

# Welcome!

We'll get started in a moment!



# COVID-19 and Automation in the Floriculture Sector

March 31, 2021

# Introduction

- COVID-19 has dominated priorities for a year
- Planning for the end of COVID-19
- Aiming to position the sector for success
- Can we identify co-benefits of productivity and COVID-19 prevention?

# Introduction

- Does automation hold the potential to increase productivity and reduce COVID-19 risk?
  - Moving workers away from risky tasks?
  - Reducing the number of people on farm?
  - Enabling farms to maintain or increase output with fewer people?

# The Project

- Aims to validate opportunities for automation to improve productivity and reduce COVID-19 risk
- Tight timelines – January 4 to March 31
- Leveraged most of our team
- Utilized steering committee

# Objectives

1. Characterize the state of automation in the floriculture sector
2. Determine the opportunity to offset the risk of COVID-19 using automation
3. Characterize the opportunity to increase productivity using automation
4. Explore strategies to encourage automation uptake in the sector

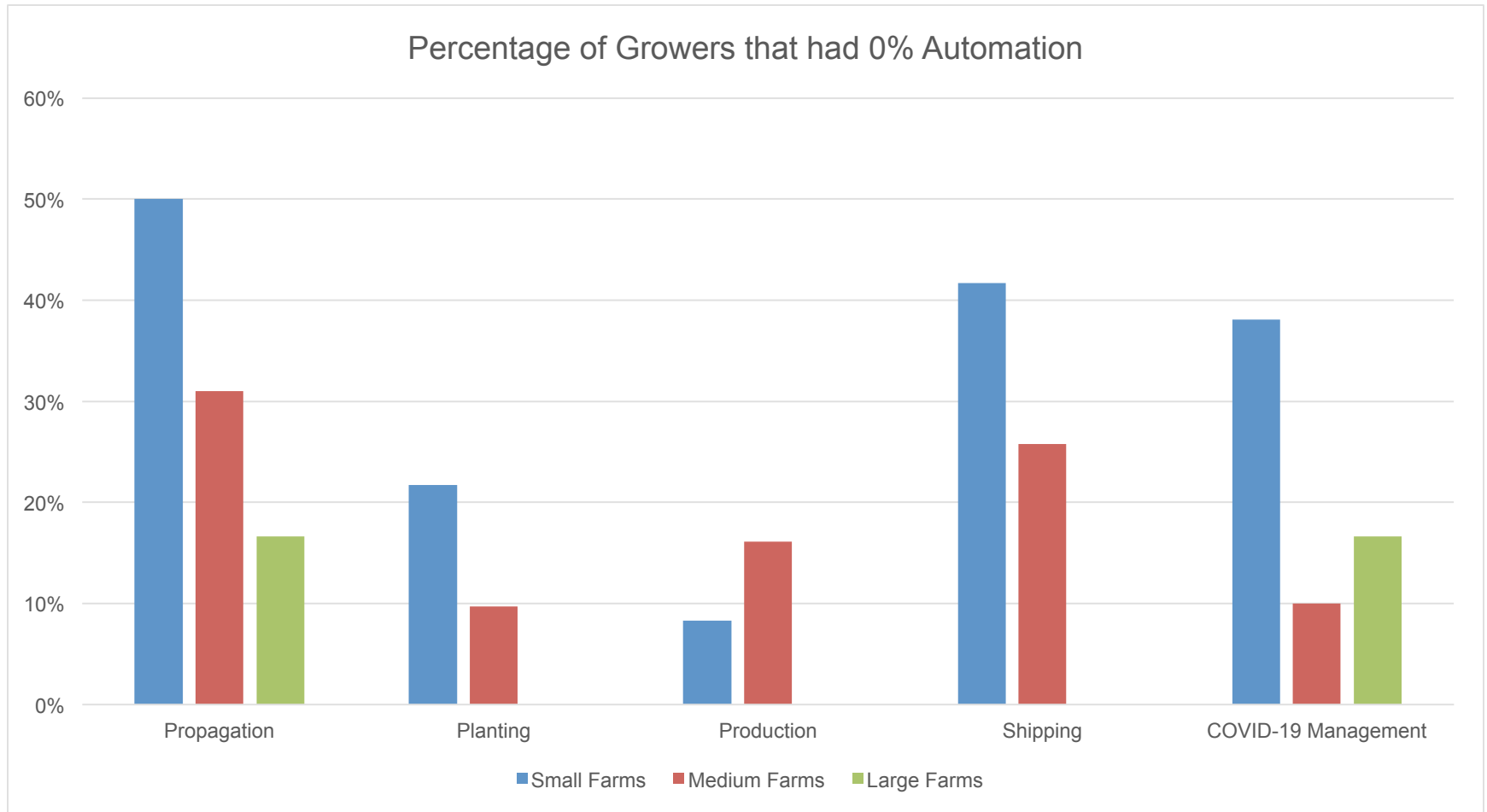
# Process

- Data collection:
  - Survey 1
  - Survey 2
  - Statistics Canada
  - Direct engagement
    - HR and Health professionals
    - Manufacturers

# 1. Current Automation in Ontario Floriculture

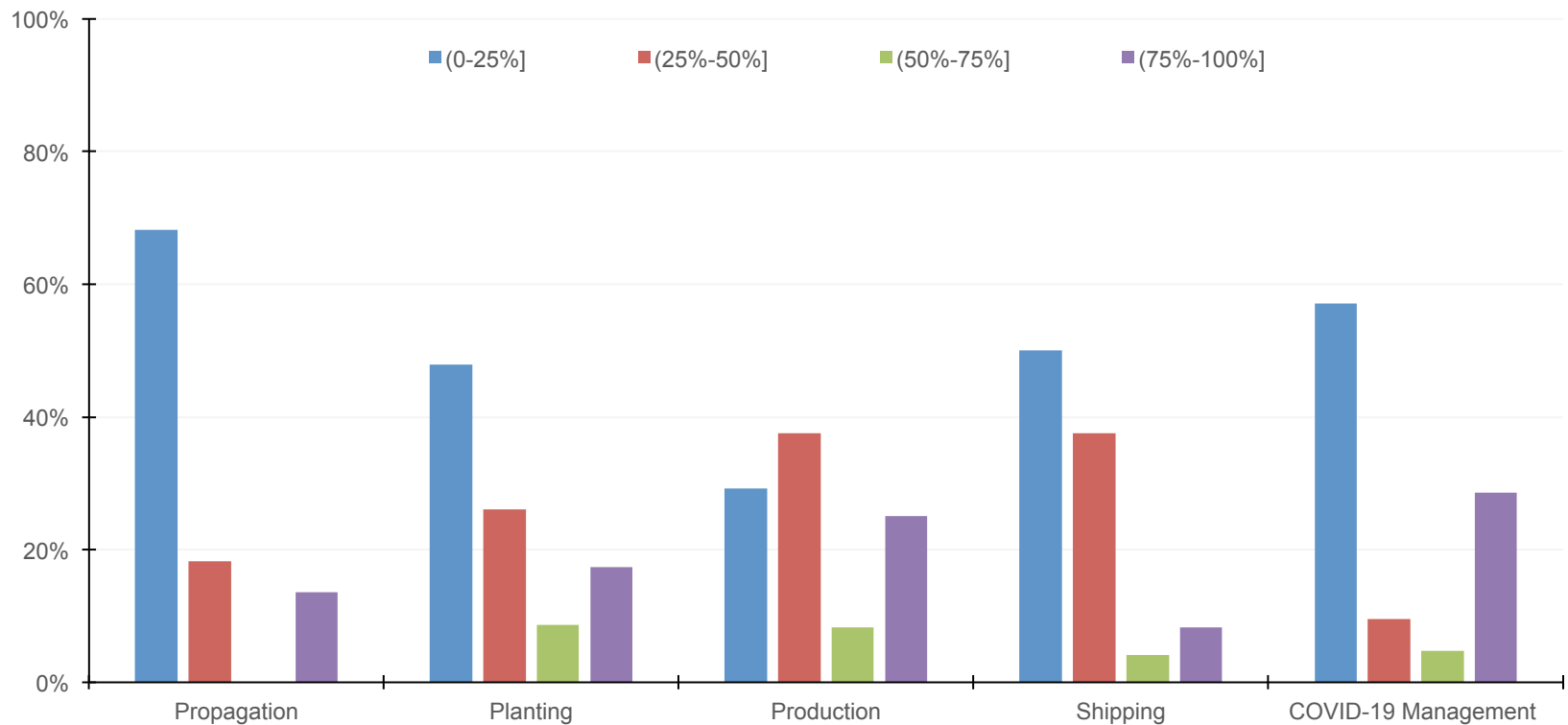


# Who hasn't automated?



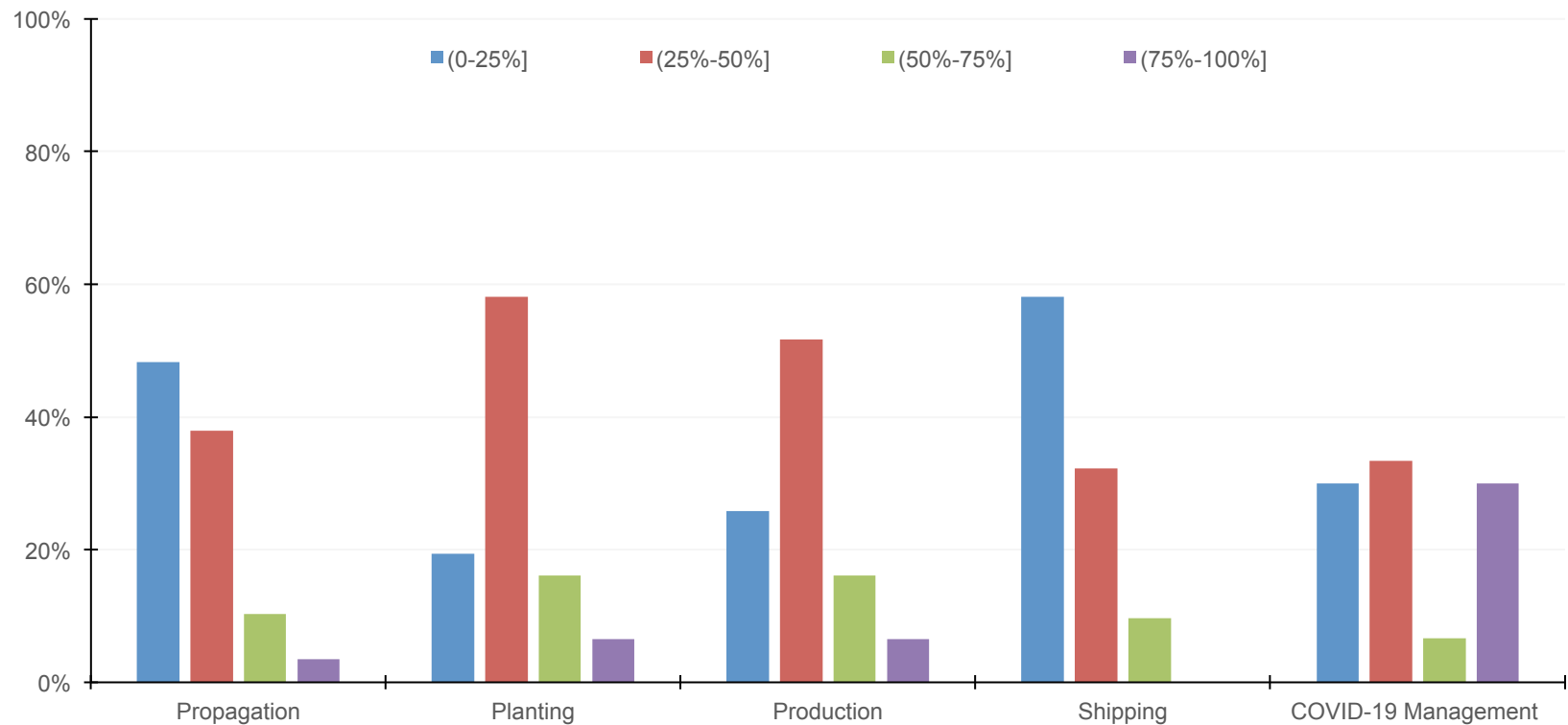
# How automated are **Small** farms?

Small Farm - level of automation



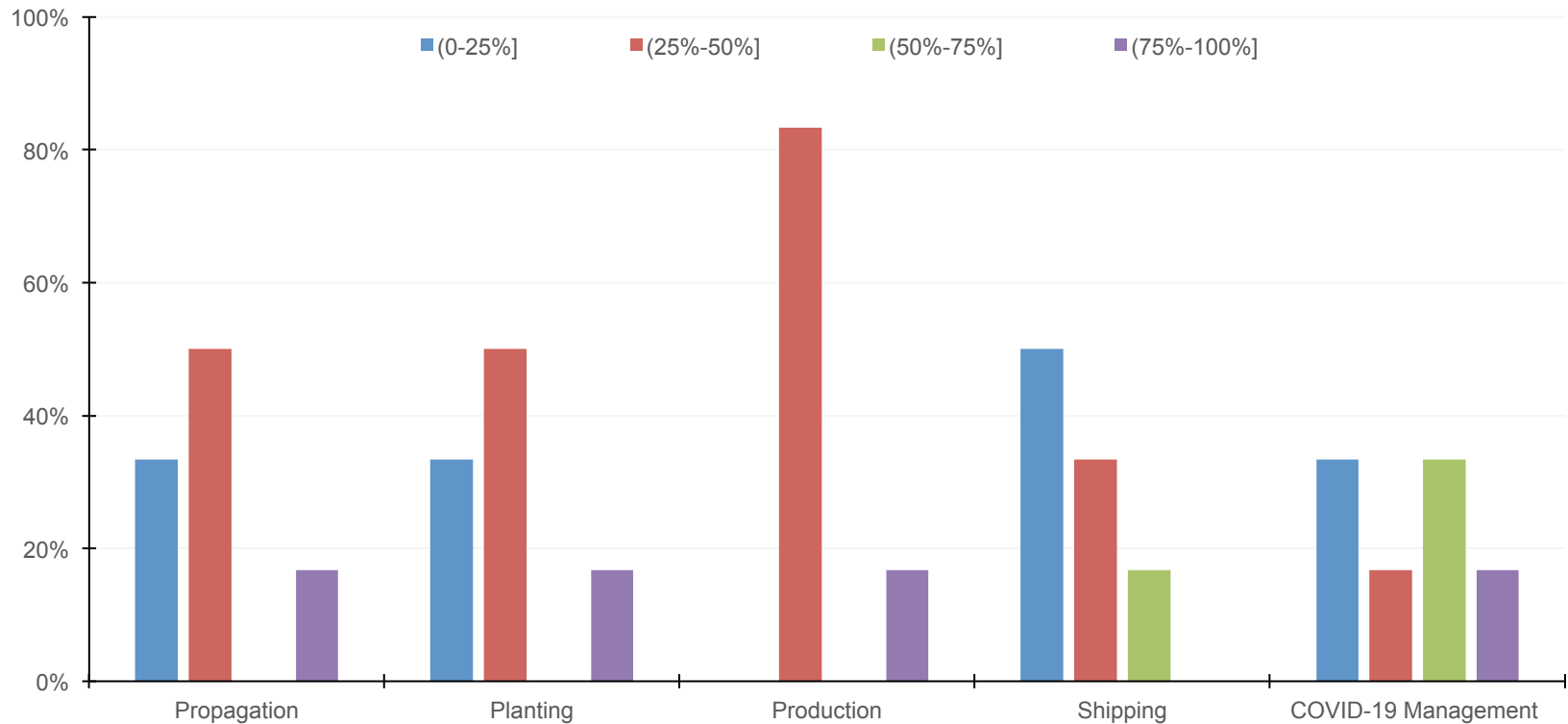
# How automated are **Medium** farms?

Medium Farm - level of automation

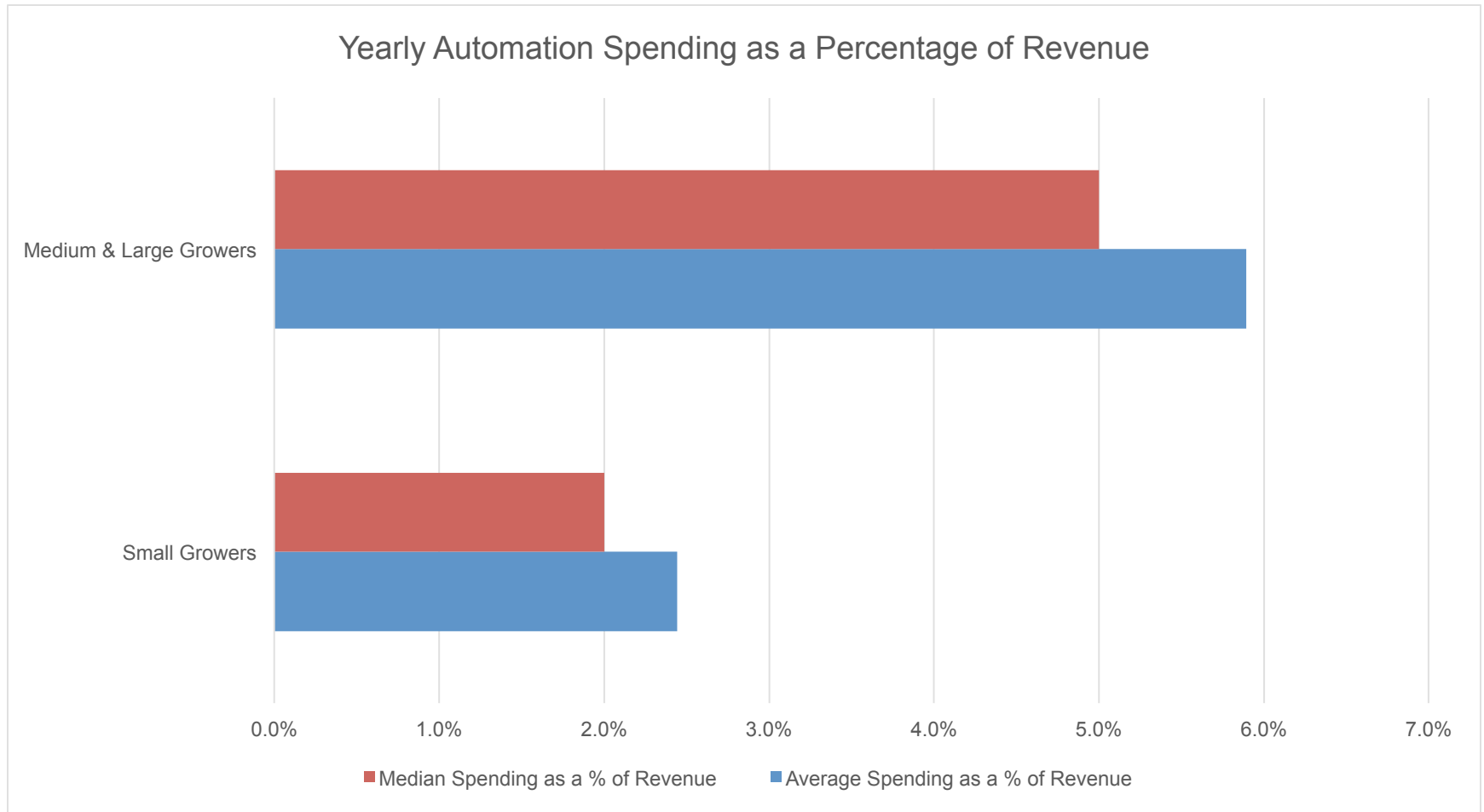


# How automated are **Large** farms?

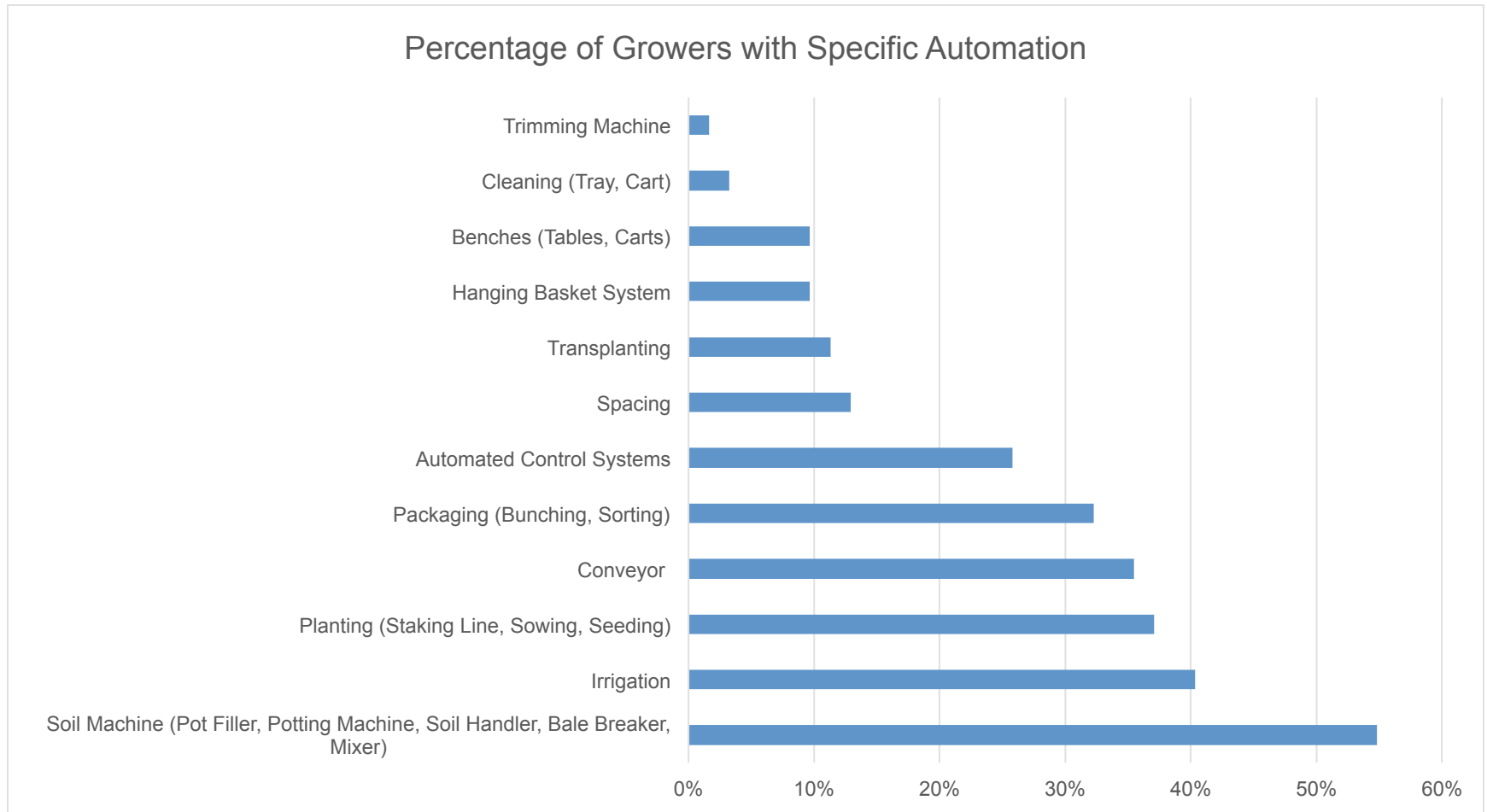
Large Farm - level of automation



# How much are farms spending on automation?



# What types of automation do farms have now?



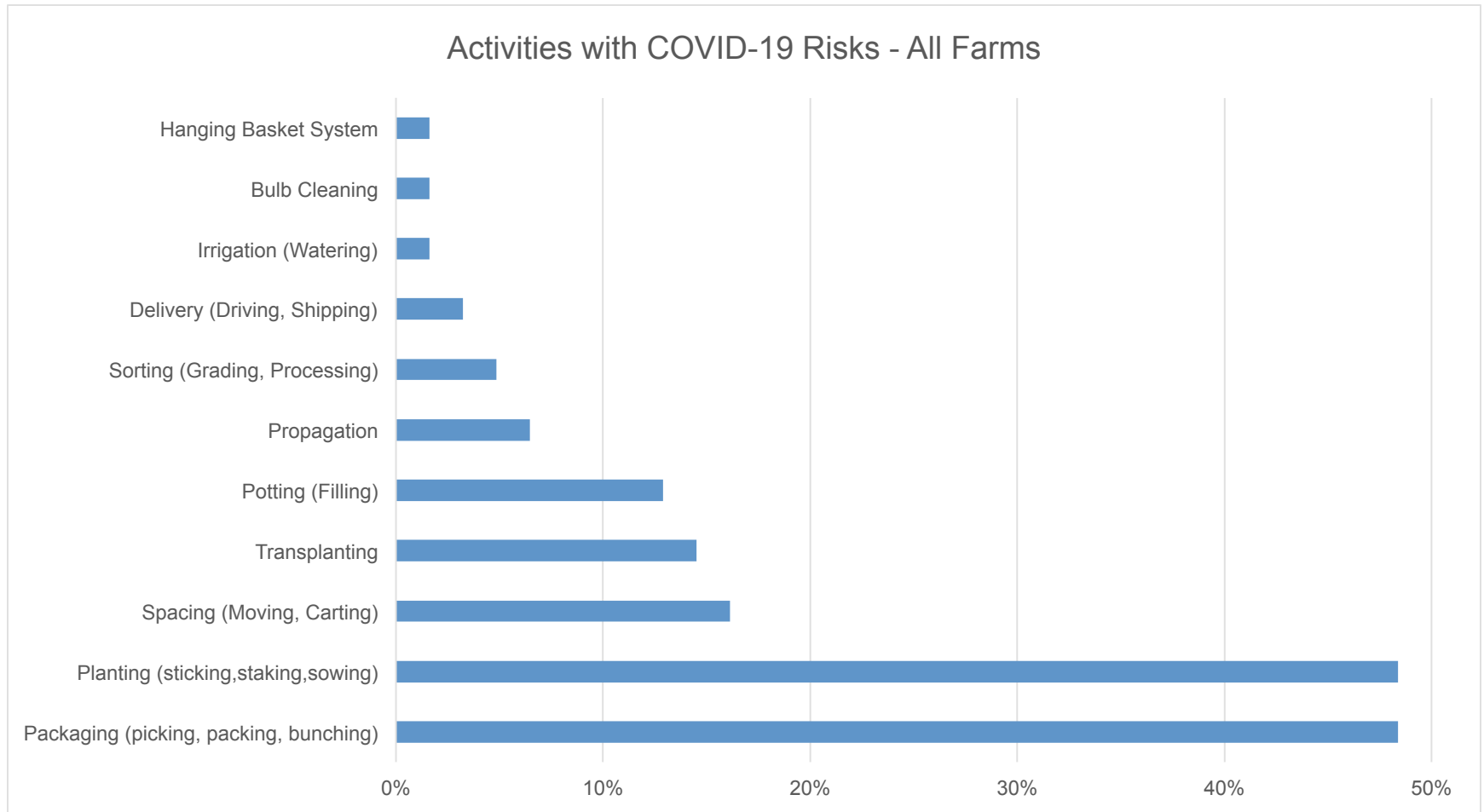
# Current Automation in Ontario Floriculture

- Most farms have some automation
- Smaller farms are the most likely not to have automation
- All farm sizes have room to expand automation
- Farms are spending on between 2.4% and 6% of annual revenue on automation, or \$20-\$49 million across the sector

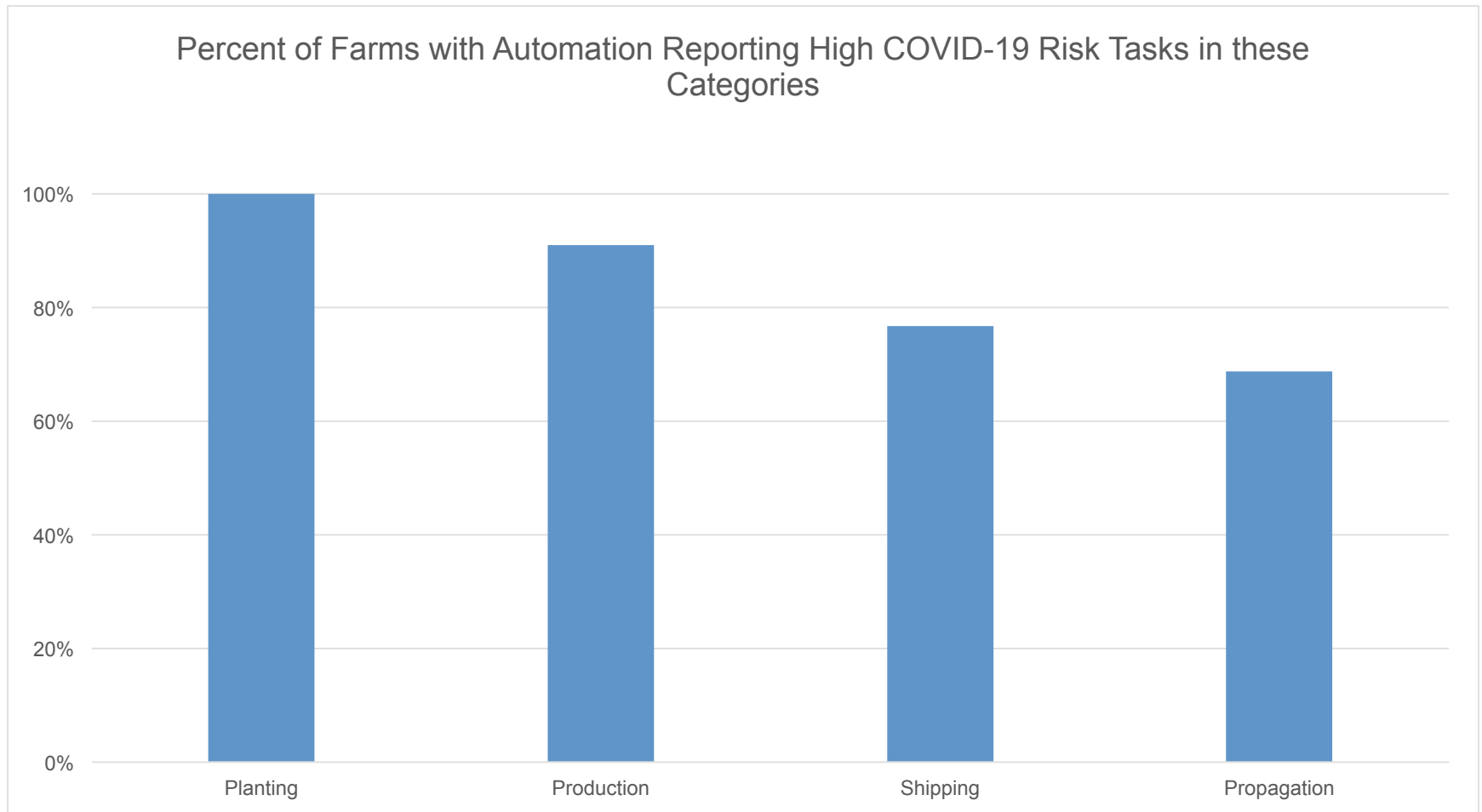
## 2. Offsetting COVID-19 with Automation



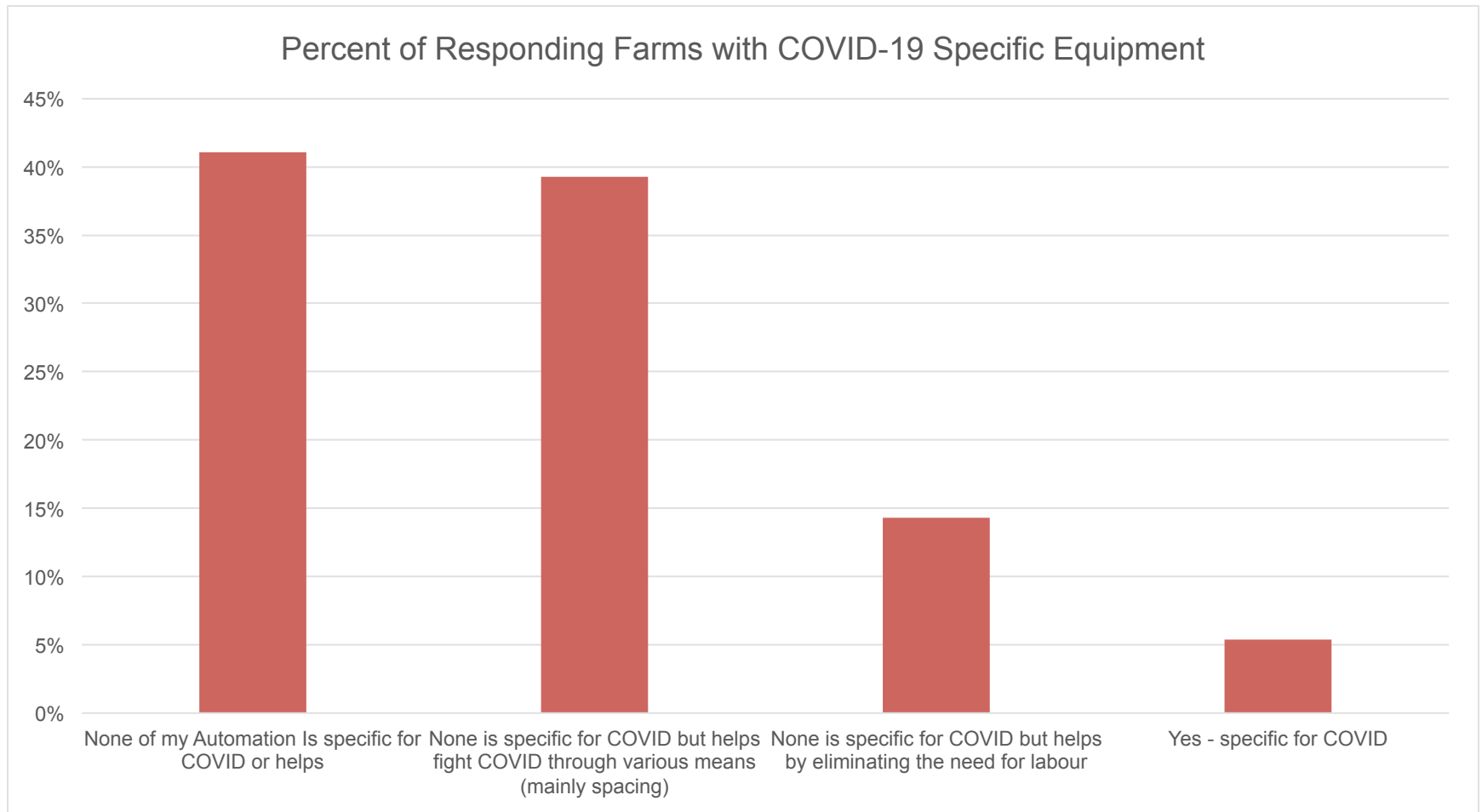
# What tasks bring workers close together?



# Many farms have automation in areas they see COVID-19 risk



# Does current automation help address COVID-19?

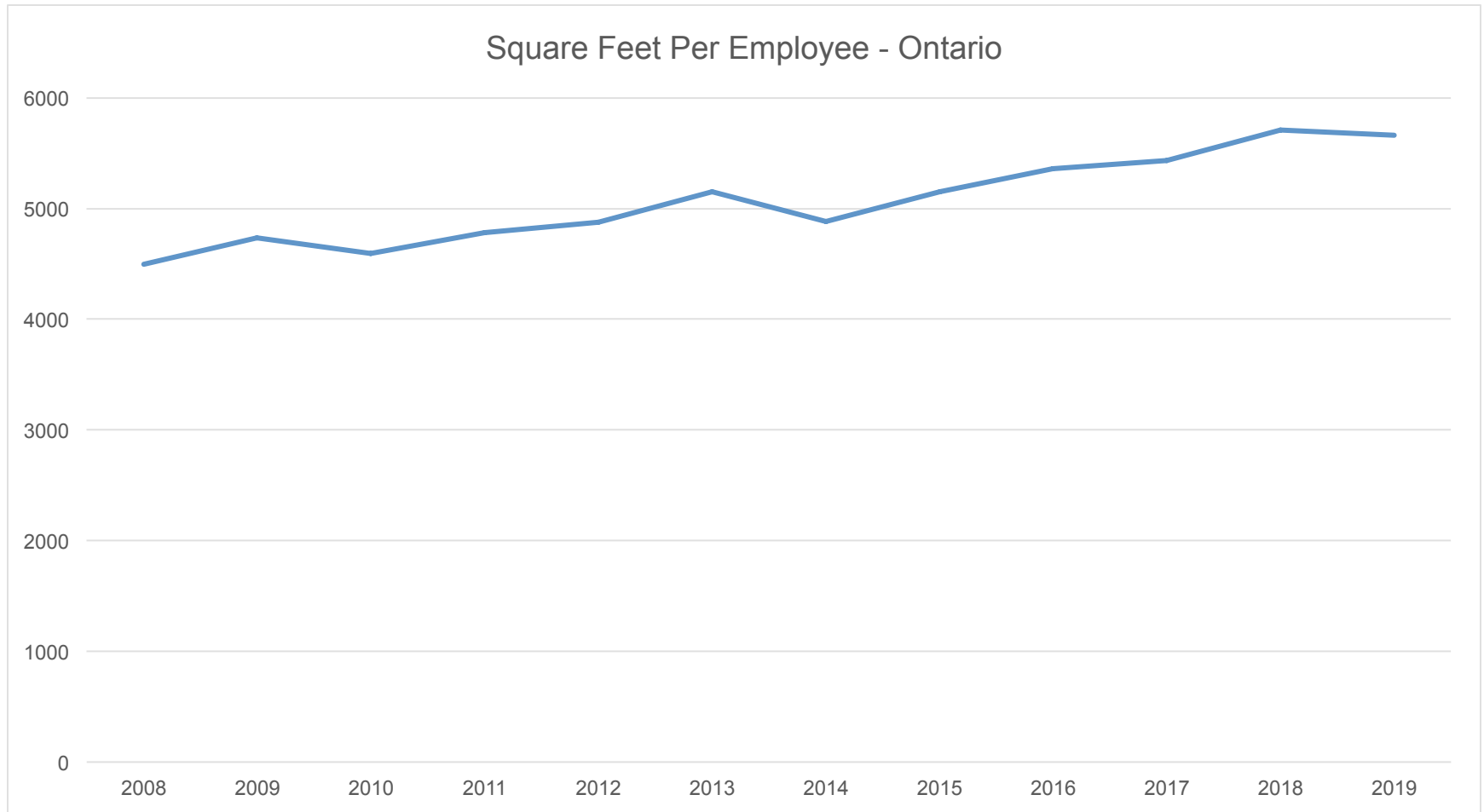


# Offsetting COVID-19 with Automation

- Packaging and Planting are highest risk activities that could be automated
- Most farms already have automation in Packaging and Planting
- 60% of farms felt their systems helped prevent COVID-19 in one way or another
- Current automation seems to have limited impact on COVID-19 prevention

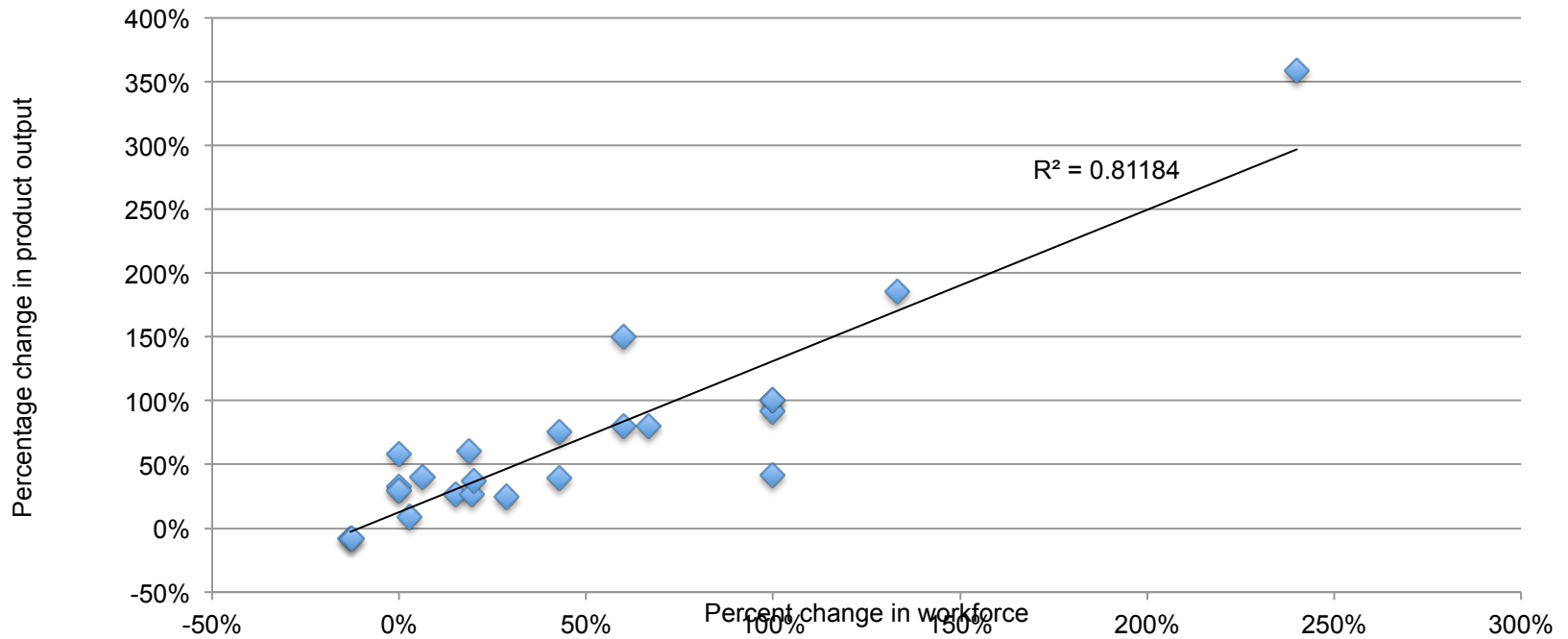
# 3. Opportunity to Increase Productivity with Automation

# Productivity per worker has increased steadily

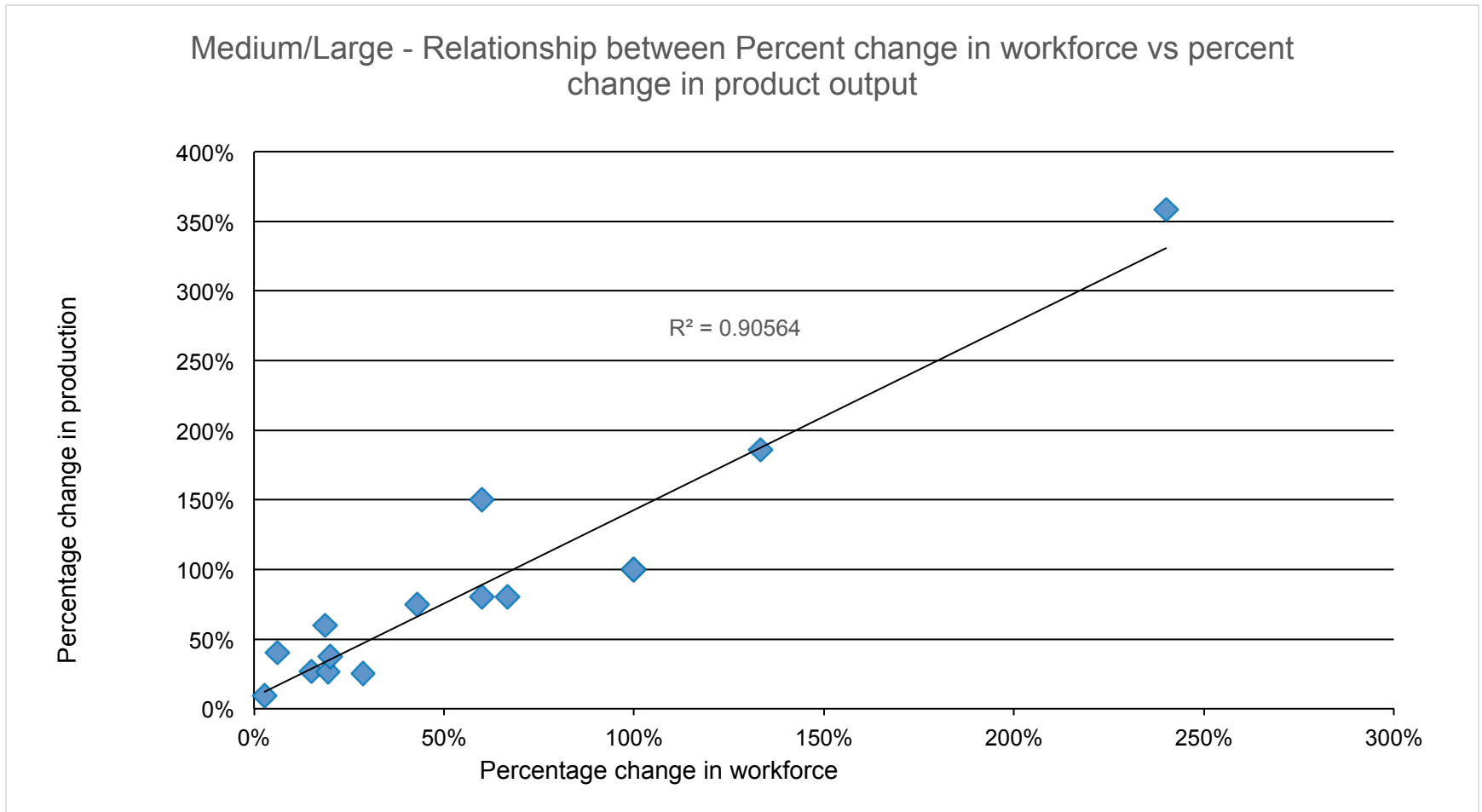


# Adding labour clearly improves output...

Relationship between Percent change in workforce vs percent change in product output



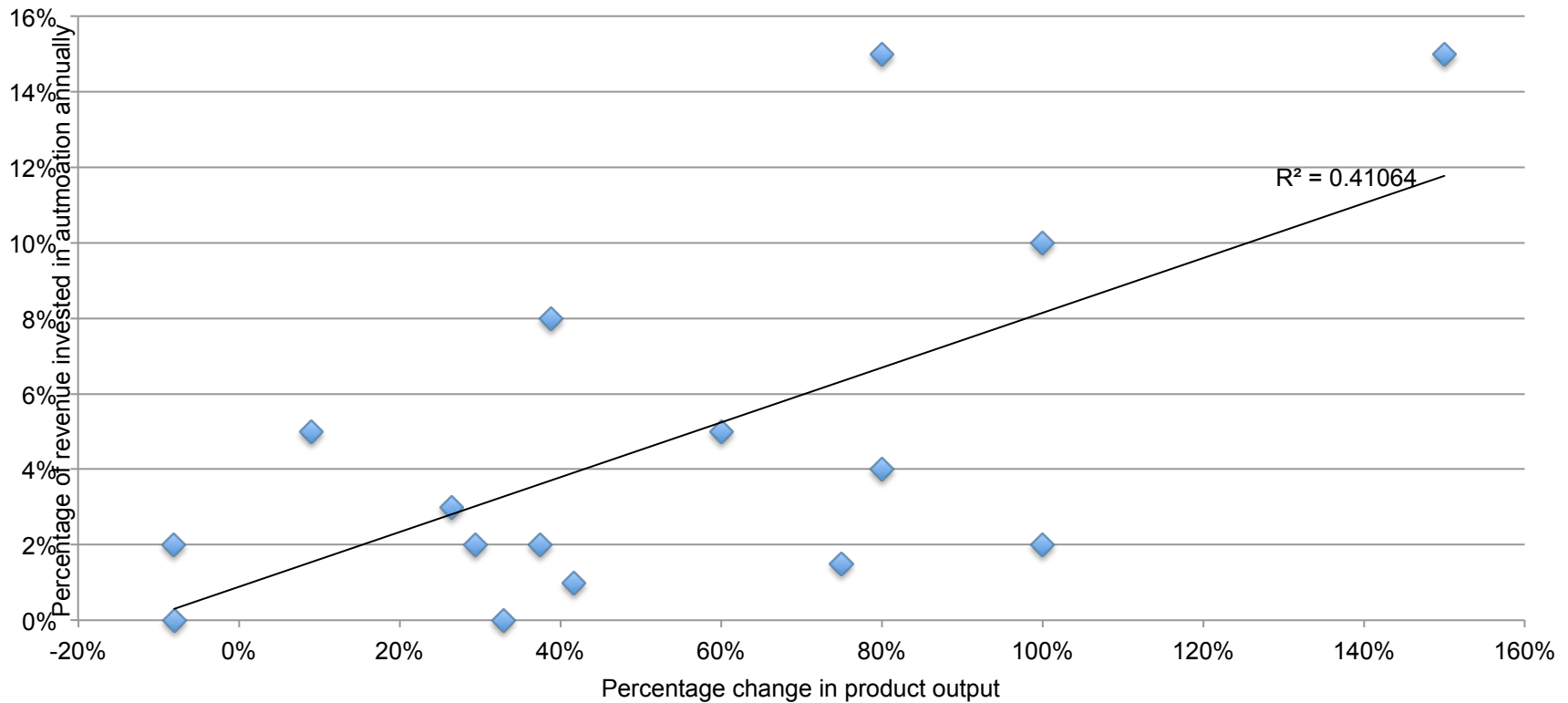
# ...Especially for medium and large farms





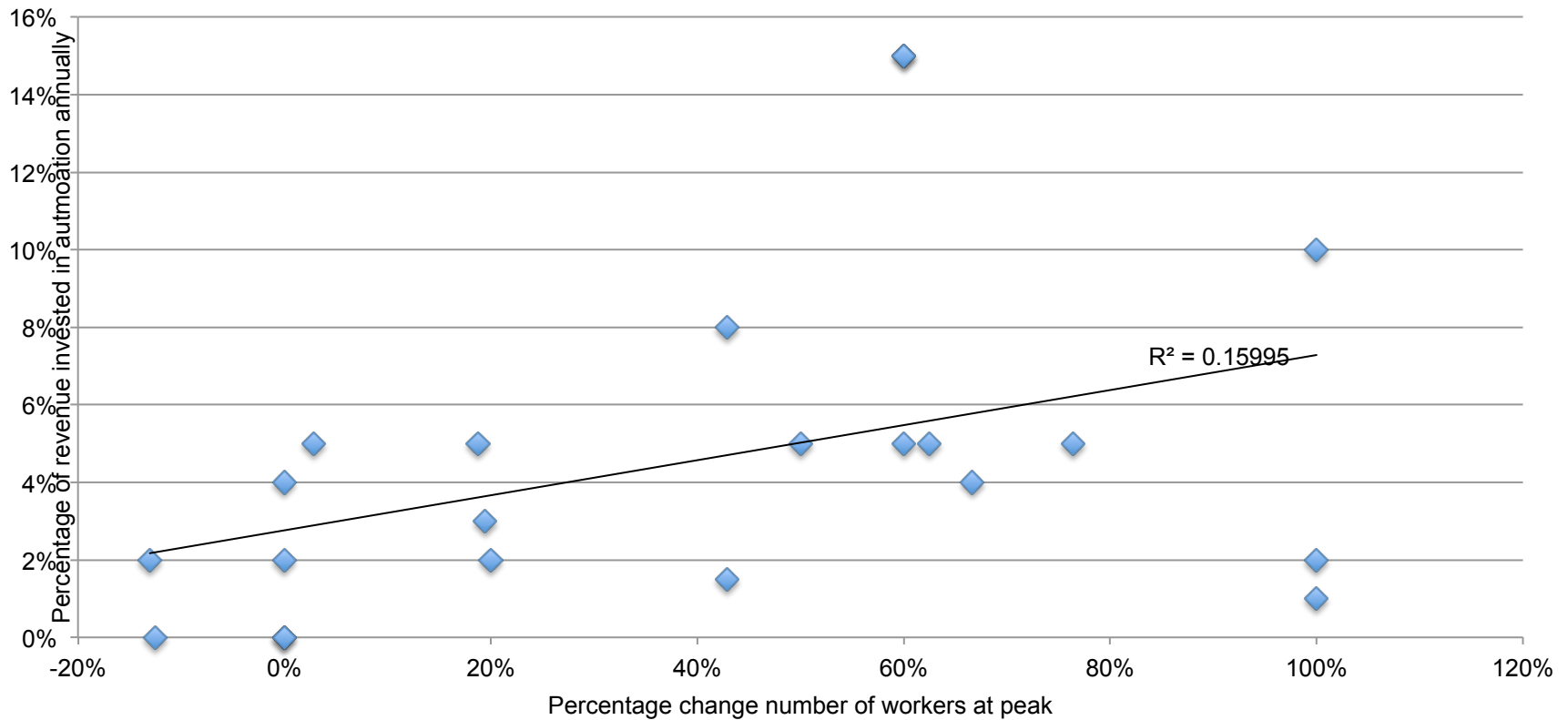
# Automation improves output

Relationship between Percent of revenue invested in automation vs percent change in product output



# Automation does **not** reduce workforce

Relationship between Percent of revenue invested in automation vs percent change in number of workers at peak



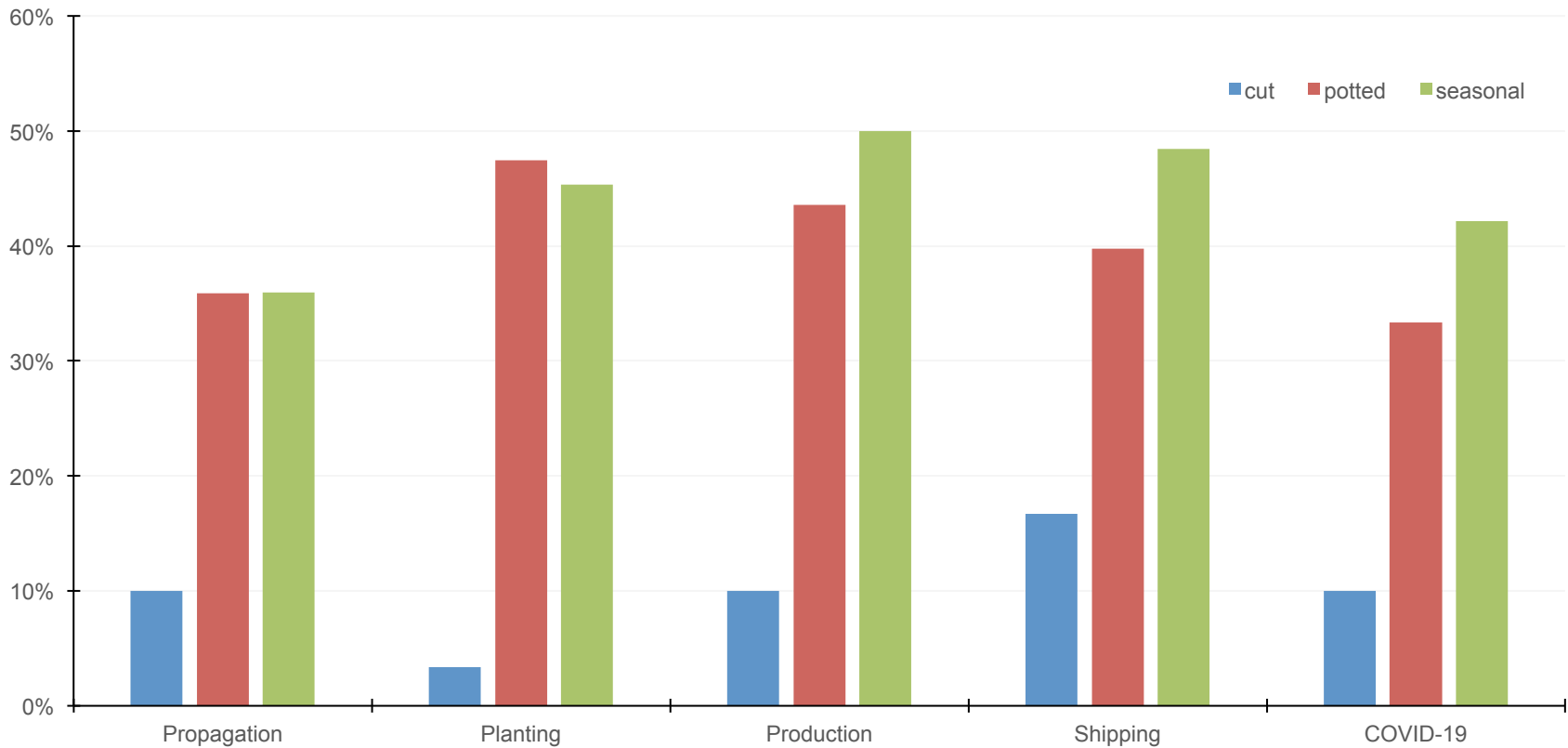
# Opportunity to Increase Productivity with Automation

- Labour productivity improvements have been constant
- Farms that add more workers, see more productivity
- Farms that add more automation see more productivity
- Farms that invest more in automation do not see decreases in their workforce
- Automation is unlikely to reduce COVID-19 challenges by reducing workforce, but it will increase productivity

# 4. Encouraging Automation Uptake

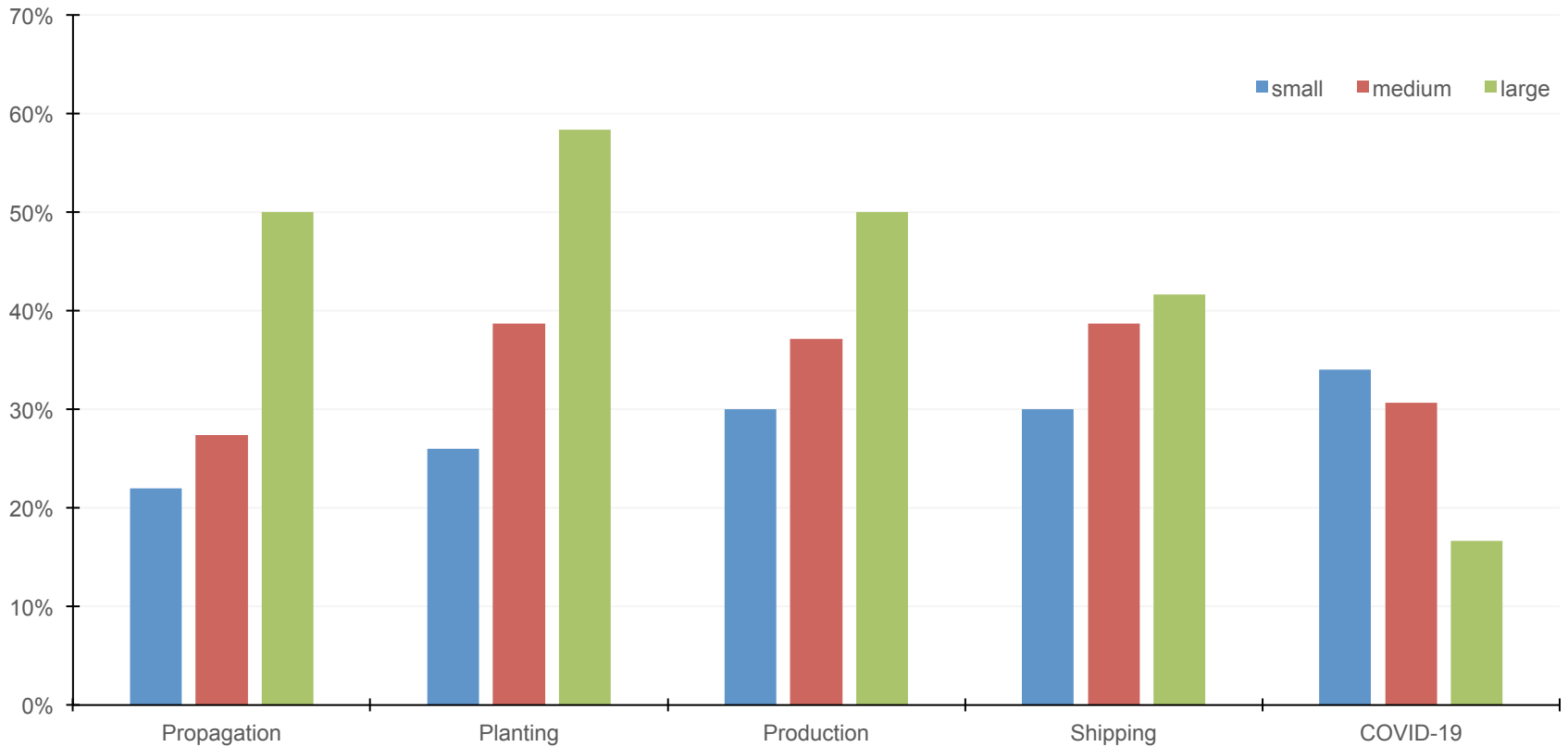
# What types of automation do farms **want** to add?

Type of automation equipment farms would like to add by producer type



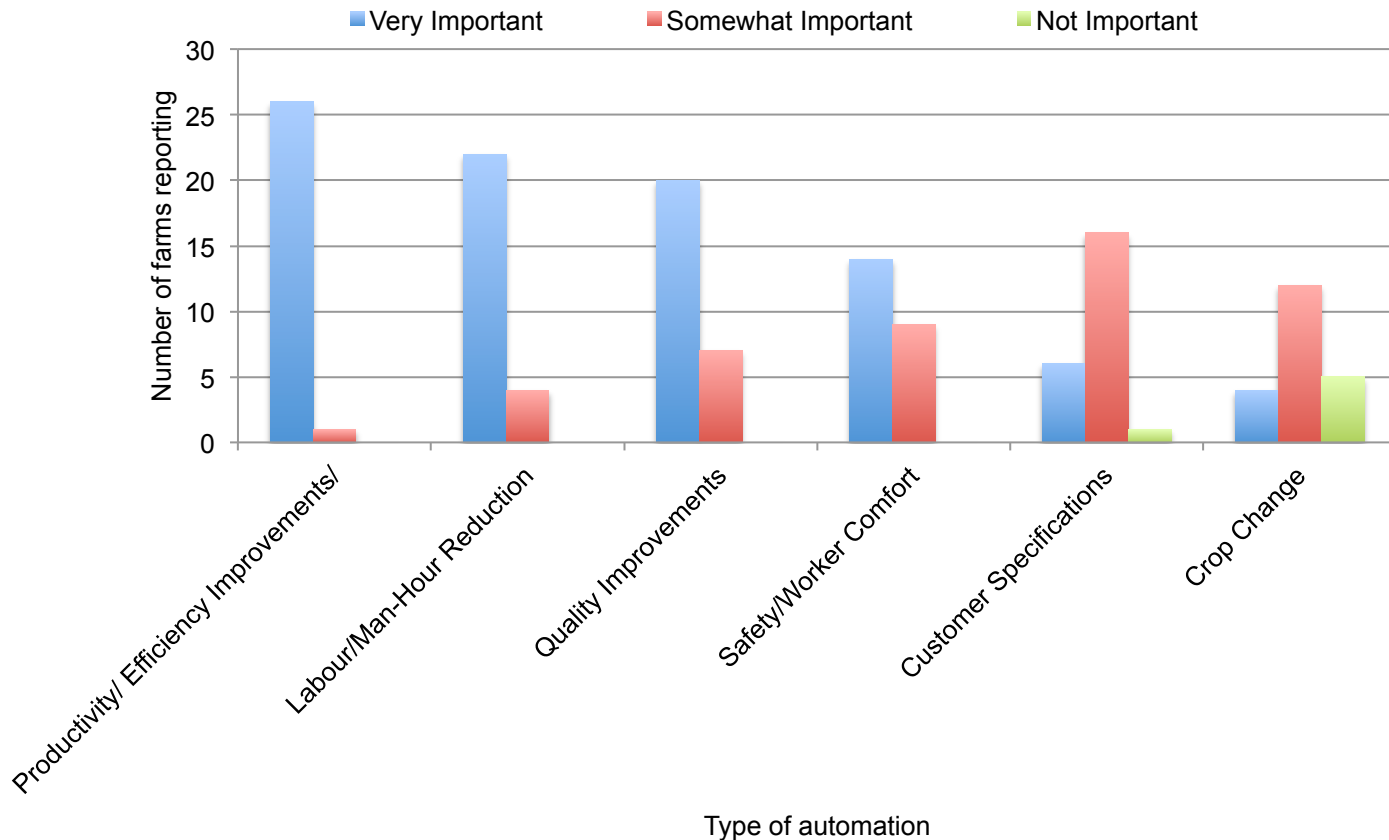
## What types of automation do farms **want** to add?

Type of automation equipment farms would like to add by farm size



# Why do farms automate?

## Priorities When Choosing Automation Systems

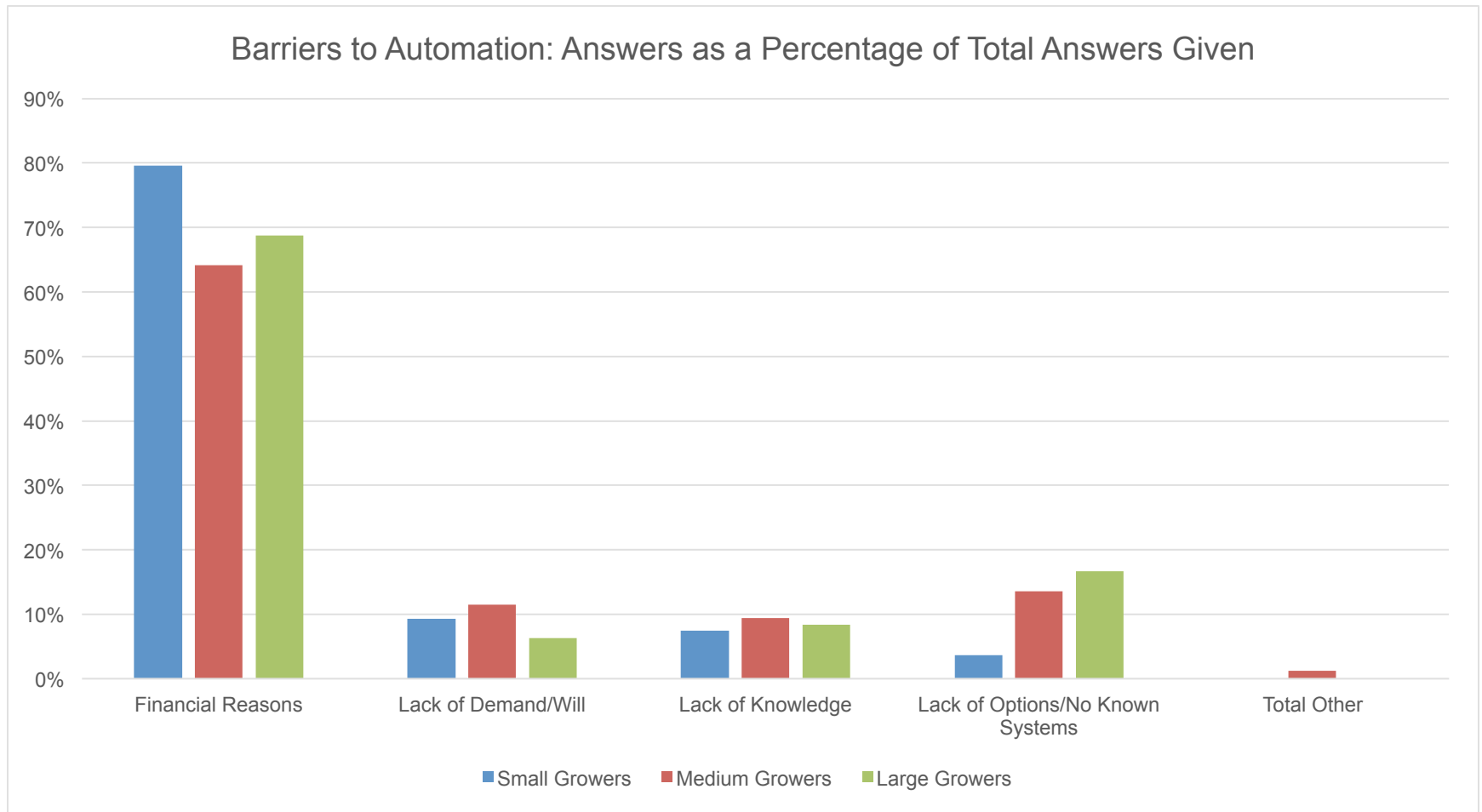


# Impacts of anticipated automation

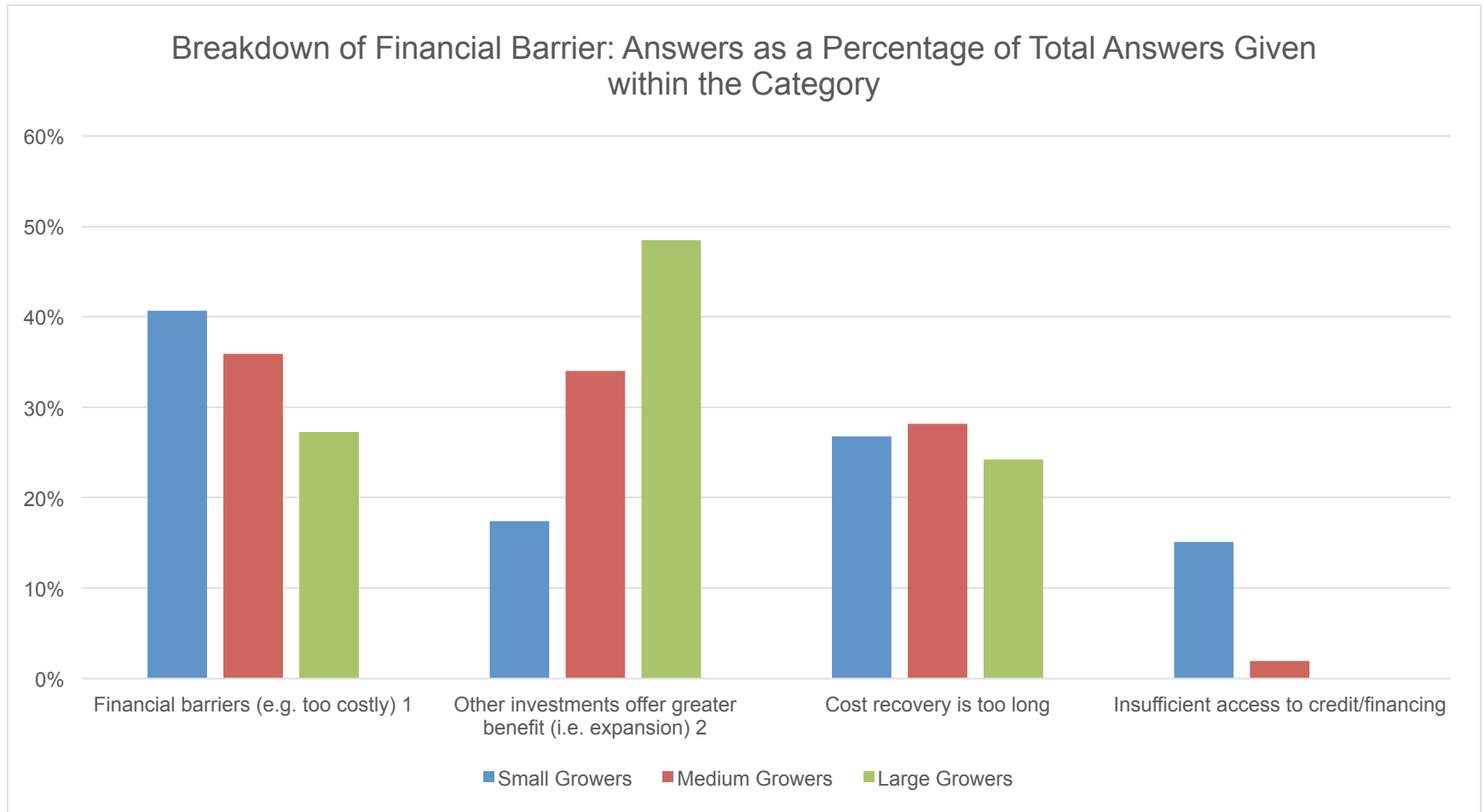
- Decrease in their workforce by 8.5%,
- Decrease staff-hours by 10.2%,
- Increase in productivity by 47%



# What's stopping farms from automating?



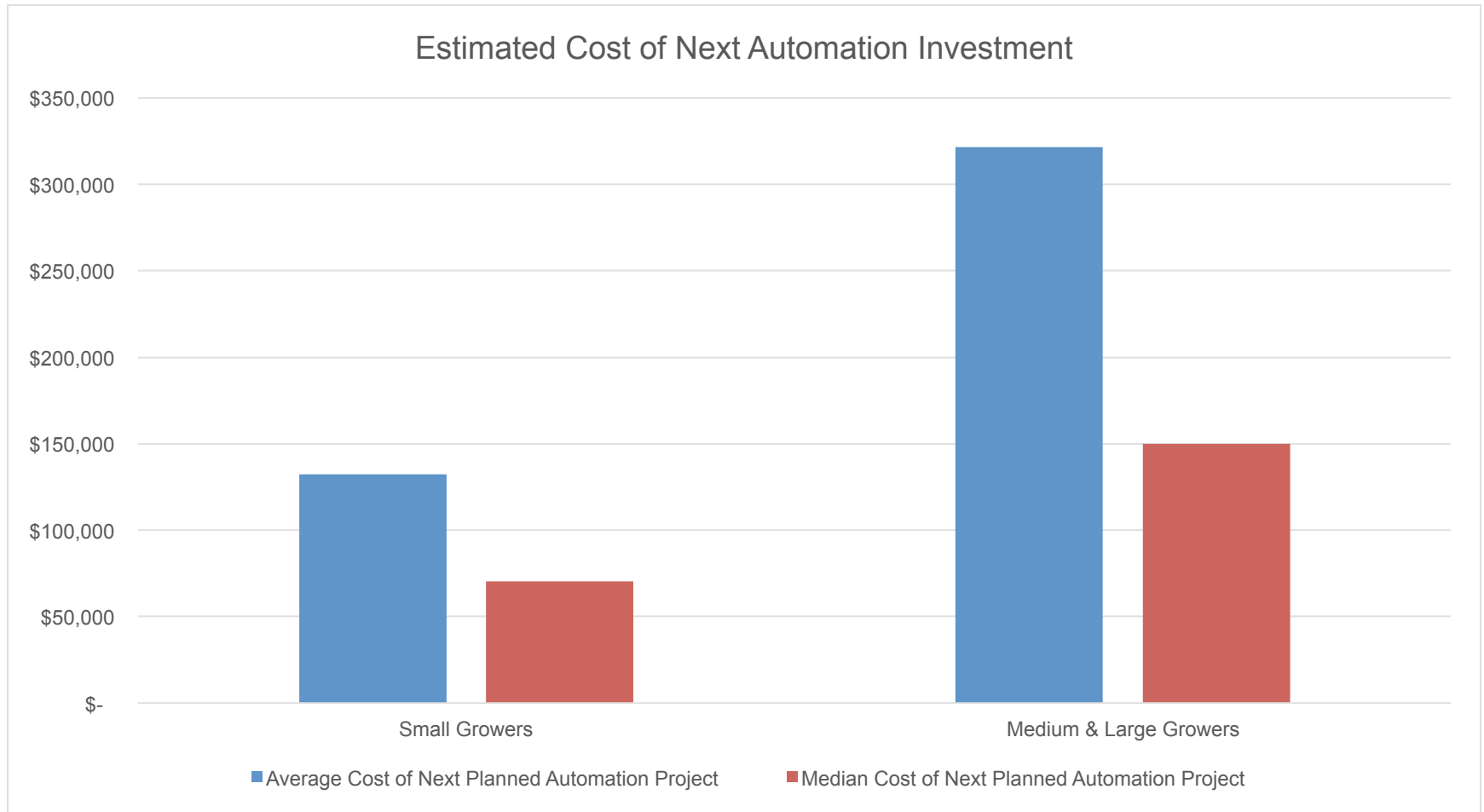
# What's stopping farms from automating?



# Competition for investment

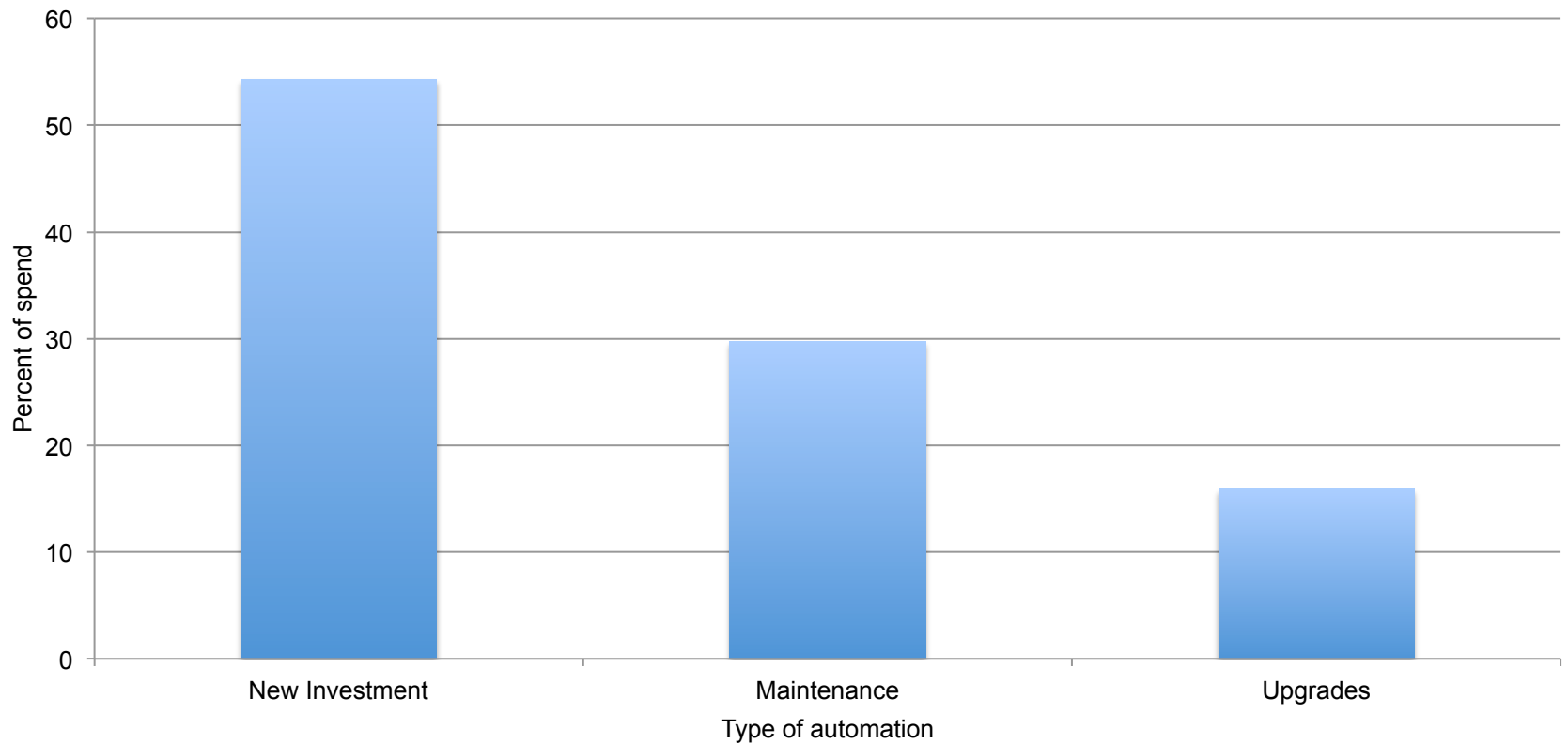
- 40% of farms plan to invest in greenhouse expansion over automation

# How much will next expenditure cost?



# Other costs of automation

Average proportion of automation expenditure spent on new investment vs maintenance vs upgrades



# Encouraging Automation Uptake

- Farms want to automate a diversity of systems, and have many reasons for automation
- Increasing productivity was most important followed by labour reduction and quality improvements
- Financial barriers are the largest hurdle to automation
- Few farms expressed a lack of knowledge as a barrier to automation
- Average cost of new investments was \$300,000
- Most farms would automate if financial barriers were reduced

# Recommendations for Farms

- Automation holds great opportunity for increasing productivity, but less opportunity to reduce COVID-19 risk
- Key COVID-19 risk areas which can be automated identified by farms include:
  - Planting
  - Packaging
- Key COVID-19 risk areas on the farm include:
  - Lunchrooms
  - Entrance/exits
  - Washrooms
  - Congregate Living

# Recommendations for Government

- Largest barriers to automation are financial
- Most farms (100% large farms, 93% medium farms, 86% small farms) would automate if financial barriers were reduced
- Financial programming must match anticipated cost - \$300,000 being average cost of automation
- Automation support should not be linked to specific automation tasks like reducing labour in key areas, as most are already automated



# Where to find more information

- Full project reporting available on request (soon on [flowerscanadagrowers.com](http://flowerscanadagrowers.com))
- More information on systems available through visual matrix and automation system database (soon on [flowerscanadagrowers.com](http://flowerscanadagrowers.com))

# Acknowledgements

Funding for this project was provided by the Ontario Ministry of Agriculture, Food and Rural Affairs as part of their Agri-food Prevention and Control Innovation program.

The Flowers Canada (Ontario) Inc. (FCO) team is grateful to OMAFRA for facilitating this project. The views expressed in this report are the views of the Recipient and do not necessarily reflect those of the Province.

**Thanks!**