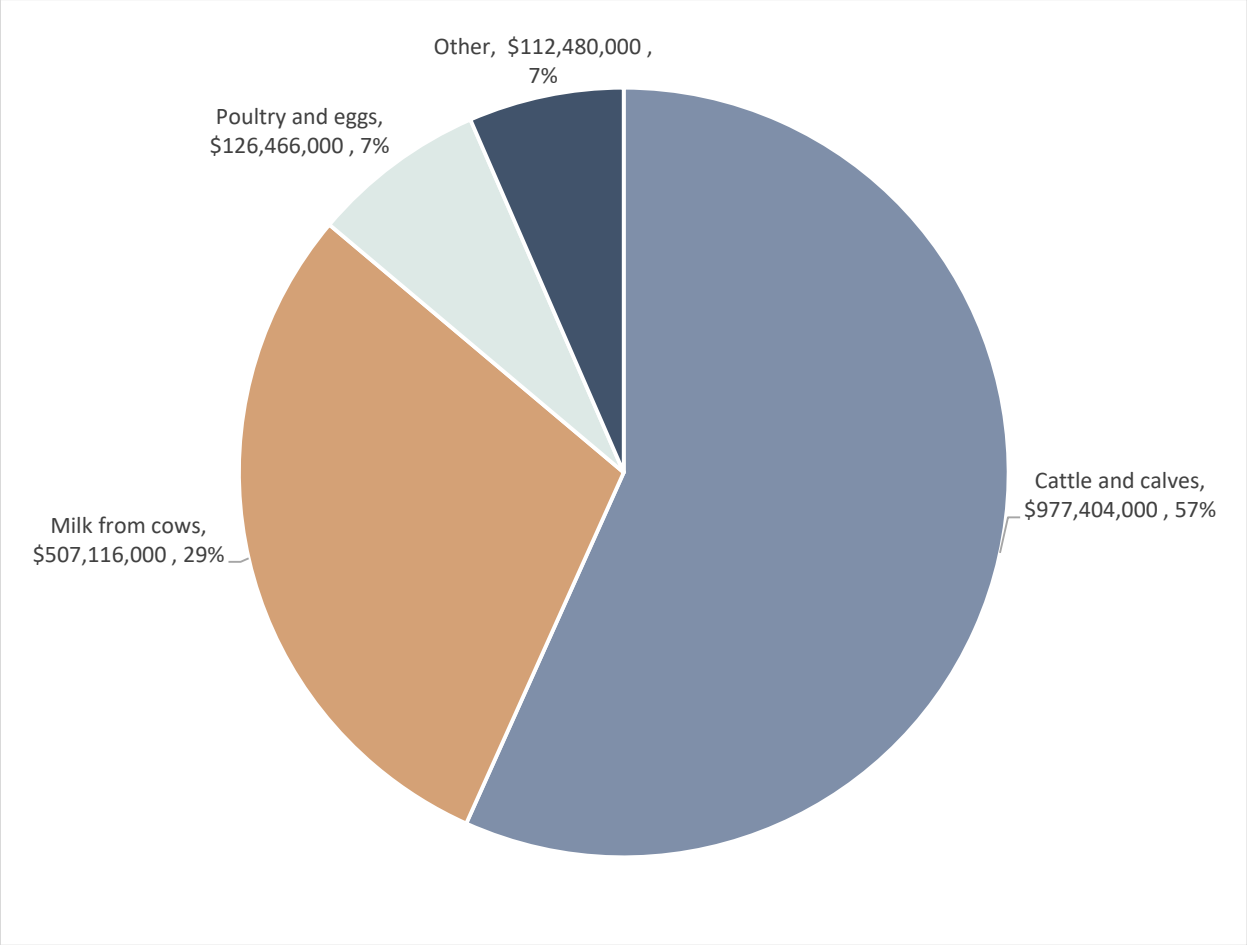
According to the latest U.S. Census of Agriculture, the total market value of Oregon agricultural products sold in 2017 was over $5.0 billion (National Agricultural Statistics Service, US Department of Agriculture, 2017). Approximately $3.3 billion, or two-thirds, of Oregon agricultural value is from crop production while the remaining $1.7 billion is from livestock, poultry, and animal production (including dairy). Oregon animal and crop production broadly supports income and employment across the state, particularly in rural areas.

Figure 2-1: 2017 Oregon Market Value of Crops Sold



Source: 2017 US Census of Agriculture

Figure 2-2: 2017 Oregon Market Value of Livestock & Animal Products Sold



Source: 2017 US Census of Agriculture

A 2021 Oregon State University (OSU) analysis estimates that 5.7% of the Oregon workforce is an operator or a laborer (including unpaid laborers) on an Oregon farm or ranch. Factoring in the ripple effect in other industries that are closely linked to agriculture, the OSU report found that Oregon agricultural production together with food and fiber processing directly and indirectly support 8.5% of all Oregon employment (223,500 full- and part-time jobs) and 6.0% of Oregon value-added ($15.6 billion, a measure of total income generated). Further, the report estimated that the $2.1 billion in exports from Oregon of food, beverage and fiber accounted for 13.6% of total Oregon exports in 2019.

2.2 Importance of Specialized, Labor-Intensive Crops in Oregon

The vast majority of the economic value of crop production in the State of Oregon are from specialty crops.[6] There are more than 220 agricultural products produced in Oregon. With the exception of

[6] Section 101 of the Specialty Crops Competitiveness Act of 2004 (7 U.S.C. 1621 note), amended under section 10010 of the Agricultural Act of 2014, Public Law 113-79 (the Farm Bill), defines specialty crops as, "Fruits and vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture). Eligible plants must be cultivated or managed and used by people for food, medicinal purposes, and/or aesthetic gratification to be considered specialty crops" (Agricultural Marketing Service, US Department of Agriculture, n.d.).

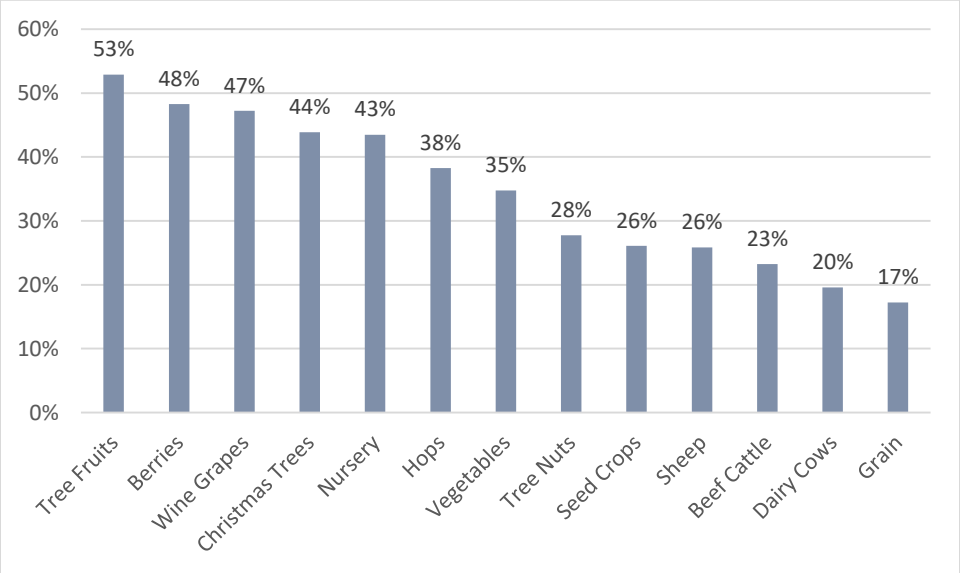
wheat, hay, and grain corn, all of Oregon's top agricultural crops by value are specialty crops: greenhouse and nursery, grass seed, potatoes, wine grapes, cherries, hazelnuts, blueberries, onions, Christmas trees, pears, hops, sweet corn, and apples (Oregon Department of Agriculture, 2021). In fact, **specialty crops account for nearly 70% of all Oregon crop production value. Other top agricultural commodities by value include cattle and calves and milk production.**

This is particularly relevant as specialty crop production relies on farm labor more than other types of crop production. Nationwide, in 2018, hired farm labor expenses (including employees and contract labor) on specialty crop farms accounted for 39% of total cash expenses compared to the average of 13% for all farms, or three times higher than the average for all farms (Economic Research Service, US Department of Agriculture, 2020). Compared to other farm types, dairy farms nationally had the next highest hired farm labor expenses after specialty crops at 14% of all cash expenses (in our survey of Oregon producers, dairy farmers indicated that labor as a percentage of their costs was higher, at 20%).

The US Census of Agriculture conducts a separate horticultural survey, with the most recent conducted in 2019. Data from this survey indicate that labor as a proportion of all nursery operating expenses in 2019 was 49%; this is similar to the result from the survey conducted for this study that found that 43% of all nursery cash expenses were labor-related.

The bottom line is that for a given level of output, because of the share of labor-intensive specialty crops grown and the size of our dairy sector, Oregon agricultural production is more labor-intensive than typical agricultural production elsewhere in the United States. **Figure 2-3** summarizes labor as a proportion of cash costs for Oregon farm producers responding to the survey.

Figure 2-3: Labor as a % Of Cash Costs, Survey of Oregon Farm Producers



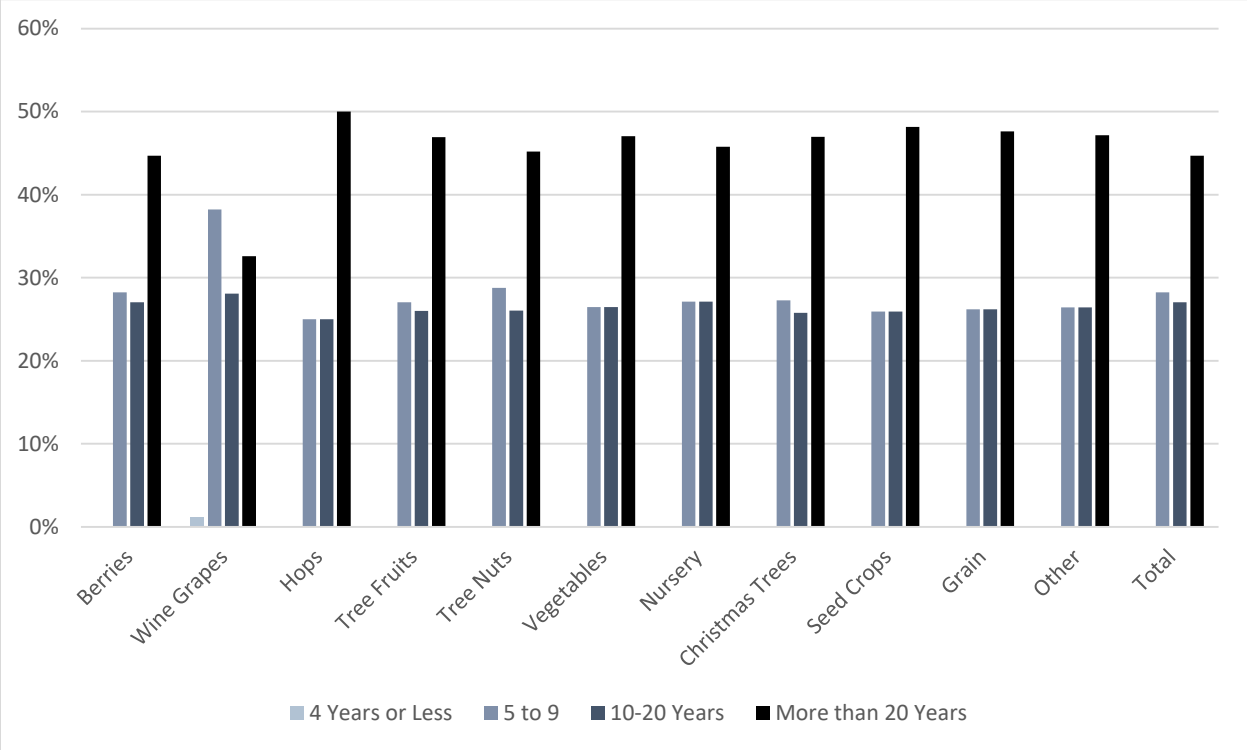
Source: Highland Economics survey of Oregon farm operators conducted for this study.

2.3 Farm Ownership & Tenure

Oregon farms are family farms, with less than 1% of farms owned by corporations that are not family held (336 farms out of 37,616 total farms according to the 2017 Census of Agriculture are corporations

not family held). Across Oregon, 72% of producers have been farming for more than 10 years. The same proportion (72%) of respondents to the survey conducted for this study have been farming for over 10 years (or the farm has been in the family for at least that long), with a large proportion of farms in all crops represented in the survey being operated by the respondent or the respondent's family for more than 20 years (shown by the orange bars in **Figure 2-4**). Almost no survey respondents had been farming for fewer than 5 years, indicating their deep experience in farming.

Figure 2-4: Survey Respondents: Years Farm Has Been in Family / Years Been Farming



Source: Highland Economics survey of Oregon farm operators conducted for this study.

3 CHALLENGES FACING OREGON AGRICULTURE

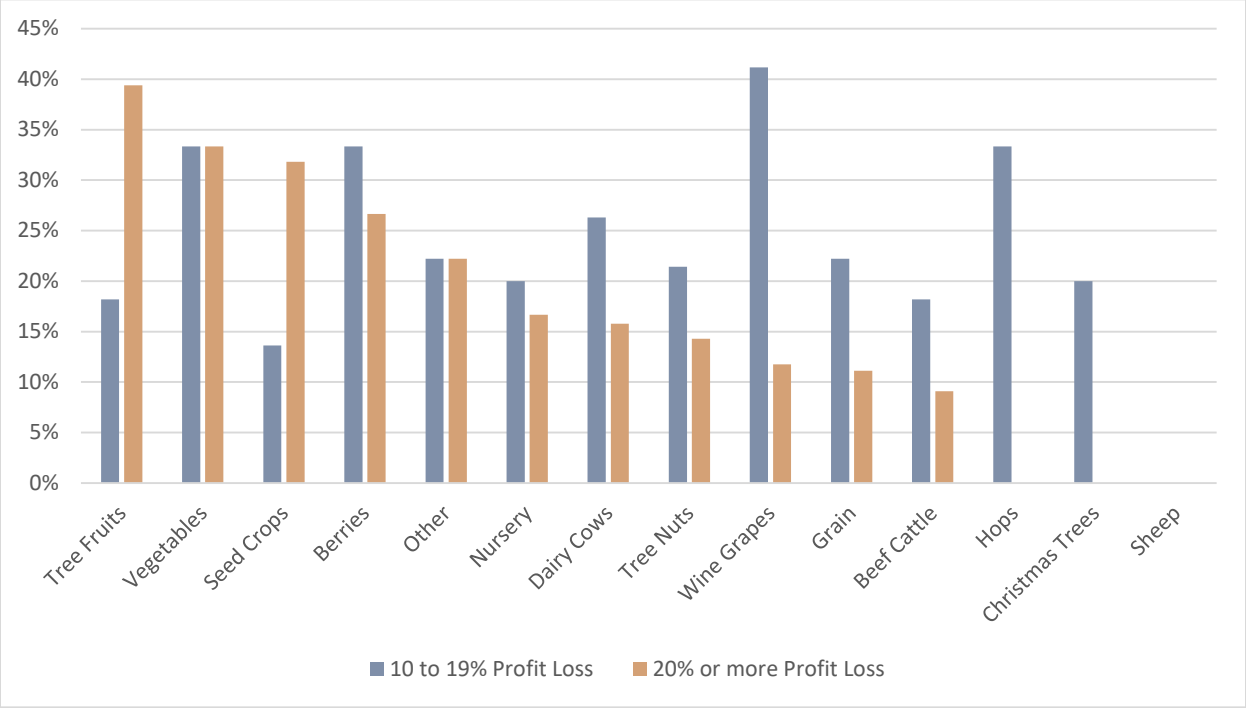
As noted in the Oregon State Board of Agriculture 2021 report, there are many challenges facing Oregon agriculture, including shortages of skilled agricultural labor, drought and severe weather, agricultural land use and conversion of Oregon farmland, market access (affected by trade relations and the COVID-19 pandemic) and farm succession as farm operators age and farms will need to transition to the next generation (Oregon State Board of Agriculture, 2021).[7] This section summarizes responses from surveyed farm producers and other sources regarding the effects of these types of challenges on Oregon farms.

3.1 WILDFIRE, SMOKE, AND SEVERE WEATHER, COVID-19, TRADE RELATIONS, AND REGULATIONS

Over the last several years, Oregon agriculture has experienced a wide variety of challenges, including those related to wildfire and smoke, severe weather events (heat, drought, and ice storms), the COVID-10 pandemic, changes in trade relations, and new regulations. As shown in **Figure 3-1, cumulatively, these challenges over the last 18 months have affected nearly all livestock and crop operations.** The figure shows the percent of operations facing profit losses of greater than 10% over the last 18 months compared to prior periods (this reported profit loss is after accounting for government assistance during the pandemic and after severe weather/wildfire events). Many operations faced profit losses that were less than 10%, but **Figure 3-1** shows the percent of operations responding to the survey that suffered profit losses greater than 10%. **Half to two-thirds of vegetable, berry, tree fruit, and wine grape farms responding to the survey reported profit losses of over 10%. Severe losses (over 20% or more of profits) were particularly high in the tree fruit, vegetables, and seed crop industries**. As expected in any industry with wide diversity in operating conditions and products, some growers also experienced increased profits in the last year and a half. Beneficial effects on overall profits were reported by a 6% to 7% of tree fruit/tree nut producers, 10% of Christmas tree producers, 12% of wine grape producers, 18% of beef cattle producers, and 50% of sheep producers (the other 50% of sheep producers reported losses of less than 10% of profits).

[7] As of the 2017 Census of Agriculture, 63.9% of Oregon agricultural producers were over the age of 55 (with an average age across all producers of 57.9), indicating that soon many farms will transition to the next generation.

Figure 3-1: Cumulative Adverse Effects on Farm Profits Over Last 18 Months from Severe Weather, COVID-19, Regulations, Trade Relations, and Labor Shortages



Source: Highland Economics survey of Oregon farm operators conducted for this study.

3.1.1 Wildfire & Smoke

Regarding wildfire, initial estimates indicate that there 65,000 acres of Oregon Exclusive Farm Use (EFU) lands were within the wildfire boundaries in 2020 (Oregon State Board of Agriculture, 2021). As noted in a 2021 report published by Oregon State University on the economic impact of agriculture in Oregon (Sorte, Reimer, & Jones, 2021), the 2020 wildfire season in Oregon significantly impacted many farms, with impacts particularly concentrated on wine grapes, hemp, hops, recreational marijuana, tree fruit, and cattle. In particular, many farms in the wine industry faced significant losses due to wildfire smoke effect on grapes. Wineries response to crop damages included discarding grapes, adopting new technology to extract juice without skins, filtering techniques, and purchase of grapes from outside the region that did not have wildfire smoke damage. New marketing strategies like virtual tastings still could not overcome wildfire and COVID-19 losses to the industry, with an estimated 20% decline in wine industry revenues due to the pandemic and wildfire (Sorte, Reimer, & Jones, 2021). Such a decline in revenues likely translates into a much bigger decline in profits given that costs likely did not decrease but rather likely rose due to the pandemic and wildfire.

3.1.2 COVID-19

COVID-19 severely impacted agriculture businesses across the state, with Oregon farmgate sales declining to the lowest point in over a decade due to the pandemic (Sorte, Reimer, & Jones, 2021). A 2021 survey of Washington's farm businesses found almost two-thirds reported that COVID-19 had a negative impact on business, with nearly half of respondents citing revenue loss and two-thirds reporting increased operational costs often in the form of sanitation and safety measures (Collier, et al., 2021). Other impacts included closure of direct marketing outlets (55% of respondents), distribution

system disruption (48% of respondents), closure/reduced indirect marketing channels (46% of respondents), labor hiring and retention difficulty (41% of respondents), and farm input availability reduction (40% of respondents) (Collier, et al., 2021).

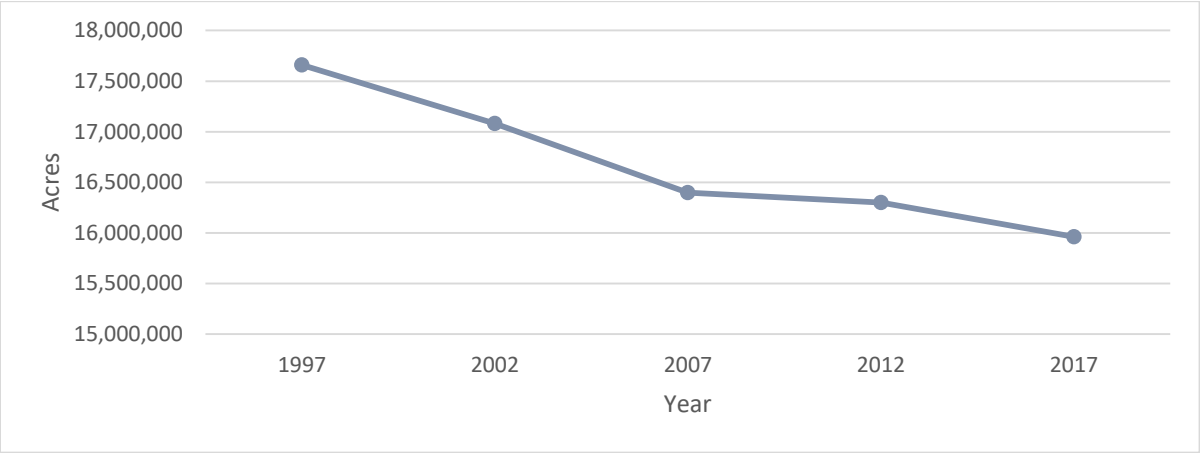
However, overall US net farm income (an indicator of farm profitability) is expected to increase by 43% from 2019 (Sorte, Reimer, & Jones, 2021). The increase in net farm income is due to assistance and payments from the government (specifically the CARES Act and follow-up governmental support). Due to the diverse crops grown in Oregon with a lower percentage of commodity crops, it is expected that net farm income gains in Oregon will be somewhat lower than national averages (Sorte, Reimer, & Jones, 2021).

A survey of Washington farm businesses focusing on the effects of the COVID-19 pandemic found that more than half (54%) of surveyed farm businesses applied for COVID-19 relief programs with 70% of applications accepted (Collier, et al., 2021). All things considered, impacts were varied with two-thirds of Washington farm businesses reporting an adverse effect of COVID-19 on their businesses and one-third of Washington farm businesses reporting that COVID-19 had a positive overall impact on their business (Collier, et al., 2021). Looking to the future, more than 80% of surveyed Washington farm businesses are concerned about unforeseen farm expenses and 72% were concerned about disruptions to the input supply chains. The future ability to offer competitive wages was a concern for 49% of surveyed Washington agricultural businesses (Collier, et al., 2021).

3.2 Farmland Conversion

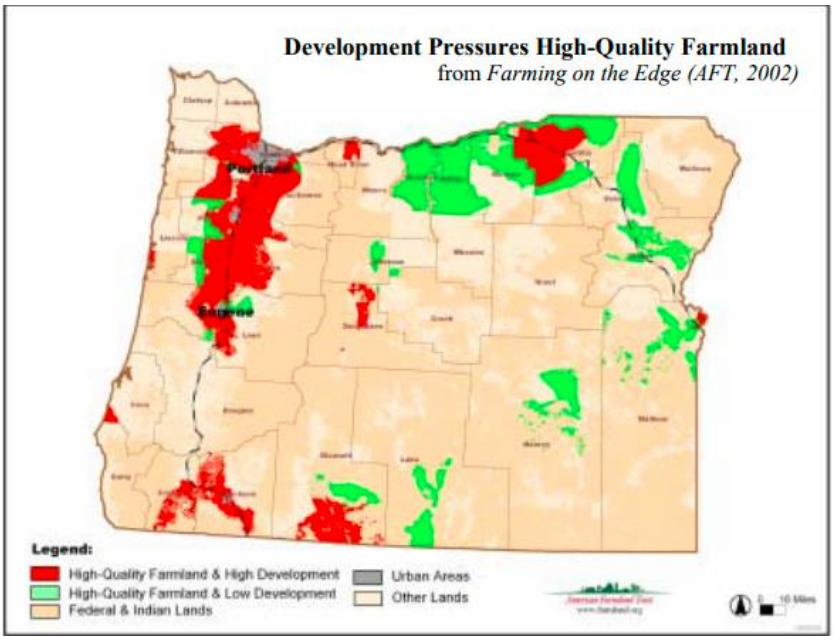
As shown in **Figure 3-2**, **across Oregon the area operated in Oregon farms has been decreasing over the last several decades, with a 10% drop in reported acreage (1.7 million acres) in farms during the period 1997 to 2017**. As noted in many previous studies, farmland in many areas of Oregon faces high development pressures, particularly in the Willamette Valley. **Figure 3-3** is a graphic developed in 2002 by the American Farmland Trust showing in red the high-quality farmland areas in Oregon facing high development pressure. The green areas are high quality farmland areas facing relatively low development pressure. While land in farms has declined over the last 20 years, the value of farm products sold has continued to increase, reflecting the increased concentration of Oregon agricultural value from specialized crops that require more inputs (including labor) on less land.

Figure 3-2: Area Operated, Oregon Farms



Source: 1997, 2002, 2007, 2012, 2017 US Census of Agriculture.

Figure 3-3: High Quality Farmland and Development Pressure



Source: American Farmland Trust, as cited in (Rashford, Weber, Lewis, & Evonuk, 2003)

3.3 Farm Costs Rising Faster Than Prices Received

The National Agricultural Statistics Service (NASS) collects data on prices paid for agricultural inputs by farms and prices received for agricultural products. These data provide general information on how costs versus revenues are trending for various farm types. The latest data available from October 2021 indicate that prices of agricultural inputs (i.e., farm costs) are rising faster than the prices received for farm products (US Department of Agriculture, National Agricultural Statistics Service, 2021). **Overall, in the period 2011 to 2021, prices received by farmers have increased by approximately 9%, while prices paid by farmers have increased by 16%, cutting into farm profit margins.** Trends in prices received vary significantly amongst commodities, with some commodities such as tree fruits and nuts faring better

(prices received up 33% since 2011) and some, such as dairy faring much worse (prices down by 9% since 2011). For most other crop and meat animal categories tracked, prices received by farmers are up by 5% to 10%, resulting in the average prices received increase of 9% noted above.

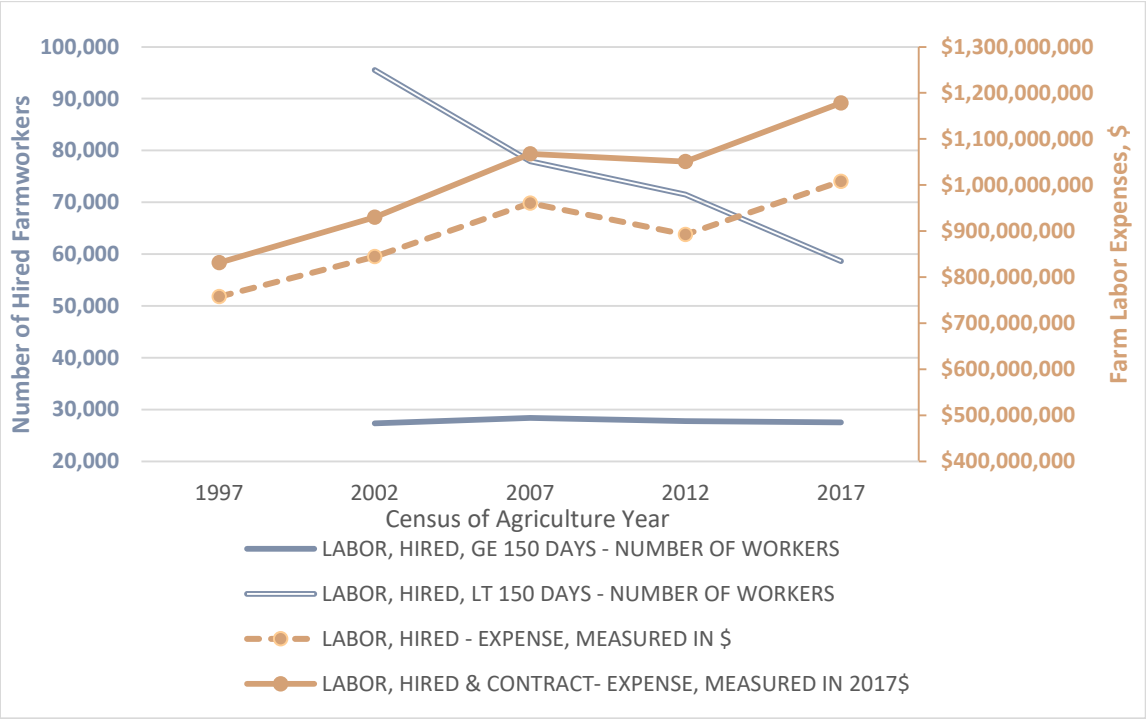
Farm prices paid are tracked by category and not be crop. Of all the farm expense categories (including feed, seeds, fertilizer, chemicals, machinery, services, rent, etc.), labor wage rates have increased the most in the last 10 years. From 2011 to October 2021, farm wages paid has increased 41.5% nationally.

3.4 Labor Costs

Farm labor costs in Oregon are following the national trend: according to data from the US Census of Agriculture, reported hired farm labor workers in Oregon have been decreasing over the last several decades while farm labor expenses have been increasing**. Focusing just on farm labor directly hired by farms, from 2002 to 2017, hired farm labor expenses in Oregon increased by 19% (after adjusting for inflation) while the number of hired farmworkers actually went down by 30% (almost all decreases in hired workers were in workers employed fewer than 150 days in a year).** Including all hired and contract labor expenses, farm labor expenses (all adjusted for inflation and expressed in 2017 dollars) rose from $831 million in 1997 to $1.78 billion in 2017, an increase of 42%.[8] **Figure 3-4** also shows that across Oregon in the period 2002 to 2017, approximately 85% to 90% of total farm labor expenses was for hired labor (as opposed to contract farm labor). It also highlights that most (68% to 78%) of hired farmworkers in the period 2002 to 2017 were seasonal workers hired for fewer than 150 days in the year.

[8] Note that this is adjusted for inflation while the national labor cost increases from NASS of 41% over the last ten years are not adjusted for inflation.

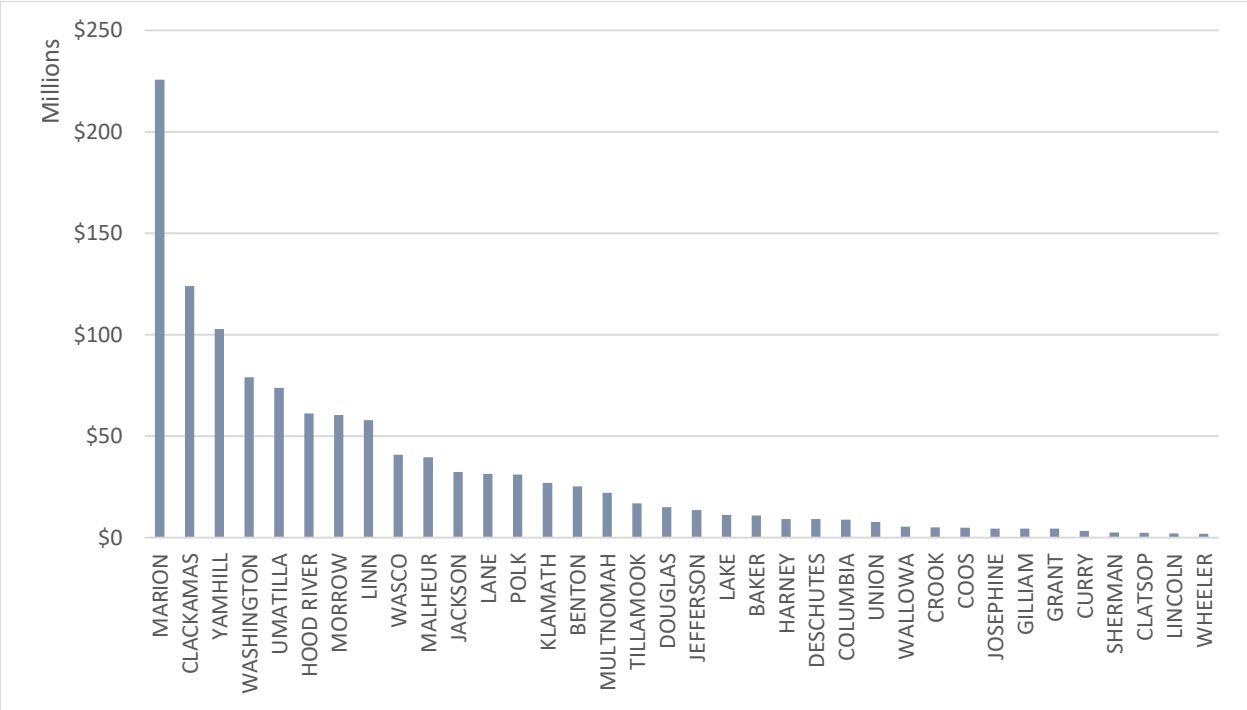
Figure 3-4: Hired Farmworkers and Farm Labor Expenses



Source: US Census of Agriculture 1997, 2002, 2007, 2012, 2017

Total direct, paid farm labor expenses in Oregon, as reported in the 2017 Census of Agriculture, were $1.178 billion dollars (2017 dollars). **In 2017 two-thirds (67%) of all farm labor expenses (for contract labor and hired labor) in the State of Oregon were paid by farms in eight out of the 36 Oregon counties (Marion, Clackamas, Yamhill, Washington, Umatilla, Hood River, Morrow, and Linn), see Figure 3-5.** These data have been stable through time; in 2007 and 2012, farms in these eight counties accounted for 67% and 64%, respectively, of all labor expenses paid in Oregon.

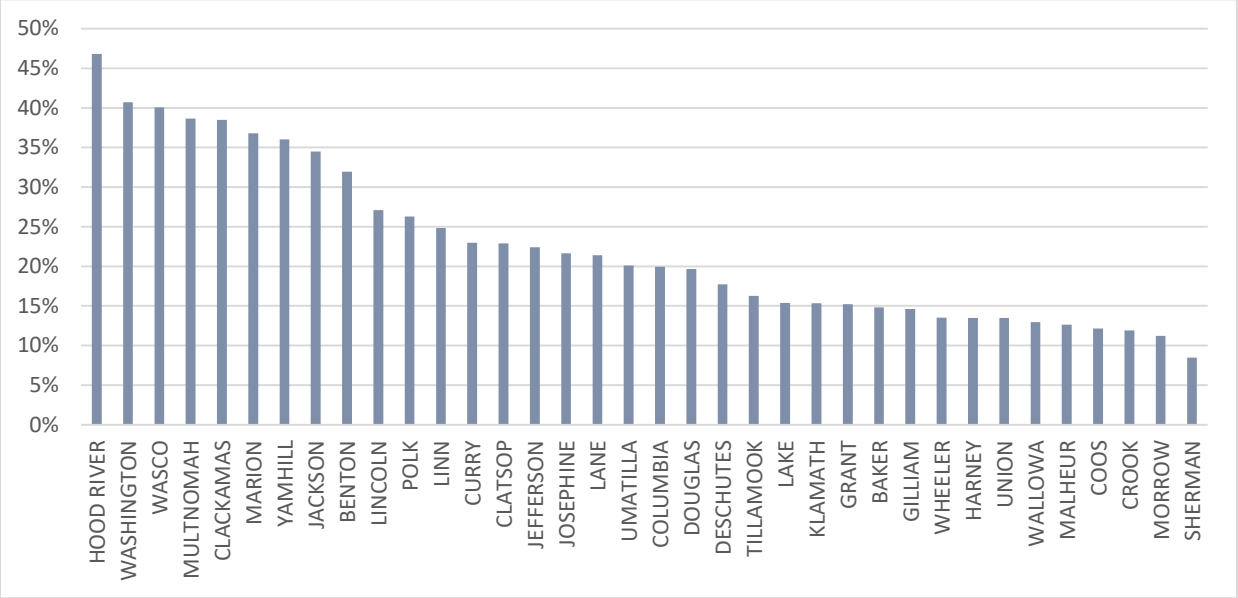
Figure 3-5: 2017 Expenses for Hired & Contract Labor by County (2017$)



Source: Highland Economics analysis of NASS Agricultural Statistics, Calculated as (Hired Farm Labor Expense + Contract Labor Expense).

Regarding potential impacts of the agricultural overtime law, more important than total labor expenses is the cost of labor relative to total farm expenses**. Labor as a proportion of total farm expenses varies dramatically by crop and by region of the State, with counties in the Columbia Plateau and the Willamette Valley regions of the state generally showing high labor costs as a proportion of total expenses, and may be most affected by changes in labor costs (Figure 3-6)**. These are also the regions of the state with the highest number of farm laborers and that produce the vast majority of the agricultural value in the State.

Figure 3-6: 2017 Hired & Contract Labor as a Percent of All Farm Expenses, by County

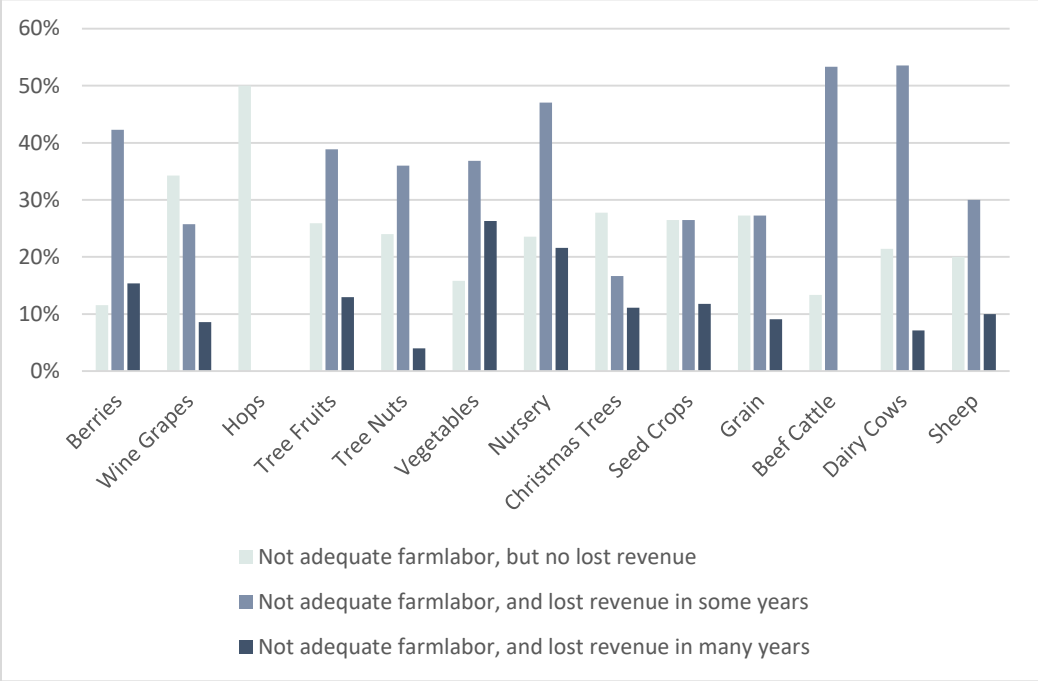


Source: Highland Economics analysis of Census of Agriculture data, Calculated as (Hired Farm Labor Expense + Contract Labor Expense)/Total Expenses.

3.5 Farm Labor Shortages

Across all operations responding to the survey for this study, just over one-quarter (26% of crop operations and 27% of livestock operations) responded that they had adequate farm labor to complete tasks during peak periods. **Figure 3-7** summarizes the effects on revenues on the remaining three quarters of operations that feel they do not have adequate farmworker labor. **Across all surveyed operations, approximately 50% (47% of crop operations and 54% of livestock operations) reported reduced revenues due to inadequate labor supply**, with some operations reporting reduced revenues in many years. Lost revenue due to farm labor shortages is particularly high in the vegetables, nursery, tree fruits, berries, dairy and beef cattle sectors, with over 50% of farms in these sectors reporting lost revenue in at least some years due to labor shortages.

Figure 3-7: Oregon Operator Survey: Effects of Farm Labor Shortages on Farm Revenue



Source: Highland Economics survey of Oregon farm operators conducted for this study.

4 AGRICULTURAL LABOR IN OREGON

This section summarizes data on the agricultural workforce in Oregon, including information on farmworker population and demographics, characteristics of farm work such as seasonality and hours, farm labor compensation, and farm labor health and safety and other challenges. Data sources include state and federal agencies, national surveys of farmworkers, Oregon surveys of farmworkers, and the survey conducted for this study of Oregon agricultural producers.

Note that throughout this section, we refer to data from the National Agricultural Workers Survey (NAWS) conducted by the U.S. Department of Labor. This is one of the best sources of data on agricultural labor, and the only standard national survey of farmworkers themselves (rather than farm operators). However, the data for Oregon is combined with data for Washington, Idaho, Montana, Wyoming, Colorado, Nevada, and Utah into an eight-state "Northwest Region"; the farmworkers represented in the survey each year in the Northwest region range from approximately 200 to 400 workers. Other sources of data on agricultural labor are the Farm Labor Survey (surveying 38,000 farms nationally) and the Census of Agriculture, both conducted by the U.S. Department of Agriculture and both surveying farm operators. We also cite a 2021 study of Oregon farmworkers focused on the effects of the COVID-19 pandemic on farmworkers.

4.1 FARMWORKER DEMOGRAPHICS

Farmworkers in Oregon are predominantly Hispanic and up to 40% are Indigenous. The 2017-2018 NAWS data for the eight-state Northwest region indicates that 78% are foreign-born (primarily Mexico) and up to 46% may be unauthorized. The vast majority (85%) of Northwest farmworkers surveyed by NAWS were settled and did not migrate. However, specific to Oregon, a publication from Oregon State University estimated in 2018 that there are 28,940 migrant farmworkers in the State, with an estimated 20,954 migrant children and youth (Rahe, 2018). However, this publication estimated farmworker numbers based on demand (which since demand is unmet, the number of farmworkers is less than would be indicated by demand), and assumed all farmworkers were either migrant or seasonal.

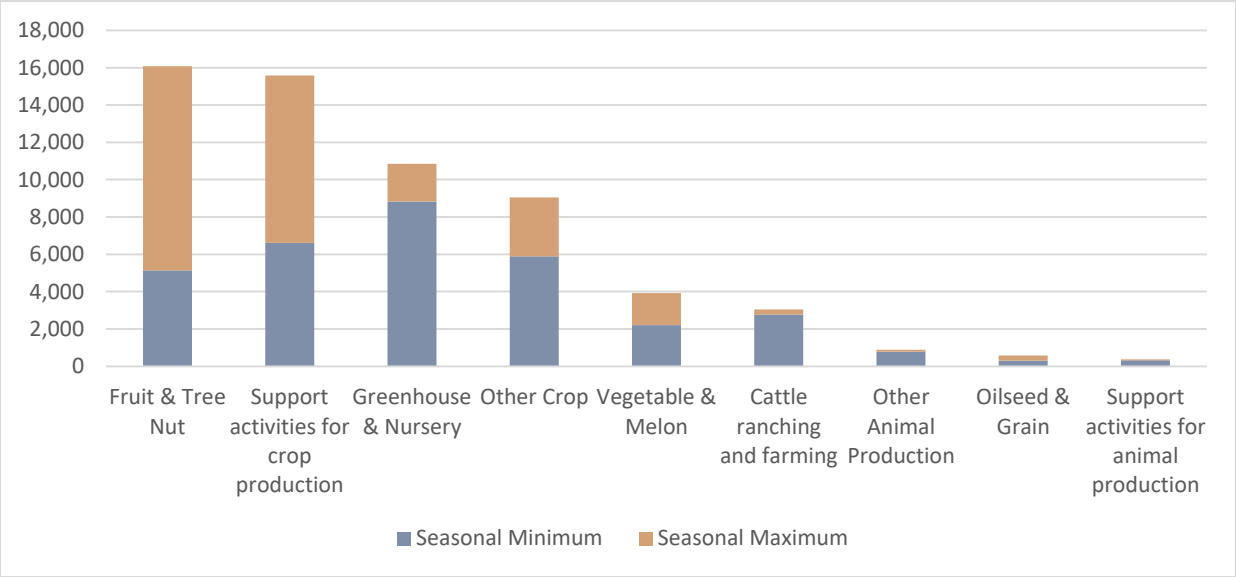
The NAWS data indicate that approximately half of farmworkers have children, while the Oregon survey of farmworkers focusing on the effects of COVID-19 found that the a significant majority of farmworkers (78%) have children under 18 years of age. The NAWS data indicate that nearly two-thirds of Northwest farmworkers are men, while the Oregon survey of farmworkers focusing on the effects of COVID-19 found that there are nearly equal numbers of men and women farmworkers in Oregon.

4.2 SIZE AND LOCATION OF FARM LABOR FORCE

On an average annual basis in 2020 there were 42,500 wage and salary farmworkers covered by unemployment insurance (a legal requirement for nearly all hired farmworkers) in Oregon, including crop and animal production and support services (as estimated by the Bureau of Labor Statistics Quarterly Census of Employment and Wages, or QCEW). However, there were 59,300 workers reported in the State in July, the peak month for agricultural employment. **Figure 4-1** shows the minimum and maximum reported wage and salary employment in Oregon agriculture throughout 2020. **Figure 4-2** shows the data by county, including the forestry, fishing and hunting (excluding forestry, hunting, and

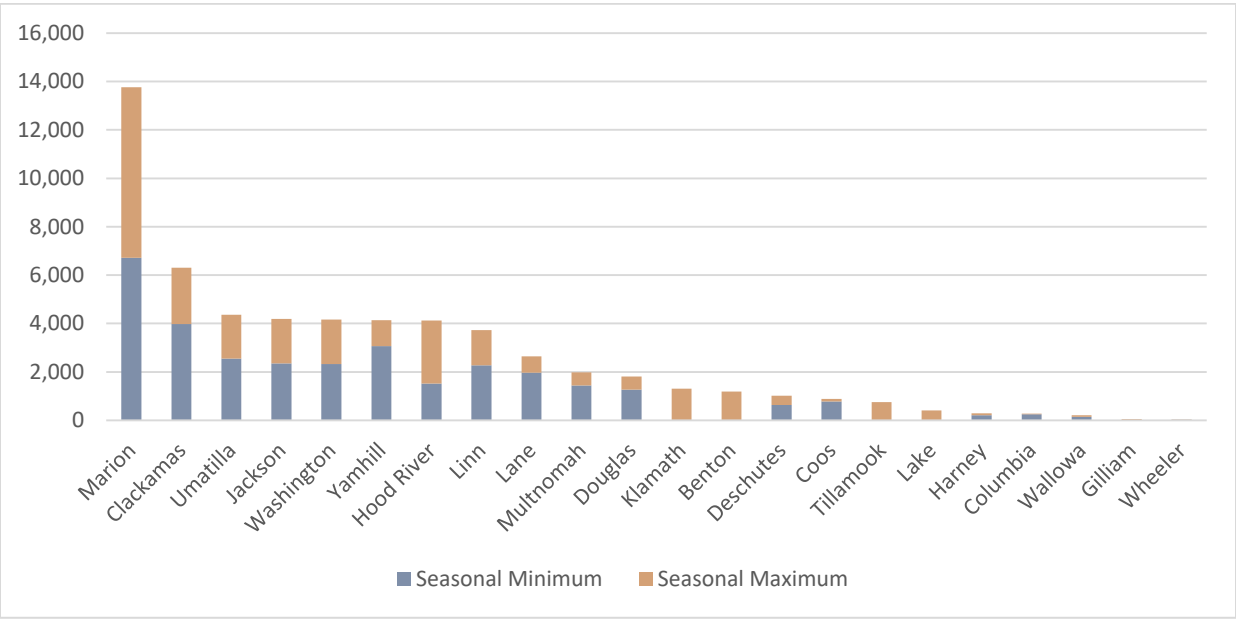
fishing is not feasible for each county, so those are included in the county-level data in Figure 4-2 data). Note that these reported data for all farmworkers are less than the estimated demand by Oregon farms of 86,389 farmworkers using crop acreage and livestock figures and estimated labor needs by commodity (Rahe, 2018). Part of the discrepancy is likely due to the fact that there are labor shortages, and the actual agricultural supply is less than labor demand (i.e., the labor demand as estimated by Rahe is greater than the available labor pool that is hired by farm operators).

Figure 4-1: Estimated Oregon Farmworkers in 2020



Source: Bureau of Labor Statistics, Quarterly Census of Wages and Employment (QCEW)

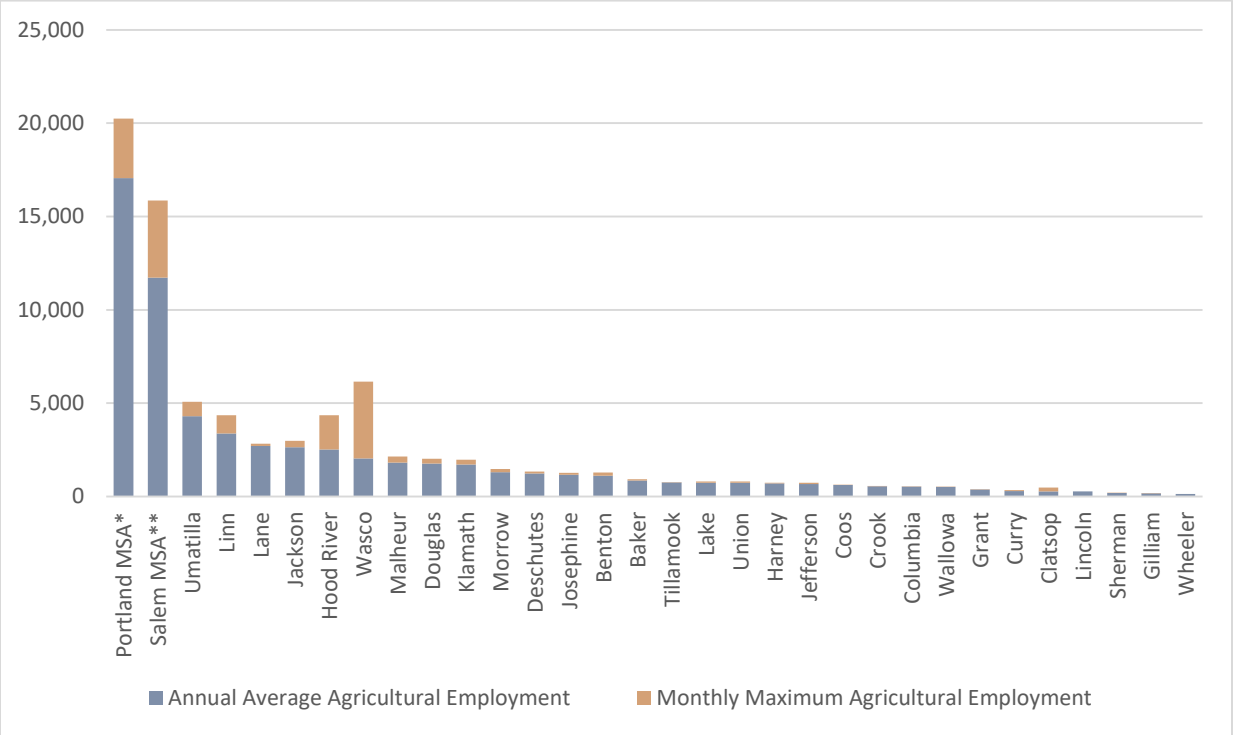
Figure 4-2: Estimated Wage and Salary Workers in Agriculture, Forestry, Fishing and Hunting in Oregon by County in 2020



Source: Bureau of Labor Statistics, Quarterly Census of Wages and Employment (QCEW)

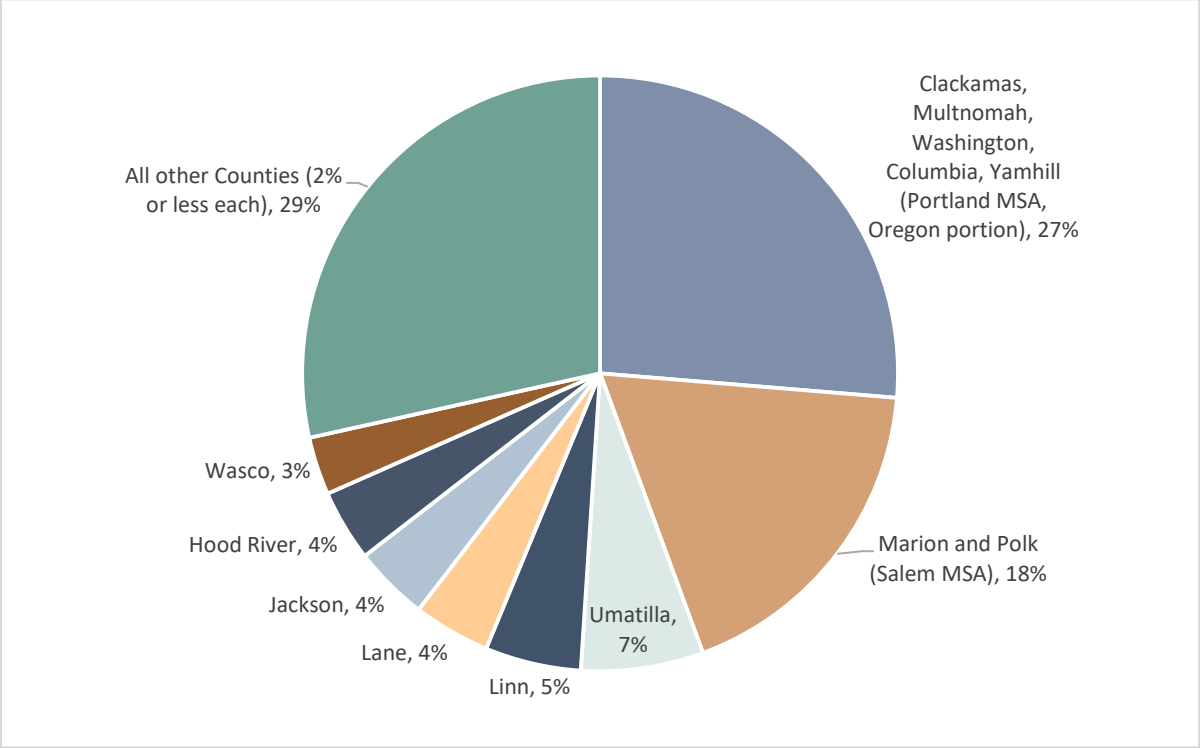
Figure 4-3 highlights total agricultural employment by county, including the data for proprietors in Oregon. The data in Figure 4-3 shows a similar geographical distribution of agricultural employment across counties, but reflecting the total employment in agriculture when proprietors are included. **Figure 4-4** highlights the concentration of total agricultural employment in the counties located in the Willamette Valley and the Columbia River Gorge.

Figure 4-3: Estimated Agricultural Employment in Oregon by County in 2020, Including Proprietors



Source: Oregon Employment Department (Oregon Employment Department, 2021).
**Portland MSA (Metropolitan Statistical Area) includes Clackamas, Multnomah, Washington, Columbia, and Yamhill counties.*
***Salem MSA includes Marion and Polk counties.*

Figure 4-4: Percent of Agricultural Employment (including Proprietors) in Oregon by County in 2020

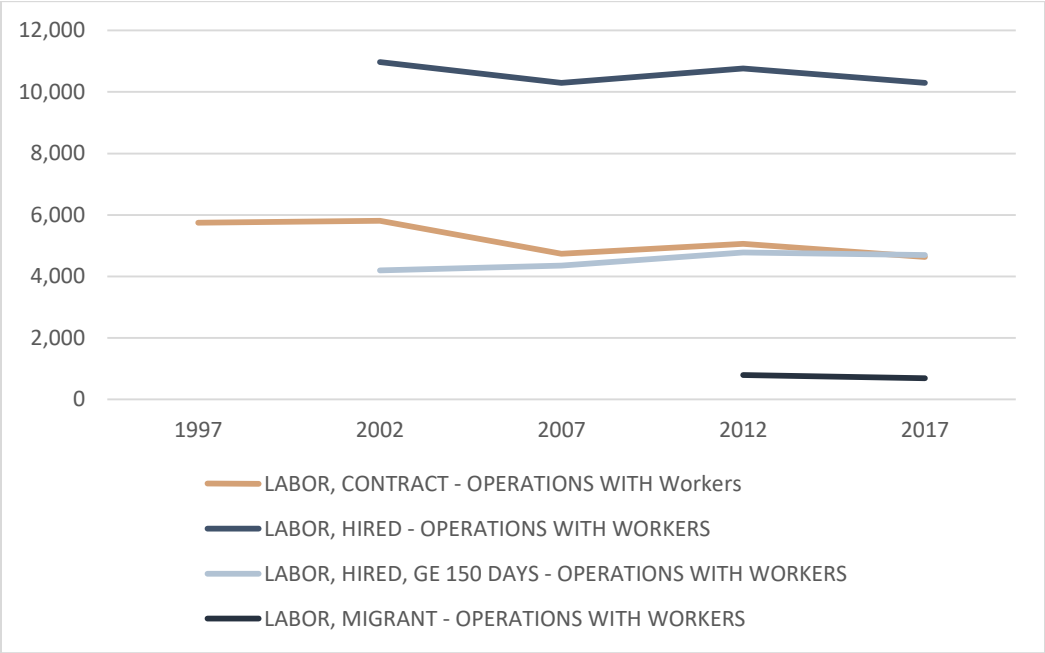


Source: Oregon Employment Department (Oregon Employment Department, 2021).
**Portland MSA (Metropolitan Statistical Area) includes Clackamas, Multnomah, Washington, Columbia, and Yamhill counties.*
***Salem MSA includes Marion and Polk counties.*

4.3 Farms with Workers

Figure 4-5 highlights the number of Oregon farms with the various worker types recorded by the US Census of Agriculture. As shown in the figure, the number of farms with hired workers has stayed fairly steady with a slight downward trend. However, the key point from **Figure 4-5** is that only 10,300 farms (or just over one-quarter of all Oregon farms) have workers of any type – seasonal, contract, or year-round. The data in Figure 4-5 shows nearly an equal portion of operations using contract labor (tan line) and worked hired for more than 150 days (light blue line), supporting the data from a recent survey of Oregon farmworkers related to the effects of COVID-19 indicated that 29% of those surveyed worked for a farm labor contractor (FLC) or personnel agency.

Figure 4-5: Farms with Workers in Oregon from 1997 to 2017

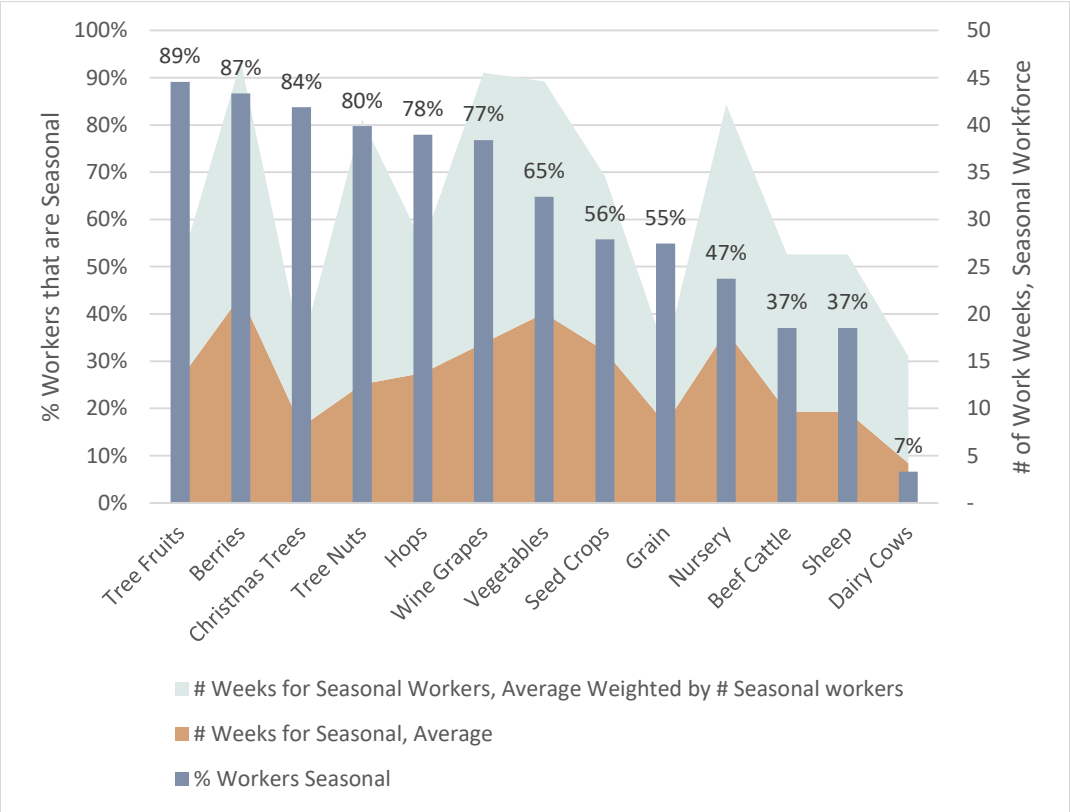


Source: USDA Census of Agriculture for 1997, 2002, 2007, 2012, 2017.

4.4 Seasonality of Farm Labor

A characteristic of farm labor demand is its seasonality. According to the eight-state NAWS survey for the Northwest region of the United States, the average farmworker was employed for 35 weeks (67% of the year); similarly, in California, which is its own NAWS survey region, the average farmworker was employed for 36 weeks of the year. **Figure 4-6** below from our survey of Oregon producers highlights that this is the pattern in Oregon as well. The blue bars in the figure show the percentage of hired farmworkers in each commodity type that are seasonal workers, with more than 70% of workers employed by surveyed farms being seasonal in the fruit (tree fruits, berries, and wine grapes), nuts, Christmas trees, and hops crop sectors. Livestock farms had the fewest seasonal workers, but even on surveyed sheep and beef cattle operations over one-third of employment is seasonal. Surveyed dairy operations had the least proportion of seasonal workers, with just 7% seasonal. The shading behind the blue bars indicates the number of weeks that seasonal workers are employed, with the orange shading showing the average number of weeks employed across operations and the grey shading weighting the number of weeks by the number of workers (i.e., the grey is the average weeks employed amongst workers while the orange is the average amongst operations). Workers were employed from just over 15 weeks to just over 45 weeks a year. Operations with more seasonal employees tend to hire workers for more weeks.

Figure 4-6: Seasonality of Oregon Farmwork



Source: Highland Economics survey of Oregon farm operators conducted for this study.

4.5 Farm Labor Compensation

As presented in **Table 4-1**, agricultural workers in Oregon earned an estimated $1.5 billion in total compensation in 2020, based on data from the U.S. Department of Labor Statistics Quarterly Census of Employment and Wages (QCEW). The QCEW only collects total wages paid to covered workers (those employees covered by unemployment insurance, which does not include self-employed proprietors) during each three-month quarter of the year, along with the employment reported by employers on the 12th day of each month. The QCEW reports annual wages based on dividing total wages reported by the total average annual number of workers; as noted above this is 42,500 farmworkers on average in Oregon in 2020. The third column in Table 4-1 provides this annual average wage, which would be based on 12 months of work. In the final column in Table 4-1, we divide the wages by the 59,300 workers reported in Oregon in July of 2020, the peak month for agricultural employment. This provides a sense of the likely average total farm wages ($26,000 to $36,000) received by an individual farmworker in Oregon, on average, with the seasonality of farmwork reducing the total farm wages earned by many farmworkers. These wage estimates only include farm wages and do not include any income earned by farmworkers in other industries at other times of the year.

These Oregon-specific wage estimates based on QCEW data are higher than the average annual wages in 2017-2018 reported by the National Agricultural Worker Survey for farmworkers in the eight-state Northwest region of $20,000 to $24,999. In addition to the effects of rising wages in the intervening four

years, the disparity may reflect differences in agricultural employment in this broader region relative to Oregon.

Table 4-1: 2020 Oregon Agricultural Worker Compensation*

Agricultural Production	Annual Total Reported Wages	Annual Wages, Based on # of "Average Annual" Farmworker	Annual Wages, Based on Estimated # of Total Farmworkers
Oilseed & Grain	$16,000,486	$37,633	$28,170
Vegetable & Melon	$124,444,721	$39,472	$33,964
Fruit & Tree Nut	$248,254,436	$30,868	$15,439
Greenhouse & Nursery	$402,466,339	$40,202	$39,021
Other Crop	$292,145,746	$39,069	$32,933
Cattle ranching and farming	$112,890,545	$39,192	$37,086
Other Animal Production	$31,614,336	$37,846	$36,089
Support activities for crop production	$299,589,871	$32,276	$19,230
Support activities for animal production	$8,404,693	$24,303	$24,082
Total	$1,535,811,173	$36,177	$25,879

Source: Quarterly Census of Employment and Wages, US Bureau of Labor Statistics

**QCEW only reports total wages during each three-month quarter of the year, along with the employment reported by employers on the 12th day of each month. As such, the annual estimated wages are based on the average annual employment which is much less than the total number of farmworkers working in any given year. The final column in the table aims to estimate a more accurate picture of farmworker farm income.*

Due to the QCEW's data constraints (wages reported on a quarterly basis and employment on a monthly basis with no tracking of hours worked), surveys focused on agricultural labor are better sources of information for hourly wage data. In terms of current average hourly wage rates, data from the 2020 and 2021 Farm Labor Survey for the Pacific Region (Oregon and Washington) indicate that average hourly wage rates across all hired farmworkers in January of 2021 were $17.44, in April of 2021 were $16.90, and in July of 2020 were $16.87 (US Department of Agriculture, 2021). The survey of Oregon producers conducted for this study found a similar but slightly higher average pay rate for agricultural workers of approximately $18 per hour across specialty crop and livestock farms. Across all occupations in Oregon in May 2020, the median hourly wage was $21.04; select hourly wage rates for other occupations (including supervisory and all types of workers within each occupation type) are displayed in **Table 4-2.** These multiple data sources indicate that average hourly wages in agriculture are competitive with average hourly wages in alternative employment sectors. However, the data in Table 4-2 also indicate that the lower paid workers in agriculture (i.e., not equipment operators or other more skilled positions) are amongst the lowest paid workers across Oregon. Combined with the seasonality of farmwork, this translates into low overall annual income for farmworkers.

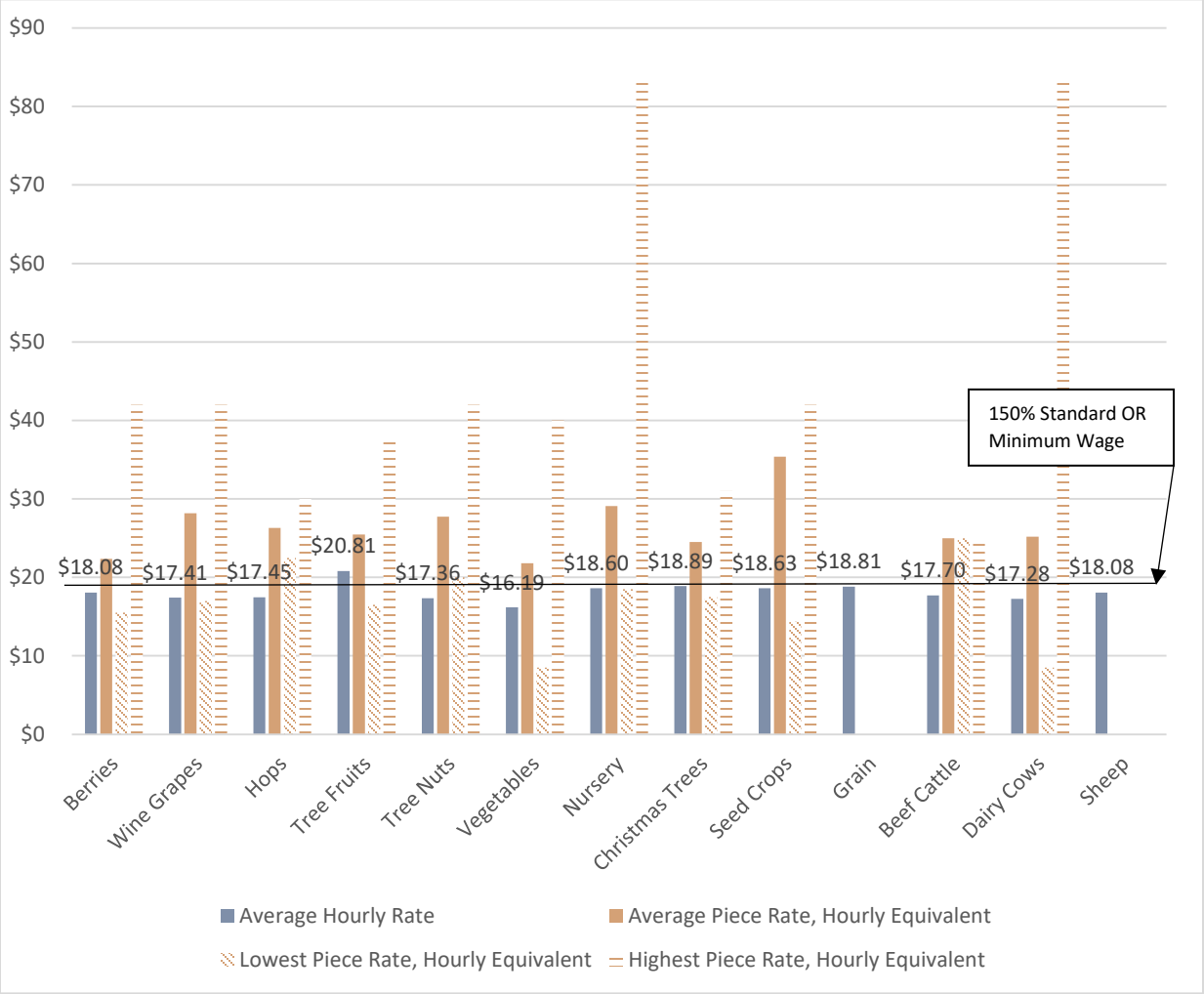
Table 4-2: Median Hourly Wages across Select Oregon Occupations, Bureau of Labor Statistics Survey of Employers May 2020

	Hourly Median Wage Rate
All occupations	**$21.04**
Other Selected Occupations	
Healthcare support occupations	$16.47
Food preparation and serving related occupations	$13.54
Building and grounds cleaning and maintenance occupations	$15.15
Personal care and service occupations	$15.09
Sales and related occupations	$16.08
Construction and extraction occupations	$26.30
Production occupations (all manufacturing)	$18.70
Transportation and material moving occupations	$17.66
Farming, Fishing, and Forestry Occupations	**$14.93**
Agricultural Equipment Operators	$16.63
Farmworkers and Laborers: Crop, Nursery, and Greenhouse	$13.72
Farmworkers: Farm, Ranch, and Aquaculture	$12.50
Agricultural Workers, Other	$18.55

Source: Occupational Employment and Wage Statistics, Bureau of Labor Statistics, May 2020 (US Bureau of Labor Statistics, 2021)

Oregon minimum wage outside the Portland metro area urban growth boundary is either $12.75 or $12.00 per hour, depending on the county. At the minimum wage rate, the overtime pay level at 150% of base pay would be $18/hour to $19.13/hour. As shown in **Figure 4-7**, this wage rate is near the reported current average wage rate paid to agricultural workers in the surveyed farm sectors (which, as shown in Figure 4-7 may vary from approximately $16.19 to $20.81 per hour). In other words, pay of 150% of the standard minimum wage is already received by many farmworkers (see the bars exceeding the 150% of standard minimum wage horizontal black line in Figure 4-7). However, at an $18 average base pay rate, pay at 150% of current base pay would equate to $27 per hour, at pay rate at which only productive piece rate workers are generally paid currently. For many specialty crop farm sectors where piece rate work is important, an overtime rule could result in very high pay rates that may exceed the economic means of growers (i.e., may be financially infeasible for growers).

Figure 4-7: Survey Response on 2021 Hourly Pay Rates (Or Hourly Equivalent if Piece Rate)*



Source: Highland Economics survey of Oregon farm operators conducted for this study.
**Average across farmworkers represented in survey, not average across operations (said differently, this is a weighted average, weighted by the number of farmworkers at the operation).*

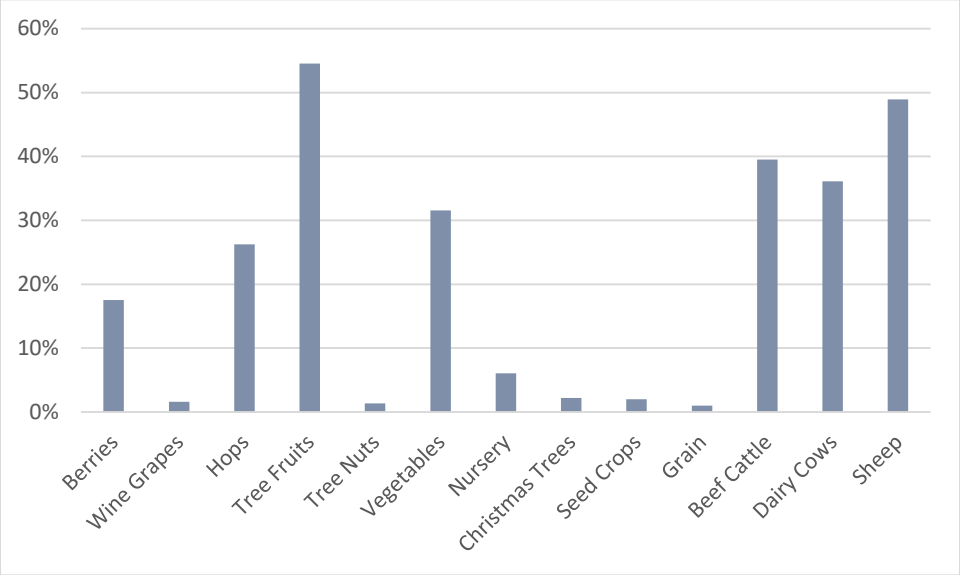
Figure 4-8: Survey Response on Type of Pay of Farmworkers During Peak Labor Periods

Source: Highland Economics survey of Oregon farm operators conducted for this study.

Survey responses indicate that, on average, across crop types, approximately 5% to 10% of worker compensation is non-wage (in the form of housing, bonuses, personal use of vehicles, etc.). For tree fruits, vegetables, and livestock operations that provide housing for a significant share of workers (**see Figure 4-9**), this non-wage compensation can be particularly significant. Affordable housing is defined by the federal government (federal Department of Housing and Urban Development) as 30% of gross income; since farmers often provide housing because of a lack of affordable housing in a region (but also because it is a requirement of the H-2A guest worker program), farmworker housing provision may represent at least 30% of the average farmworker wage, indicating total compensation may be at least 130% of the wage rate for farmworkers who receive housing. Given the wage rate of approximately $18 per hour on average received by farmworkers in the survey, the housing provision may equate to approximately $6 per hour[9], or approximately $24 per hour compensation (accounting for wages and housing) for farmworkers receiving housing.

[9] Using NAWS data on weeks and hours worked on average of 1575, and $6 per hour value of housing, this would equate to a monthly rent of $800 per worker, which seems reasonable for the Willamette Valley and Hood River Valley areas of Oregon where worker housing is most often provided. Statewide, currently average rents for one-bedroom apartments are over $1,000 per month according to numerous rent tracking agencies such as rent.com, rentcafe.com, and realtor.com.

Figure 4-9: Survey Response: % of Farmworkers Provided Housing on Surveyed Operations



Source: Highland Economics survey of Oregon farm operators conducted for this study.

4.6 Farm Labor Hours

According to the NAWS survey for the eight-state Northwest region, on average each farmworker worked 45 hours per week during weeks worked in the period 2017 to 2018; this indicates that across all farmworkers, on average a farmworker worked 12.5% of hours in excess of 40 hours per week.[10] Note that this does *not* indicate that 12.5% of total hours worked were in excess of 40 hours per week. If 10 farmworkers worked 30 hours per week and 10 farmworkers worked 50 hours per week, the average number of hours worked would be 40 hours per week. However, in this example, the percent of total hours worked that are over 40 is 12.5%.[11] To estimate the effects on agricultural employers, the pertinent statistics if the percentage of hours worked over 40 as these are the hours that would need to be paid at 150% of the standard wage rate under Oregon's currently proposed legislation.

As such, at a minimum, we would expect that across all farm sectors, hours worked in excess of 40 hours per week would be 12.5%. As Oregon has a higher proportion of farmworkers in labor-intensive specialty crops and dairy operations with high labor requirements during certain periods of the year, we would expect that the proportion of hours worked over 40 to be higher in Oregon than in the greater eight-state Northwest region. The survey of Oregon specialty crop and livestock producers indicates that this is in fact the case for many crops and livestock operations. The data in **Table 4-3** indicate that across all specialty crops the proportion of total hours worked annually over 40 hours a week is likely between 15% to 25% (i.e., with average hours worked between 46 and 53 per week), depending on the crop type and the operation.

[10] Taking the five hours worked in excess of 40 hours per week and dividing by 45 hours equals 12.5%.

[11] Taking the 10 hours worked in excess of 40 hours per week by 10 workers indicates 100 hours worked in excess of 40 hours per week, divided by the 800 total hours worked by all workers equals 12.5%.

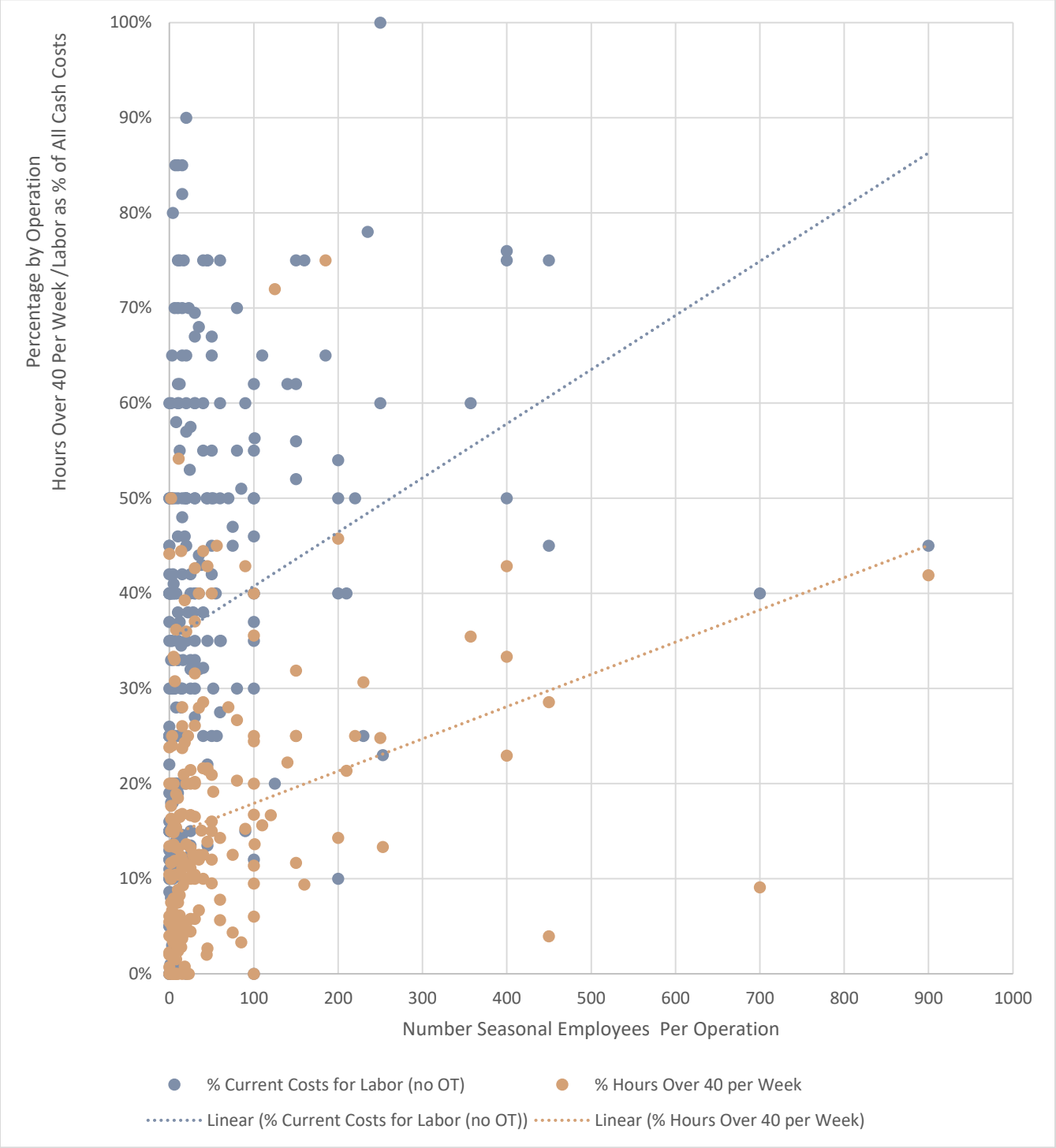
Table 4-3: Estimated Overtime Hours and Weeks with Overtime Hours in Oregon

Crop/Livestock Type	% Hours Worked in Excess of 40 Hours per Week Across All Workers	Hours Worked Per Week	Number of Weeks with Workers >40 Hours, Average Across Operations	Number of Weeks with Workers >40 Hours, Average Across # of Total Workers
Berries	25%	53	22	25
Wine Grapes	12%	45	17	29
Hops	17%	48	14	14
Tree Fruits	18%	49	13	12
Tree Nuts	18%	49	13	28
Vegetables	25%	53	20	25
Nursery	15%	47	18	24
Christmas Trees	14%	47	8	8
Seed Crops	20%	50	16	19
Grain	13%	46		
Beef Cattle	18%	49	8	8
Dairy Cows	25%	53	10	17
Sheep	21%	51	4	11

Source: Highland Economics survey of producers.

Analyzing the data on operations on that factors that may influence potential overtime hours, we find across all crops that operations that employ more seasonal workers tend to have higher labor costs (as a percent of all cash costs) and a higher proportion of worker hours over 40 hours. This makes sense as the operations that have the most seasonal workers also tend to have the highest peaks in labor demand. However, as shown by the scatter plot in **Figure 4-10**, there is significant variation in overtime hours and labor costs for a given number of seasonal employees, even within a given crop type. This reflects variation in operation crop diversity, production methods, number of year-round workers, and other variables.

Figure 4-10: Relationship between # Seasonal Workers and % Labor Costs and % Worker Hours Over 40 per Week, by Crop Operation

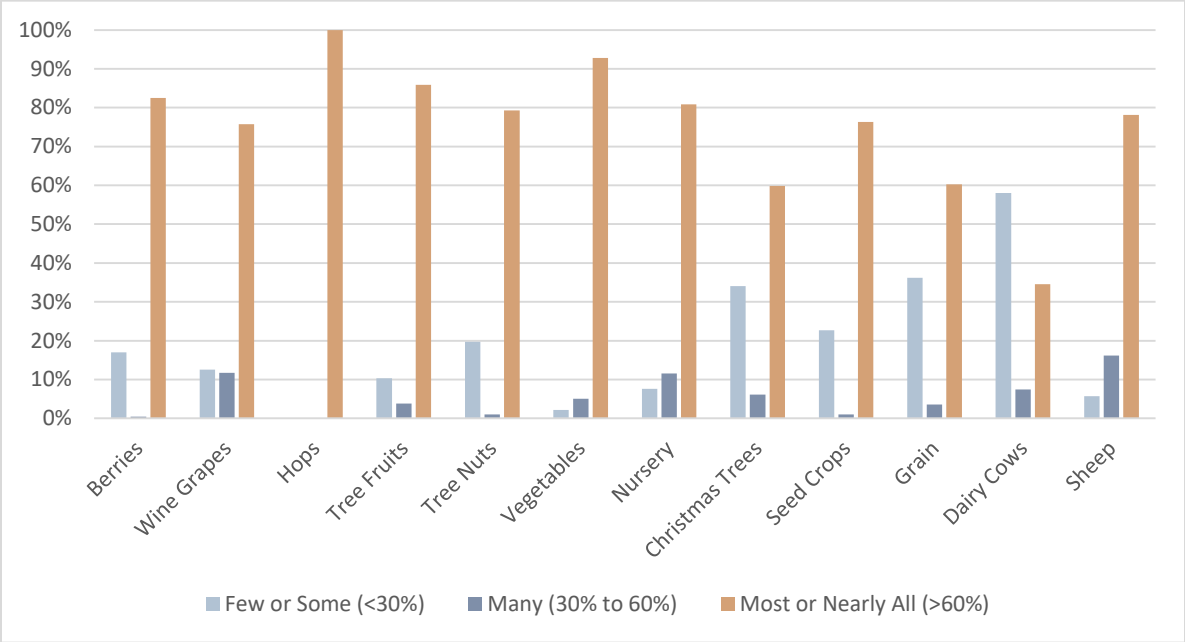


Source: Highland Economics survey of Oregon farm operators conducted for this study.

Farm operators' perception of worker preferences regarding hours is presented in **Figure 4-11**. While dairy operators perceive that their workers would not like to work more than 40 hours per week, nearly

all operators in other sectors perceive that a large portion of their farmworkers generally do want to work hours in excess of 40 per week.

Figure 4-11: Farm Operator Estimate of % Workers Requesting or Preferring Work Hours > 40 Per Week, Weighted by # Farmworkers



Source: Highland Economics survey of Oregon farm operators conducted for this study.

4.7 Farm Labor Health & Safety

The Centers for Disease Control and Prevention ranks agriculture among the most hazardous industries with a high risk of occupational injuries. In 2016, there were 788 OSHA reported injuries on Oregon farms (Oregon Occupational Safety and Health , 2017). According to the Oregon Health Authority, migrant and seasonal farmworkers experience higher rates of specific health problems such as diabetes, hypertension, cardiovascular disease and cancer than most other Oregonians (Oregon Health Authority, n.d.).

Oregon farmworkers are especially vulnerable to harm from excessive heat, wildfires, and COVID-19. Farmworkers in the state, many of whom are indigenous or Hispanic, faced disproportionately higher rates of COVID-19 infection than people from other employment industries and ethnic backgrounds (COVID-19 Farmworker Study, 2020). The 2021 summer season in Oregon brought record breaking temperatures, while the 2020 wildfire season and related smoke happened at the peak of harvest season. Migrant farmworkers, particularly Hispanic and indigenous female workers, suffer from wildfire related PSTSD, depression, emotional distress and long-term stress (Afzal, 2021). To limit these effects on farmworkers, new state mandates require employers to provide N95 masks when the air quality index is over 100 (Richards, 2021), shaded breaks ever two hours when the temperatures are above 90 degrees, and 1 quart of cool drinking water every hour for each farmworker, and monitoring for heat related illness (Abbott, 2021).

Regarding overtime pay and health, some studies have linked overtime work to a variety of negative health impacts, although little research has focused on agricultural work. A wide-ranging longitudinal survey in the US found that working jobs with overtime schedules was associated with a 61% higher injury hazard rate and working at least 12 hours per day was associated with a 37-percent increase (Dembe, Erickson, Delbos, & Banks, 2005). A British study found that working 3-4 hours of overtime per day significantly increased both fatal and non-fatal heart disease, and the risk increased as the number of overtime hours increased (McInnes, 2010). However, in one particularly relevant study, researchers examined the connection between heart disease and occupational stress of men in California. The study found that farmers and farm laborers "show relative protection from mortality attributed to coronary heart disease, even though many of them work long hours" (Buell & Breslow, 1960). Perhaps most pertinent to agriculture, workplace injury can rise with increased fatigue and exposure that comes with increased hours worked.

4.8 COVID-19 AND FARMWORKER WAGES

In a 2020 study, over two-thirds of Oregon farmworkers reported a significant loss of work and income during the COVID-19 pandemic, with over half of surveyed farmworkers losing weeks or even months of work (COVID-19 Farmworker Study, 2020) (Martinez, et al., 2021). These income losses were often not recovered due to lack of knowledge or understanding of government COVID-19 relief aid. The effects of COVID-19 on wages was particularly significant for female farmworkers who reported losing more work than male farmworkers, likely due to taking care of family members during illness and school closures. The loss of wages and work created significant challenges for farmworkers with almost 60% of respondents having difficulties paying for food, rent, or gas/electricity (Martinez, et al., 2021) and 54% of respondents using food banks to supplement lost wages.

5 Farm Producer Response to Agricultural Overtime Pay

This section summarizes the available evidence and information on farm producer response to agricultural overtime pay from the following data sources: our Oregon producer survey, interviews with Oregon labor contractors, interviews with agricultural industry and farm labor representatives in California which passed an agricultural overtime law in 2016, and the available economic literature on the effects of overtime on employment and compensation. In general, all sources indicate that we can expect:

- Employers will reduce farm labor hours that exceed 40 hours per week to the extent feasible through mechanization, crop switching, and switching to piece rate pay versus hourly to increase productivity with fewer hours.
- Employers will try to hire additional laborers to reduce overtime pay, which may not be possible due to labor shortages unless farm laborers decide to work shifts with multiple employers to maintain hours, with potential adverse effects on worker health and safety.
- Some employers may try to reduce standard wage rates to at least partially offset increased compensation from overtime pay, however, some employers also expect to raise wage rates for some workers.
- Consolidation of farms is likely for some operators, particularly smaller operations where mechanization may not be feasible.
- Economic studies of other industries indicate that overtime pay may actually lead to a reduced demand for agricultural workers, with reduced overall farm labor employment, particularly of low wage employees (due to mechanization and other labor-saving adaptations). However, effects on overall farm labor employment may be minor since there is a shortage of farm labor in Oregon, with many producers reporting lost revenue due to insufficient labor.
- Overall, the preliminary data from California on its overtime requirement and from the general economic literature as well as the interviews and surveys conducted for this study indicate that effects on farmworker compensation will be mixed, with some workers receiving higher overall pay (the data indicate that the most likely to benefit may be more skilled/higher paid agricultural workers such as equipment operators), some receiving the same pay for fewer hours worked (but potentially with higher pressure for productivity in those hours), and others receiving lower pay due to fewer hours worked or even jobs being eliminated.

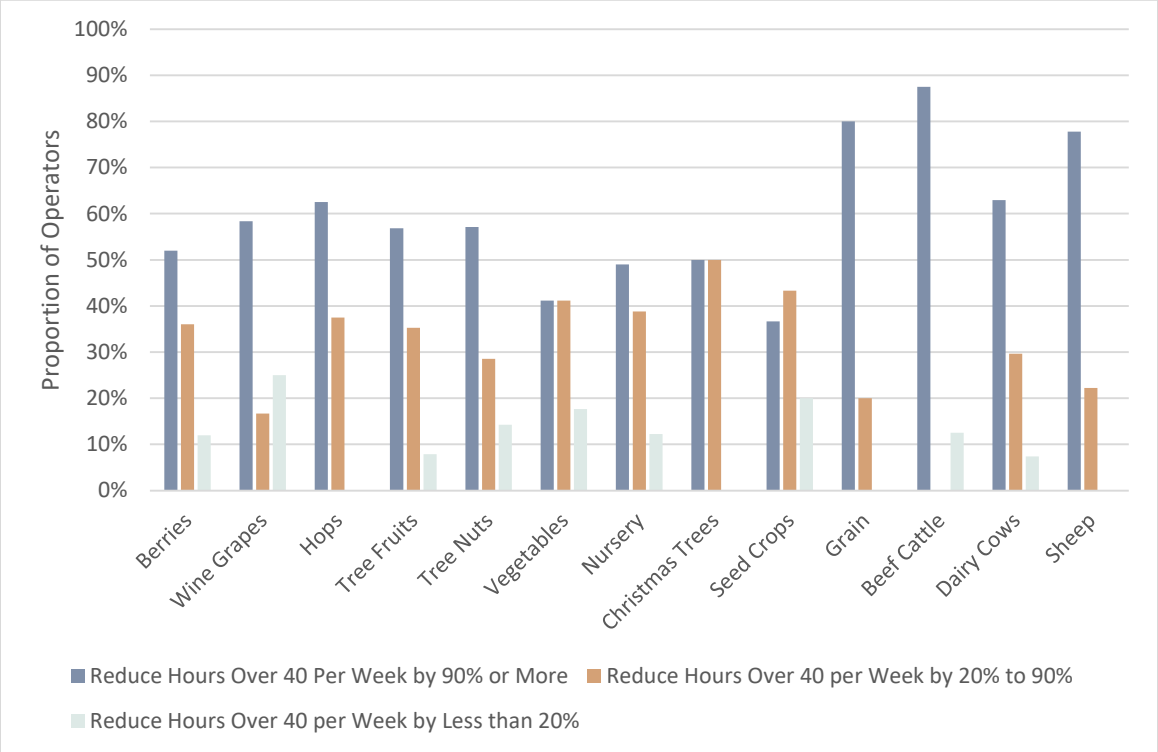
5.1 Oregon Farm Producer Survey

This section summarizes responses to questions in the survey regarding changes in worker hours, worker wage rates, other compensation, and farm consolidation. As this is a pending, potential change rather than a change that operators have had experience in adjusting to, it is important to consider that actual responses by operators to an overtime requirement may differ from their current expectations.

5.1.1 Shift in Worker Hours

A key determinant of how the agricultural overtime rule will affect farmworkers is how farms may change their labor demand. If operations reduce demand for overall labor or reduce agricultural overtime pay, then the total pay of individual farmworkers may decline. **Figure 5-1** summarizes producer response regarding the proportion of farmworker hours over 40 that they would continue to pay. As highlighted in the dark blue (and the percentage labels in the figure) a significant portion of growers (between one-third and over three-quarters, depending on commodity) expect that they would eliminate almost all overtime hours worked over 40 hours per week with the passage of time and a half overtime pay for agricultural workers. Across commodities, two-thirds of all crop respondents and 80% of all livestock respondents reported that they would continue employing/paying fewer than 25% of current hours worked over 40 with an overtime rule; in other words, the majority of workers may face a 75% or greater reduction in overtime hours. Weighting the responses by number of farmworkers employed results in slightly different proportions (with generally greater reduction in hours expected for larger producers with more farmworkers), but the overall picture remains the same: **operators will attempt to reduce hours qualifying for overtime pay to the extent possible.**

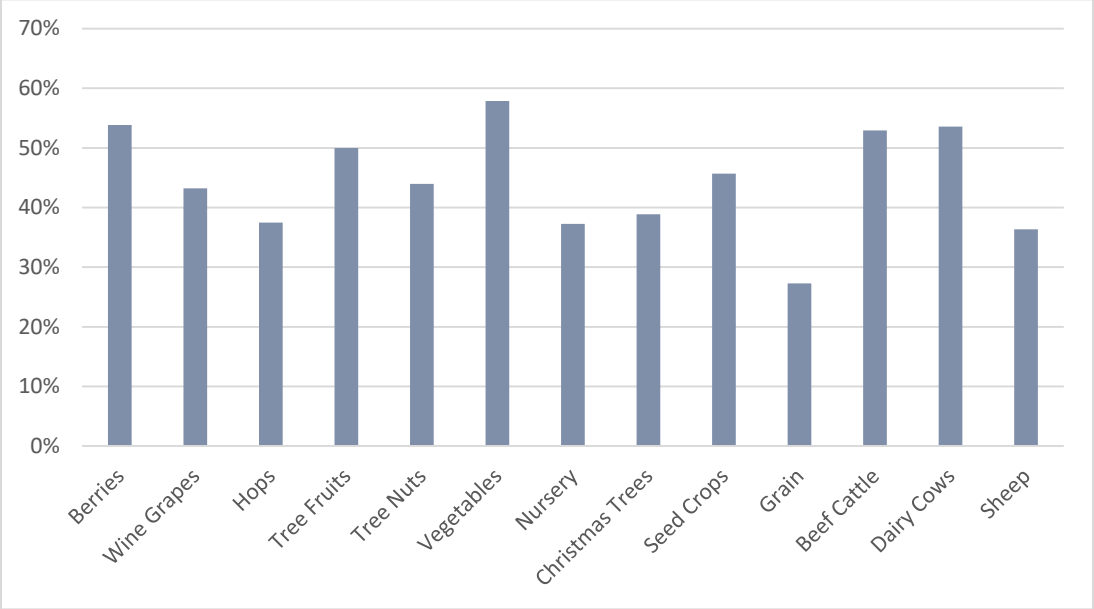
Figure 5-1: Proportion of Operators Expecting to Reduce Hours >40 per Week



Source: Highland Economics survey of Oregon farm operators conducted for this study.

In a separate question asking whether they would reduce worker hours, approximately 45% of producers expected that they would reduce total worker hours by more than 10%. When weighted by the proportion of farmworkers employed, approximately 60% of farmworkers may experience a decrease in total hours worked of 10% or more if farmers respond as indicated in the survey. So for a farmworker who works approximately 45 hours per week on average, a 10% decline in hours worked would reduce his or her hours to approximately 40 hours per week.

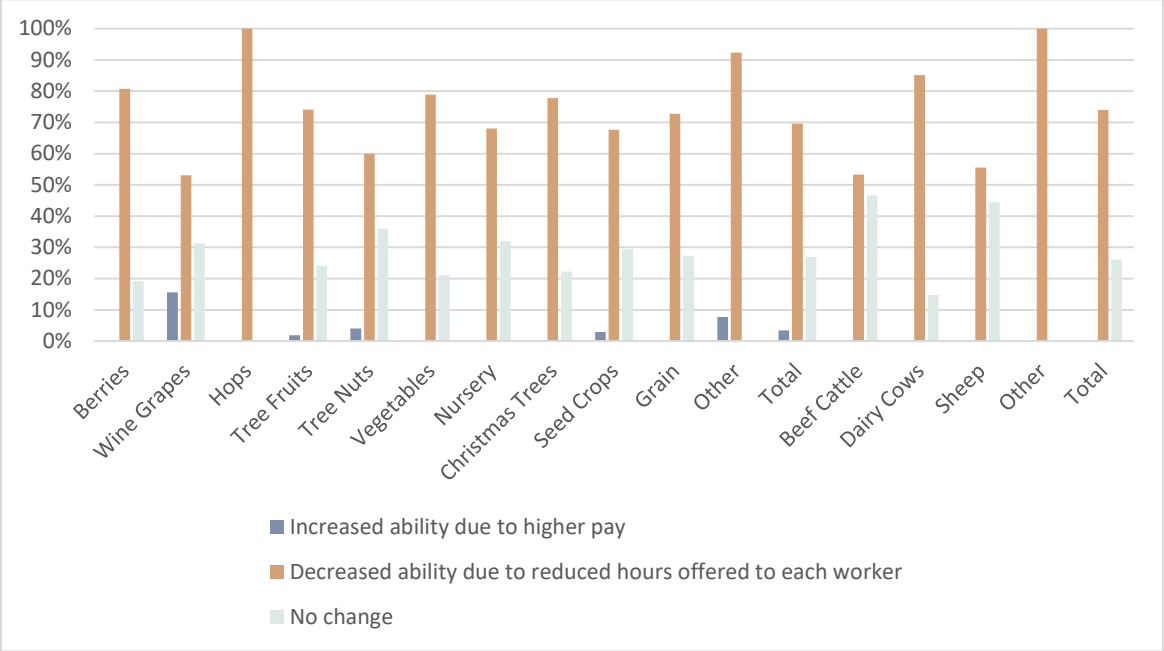
Figure 5-2: Proportion of Producers Expecting to Reduce Total Work hours by 10% or More with OT Requirement



Source: Highland Economics survey of Oregon farm operators conducted for this study.

Producers were also asked in the survey regarding their expectations regarding the availability of labor with an overtime requirement. Their responses indicate that across crop types over 50% of surveyed producers expect that labor availability will decrease with an overtime requirement due to an expected reduction in overall compensation based on reduced hours offered to workers. A small minority of producers expected labor availability to increase due to higher total wages, while the remainder thought there would be no effect. Throughout these disparate questions that touch on the hours worked, producers consistently indicate that they expect to reduce worker hours in response to overtime pay requirements.

Figure 5-3: Producer Expectations of Effects of Overtime Requirement on Farm Labor Availability

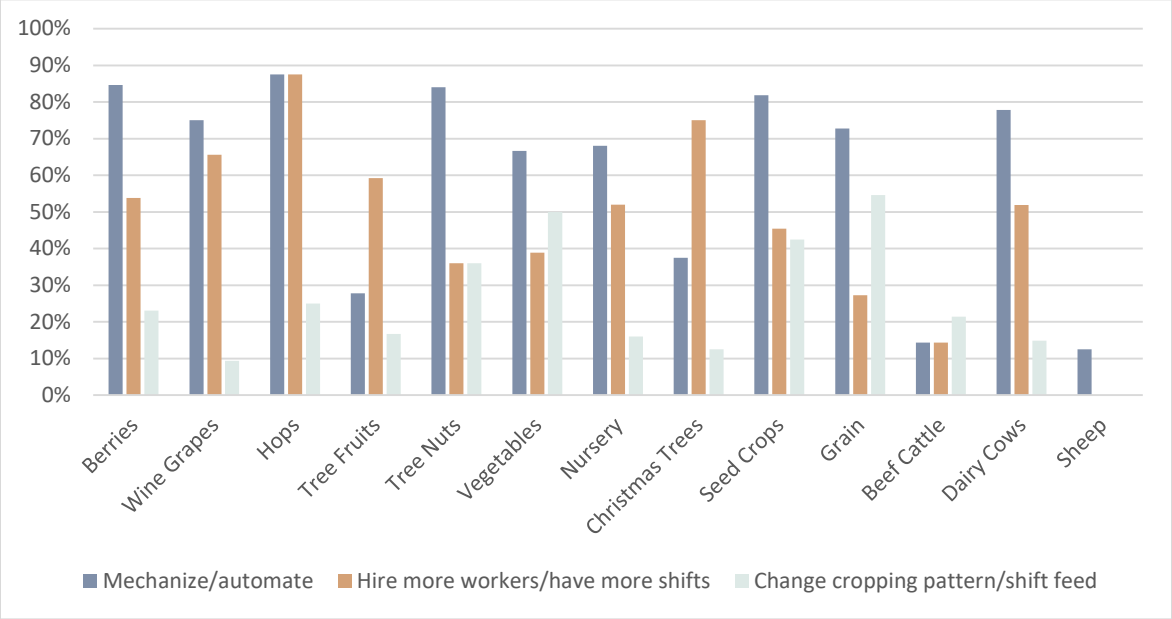


Source: Highland Economics survey of Oregon farm operators conducted for this study.

5.1.2 Other Operational Adjustments to Reduce Worker Hours

Figures 5-4 and **5-5** summarize how operations expecting to reduce hours expect to do so. Producer responses indicate that all options are on the table for many producers. Many operations indicated that they would take multiple tactics to adjust farm labor demand, from increased mechanization/ automation of farm operations (a trend that is occurring throughout the agricultural industry in response to labor shortages), to having more labor shifts, to changing cropping patterns, to even reducing operation size or ceasing to farm (**Figure 5-5**). Aside from hiring more workers (which would reduce overtime hours but increase total agricultural employment), the expected responses by producers would reduce overall agricultural labor demand. However, it is important to consider that responses by operators to these questions regarding operational adjustments may be based on hopes and fears regarding the effects of agricultural overtime rather than what actually may happen. For example, many operators indicated that they would expect to respond to overtime by hiring additional workers (see Figure 5-5). However, apart from hops and Christmas tree operators, the overwhelming majority of respondents also indicated that due to labor shortages, hiring additional workers was unlikely (with a small fraction indicating that it was only likely if workers decided to work shifts at multiple employers).

Figure 5-4: % Operations Expecting to Mechanize, Hire More Workers, Change Cropping Patterns



Source: Highland Economics survey of Oregon farm operators conducted for this study.

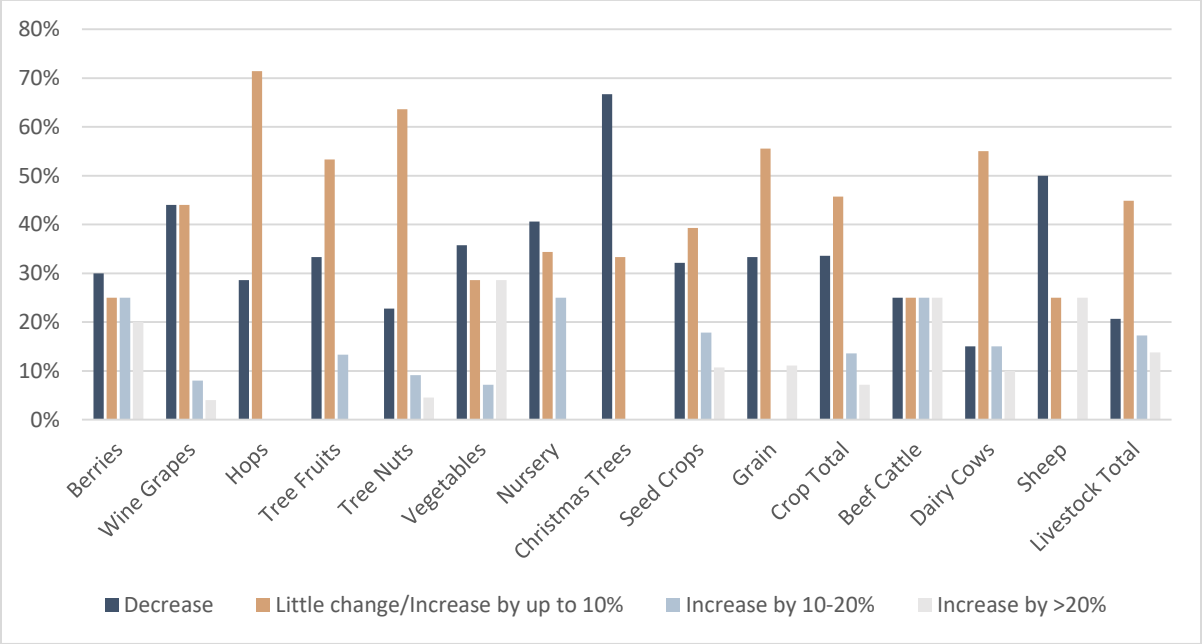
For farms that expect to mechanize/automate, generally, depending on the commodity, between 20% and 40% of operators expect it to decrease costs, indicating that these operators may mechanize/automate even in the absence of the overtime regulation. However, generally between 25% and 65% of operations (depending on commodity type) expect that mechanization in response to an agricultural overtime rule will have little effect or less than 10% effect on long-run costs (as highlighted by the orange bars and the percent callouts in Figure 5-5). This indicates that for many operations, an agricultural overtime rule would likely incentivize them to mechanize/automate to reduce labor demand, which they might not do without an overtime rule (since they expect automation to have little effect on costs). Operations that expect to mechanize in response to agricultural overtime pay even if it increases overall costs by greater than 10% or even by greater than 20% (as represented by the lighter and lightest blue bars in Figure A), logically expect that paying agricultural overtime would increase their costs by at least that much. As a point of cross reference, if an operation expects mechanization to increase their overall costs by 10%, and labor costs comprise 50% of their current overall costs, then the operation would logically expect overtime to increase their labor costs by at least 20% for mechanization to be cheaper. Further, if labor costs would rise by 20% with agricultural overtime, this further indicates that farm labor hours worked over 40 per week represents approximately 40% of their current labor hours.[12]

As highlighted by the dark blue bars, for many commodities, over one-quarter or more of operations expect that mechanization will actually decrease long-run overall costs (including both debt

[12] For example, a workweek of 66 hours indicates approximately 40% of hours would be overtime hours (26/66=40%). At pay of $15 per hour, pay for the first 40 hours would be $600 per week, plus 26 hours at $22.50 per week would be $585 per week for a total of $1185 per week. This compares to $990 per week for a worker working 66 hours at $15 per hour. This constitutes a 20% rise in total labor costs.

repayment/capital costs of new machinery and associated changes in annual operations and maintenance and labor costs). This indicates that agricultural overtime may hasten the already existing trend of operations adopting mechanization/automation production methods that reduce agricultural labor demand.

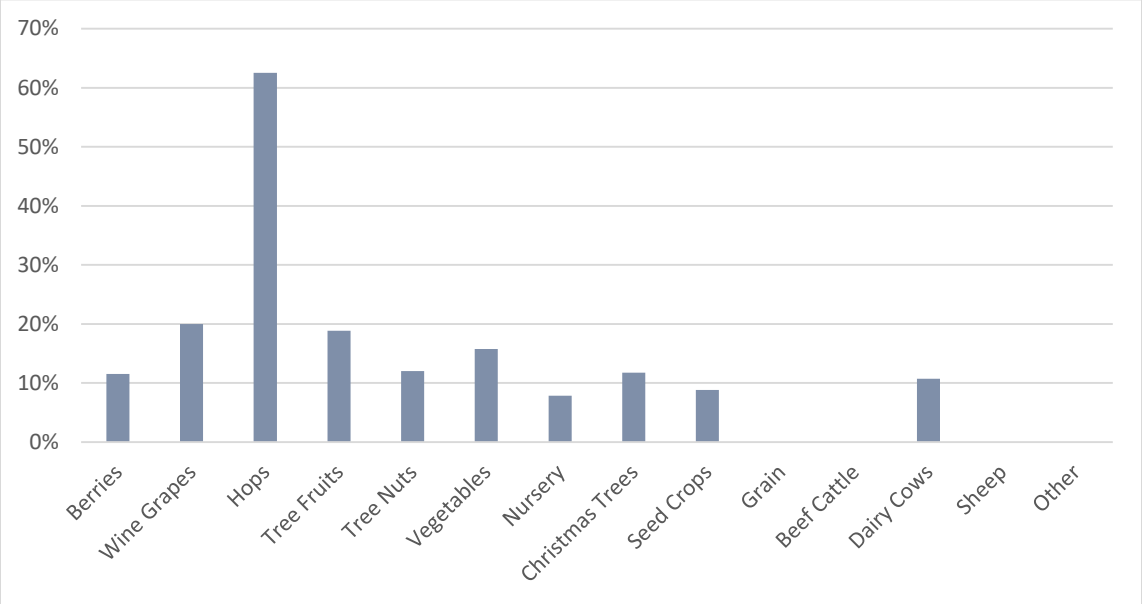
Figure 5-5: Survey Response Regarding Effects of Mechanization/Automation on Long-Run Total Costs



Source: Highland Economics survey of Oregon farm operators conducted for this study.

While a significant portion of farms responded that they would likely hire more workers, approximately two-thirds of all this study's survey respondents said that it was unlikely that hiring more workers would be feasible, given the current shortage in farmworkers (63% of crop survey respondents and 68% of livestock survey respondents). However, approximately 15% of this study's crop survey respondents and 11% of dairy survey respondents indicated that reducing overtime hours by increasing the number of workers is only possible if farmworkers work shifts on multiple operations. This indicates the severe constraints on farm operators in responding to agricultural overtime, and it also highlights potential adverse effects on worker safety. **Several people interviewed for this study noted that farmworker safety could be compromised under agricultural overtime regulations as farmworkers who have their hours reduced may seek employment on other farm operations, and have to work an entire additional shift (rather than a few additional hours) and work under a supervisor who may not be aware of the total hours that they are working.**

Figure 5-6: Proportion of Survey Respondents indicating that Hiring Additional Farmworkers Is Only Feasible if Workers are Employed on Multiple Farms



Source: Highland Economics survey of Oregon farm operators conducted for this study.

5.1.3 Shift in Worker Hourly Pay & Other Compensation

To offset increases in wages from overtime pay, operations may try to reduce labor costs by reducing hourly wage rates or other benefits. **Table 5-1** summarizes the proportion of surveyed producers by crop type that may respond by reducing wages or other benefits by 10% or more. Operations are most likely to reduce bonuses and other benefits, and least likely to reduce housing benefits. With the exception of grain producers, relatively few producers (approximately 20% or fewer of surveyed producers in each commodity type) expected to reduce wage rates. However, it is also important to note that surveyed crop and livestock operations indicated that an overtime pay requirement would result in 15% of workers[13] receiving increased standard wage rate (increased compensation in the form of housing, bonuses, or other benefits was limited to 3% or less as weighted by number of farmworkers).

[13] Note that operator responses were weighted by number of farmworkers represented on each operation to estimate the proportion of farmworkers affected.

Table 5-1: % Operations Expecting to Reduce Standard Wage Rate or Other Benefits by More than 10%

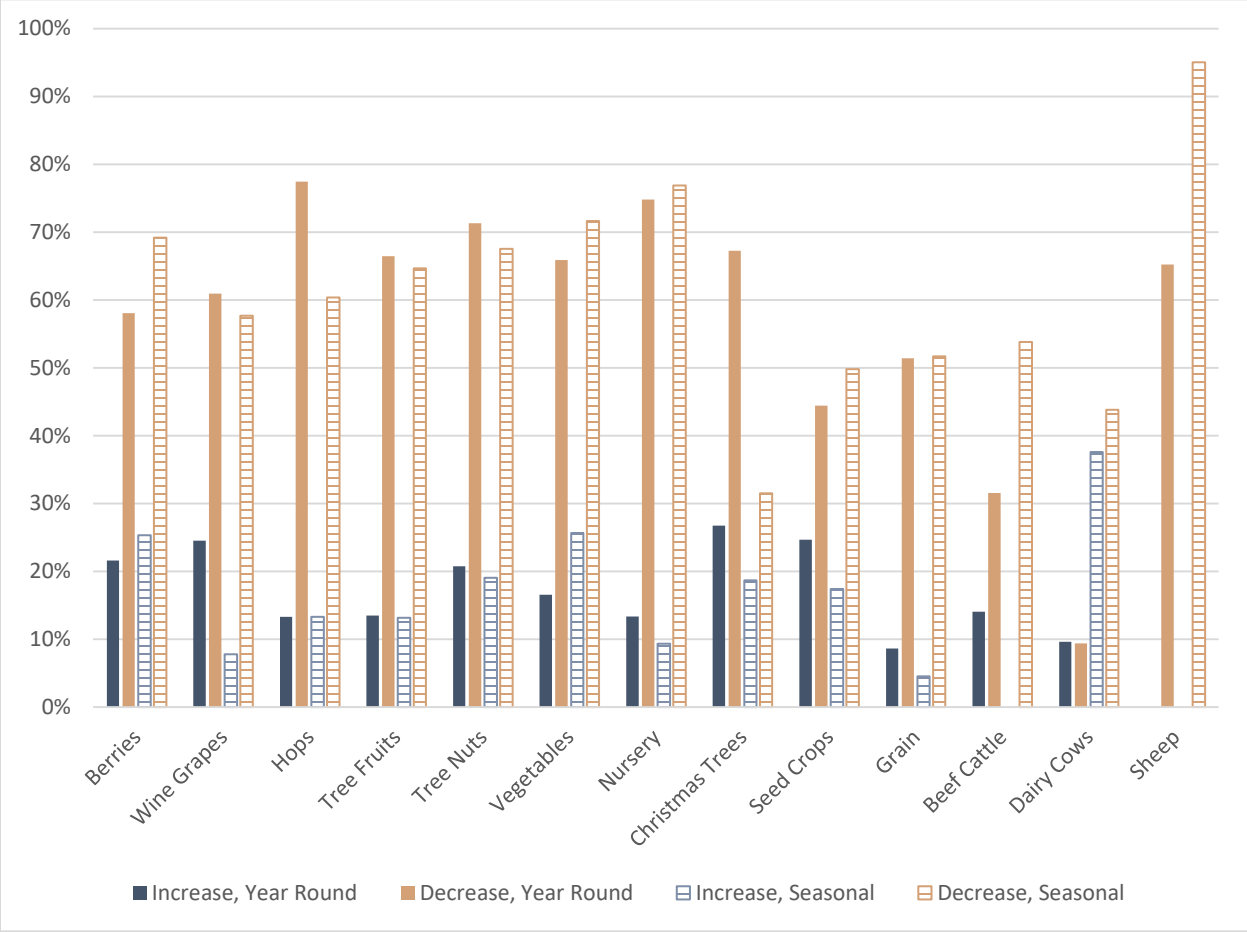
Commodity	Standard Wage Rate	Housing	Bonuses	Other Benefits
Berries	4%	8%	35%	19%
Wine Grapes	5%	5%	19%	5%
Hops	13%	0%	50%	0%
Tree Fruits	13%	9%	41%	33%
Tree Nuts	12%	4%	40%	32%
Vegetables	21%	11%	47%	37%
Nursery	2%	4%	25%	14%
Christmas Trees	17%	11%	22%	22%
Seed Crops	20%	9%	49%	37%
Grain	36%	9%	36%	36%
Beef Cattle	6%	18%	35%	35%
Dairy Cows	21%	7%	36%	32%
Sheep	18%	0%	36%	45%

Source: Highland Economics survey of producers for this study.

5.1.4 Overall Expected Effect on Worker Compensation

Figure 5-7 and **Table 5-2** present expectations by surveyed operators of how total worker compensation (including wages, housing, bonuses, etc.) would be affected by the overtime requirement. As shown by the blue bars in the figure, operators expect that some workers will benefit with increased total compensation (approximately 10% to 25% of workers, depending on the crop), a significant portion (particularly year-round livestock workers) may see no change in compensation, while the majority of workers in many crop types and some livestock types may see a decrease in compensation (highlighted by the tan bars in **Figure 5-7**). Table 5-2 provides the data presented in Figure 5-7, and also includes the data on the proportion of workers in each commodity group that operators expect to see no change in compensation.

Figure 5-7: Operator Expectations on Changes to Total Worker Compensation* with Change with OT Requirement, Weighted by Farmworkers Employed



Source: Highland Economics survey of Oregon farm operators conducted for this study.
**Including bonuses, housing, etc.*

Table 5-2: Operator Expectations on Changes to Total Worker Compensation* with Change with OT Requirement, Weighted by Farmworkers Employed

Commodity	Year-Round Workers			Seasonal Workers		
	Increase	No Change	Decrease	Increase	No Change	Decrease
Berries	22%	20%	58%	25%	5%	69%
Wine Grapes	25%	14%	61%	8%	35%	58%
Hops	13%	9%	77%	13%	26%	60%
Tree Fruits	13%	20%	66%	13%	22%	65%
Tree Nuts	21%	8%	71%	19%	13%	68%
Vegetables	17%	18%	66%	26%	3%	72%
Nursery	13%	12%	75%	9%	14%	77%
Christmas Trees	27%	6%	67%	19%	50%	31%
Seed Crops	25%	31%	44%	17%	33%	50%
Grain	9%	40%	51%	5%	44%	52%
Crop Total	18%	20%	62%	17%	21%	62%
Beef Cattle	14%	54%	32%	0%	46%	54%
Dairy Cows	10%	81%	9%	38%	19%	44%
Sheep	0%	35%	65%	0%	5%	95%
Total	9%	68%	24%	13%	31%	56%

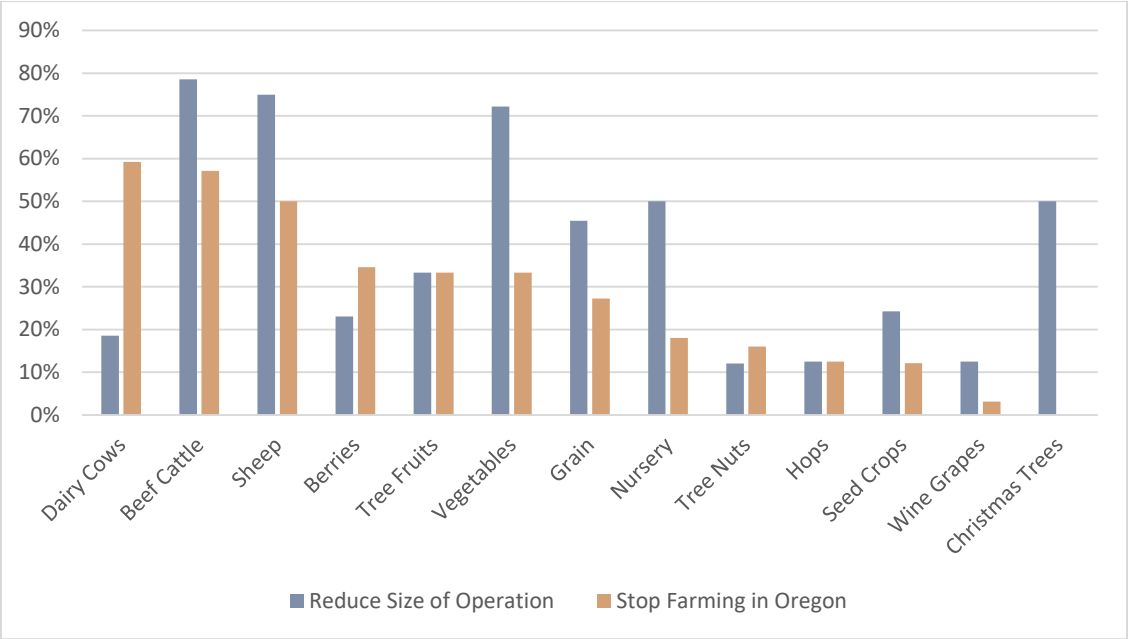
Source: Highland Economics survey of producers for this study.
**Including bonuses, housing, etc.*

5.1.5 Expected Effect on Farm Structure and Land Use

Figure 5-8 summarizes operator expectations regarding the influence of agricultural overtime on whether they will reduce their operation size or stop farming in Oregon. As shown in the diagram, livestock operators were most likely to respond that they would stop farming in Oregon, while up to a third of berry, tree fruit, and vegetable growers also responded that it might lead them to stop farming. For producers who responded that they might cease farming or reduce operation size, **Figure 5-9** highlights those producers' expectations regarding future use of those lands. As shown in the figure, with the exception of sheep farm and Christmas tree producers, operators expected that some consolidation was likely to occur. Certain commodity groups in particular expected consolidation within their sector: tree nuts, wine grapes, dairy cows, berries, seed crops, tree fruits, grain, and nursery.

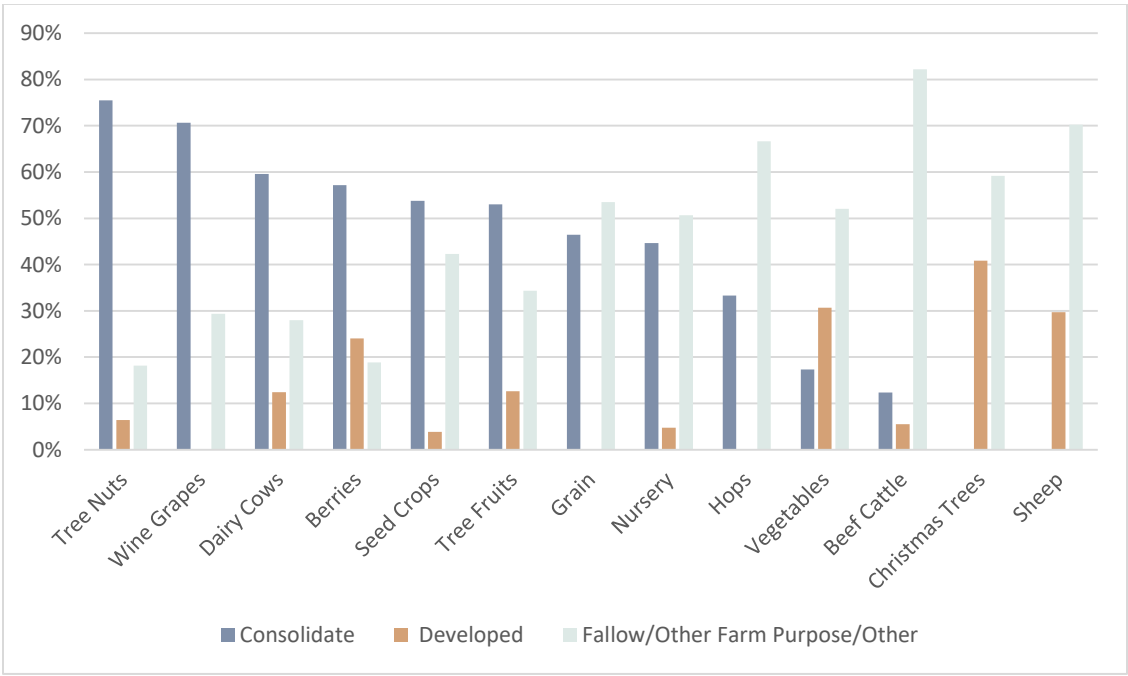
Other operators who indicated that they may cease farming or reduce operation size expected that their lands may be developed. This is particularly the case for Christmas tree growers, vegetable growers, sheep producers, and berry growers; all sectors highly concentrated in the Willamette Valley, with survey respondents indicating that of their lands approximately 2,000 to 3,000 acres could potentially be affected in each of the following counties: Multnomah, Clackamas, Columbia, and Marion. Growers and livestock producers in Hood River, Baker, Polk, Tillamook, Umatilla, Yamhill and Wasco counties also indicated that their land could be developed due to their reducing their farm size or ceasing to farm in response to an agricultural overtime regulation.

Figure 5-8: % Operations Expecting to Reduce Size/Stop Farming in Oregon



Source: Highland Economics survey of Oregon farm operators conducted for this study.

Figure 5-9: Operator Expected Effects on Farm Consolidation and Land Use, Lands Owned by Operators Expecting to Reduce Farm Size/Cease Farming*



Source: Highland Economics survey of Oregon farm operators conducted for this study.
**Weighted by acreage of producer.*

5.2 Oregon Farm Labor Contractor Expectations

We interviewed four farm labor contractors (FLC) in Oregon (Drury, 2021), (Gonzalez, 2021) (Ramirez, 2021) (Cabrera, 2021). The FLCs interviewed represent more than 2,500 workers that work in vineyards, berries, dairy, and poultry farms across Oregon, from Roseburg to the Willamette Valley to Clatskanie and The Dalles. **In general, interviews FLC opinions matched closely with grower expectations that hours would be reduced, wage rates would likely not fall, but overall farm labor employment may fall and farm consolidation was likely.** In more detail, their opinions were as follows regarding effects on farmworkers:

- Growers will reduce labor demand through mechanization and crop switching.
    - Growers will increase mechanization when possible (berries, large grape growers).
    - Growers will switch crop types; quickly for annual crops and slowly for permanent crops.
- Worker hours will likely be reduced at each employer, but workers may try to keep the same total hours by working for multiple employers.
    - Worker hours will be reduced as employers mechanize or switch to less labor-intensive crops.
    - Workers will try to keep the same total hours by working for multiple employers.
- Effect on piece rate work is unclear. Growers may shift to piece rate to keep productivity with fewer labor hours, which may result in higher injuries and difficulty for older workers to make a living. However, growers may reduce piece rate work to avoid really high overtime wages.
    - An increase in piece rate work will result in more frequent injuries, higher insurance rates, and older workers struggling to make a living.
    - Piece rate may be reduced to save on costs.
- Overall, wage rates will likely not fall because of labor shortages.
    - Wages will rise due to labor shortages.
    - Wages at her company will not fall because employees would find work with someone else at a higher wage.
    - Maybe lower but may also rise due to labor shortage; not sure.
- Total compensation effects were unclear, with an FLC indicating he thought compensation would go down and others not sure.
- Total labor force was expected to be reduced, with the exception that the H-2A program may grow.
    - Will be reduced, either from mechanization or piece rate burnout/injuries.
    - H-2A program may grow.
- Farm consolidation is likely.
    - This will happen due to labor shortages and costs.
    - Mechanization will be harder for smaller growers and may result in consolidation.

- Passing on costs likely not possible for most growers.

Overall, the FLC opinions were mixed on the proposed OT legislation: two thought it would likely be more harmful than helpful, another thought it would be fine and that farmworkers that don't like it could find work in another state without overtime, and another was unsure.

5.3 Agricultural Overtime In Other States

Several other states have passed agricultural overtime pay requirements; however, most of these laws are either limited in scope or have only been recently passed so provide limited insight into the effects of the proposed Oregon legislation. Agricultural overtime pay is limited to the following states:

- Minnesota requires overtime after 48 hours a week for most hourly agricultural employees;
- New York and Maryland require overtime compensation for hours worked over 60 hours in any calendar week;
- Colorado recently passed legislation for agricultural overtime, with overtime thresholds after a phase-in period of 48 hours to 56 hours per week, depending on the seasonality of the farm workforce and the operation size, as well as a paid 30-minute rest period for hours worked over 12 and an additional hour of pay for a workday of more than 15 hours of work;
- Washington State recently passed legislation that by 2024, the overtime threshold for all agricultural workers will be 40 hours per week; and
- California passed legislation in 2016 that will ultimately require overtime pay for agricultural workers working more than 8 per day or 40 hours per week.

Perhaps the most relevant example with some data is California. In 2016, California passed AB-1066 mandating overtime requirements for agricultural workers. Under this law, overtime requirements for large agricultural employers were phased in from 2019-2021, and beginning in 2022, agricultural employees that work more than 8 hours per day must be compensated at 1.5 times their regular rate of ay, while labor hours in excess of 12 hours per day must be compensated at least twice their regular rate of pay (California Legislature, 2016). Employers who employ 25 or fewer employees have an additional three years to comply with requirements.

Because AB-1066 is phased in (with requirements increasing over time), and because only two full years have passed since the start of the bill's implementation, it is not feasible to discern the full impact of the law on California growers and farmworkers. One of the only sources of data on the effects to date of the California agricultural legislation is a study conducted in the winter of 2020 that interviewed 121 full-time crop workers in Kern County and Madera County (two-thirds working in vineyards, one-quarter in orchards, and the remainder primarily with vegetables) (UC Davis, 2020). **Over half of the surveyed workers (54%) reported that their hours of work had changed because of the overtime requirement, and 40% said they felt more pressured at work after the overtime law passed.** Of the workers who faced reduced salary from reduced hours worked, 40% faced reduced spending, 15% got a second job, 5% asked for public benefits, and the remainder (40%) said they spent more time with their family. Workers were divided on their opinions regarding working hours and overtime: 41% said they wanted overtime pay after 40 hours per week/8 hours per day, 27% said they preferred more hours of work even without overtime pay, and 32% preferred working 40 hours per week with no extra hours. **Another**

interesting response from this survey is that workers expected that certain types of farm laborers would benefit most from the agricultural overtime rule, with the largest share (40%) indicating that more skilled and higher paid equipment operators (and those least likely to be impacted by mechanization) would benefit the most from agricultural overtime. Packing house workers were the type of worker that the next largest share of respondents (20%) indicated would benefit the most.

To supplement the data from this survey, and get a broader sense of the effects of AB-1066 on California farms and farmworkers, we interviewed the California Farm Bureau Federation, the California Farmworker Foundation, the California Wine Grape Grower Association, and a law firm specializing in agricultural employment (Barsamian and Moody). According to the California Farm Bureau Federation, external factors, such as the COVID-19 pandemic and wildfires, have caused major disruptions to the agricultural industry since the law's implementation, which complicate any effort to determine the effects of the overtime law (Miller, 2021). Parsing out the impacts of the overtime mandate is also challenging when other, confounding factors (such as labor shortages) are simultaneously driving industry changes (Little, 2021).

Several people interviewed suggested that the overtime law is contributing to changes in the industry that were underway prior to the law's implementation, which include increasing labor costs, farm consolidation, a switch from high-labor to low-labor crops, and increased mechanization (Little, 2021; Miller, 2021; Moody, 2021). Apart from the overtime law, the factors driving these changes include labor shortages and increasing costs of production inputs and services (such as electricity, transportation, and insurance) (Little, 2021; Miller, 2021). Because of the labor shortages, adding workers to avoid paying overtime is not an option for many growers (Little, 2021). The labor shortages have forced some table grape and stone fruit growers to pay overtime wages in the last year (Hernandez, 2021).

In some industries (such as the grape growing industry), the quality of labor is lacking in addition to the quantity; there has been an increasing trend of workers quitting after only a half-day's work (Miller, 2021). The problems in the labor market are pressuring growers to vigorously pursue alternatives to labor-driven production, which include mechanizing production and switching to low-labor crops such as almonds, walnuts, and pistachios (Miller, 2021; Little, 2021; Moody, 2021). These issues, in combination with other industry stressors, have driven some growers to reduce production, relocate to other states, or sell their farms to larger operations (Moody, 2021). Production costs, in general, are rising, and growers are very limited in their ability to pass along these costs to consumers (Moody, 2021). But because of the confounding factors involved, the isolate impact of overtime mandate is uncertain.

Some employers have been limiting the use of overtime pay to peak production seasons, and some large agricultural employers are making use of business metrics to employ overtime labor only when it is really needed (Little, 2021). Historically, employers would often find non-essential work for their most valued employees in order to retain them during slow production times. This practice has declined recently, although it is unclear to what extent the overtime law has contributed to this trend (Little, 2021). The labor shortages have also led to an increase in the use of farm labor contractors, which can provide timely labor, and growth in the use of the H-2A program, which bring in foreign workers that have a reputation for being efficient employees (Little, 2021; Hernandez, 2021). Use of the H-2A program has expanded into commodities that did not make use of it historically, as well as growers that previously considered the program unaffordable (Hernandez, 2021).

According to interviews conducted with representatives from both farmworker advocacy organization and farm advocacy organizations (the California Farm Bureau, California Farmworker Foundation, the California Association of Winegrape Growers), the effect of the overtime mandate on farmworkers has been mostly negative. The most commonly cited impact has been that the law resulted in fewer labor hours for farmworkers; some workers that previously chose to work more than 40 hours per week (without overtime pay) are now limited to a 40-hour week (Hernandez, 2021; Moody, 2021; Miller, 2021). However, there is not a consensus on how total worker income has been affected. Some income lost from reduced hours has been offset by higher wages, which have risen due to both the labor shortages and the increased minimum wage (Hernandez, 2021; Miller, 2021; Moody, 2021). Workers who have lost hours are also finding ways to adapt and retain their total amount of desired work time. Some workers are working for multiple employers, both in the agricultural industry and outside it, such as packing houses, restaurants, or the hospitality industry (Hernandez, 2021; Moody, 2021; Little, 2021).

The overtime mandate (in combination with rising wages) has had other unexpected negative effects on some farmworkers. Some workers whose total incomes have risen no longer qualify for income-based public assistance programs, such as affordable (Section 8) housing and public health insurance (Medi-Cal). So, despite their incomes increasing, these workers are financially worse off (Hernandez, 2021).

To summarize the experience from California, the overtime mandate seems to have contributed to numerous factors that are driving changes in the agricultural industry and putting further stress on growers. These drivers are generally increasing costs for growers, but the individual impact of the overtime law is difficult to discern. For farmworkers, the law is likely to have had disparate effects: for some, it likely resulted in increased total income, for others it resulted in similar income with fewer hours worked, for others it has decreased income, added difficulty to their work life by necessitating multiple employers to attain the same amount of work, or resulted in worse financial outcomes despite higher incomes because of less social assistance received.

5.4 Economic Literature

Setting the agricultural industry aside, the impacts of overtime mandates in other industries may provide useful insights into the potential impacts of an overtime law for the Oregon agricultural industry. Economic theory and common sense suggests that employers adapt to new regulations in ways that minimize costs and maximize profits. Firms can pursue a number of strategies to adapt to overtime mandates. One strategy is to keep total worker compensation unchanged by reducing the standard rate pay to such level that, even with overtime pay, employees' total compensation and hours worked will remain the same. For minimum wage workers (whose wage rate cannot be legally reduced), firms can reduce overtime hours to avoid paying overtime, likely requiring them to hire more employees to keep the same total amount of labor. However, any minimum-wage employees that continue to work overtime would experience increases in their total earnings (U.S. Department of Labor, 2019).

The Fair Labor Standards Act (FLSA) which governs overtime pay at the federal level, has undergone a number of changes in the last decade, which has allowed researchers to study the impacts of changing overtime requirements on employer costs, employee hours and wages, and total employee compensation. Because the FLSA affects most industries in the US, the impacts of the FLSA overtime rules provide a generalized example of how such rules can affect industries. But because the agricultural industry has its own unique employer and labor dynamics, the FLSA example may not be an accurate

predictor of the impacts that will arise from implementation of the Oregon overtime law. Several studies of the FLSA across all industries found evidence that the standard wage rate did fall for some workers in response to overtime requirements but that worker overall pay still rose (Trejo, 1991). Two subsequent studies of the FLSA found similar results of lower hourly wage rates, lower total hours of work, but slightly higher total compensation (Barkume, 2010) (U.S. Department of Labor, 2019).

The Economic Policy Institute conducted a separate study examining the same topic using different data and reached similar conclusions. Jobs with more usual overtime work had lower wage rates on average (Golden, 2014), supporting the theory that employers tend to lower wages in response to overtime mandates (where possible). In 2016, the Congressional Budget Office (CBO) also studied the economics of the FLSA, examining a rule change that would prevent 3.9 million workers from becoming eligible for overtime pay. By reducing the scope of the overtime mandate, the CBO projected the rule change would reduce payroll costs (i.e., reduce total worker compensation) (Congressional Budget Office, 2016). Of the estimated 900,000 workers who would be directly affected by the change, the average worker was expected to work 20 hours more in 2017 and earn about 2% less during the year than if the workers were covered by the overtime mandate. The rule change was expected to slightly increase the hours of some workers while increasing total output, the net effect of which would cause no significant change to total employment (Congressional Budget Office, 2016). The results of this study imply that overtime mandates decrease working hours for the average worker and slightly increase total compensation but have little impact on total employment.

Another study researched similar rule changes to both federal and state overtime eligibility but was able to examine the impacts of past changes rather than predicting the effects of potential future changes. Quach (2021) found that expanding overtime coverage led to a net loss in employment, especially among lower paying jobs. For every 100 workers affected the overtime mandate, 4.3 jobs were lost, typically at the lowest wage levels (Quach, 2021). Income for workers that become overtime eligible increased only slightly (1.3%), partly due to overtime pay and partly due to employers increasing salaries slightly so that employee incomes were above the overtime income threshold and subsequently did not quality for overtime. The study noted that overtime pay requirements tended to exacerbate inequality, with less employment at lower wage rates and income gains at higher wage rates. Notably, the effects were found to be similar between state and federal policies, implying that Oregon overtime mandates may have similar impacts to those resulting from federal overtime mandates.

To summarize, studies of other industries suggest that employers respond to overtime in various ways to reduce total labor costs. These include: lowering standard hourly wage rates in order to minimize changes in total labor compensation, reducing hours worked, reducing the number of low-wage jobs, and increasing pay for workers who are near the threshold to be exempt from overtime pay (currently at $684 per week or $35,568 annually). **However, despite these employer responses to minimize the effects overtime pay, many studies have found that on average across all industries, many workers' pay does rise with overtime pay requirements. These findings from other sectors should be interpreted with caution, however, as the applicability and transferability of these findings from other sectors to the agricultural industry is not known.**

6 CONCLUSIONS: EFFECTS OF AGRICULTURAL OVERTIME PAY

As discussed and presented throughout this analysis, the effects of agricultural overtime pay will vary by operation and farmworker depending on many factors including the commodity type and operational specifics. This section provides an overview of the expected maximum effects for individual farmworker wages and operation costs as well as the expected average effects for farmworkers and operations by commodity type. The section also summarizes potential other effects, including on producer viability, worker health, and agricultural land conversion.

6.1 EFFECTS ON WORKER WAGES & EMPLOYMENT

All data sources reviewed for this study suggest that, in response to an overtime mandate, farm producers will use a variety of means to reduce worker hours and minimize overtime wages. The resulting effects on farmworker pay will vary across industry, farm, and individual farmworker. Some farmworkers will see their compensation rise, some will see compensation stay the same with fewer hours worked (but potentially higher pressure for high productivity on the hours worked), some will see their compensation fall or their jobs even eliminated through increased mechanization/automation. In sum, the effects will be mixed. If producers reduce worker hours as they expect, the majority of workers will face a drop in wages in the range of 3% to 16% (see Table 6-1 and Figure 5-8), while a minority may experience an increase of approximately the same magnitude.

The net effect on total worker compensation depends on three key variables: worker standard hourly wage, worker hours, and other compensation such as housing, bonuses or meals. The variable that surveyed producers most uniformly indicated that they would change is worker hours; with surveyed producers indicating that that would reduce hours worked in excess of 40 per week by 60% to 90%. To present a range to quantify how workers may be affected, **Table 6-1** presents some general data about how an overtime pay requirement would affect agricultural labor costs and wages under different assumptions regarding hours worked per week, and how agricultural producers may change hours worked in excess of 40 hours per week if agricultural overtime is required. The estimates in table assume overtime pay is required after 40- hours of work per week and that overtime pay is 150% the standard hourly rate. The percent changes in overall wages presented in the table are applicable for all wage rates.

A few key points from the data in Table 6-1:

- The absolute maximum percentage of all labor hours worked overtime on any operation is expected to be less than approximately 40% (a 66-hour average workweek).
- **The maximum potential increase in annual average labor wages across all commodities for all operations could be up to 20%** (with a 66-hour work week and 26 hours paid at time and a half).

  In general, with no change in hours worked or pay rates, the percentage increase in agricultural wages with agricultural overtime is equal to one-half of the percentage hours worked in excess of 40.

- **Assuming no change in hours worked or pay rates, farmworker wages with an agricultural overtime law could likely increase on average across commodities and operations by 5% to 12.5%** (recognizing that this number may be much higher or lower across different operations). As discussed above, grower responses to the survey conducted for this study and other data from other states and surveys indicate that across commodities, farm laborers workers may work approximately 45 to 55 hours on average per week, so approximately 10% to 25% of hours may qualify for overtime, with a resulting 5% to 13% increase in pay if overtime were paid at time and a half for all hours over 40 hours per week.
- **If there is no change in the wage rate or other benefits, then the break-even point for determining the total effect on worker compensation is a 33% reduction in worker hours: if hours are cut by more than 33%, then total compensation goes down, if hours are cut by less, then compensation goes up.** Assuming no change in the standard hourly wage, the increase in pay from overtime is offset almost completely by a 33% decrease in total hours employed. In other words, at this level of hour reduction, workers would potentially work fewer hours with the same pay.
- **If hours in excess of 40 per week are reduced by more than 33%, as expected by farm producers, then worker compensation decreases**. For example, as shown in the final columns in Table 6-1, if there is a 50% drop in worker hours in excess of 40 per week (e.g., if a worker working 50 hours would drop to 45 hours per week), then pay would decrease by 2% to 13%, with the most likely pay drop for most workers (who likely average 45 to 55 hours worked per week) in the range of 3% to 7%.
- **If producers reduce hours as they expect, the majority of workers will face a drop in wages.** As presented earlier in this report**,** across commodities, two-thirds of all crop respondents and 80% of all livestock respondents reported that they expect that they would continue employing/paying fewer than 25% of current hours worked over 40 with an overtime rule; in other words, the majority of workers may face a 75% or greater reduction in overtime hours. A 75% reduction in hours eligible for overtime would translate into a reduction relative to current pay of 3% to 25%, depending on the number of hours worked. For the average worker likely working between 45 and 55 hours per week, this would translate to a pay drop of approximately 8% to 17%. As found in a survey of 115 California agricultural workers discussed in Section 5.3, over half of surveyed workers faced a change in hours and pay as a result of the current implementation of the California overtime law (which is still being phased into effect).

Table 6-1: Summary of % Changes in Labor Wages with Overtime Pay*

Current Hours Worked Per Week	Assuming No Change in OT Hours Paid		Assuming 33% Drop in OT Hours Paid		Assuming 50% Drop in OT Hours Paid		Assuming 75% Drop in OT Hours Paid	
	% Labor Hours>40	Change in Labor Wages with OT (%)	Hours Worked	Change in Labor Wages with OT (%)	Hours Worked	Change in Labor Wages with OT (%)	Hours Worked	Change in Labor Wages with OT (%)
42	4.8%	2.4%	41.34	0.0%	41	-1.2%	40.5	-3.0%
44	9.1%	4.5%	42.68	0.0%	42	-2.3%	41	-5.7%
46	13.0%	6.5%	44.02	0.1%	43	-3.3%	41.5	-8.2%
48	16.7%	8.3%	45.36	0.1%	44	-4.2%	42	-10.4%
50	20.0%	10.0%	46.7	0.1%	45	-5.0%	42.5	-12.5%
52	23.1%	11.5%	48.04	0.1%	46	-5.8%	43	-14.4%
54	25.9%	13.0%	49.38	0.1%	47	-6.5%	43.5	-16.2%
56	28.6%	14.3%	50.72	0.1%	48	-7.1%	44	-17.9%
58	31.0%	15.5%	52.06	0.2%	49	-7.8%	44.5	-19.4%
60	33.3%	16.7%	53.4	0.2%	50	-8.3%	45	-20.8%
62	35.5%	17.7%	54.7	0.2%	51	-8.9%	45.5	-22.2%
64	37.5%	18.8%	56.1	0.2%	52	-9.4%	46	-23.4%
66	39.4%	19.7%	57.4	0.2%	53	-9.8%	46.5	-24.6%

Source: Highland Economics analysis.

**This assumes no change in hourly pay rate in response to agricultural overtime pay requirement.*

Employers may cut workers' overtime hours where possible, but this will not be the case for all workers and given current labor shortages this may be especially unlikely for some farm sectors where automation may be challenging. The estimates in **Table 6-1** assume that there is no change in hourly pay rate in response to an agricultural overtime requirement. As discussed in Section 5.3.2, empirical evidence from other industries indicate that some employers may lower wage rates in order to keep total labor compensation unchanged or increased only slightly when overtime premiums are included; this is consistent with the producer survey in which 18% of surveyed crop producers and 34% of livestock producers indicated that they may reduce standard wage rates due to required overtime pay.

One key consideration raised by a farm labor contractor and by a farmworker advocate in California is that increases in farm pay for some farmworkers may actually result in a decrease in total household disposable income if they no longer qualify for some types of public benefits, including benefits related to food, housing, and other basic needs. The NAWS survey indicates that in 2017 to 2018 approximately half (54%) of farmworkers in the eight-state Northwest region received some form of benefit from a needs-based program in the previous two years (the proportion of Oregon farmworkers receiving such assistance is not known). Increased pay from an overtime requirement may result in some farmworkers' total income exceeding the limits for these needs-based programs, and result in an overall decrease in their household financial welfare. Recognition of the widespread nature of this real but perverse effect of increasing wages of low wage workers is evident in a recent New York Times opinion piece by Peter

Coy regarding the "Benefits Cliff" (November 10, 2021) that details how rising wages some, but not a lot, can actually be detrimental for these workers.

6.2 Effects on Worker Health

In addition to the impacts on jobs, income, and working hours, an overtime law has the potential to impact the overall health of agricultural workers. As discussed in Section 4.7, agricultural work can be hazardous. Regarding the effects of agricultural overtime pay on worker health, there are arguments to be made for both adverse and positive impacts. One the one hand, overtime work in general has been shown to have a variety of negative health impacts; if overtime hours for agricultural workers were to be decreased, it might decrease on the job injuries and worker health. However, on the flip side, if workers were to take a second job to compensate for reduced hours, then it may lead to additional stress and compromise their safety if they work an entire additional shift (rather than a few additional hours) and work under a supervisor who may not be aware of the total hours that they are working. Several people interviewed for this study also noted that farm operators, many of whom are older than 55, may reduce hired labor hours and increase their own workload in order to avoid paying overtime costs, with potential adverse impacts to their own health and safety. Further, there could be effects on health if the overtime rule were to change overall compensation and ability to pay for medical care, or if medical insurance coverage for farmworkers were affected by the overtime rule. The likelihood and overall magnitude and net effects on health of these diverse potential effects is not known.

6.3 Effects on Producer Costs

The effects on total producer costs depends on the following key factors: 1) proportion of total worker hours over 40, 2) labor as a proportion of total costs, and 3) the ability of producers to reduce worker hours under 40 per week by hiring other employees, reducing labor requirements, or increasing productivity. Costs are expected to be particularly high for producers with high seasonality in their labor demand (with high overtime hours worked during these peak periods) combined with high labor costs and a minimal ability to reduce peak labor demand. Additionally, for those producers that pay piece rates, overtime pay may particularly affect them as hourly rates for piece work may be quite high even without overtime pay.

Recognizing that effects will vary highly between producers, to estimate potential average change in producer costs by commodity type, we combine data on the first two variables from the producer survey, and assume no operational changes to estimate the impact on producer costs with no mitigating actions (changes in worker hours, pay rates, etc.) as summarized in **Table 6-2**. Table 6-2 summarizes changes in costs as a percent of overall producer costs.

- **The maximum increase in annual average labor costs across all commodities for all operations should not exceed 20%** (as this would only occur if the operation on average employs all workers year round at 66 hours per week, which is expected to be the maximum average for any given operation).
- Producers, on average across commodities, indicated that up to approximately 25% of total labor hours are in excess of 40 hours per week. Given that labor wage costs equal 50% of the

proportion of hours exceeding 40 hours a week, this means that **on average across commodities, labor wage costs should not increase more than 10%.**

- As summarized in section 2.2, many Oregon farms are very labor intensive due to the commodities produced; with labor representing approximately 20% to 50% of overall farm cash costs. As labor costs account for up to approximately 50% of total cash cost as reported by producers, **the average increase in total costs in any commodity type may be up to approximately 5%, even with no adjustments by producers.** Producers in berry, tree fruits, and vegetables are most likely to face these types of cash cost increases.
- The maximum potential increase for any single operation (that averages 66 hours per week per worker and for which labor constitutes 50% of total cash costs) would be 10%. Overtime pay would require additional bookkeeping and accounting not accounted for here, which could raise total producer costs slightly higher. Assuming an additional increase in labor costs of 10% due to overhead and administrative costs, this would be **an increase of up to approximately 12% in total cash costs as the maximum increase in cash costs due to overtime pay for any single producer.**
- **Costs in reality are expected to be lower for producers as they make adjustments to their operation** that will reduce labor demand (such as mechanization/automation/switching crops/etc.) and hours worked in excess of 40 hours per week.

Table 6-2: Summary of % Potential Changes in Average Producer Costs with Overtime Pay with No Producer Adjustments*

Commodity Type	% Hours>40 of Total Hours	Estimated Maximum % Increase in Labor Wage Costs Due to Overtime**	Labor Cost as a % of Total Cash Costs	Approximate Potential % Increase in Total Cash Costs
Berries	25%	13%	48%	6%
Tree Fruits	18%	9%	53%	5%
Vegetables	25%	13%	35%	4%
Hops	17%	9%	38%	3%
Nursery	15%	8%	43%	3%
Christmas Trees	14%	7%	44%	3%
Wine Grapes	12%	6%	47%	3%
Sheep	21%	11%	26%	3%
Seed Crops	20%	10%	26%	3%
Tree Nuts	18%	9%	28%	3%
Dairy Cows	25%	13%	20%	3%
Beef Cattle	18%	9%	23%	2%
Grain	13%	7%	17%	1%

Source: Highland Economics analysis. Surveyed producer responses regarding proportion of worker hours over 40 hours per week and labor as a proportion of total cash costs.

**This assumes no change in hourly pay rate or hours worked or other operational responses to agricultural overtime pay requirement.*

***This assumes overtime pay is required for every hour worked over 40 hours per week and that overtime pay is equal to 150% of standard pay.*

6.4 Effects on Producer Viability

Effects on producer viability will depend on how profitable they are currently, the effect on their overall costs and revenues of agricultural overtime, and how much of their increased costs they can pass on to consumers. Many producers are facing significant challenges to maintaining profitability, as summarized in **Section 3**. A significant portion, as summarized by the blue bars in **Figure 6-1** indicated that they are currently borderline profitable and expect that they may need to cease farming with the increased costs of the overtime rule coming on top of other current challenges. Although a 1% to 6% increase in cash costs, or even a 12% increase in cash costs may seem small, this is a sizable increase in cash costs and can make a difference in an operation being profitable or not. Using data on Oregon total net farm income and net farm cash costs for the period 2012 to 2020 from the US Department of Agriculture Economic Research Service, an increase in 10% of cash costs would have reduced statewide net farm cash income by 32% to 47% over this period (USDA Economic Research Service, 2021). An increase of 3% in farm cash costs would have reduced net farm cash income by 7% to 14% during this period. In other words, the level of cash cost increase from agricultural overtime could well result in an operation becoming financially infeasible, particularly if it currently has small profit margins and does not have good alternatives to reduce reliance on overtime work.

Since many agricultural commodities are traded on national and global markets where producers are price takers not price setters, producers would generally not be able to pass on much of the increased cost to customers. As discussed in Section 3.3, nationwide costs have risen more sharply than prices for farmers, highlighting that even at a national level the prices received by farms often do not track changes in costs of inputs such as labor. Given that farm products have a national and international market, a state-wide change in farm costs would have much less of an effect on prices received by farms than a national change in farm costs. Producers with differentiable and specialized products, or for which Oregon has notable market share, such as nursery, wines, and Christmas trees, may be able to pass on some costs to consumers. However, in general, farms would likely not be able to pass on much of the increased costs, and those with less differentiated products such as dairy milk or grain would likely have to absorb all or nearly all overtime labor costs.

As discussed in Section 5.1.5, a significant share of surveyed operations in certain commodity groups indicate that may need to downsize or cease farming with an overtime pay requirement. A relatively high share of livestock operations in particular expect they might need to cease farming in Oregon under an overtime pay requirement, followed by the crops with the highest expected increases in overall costs due to agricultural overtime (and relatively low expectations on ability to pass on costs to customers): berries, tree fruits, and vegetables. As noted in Section 5, it is important to consider that responses by operators to these questions regarding operational adjustments may be based on hopes and fears regarding the effects of agricultural overtime rather than what actually may happen. The actual share of these producers that may become unviable from an agricultural overtime requirement is not feasible to determine within the scope of this study.

6.5 Effects on Agricultural Land Conversion & Consolidation

Finally, as discussed in section 5.1.5, many surveyed operators indicated that they may reduce operational size or cease to farm in Oregon in response to an agricultural overtime requirement. In general, with the exception of sheep farm and Christmas tree producers, these operators expected that some consolidation was likely to occur. Certain commodity groups in particular expected consolidation within their sector: tree nuts, wine grapes, dairy cows, berries, seed crops, tree fruits, grain, and nursery. Other operators who indicated that they may cease farming or reduce operation size expected that their lands may be developed. This is particularly the case for Christmas tree growers, vegetable growers, sheep producers, and berry growers; all sectors highly concentrated in the Willamette Valley, although growers and livestock producers in Hood River, Baker, Polk, Tillamook, Umatilla, Yamhill and Wasco counties also indicated that their land could be developed due to their reducing their farm size or ceasing to farm in response to an agricultural overtime regulation. As discussed in Section 3.2, these counties are generally the areas of Oregon most vulnerable to agricultural land conversion and urban development pressure and have a high concentration of the crops that may be most impacted by the overtime requirement. The extent to which land conversion and farm consolidation would actually occur as a result of an agricultural overtime requirement is not feasible to determine within the scope of this study.

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APPENDIX A: CROP PRODUCER SURVEY

Agricultural Overtime Survey: Crops

Your responses to this survey will provide CRITICAL INFORMATION for an economic analysis of the effects on farms and farmworkers of requiring agricultural overtime pay in Oregon. The survey is sponsored by the Oregon Farm Bureau and includes general questions on your farm operation, your current labor situation, your expected response to a potential overtime pay requirement in Oregon, potential effects on farmworker compensation, and other economic challenges facing your farm. All information in this survey will be kept CONFIDENTIAL and aggregated so that no information can be traced to a single farm. Other than multiple choice questions and rare other exceptions, please enter a single numeric value as your answer. Please call Barbara Wyse (economist at Highland Economics) at 503-954-1741 if you have any questions while filling out this survey.

* Required

1. What is your primary crop (in terms of labor requirement)? Please only select multiple crops if you have several crops that require a large amount of hired labor. *

Check all that apply.

- [ ] Berries
- [ ] Wine Grapes
- [ ] Hops
- [ ] Tree Fruits
- [ ] Tree Nuts
- [ ] Vegetables
- [ ] Nursery
- [ ] Christmas Trees
- [ ] Seed Crops
- [ ] Grain
- [ ] Other

2. What acreage of your primary crop type(s) do you grow in a typical year (please enter numeric value of acres)? Note: This answer indicating your operation size helps us to evaluate the scale of impacts in aggregate at the state level.

3. What other crops do you grow?

Check all that apply.

- [ ] Berries
- [ ] Wine Grapes
- [ ] Hops
- [ ] Tree Fruits
- [ ] Tree Nuts
- [ ] Vegetables
- [ ] Nursery
- [ ] Christmas Trees
- [ ] Seed Crops
- [ ] Grain
- [ ] Other

4. In what County (ies) do you operate?

_____

5. How many years have you been farming in Oregon, or has your farm been in your family (whichever is greater)? (Please enter numeric value.)

_____

6. For the remainder of this survey, there are numerous questions regarding farm labor and costs on your operation. Please indicate if you will answer these questions for your primary crop only or your entire operation (please select whichever is more accurate and easier for you to do). *

Mark only one oval.

- ◯ Primary crop only
- ◯ Entire operation

7. The following questions are regarding the number of hired farmworkers and their hours worked on your operation. How many year-round hired farmworkers (who work 10 or more months of the year on your farm) are typically employed on your operation? (Please enter numeric value.)

_____

8. How many seasonal farmworkers typically work on your operation (including contract laborers and H-2A workers)? (Please enter numeric value.)

_____

9. How many weeks are seasonal farmworkers typically employed on your operation? (Please enter numeric value.)

_____

10. How many H-2A farmworkers do you typically employ? (Please enter numeric value.)

_____

11. How many years on average have farmworkers on your operation worked for you?

Mark only one oval per row.

	1 year on average	2-4 years	5-9 years	10+ years
Year round workers	◯	◯	◯	◯
Seasonal workers	◯	◯	◯	◯

12. How many total hours annually are typically worked by all types of hired farmworkers on your operation? (Please enter numeric value.)

_____

13. Approximately how many total hours worked annually by hired farmworkers on your operation are in excess of 40 hours per week? (Please enter numeric value.)

_____

14. How many weeks out of the year are there farmworkers on your operation working more than 40 hours per week? (Please enter numeric value.)

_____

15. During peak labor demand periods, how are farmworkers on your operation typically paid?

Mark only one oval.

- ◯ Hourly rate
- ◯ Piece rate
- ◯ Salary
- ◯ Other: _____

16. Currently, what is the approximate average hourly pay rate (or average hourly equivalent if payment is piece rate or salary) on your operation during peak labor periods? (Please enter $ numeric value.)

_____

17. For workers paid piece rate, what is the range in pay for an hour's work during peak labor periods (please enter low and high $ numeric values)?

_____

18. How many farmworkers do you provide housing for?

_____

19. What percent of your farmworkers' compensation is non-wage (for example, compensation in the form of housing, use of vehicles, bonuses, meals, etc.)?

Mark only one oval per row.

	Less than 10%	10% to 25%	25% to 50%	Over 50%
Year Round	◯	◯	◯	◯
Seasonal	◯	◯	◯	◯

20. What approximate percent of your total (fixed and variable) cash costs are for labor (including contract labor and all labor-related costs such as housing)? (Please enter % numeric value.)

_____

21. The following questions are regarding your expected response if Oregon requires overtime pay (1.5X standard pay for hours in excess of 40 hours per week). What percent of current worker overtime hours do you anticipate that you would CONTINUE employing/paying long-term? (Please enter % of current total annual overtime hours you would continue).

_____

22. If you expect to reduce overtime hours on your operation, how do you expect to do so? (Please check all that apply).

Check all that apply.

- [ ] Mechanize/Automate
- [ ] Hire more workers/have more shifts
- [ ] Change cropping pattern
- [ ] Reduce size of operation
- [ ] Stop farming in Oregon
- [ ] Other

23. If you answered 'mechanize/automate', what do you expect would be the long-term expected change in total costs for your operation, taking into account both debt repayment/capital costs of new equipment and associated changes in annual O&M and labor costs?

Mark only one oval.

- ◯ Decrease annualized costs
- ◯ Little change in long-term annualized costs
- ◯ Increase annualized costs by up to 10% of current total costs
- ◯ Increase annualized costs by 10 to 20% of current total costs
- ◯ Increase annualized costs by more than 20% of current total costs

24. If you expect to reduce the size of your operation or stop farming in Oregon, what do you expect will happen to the farmland you are no longer cultivating (please check the most likely consequence).

Mark only one oval.

- ◯ Consolidated into larger farms
- ◯ Developed for urban/suburban uses
- ◯ Lie fallow
- ◯ Be used for other farm purposes
- ◯ Other

25. Given the farmworker labor supply in Oregon, is reducing overtime hours by increasing the number of workers on your operation a feasible option?

Mark only one oval.

- ◯ Yes, there are sufficent workers to decrease farmworker overtime hours by hiring more workers
- ◯ Yes, but only if farmworkers work shifts on multiple operations
- ◯ No / Unlikely
- ◯ Don't Know / Maybe

26. Currently, is there adequate farmworker labor to complete tasks during peak season (such as harvesting perishable crops)?

Mark only one oval.

- ◯ Yes, I have adequate farm labor on my operation
- ◯ No, but my operation does not lose revenue because of farm labor shortages.
- ◯ No there is not adequate labor now, and my operation loses revenue in SOME years due to labor shortages.
- ◯ No there is not adequate labor now, my operation loses revenue in MANY years due to labor shortages.

27. How do you think an overtime pay requirement would affect your ability to find and hire sufficient farm labor for your operation?

Mark only one oval.

- ◯ Increased ability due to higher potential pay
- ◯ Decreased ability due to reduced hours offered to each worker
- ◯ No change

28. We have a few questions regarding the potential effects on worker total compensation under an overtime pay requirement. With an overtime pay requirement, how do you expect the following will change for most farmworkers on your operation?

Mark only one oval per row.

	Increase	No Change	Up to 10% Decrease	>10% Decrease
Worker Hours (each worker)	◯	◯	◯	◯
Standard Wage Rate (first 40 hours worked)	◯	◯	◯	◯
Provision of Housing	◯	◯	◯	◯
Bonuses	◯	◯	◯	◯
Other benefits	◯	◯	◯	◯

29. For the following types of farmworkers on your operation, how would you expect total compensation (including bonuses/housing/etc.) to change with an overtime pay requirement?

Mark only one oval per row.

	Increase	Not Change	Decrease
Seasonal workers	◯	◯	◯
Year-round workers	◯	◯	◯

30. Taking into account all costs of the overtime pay requirement, by what percent do you expect it to increase your overall cash costs in the long-run?

_____

31. What percent of the increased cost associated with an agricultural overtime pay requirement would you be able to pass on to your customers (e.g., please enter 100% if you expect to pass on all your increased costs, or 0% if you expect to pass on none of your increased costs, etc.)?

_____

32. The following few questions are regarding choices and preferences of farmworkers. How many farmworkers request more hours (in excess of 40 hours per week) or agree to work for you because of the understanding they will get more than 40 hours per week of work?

Mark only one oval.

- ◯ Few workers (<10%)
- ◯ Some workers (~10% to 30%)
- ◯ Many workers (~30% to 60%)
- ◯ Most workers (~60% to 80%)
- ◯ Nearly all workers (~Over 80%)

33. During periods when many farmworkers on your operation work more than 40 per week, are there also farmworkers who do not work more than 40 hours/week, and if so, what factors influence whether they work more than 40 hours?

Mark only one oval.

- ◯ Not Applicable
- ◯ Farmworker Choice
- ◯ Type of Farmworker/Skillset of Farmworker
- ◯ Other

34. What else should the Oregon legislature and the public understand about effects on farmworkers and farmworker choice/preferences regarding overtime?

35. You are almost done!! The final questions in this survey address current economic conditions and other challenges facing your operation. In the LAST 18 MONTHS, by how much have your FARM PROFITS (after accounting for any insurance payments and farm/federal assistance programs) been affected by each of the following:

Mark only one oval per row.

	Positive Effect/No Adverse Effect	<-3%	-3 to -9%	-10 to -19%	-20% to -50%	-50%+
Extreme weather						
Wildfire/Smoke						
Covid-19						
Trade Relations						
New Labor Regs						
Other New Regs						
Labor Shortages						
All of the Above						

36. Will these effects from the past 18 months continue to adversely affect your operation in the next year? If so, how? (Please check all that apply).

Check all that apply.

- [ ] Decreased revenues and/or increased costs
- [ ] Decreased crop/animal productivity
- [ ] Increased debt
- [ ] Increased likelihood of selling operation or ceasing to farm
- [ ] No adverse effects expected and/or beneficial effects expected

37. How are these events (drought, severe weather fire, covid, etc.) affecting your planning for the future (please check all that apply)?

Check all that apply.

- [ ] Decrease acreage in production
- [ ] Increase acreage in production
- [ ] Change cropping pattern
- [ ] Decreased wilingness to take on risk or try a new crop or venture
- [ ] Increased willingness to take on risk or try a new crop or venture
- [ ] Increased likelihood of selling your operation or ceasing to farm
- [ ] No change in plans

38. How would adding in an agricultural overtime pay requirement affect your overall farm viability and profitability?

Mark only one oval.

- ◯ My operation is profitable now and can maintain sufficient profitability with agricultural overtime
- ◯ Likely need to increase operation size to achieve economies of scale/afford mechanization to remain profitable
- ◯ Likely need to make other adjustments to operation, but we'll figure out a way to stay profitable
- ◯ My operation is currently borderline profitable and agricultural overtime pay might put us over the edge where we would likely sell the farm/cease to farm.
- ◯ Don't know/Other

39. Please provide any other information or effects you believe are relevant to an economic analysis of agricultural overtime requirements in Oregon.

APPENDIX B: LIVESTOCK PRODUCER SURVEY

Agricultural Overtime Survey: Dairy & Livestock

Your responses to this survey will provide CRITICAL INFORMATION for an economic analysis of the effects on farms and farmworkers of requiring agricultural overtime pay in Oregon. The survey is sponsored by the Oregon Farm Bureau and includes general questions on your farm operation, your current labor situation, your expected response to a potential overtime pay requirement in Oregon, potential effects on farmworker compensation, and other economic challenges facing your farm. All information in this survey will be kept CONFIDENTIAL and aggregated so that no information can be traced to a single farm. Other than multiple choice questions and rare other exceptions, please enter a single numeric value as your answer. Please call Barbara Wyse (economist at Highland Economics) at 503-954-1741 if you have any questions while filling out this survey.

* Required

1. What is your primary type of livestock (in terms of labor requirement)? Please only select multiple types if your labor requirement is high for all selected livestock types. *

   Check all that apply.

   - [ ] Beef Cattle
   - [ ] Dairy Cows
   - [ ] Sheep
   - [ ] Other

2. How many total head do you typically have of your primary livestock type (please enter numeric value of head)?

   _____

3. Do you have other types of livestock? *

Check all that apply.

- [ ] Beef Cattle
- [ ] Dairy Cows
- [ ] Sheep
- [ ] Other
- [ ] No

4. In what County (ies) do you operate?

_____

5. How many years have you been farming in Oregon, or has your farm/ranch been in your family (whichever is greater)? (Please enter numeric value.)

_____

6. For the remainder of this survey, there are numerous questions regarding farm labor and costs on your operation. Please indicate if you will answer these questions for your primary livestock type only or for your entire operation. Please select whichever is more accurate and easier for you to do. *

Check all that apply.

- [ ] Primary livestock type only (including supporting feed/forage crops)
- [ ] Entire operation (including other livestock types and non-feed/forage crops)

7. The following questions are regarding the number of hired farmworkers and their hours worked on your operation. How many year-round hired farmworkers (who work 10 or more months of the year on your farm) are employed on your operation? (Please enter numeric value.)

_____

8. How many seasonal farmworkers typically work on your operation (including contract laborors)? (Please enter numeric value.)

9. How many weeks are seasonal farmworkers typically employed on your operation? (Please enter numeric value.)

10. How many H-2A farmworkers do you employ? (Please enter numeric value.)

11. How many years on average have farmworkers on your operation worked for you?

Mark only one oval per row.

	1 year on average	2-4 years	5-9 years	10+ years
Year round workers				
Seasonal workers				

12. How many total hours annually are worked by all types of hired farmworkers on your operation? (Please enter numeric value.)

13. Approximately how many total hours worked annually by hired farmworkers on your operation are in excess of 40 hours per week? (Please enter numeric value.)

14. During high labor demand periods, how many hours per week do your farmworkers typically work? (Please enter numeric value; if your labor requirement is consistent year-round, please enter the value for an average week).

_____

15. During high labor demand periods, how are farmworkers on your operation typically paid?

Check all that apply.

- [ ] Hourly rate
- [ ] Salary
- [ ] Other: _____

16. Currently, what is the approximate average hourly pay rate on your operation during high labor demand periods (or average periods if labor demand is consistent throughout the year)? (Please enter $ numeric value.)

_____

17. How many farmworkers do you provide housing for?

_____

18. What percent of your farmworkers' compensation is non-wage (for example, compensation in the form of housing, use of vehicles, bonuses, meals, etc.)?

Mark only one oval per row.

	Less than 10%	10% to 25%	25% to 50%	Over 50%
Year Round	◯	◯	◯	◯
Seasonal	◯	◯	◯	◯

19. What approximate percent of your total (fixed and variable) cash costs are for labor (including contract labor and all labor-related costs such as housing)? (Please enter % numeric value.)

_____

20. The following questions are regarding your expected response if Oregon requires overtime pay (1.5X standard pay for hours in excess of 40 hours per week). What percent of current worker overtime hours do you anticipate that you would CONTINUE employing/paying long-term? (Please enter % of current total annual overtime hours you would continue).

_____

21. If you expect to reduce overtime hours on your operation, how do you expect to do so? (Please check all that apply).

Check all that apply.

- [ ] Mechanize/Automate/Use Robotics (including robotic milkers, automated carousels, pre/post dip)
- [ ] Hire more workers/have more shifts
- [ ] Shift feed ration/source of feed
- [ ] Reduce size of operation
- [ ] Stop farming in Oregon
- [ ] Reduce cropped acreage
- [ ] Other

22. If you answered 'mechanize/automate', what do you expect would be the long-term expected change in total costs for your operation, taking into account both debt repayment/capital costs of new machinery and associated changes in annual O&M and labor costs?

Check all that apply.

- [ ] Decrease annualized costs
- [ ] Little change in long-term annualized costs
- [ ] Increase annualized costs by up to 10% of current total costs
- [ ] Increase annualized costs by 10 to 20% of current total costs
- [ ] Increase annualized costs by more than 20% of current total costs

23. If you expect to reduce the size of your operation or stop farming in Oregon, what do you expect will happen to the farmland you are no longer actively farming (please check the most likely consequence).

Mark only one oval.

- ◯ Consolidated into larger farms
- ◯ Developed for urban/suburban uses
- ◯ Lie fallow
- ◯ Be used for other farm purposes
- ◯ Other

24. Given the farmworker labor supply in Oregon, is reducing overtime hours by increasing the number of workers on your operation a feasible option?

Mark only one oval.

- ◯ Yes, there are sufficent workers to decrease farmworker overtime hours by hiring more workers
- ◯ Yes, but only if farmworkers work shifts on multiple operations
- ◯ No / Unlikely
- ◯ Don't Know / Maybe

25. Currently, is there adequate farmworker labor to complete tasks throughout the year?

Mark only one oval.

- ◯ Yes, I have adequate farm labor on my operation
- ◯ No, but my operation does not lose revenue because of farm labor shortages.
- ◯ No there is not adequate labor now, and my operation loses revenue in SOME years due to labor shortages.
- ◯ No there is not adequate labor now, my operation loses revenue in MANY years due to labor shortages.

26. How do you think an overtime pay requirement would affect your ability to find and hire sufficient farm labor for your farm?

Mark only one oval.

- ◯ Increased ability due to higher potential pay
- ◯ Decreased ability due to reduced hours offered to workers
- ◯ No change

27. We have a few questions regarding the potential effects on worker total compensation under an overtime pay requirement. With an overtime pay requirement, how do you expect the following will change for most farmworkers on your operation?

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Provision of Housing	◯	◯	◯	◯
Bonuses	◯	◯	◯	◯
Other benefits	◯	◯	◯	◯

28. For the following types of farmworkers on your operation, how would you expect total compensation (including bonuses/housing/etc.) to change?

Mark only one oval per row.

	Increase	Not Change	Decrease
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Year-round workers	◯	◯	◯

29. Taking into account all costs of the overtime pay requirement, by what percent do you expect it to increase your overall cash costs in the long-run?

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30. What percent of the increased cost associated with an agricultural overtime pay requirement would you be able to pass on to your customers (for example, please enter 100% if you expect to pass on all your increased costs, or 0% if you expect to pass on none of your increased costs, etc.)?

_____

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33. What else should the Oregon legislature and the public understand about effects on farmworkers and farmworker choice/preferences regarding overtime?

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Labor Shortages						
All of the Above						

35. Will these effects from the past 18 months continue to adversely affect your operation in the next year? If so, how? (Please check all that apply).

Mark only one oval.

- Decreased revenues and/or increased costs
- Decreased crop/animal productivity
- Increased debt
- Increased likelihood of selling farm/ranch or ceasing to farm
- No adverse effects expected and/or beneficial effects expected

36. How are these events (drought, severe weather fire, covid, etc.) affecting your planning for the future (please check all that apply)?

Mark only one oval.

- Decrease herd size
- Increase herd size
- Change cropping pattern or cultivated acreage
- Decreased wilingness to take on risk or try a new agricultural venture
- Increased willingness to take on risk or try a new agricultural venture
- Increased likelihood of selling the farm/ranch or ceasing to farm
- No change in plans

37. How would adding in an agricultural overtime pay requirement affect your overall farm viability and profitability?

Mark only one oval.

- ◯ My operation is profitable now and can maintain sufficient profitability with agricultural overtime
- ◯ Likely need to increase operation size to achieve economies of scale/afford mechanization to remain profitable
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