



Evaluation of the Apple Packer Data Sharing Project

Sector Insights and Corporate Initiatives Unit



Ministry of
Agriculture
and Food

Background

- The Apple Packer Data-Sharing Project was initiated as part of the 2021 Tree Fruit Industry Stabilization Plan in order to:
 - Assist the industry to stabilize prices
 - Assist business decision-making
- Ministry provided weekly report containing aggregated and anonymized pricing and storage data to participating packers
- Data collection started in September 2022
- This evaluation was launched towards the end of apple packing season
- Objectives of evaluation:
 - Assess whether the project should be continued for a second year
 - Improve survey and reporting processes for the 2023 seasonal cycle (if continued)

Background – Project Logic Model



- ❖ Identify significant price outliers for apple packers
- *Provide market report with aggregated information of apple pricing data*
- *Maintain anonymity of individual packers*

- ❖ Creation of data collection tool: Online survey form on Common Hosted Forms (CHEFS) platform
- ❖ Creation of reporting template
- ❖ Data collection, cleaning, and analysis
- ❖ Report generation and distribution
- ❖ Regular correspondence with apple packers

- ❖ CHEFS form
- ❖ Efficient system for data collection, cleaning, and analysis
- ❖ Weekly reports

- ❖ Packers have better information for informed business decisions
- ❖ Packers have positive perception toward the project
- ❖ Increased packer participation in the project
- ❖ Packers have increased trust in the ministry
- ❖ Packers have increased willingness to participate in future seasons
- ❖ System is efficient to sustain the project for future seasons

- ❖ Improvement in the packers' business and overall industry
- ❖ System is expanded for broader reach (more participants, more commodities)
- ❖ Increased collaboration between ministry and various industries

Evaluation Components

The evaluation components were divided into three broad categories:

1. The impact of the project on apple packers' business and decision-making.
2. The perception of stakeholders (apple packers and ministry personnel) regarding the project's usefulness, satisfaction, trust in the ministry, and whether the project should be continued and expanded.
3. The efficiency of the project, particularly to inform any decision to scale up to include more packers or commodities.

Assessing long-term impacts of the project is outside the scope of this evaluation.

Data Collection

- Semi-structured interviews containing scaled questions and open-ended questions
 - 5 apple packers (total 6 participating packers)
 - 2 industry specialists
- Data collected during the project
 - 20 weeks of pricing data submitted by packers
 - 22 weeks of response data
- Unstructured interviews and meetings
 - Multiple sessions conducted with ministry staff

Findings – Impact of the Project

- Impact of the project was analyzed in two stages:
 - Qualitative analysis of semi-structured interview responses
 - Quantitative analysis of the project's historical pricing data
- Qualitative analysis provided positive results:
 - Both pricing and storage information provided packers with a deeper understanding of the market.
 - This assisted the packers to price more effectively.
 - Both packers and specialists stated that the project needs to run for a longer period to have a significant and measurable impact.

Findings – Impact of the Project

Quantitative Analysis:

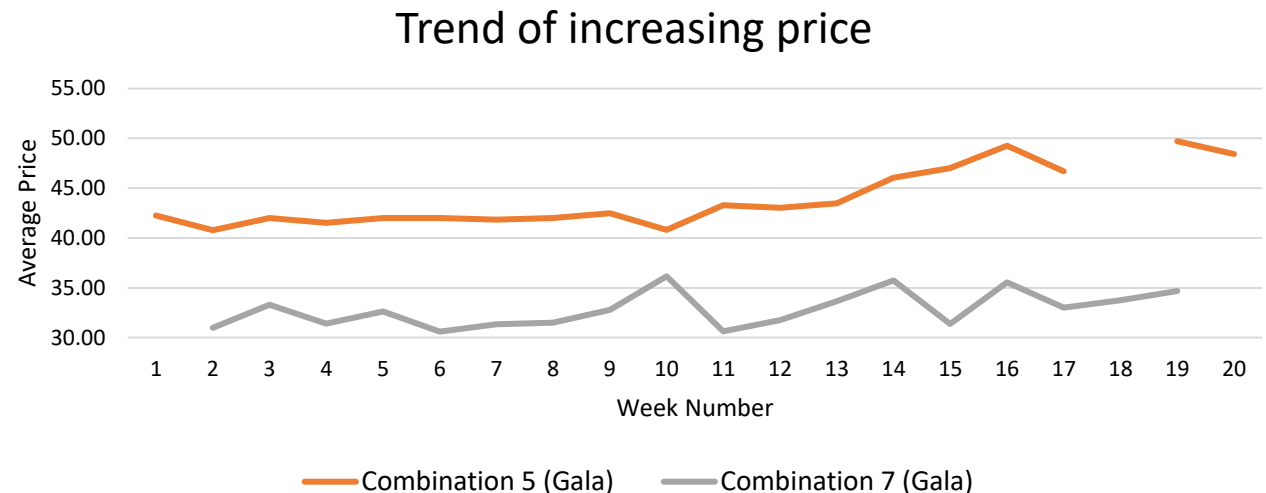
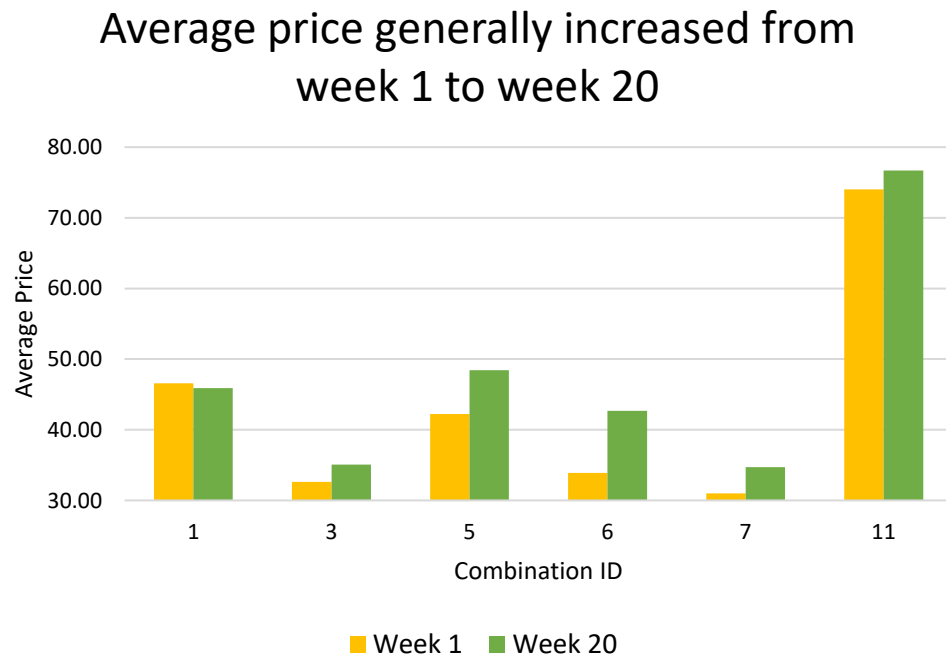
- The number of data points was insufficient to run analysis for every combination of apple variety/packaging/size
 - Two combinations (*ID numbers 5 & 7*) could be used for trend analysis of prices and the variation of pricing between packers each week
 - Six combinations could be used to conduct ‘endpoint analysis’
- No control group or counterfactual data available (to compare prices with and without the project)

Combination ID	Apple Variety	Packaging	Grade	Item Size
1	Ambrosia	Tray Pack	Extra Fancy	72-80-88s
3	Ambrosia	3Lbs Bag X 12Bags	Extra Fancy	N/A
5	Gala	Tray Pack	Extra Fancy	72-80-88s
6	Gala	Tray Pack	Extra Fancy	100-113s
7	Gala	3Lbs Bag X 12Bags	Extra Fancy	N/A
11	Honeycrisp	Tray Pack	Extra Fancy	72-80-88s

Combination of Apple used for analysis

Findings – Impact of the Project

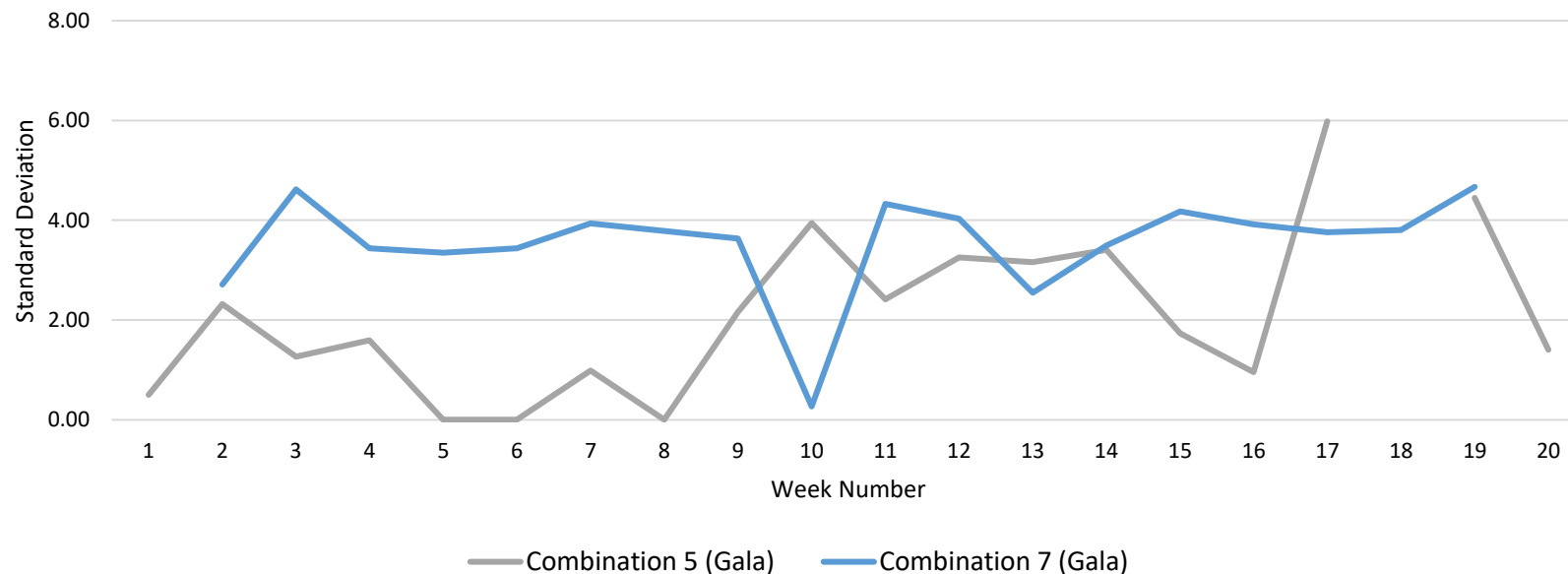
- Average pricing data for 20 weeks of combinations 5 and 7 were plotted to observe trends (right-hand chart)
- Average pricing data of week 1 and week 20 were plotted for endpoint analysis (left-hand chart)
- Both price analyses showed an overall increase in price during the season
- Due to the data limitations, this finding cannot be conclusively attributed to the project



Findings – Impact of the Project

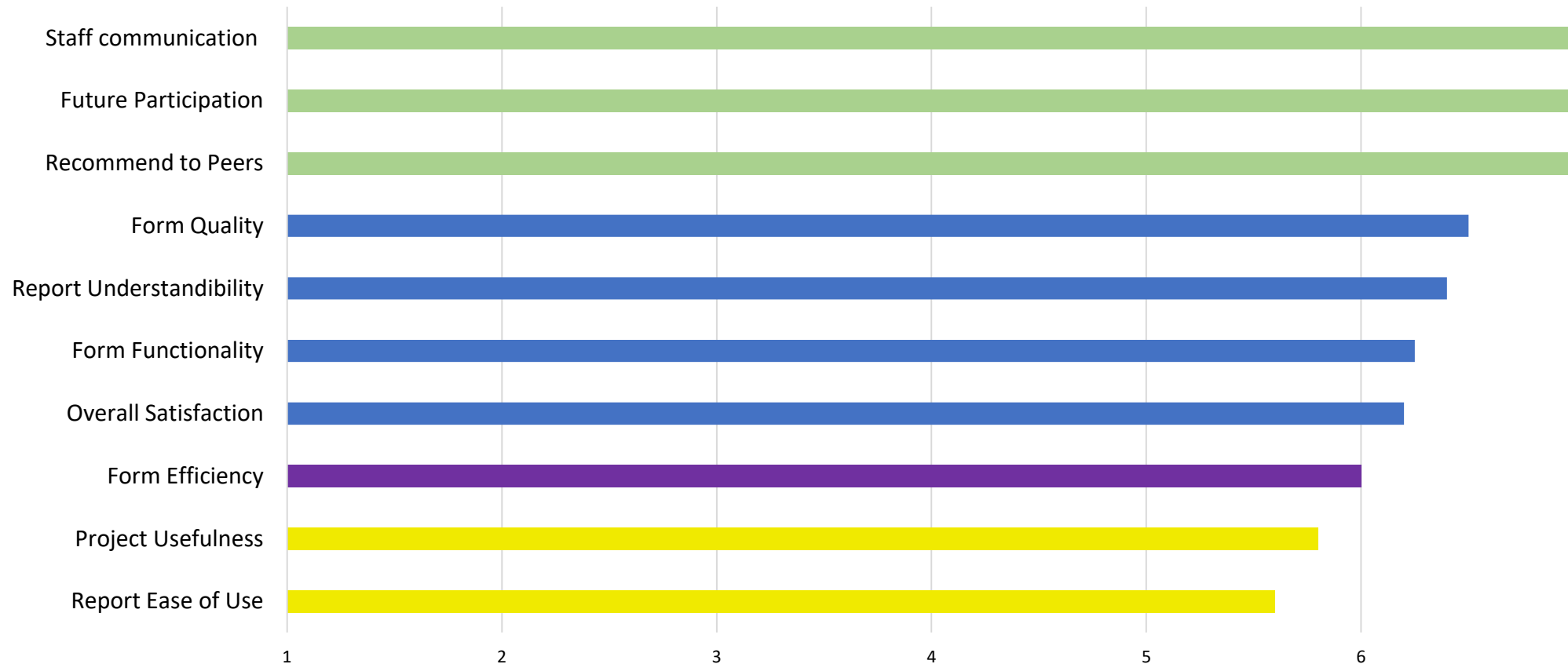
- To account for the data limitations, the variation each week in prices between each packer (standard deviation) was calculated and plotted
- Standard deviation analysis controls for external factors that may affect all packers equally
- Improved knowledge provided by the project could be expected to lower variation in prices
- The result was inconclusive: no decreasing trend in variation was observed
- This could be due to other business specific factors being dominant

Trend of Standard Deviation Pricing Data



Findings – Stakeholder Perceptions (Apple Packers)

Overall Positive Responses by Packers to the Project



- Scale is from a low of 1 to a high of 7.
- A score greater than 4 is a positive perception.

Summary score of all metrics

Findings – Stakeholder Perceptions (Apple Packers)

- Project Usefulness: Did the packers find the project as useful as they had envisioned? **5.8**
(out of a maximum of 7)
 - Feedback: The packers (and industry specialists) stated that it will take time for the project to become as useful as it has the potential to be
- Continuation of the project for future seasons
 - Future Participation: Would the packers participate in the future? **7**
 - Recommend to Peers: Would participating packers recommend the project to non-participating packers? **7**
 - Feedback: Packers stated that their very high score is dependent on similar participation of other packers and maintenance of data quality
- Satisfaction: Were packers satisfied overall with the project? **6.2**

Findings – Stakeholder Perceptions (Apple Packers)

- In addition to overall satisfaction with the project, three specific aspects were measured:
- Survey Form – satisfaction was measured across three dimensions of the form:
 - Form Efficiency: Whether the packers had to spend a long time completing the form? **6**
 - Feedback: Packers stated that they have less time available to complete the survey during peak season. A more efficient form would be appreciated.
 - Form Functionality: Did the form contain all the features and fields packers need? **6.25**
 - Feedback: Packers find it cumbersome to input/select the same data on combinations every week
 - Form Quality: What is the packers' perceptions regarding other form aspects: form design, form loading time, user friendliness of the form, etc.? **6.5**

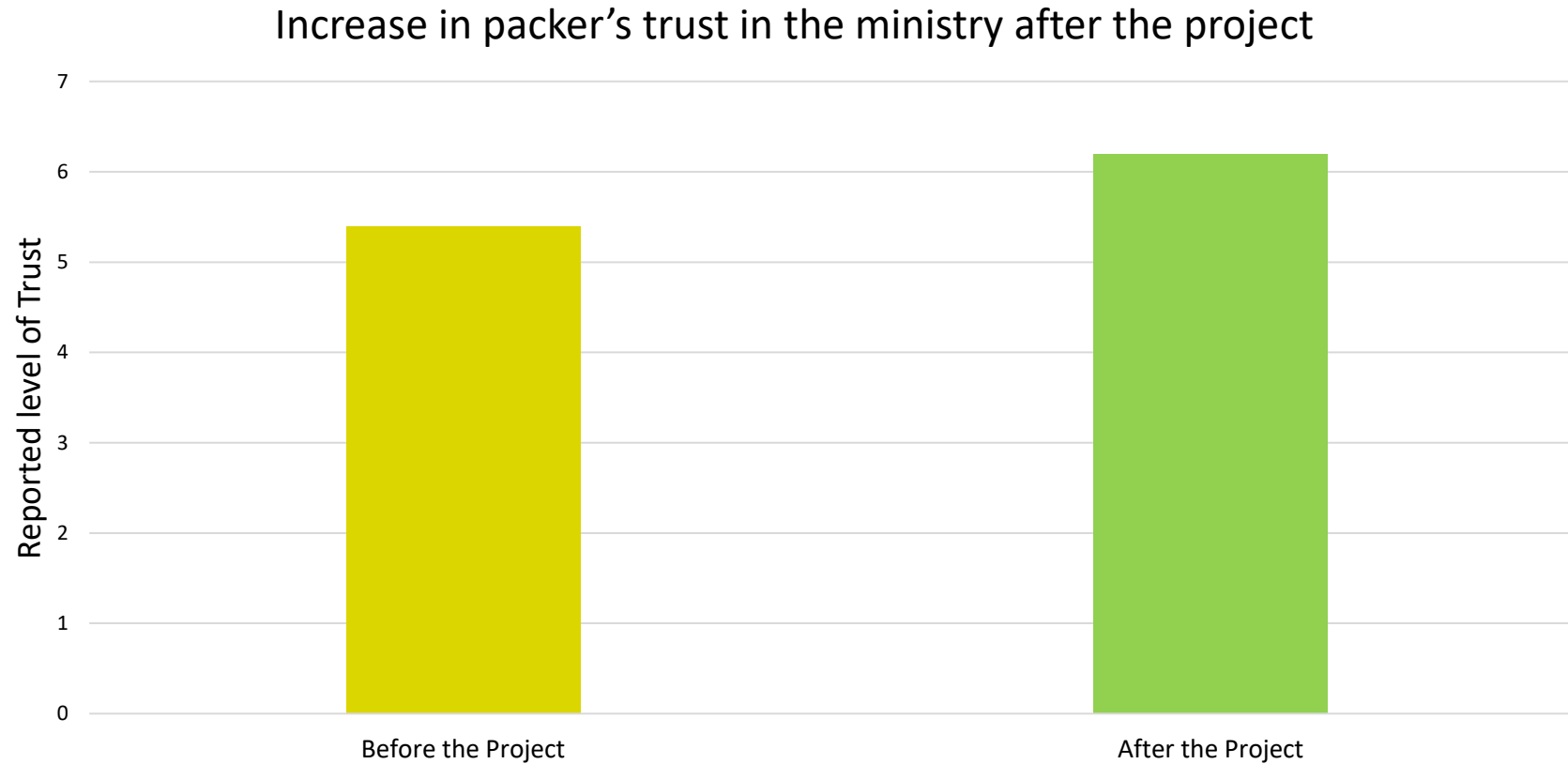
Findings – Stakeholder Perceptions (Apple Packers)

- Report - satisfaction was measured across two dimensions of the report:
 - Report understandability: Did the packers find the content of the report easy to understand? **6.4**
 - Report ease-of-use: Did the packers found it easy to navigate the report and to utilize the dynamic component of the report (filters and slicers)? **5.6***
 - Feedback: The filters and slicers sometimes did not work as required.^
- Staff Communication: Were the packers were satisfied with the interaction with the ministry project team? **7**

*The lowest score among the metrics

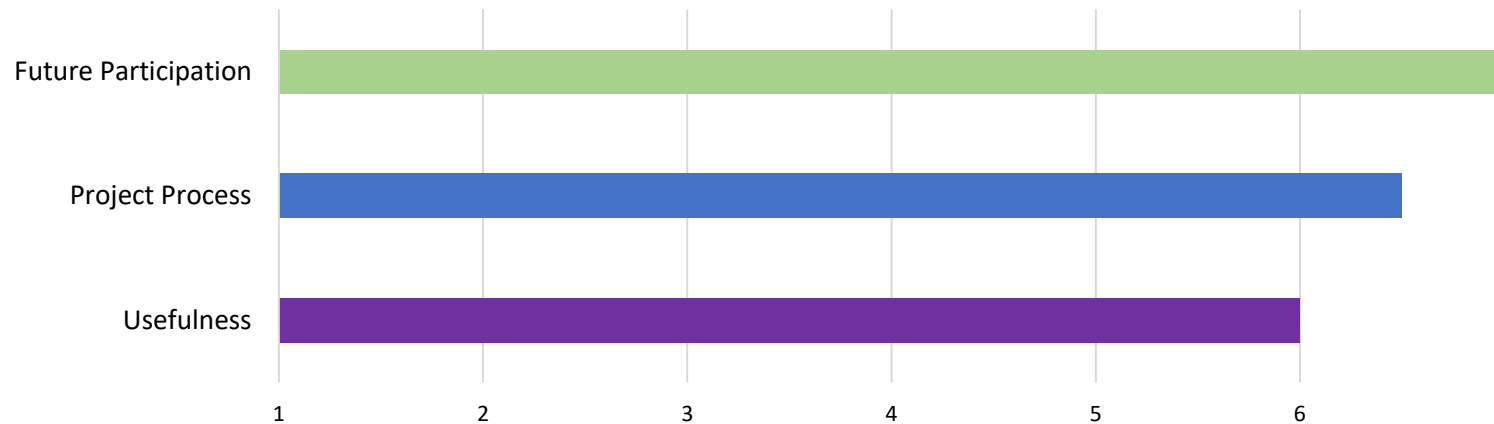
^This issue was reiterated when packers were asked about major problems of the project

Findings – Stakeholder Perceptions (Apple Packers)



Findings – Stakeholder Perceptions (Industry Sp.)

Overall Positive Responses by Industry Specialists to the Project



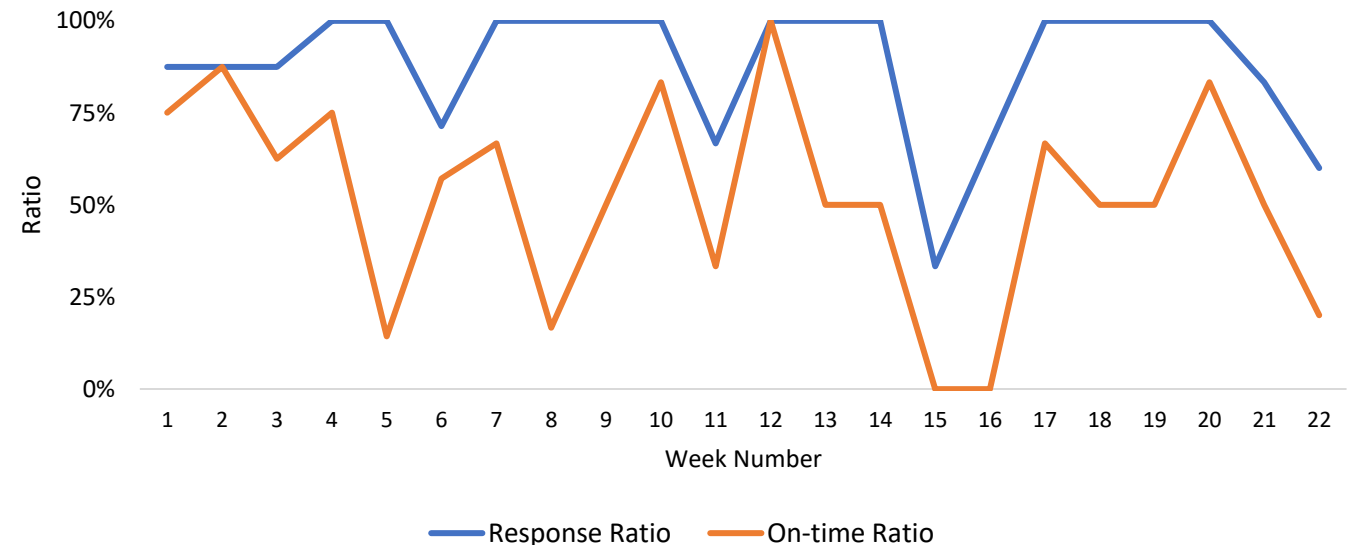
Summary score of perception metrics

Findings – Project Participation by Packers

Analysis was conducted of packers' response ratio and on-time ratio

- The **response ratio** is the proportion of packers who responded to the survey each week
- The **on-time ratio** is the proportion of packers who responded to the survey within the deadline
 - Deadline was 11:59 pm each Tuesday
- A good on-time ratio is assumed to be more than 75%
- The on-time ratio is significantly lower than response ratio
- Out of 22 weeks, 16 weeks had an on-time ratio lower than 75%
- Out of 22 weeks, 12 weeks had an on-time ratio lower than 50%

Comparison of Packer Response Ratio & On-time Ratio



Need for individual correspondence, when packers do not submit by deadline, is a source of inefficiency.

Findings – Stakeholder Suggestions (Apple Packers)

- Suggestions for the project arising from the evaluation:
 - Start the project earlier, compared to the first-year pilot.
 - The online survey form should auto-fill data points based on a packer's previous submission, and the packer can then adjust, as necessary.
 - A 'subscription model' where packers would be given an individual username and password to gain access to the online form and the reports.
- Suggestion for additional initiatives:
 - Similar data-sharing projects for other commodities
 - Integrating data with other databases for additional services to the industry, e.g., production insurance analysis

Recommendations

1. Continue the project for at least one more season.
2. Scale up the project to include more packers and perhaps more types of fruit, after improvement to the process.
3. Recommendation for improvement to the process:
 - I. Automate the system for correspondence between ministry and packers:
 - a) Generate automatic invitation and reminder emails to participating packers.
 - b) Generate automatic reminder email to those packers who have not submitted by the deadline.
 - c) Simplify the system for ministry staff to update the correspondence list.
 - II. Automatically populate data in the survey form on the combinations that a particular producer reports on, based on their previous week's submission.

Recommendations (continued)

- III. Find ways to improve on-time submission of survey by packers.
 - IV. Automate the report-generation process.
 - V. Improve the existing CHEFS survey data collection platform or investigate other platforms to address issues including data extraction.
6. Other Recommendations:
- I. Improve the report's layout/structure to make it easier for packers to filter information.
 - II. Consider calculating weighted-average prices using the volume sold to give better insight into the market.
 - III. Investigate whether other variables can be collected to enable data sharing* across projects or data sources, e.g., to be shared with Agriculture and Agri-Food Canada.
 - IV. Establish a subscription system for the online survey platform.

*Any data sharing would be subject to the applicable regulatory requirements, and consent of the packers to share.



Ministry of
Agriculture
and Food

Thank you!

For more information, contact afstats@gov.bc.ca