

# **Evaluation of the First Year of the Wollongong Online Farmers' Market**

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This research project was conducted in partnership with Healthy Cities Illawarra and Food  
Fairness Illawarra

This research project was submitted as part of the Master of Nutrition and Dietetics degree at  
the University of Wollongong

Submitted on September 29, 2023

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## PREFACE TO RESEARCH REPORT /THESIS

This preface is intended to provide the marker with an explanation of the challenges you have experienced when conducting your research project in 2023.

Please note- there may not have been any adverse events. If this is the case – write not applicable in each section below – “research proceeded as planned”.

- **Has your project changed in some way that may have adversely impacted progress or completion? Please provide detail.**

research proceeded as planned

- **Have you had unplanned interruptions to the time for data collection ? Please explain.**

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- **Were there any other impacts on the project apart from interruptions to data collection e.g., limited access to data or patients? Please provide detail.**

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- **Are there any other factors that have impacted on the project or your ability to complete the work? Please provide detail.**

research proceeded as planned

## ABSTRACT

**Title:** Evaluation of the First Year of the Wollongong Online Farmers' Market

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### **Aim**

Alternative food networks are emerging in popularity for their grass roots initiatives to overcome the social and environmental effects of the mass food industry. Virtual farmers' markets are a relatively new social phenomena and academic research on this topic is limited. This exploratory study aimed to assess the feasibility of the Wollongong Online Farmers' Market and to inform the operation of future virtual farmers' markets.

### **Methods**

A mixed methods retrospective research design was used for this research project. Sales data was summarised using Excel. Repeat customers (n=123) and all producers (n=39) were invited to participate in the research project to share their experience and opinion of participating in the online market. Interviews and focus groups were audio recorded and transcribed. Transcriptions were analysed and themes were developed.

### **Results**

Over the 10 months of operation, in total 258 customers participated in the market and a general decline in monthly revenue was observed. Repeat customers participated in either a focus group (n=5) or an individual online interview (n=5); and in-depth online interviews were conducted with producers (n=3). Seven main themes were developed from the interviews and focus groups.

## **Conclusions**

The Wollongong Online Farmers' Market created a greater awareness of local producers to the consumers who participated in the market. However, community support for the market did not expand past the cohort of consumers who were already engaged in the local food system. Recommendations were made for adaptation of the market's business model for future virtual farmers' markets.

## **INTRODUCTION**

Over the last century, the food industry has rapidly developed to meet the needs of the growing human population (1). However, the geophysical impact of humans has contributed to the detrimental effect of the mass food industry on Earth's systems (2). As a consequence, humans are threatened by food insecurity, noncommunicable diseases (NCDs), excessive amounts of food waste, and the exhaustion of natural resources (1). It is estimated that nearly one-third of food produced globally is lost to waste (1). In addition, the food industry is estimated to contribute up to 29% of global greenhouse gas emissions that are anthropogenically produced (1). Increased concentration of greenhouse gas emissions from human activity promotes environmental degradation and climate change (3). Consequently, implications of the changing environment, such as extreme weather events, are predicted to further stress and disrupt the global food system (1). To meet the demands of the continually increasing human population in the context of climate change, a transformation of the contemporary food industry is required (4).

The manifestation of a changing environment in the Australian setting can be reflected by the profit disadvantages of small-scale food producers as a consequence from the duopoly of large food retailers who can offer reduced prices of food sold to consumers (5). A growing

body of evidence supports alternative food networks (AFN) for their bottom-up, social and environmentally sustainable business models, as compared to the neoliberal food industry (6). Short food supply chains (SFSCs) such as farmers' markets contribute fewer food miles for transportation as the distance from paddock to plate is shorter, reducing CO<sub>2</sub> emissions and enabling consumers to trace the origin of their food (7,8). The reduction of actors along the food supply chain allows for a closer proximity and relationship between producers and consumers (7,9), aiding community support for local suppliers. Additionally, SFSCs contribute to the creation of a more circular economy through the production of less food waste and packaging (7), compared to the conventional global food supply chains (10). While the growing benefits of AFNs are well documented (5,6,9), a recent study of Australian AFNs in metropolitan areas suggested challenges with visibility, scalability and lack of government support (6). Further research is needed to identify the barriers and solutions in transitioning Australian community-led food innovations to mainstream resilient food systems.

Furthermore, technological advancement has enabled food service businesses to digitise (11). Literature about online food retail services and their effects on human health is emerging (11). Conversely, there is limited research about the role of online farmers' markets in enabling consumers to obtain local produce that has a lower environmental footprint than foods found in conventional supermarkets. Moreover, two successful virtual farmers' markets 'The Food Assembly' (12,13) and 'REKO' (A play on words of *Rejäl komsumtion*, meaning 'real consumption' in Swedish) (14–16) have grown over the last 10 years or so with multiple sites spread across Europe. The Food Assembly was developed in 2011 in France and allows farmers to directly connect with consumers through an online website (12,13). In 2013, the REKO market was established in Finland and adopts a similar business model, however, Facebook is the primary digital platform that links producers to consumers (16). Academic

literature about these European online farmers' markets offers understandings of the processes of learnings in a successful virtual market (13); and have focused on consumer values (14,16,17) and the relationship between consumers and producers who participated in the markets (12,15). However, academic literature has not assessed the feasibility of these successful virtual farmer's markets. Other studies about online farmers' markets have prospectively assessed the feasibility of a potential online farmers' market or food hub in USA and Canada (18,19). While only one study has provided retrospective insights into learnings of a virtual farmers' market in Ohio, USA, and a reflective essay research design was used (20). Further international research related to online farmers' markets includes a study that evaluated a prototype app that allows customers to purchase directly from farmers in Malaysia (20). Despite this, further research is required to understand the feasibility, environmental implications and health effects of virtual farmers markets.

Healthy Cities Illawarra, a not-for-profit health promotion agency, who provides stewardship of the community coalition, Food Fairness Illawarra, developed an online farmer's market in 2022 to improve the health of the local community. The aim was to increase residents' access in the Illawarra region of New South Wales to fresh local produce as an adaptation measure to the climate crisis through a more resilient local food system. The Wollongong Online Farmers Market (WOFM) supported producers from the Illawarra, Shoalhaven, Campbelltown, Sutherland, Wingecarribee and Wollondilly regions. The online Farmers Market ran from March and December 2022 but ceased operation in January 2023 due to insufficient sales that could not meet its overheads, making it not economically viable to continue. This research project aims to evaluate the perceptions of consumers and producers that participated in WOFM to assess the feasibility of the market and to inform the operation of future virtual farmers' markets. The study objectives are to summarise the sales data,

conduct in-depth interviews with producers and conduct consumer focus groups. This study is exploratory; therefore, no hypothesis will be tested.

## **Methods**

### **Study Design**

This exploratory study used a mixed-methods retrospective analysis design. Quantitative sales data was summarised, and qualitative themes from semi-structured in-depth interviews and focus groups were captured.

Ethical approval was obtained from UOW Human Ethics Committee prior to commencement of the study (HREC2023/041). The target population for interviews and focus groups were past customers (n=258) and producers (n=39) who had participated in the WOFM. By understanding the opinions and experiences of both these groups, a deeper understanding of the feasibility of the WOFM can be sought from the triangulation of data collected. To eliminate bias, customers were excluded if they were current employees of Healthy Cities Illawarra and/or Food Fairness Illawarra; or were named researchers on the project.

Customers who had purchased from the virtual farmers market more than once (repeat customers) were considered to be the most engaged participants and comprised the sample pool for consumer recruitment (n = 123). All eligible repeat customers and producers who had partnered in the market were invited to participate in the study.

An introductory email was initially sent from the WOFM host organization, namely Food Fairness Illawarra chairperson, Berbel Franse, to all eligible participants, on behalf of the researchers. All participants were provided with a participant information sheet (see Appendix A and B) to inform them about the study. Volunteers who were interested in

participating in the study were invited to contact the student researcher to attend an in-person focus group or arrange an in-depth interview via Zoom. Informed written consent was obtained from all participants prior to conducting interviews (and focus groups).

### **Data Collection**

For the quantitative data, extensive sales records were extracted from the WOFM website which included customer orders, fees, products purchased and producers for each order cycle. De-identified sales data was provided by the WOFM to the student researcher.

Qualitative data with eligible and consenting consumers and producers was collected between April and September 2023. A single consumer focus group was conducted face-to-face at the University of Wollongong, which five consumers attended. Due to low participation rate for consumer focus groups, eligible and consenting consumer participants were invited to an online in-depth individual interview which resulted in recruitment of an additional five consumers. Despite best efforts to recruit producers, only three producers completed an online interview. Interviews and focus groups were conducted by the student researcher (AW) and the focus group was attended by the research supervisor (KC) as an observer to ensure quality control and take observer notes. A facilitator's guide was used in the interviews and focus group (see Appendix C and D). The interviews and focus groups aimed to collect information about: i) opinions about the local food system; ii) applications and operations of the WOFM; and iii) challenges, solutions and visions of the local food system. Interviews with producers also aimed to collect details about their food business model. Interviews and focus groups were recorded and transcribed verbatim.

### **Data Analysis**



The quantitative sales data of the WOFM was cleaned and summarised using Excel. Summaries of the data is presented as means (SD), medians (interquartile range) and represented graphically, where relevant.

De-identified consumer and producer interviews (and focus groups) were analysed according to the thematic analysis methodology described by Braun and Clarke (21). Transcribed interviews and focus groups were imported to QSR NVIVO 12 Pro software programme. Transcripts were auto coded by NVIVO and manually coded by the student researcher. The list of codes was collated using a hybrid model of descriptive coding and systematic analysis for the creation of themes. A ‘thematic map’ was devised by the student researcher and shared with the supervisory team for quality control and refinement. Key exemplar quotes were extracted from each theme. Moreover, qualitative research about virtual farmer’ markets is limited so an inductive thematic analysis approach was used to capture the prevalent data-driven themes that emerged from the interviews and focus groups.

## RESULTS

### WOFM Sales Data

Across 40 weekly order cycles, a total of 1,272 orders were placed by 258 unique individual customers who participated in the WOFM. On average, 32 customers (SD = 8, range = 10 (min) - 47 (max)) purchased from the WOFM per order cycle and the average customer spending per order was \$66.85 (SD = \$51.97, range = \$2.56 - \$834.04). A total of 8,466 products were sold over the duration of the WOFM. On average, 194 products were sold per order cycle (SD = 60, range = 56 - 315). **Table 1** shows that the greatest number of sales were those provided by a participating bakery.

Over the 10 months that the WOFM operated, a total of 39 producers partnered with the online market. On average, 21 (SD = 3) producers participated in the WOFM per order cycle, ranging from 8 to 27. As seen in **Table 1**, the most successful type of producers who partnered with the WOFM were fruit and vegetable growers, bakers, dairy producers and ready-made meal providers.

The total revenue of the WOFM was \$85,037.39. Of this, the combined total producer income was \$68,843.85 while the remainder (\$16,193.55) included a 10% producer audit fee and 10% consumer transaction fee (not inclusive of products sold by HCI). On average, revenue was \$2,125.94 per order cycle (SD = \$702.16, range = \$590.19 - \$4334.33). **Figure 1** shows the general negative trend observed in monthly revenue, after the highest revenue month of May 2022 (\$11,817.50), with January 2023 having the lowest monthly revenue of \$590.19 when the WOFM operated for only a single order cycle, prior to the business closure as a 'closing down sale'.

As shown in **Figure 1**, the WOFM offered deliveries of orders to customers' homes for 7 order cycles from late October to late December (order cycles 32-39). A total of 30 orders were transported from the WOFM hub at Healthy Cities Illawarra Office in Fairy Meadow to customers' houses on Thursday afternoons between 12:00pm and 8:30pm. Of these deliveries, 60% (18 orders) qualified for free delivery because \$150 or more was spent on a single order at WOFM.

### **Qualitative Data from Producer and Consumer Interviews and Focus Groups**

Seven main themes were identified from the interviews and focus group. Four major themes were generated from the consumer group and three major themes were developed from the producer group. The process of identifying the major consumer and producer themes, and

their relationship to sub-themes are presented as a thematic map in Figure 2. Key exemplar quotes reflective of the themes were extracted from the qualitative data and are displayed in Tables 2 and 3.

### **Consumer Themes**

Of the ten customers who participated in this study, nine reported demographics such as age and/or gender in their signed consent form. The age range was from 43 years to 67 years of age (mean age = 53 y (SD 8)). Six consumers reported they identified as female while three participants chose not to report their gender.

#### Theme 1: Perspectives of a local food system

The definition of a local food system was explored, and a number of different perspectives emerged from the consumer interviews and focus group. Participants perceived that a local food system should encompass sustainable practices and promote social connection within a defined area, and result in a shorter supply chain that does not rely on non-local foods.

Participants generally believed that food produced or grown in a defined area of a 50-to-100-kilometre diameter or radius from where they live was considered local to them.

*“food grown or produced within... 50 or 100 kilometres”*

This was similar to the belief of many consumers, that supporting a local food supply chain was an opportunity to reduce their carbon footprint through food and to *“really reduce those food miles”*. Other participants considered a local food system as connection with community through the understanding of where food is grown and a relationship with producers.

*“reconnecting people with produce”*

Participants had a geographical perspective of their local food system as being representing connection with producers from smaller communities as opposed to larger cities, despite similar distances.

*“a lot of connection with the South Coast, not Sydney”*

Another perspective of a local food system was related to the resilience of the system to overcome challenges without the reliance on non-local food supply chains.

*“relying less on external food as much as possible... there’s also that kind of resilience...one that can manage through the ups and downs”*

## Theme 2: Participating in a Sustainable Local Food System

Consumers identified many barriers and motivators for partaking in environmentally sustainable food choices such as growing food, reducing waste and purchasing from local producers. Barriers for participation are related to increasing housing density, reduction of agricultural land and lack of affordability of food. Participants believe there is limited *“access to land or places where they can grow food”* due to housing density and minimal government commitment incentives to overcome this problem.

*“the yard spaces that maybe people have traditionally had where they could possibly even look at growing (food) themselves at home is now less likely”*

Other participants believed that a barrier to accessing sustainable food is *“affordability or more perceived affordability”*.

*“it’s a very narrow part of the population that could afford to actually spend that sort of money on a block of cheese”*.

There was a strong feeling that the incentives of participating in sustainable food choices is related to creating a sustainable food future, reducing food and material waste and minimising expansion of the mass food industry by supporting local food suppliers.

*“a philosophical commitment to climate action, and sustainable living...”*

### Theme 3: Government Support For Creating a Local Food System

Participants expressed a desire for government support of community initiatives to create a sustainable local food system. They believe that *“education is our key...”* to empowering individuals to make informed decisions of food products.

*“but if you knew on that product, all of that information (carbon miles) to make an informed decision”.*

Participants proposed a need for education of food production in relation to environmental sustainability to allow children to participate in the food system from a young age.

*“creating an understanding first kids in schools, in childcare ... building that connection, again, between their environment and what we produce...”.*

Consumers want a top-down approach to change the environmental impact of the mass food industry and support community incentives for creating a sustainable local food supply chain.

*“leadership and policy that drove it (community groundswell) forward”*

### Theme 4: Applications and Operations of the WOFM

Participants identified several positive aspects related to the online market but also many impediments to accessing the WOFM and provided potential solutions for adaptation of the WOFM business model. Some consumers felt that participating in the online market was

convenient and “*easy*” due to the technological advancement of retail outlets during the COVID-19 pandemic as “*we’ve all hit that online*”. The WOFM was able to create a “*one stop shop*” for purchasing from local food businesses and the “*list of producers*” available on the website created awareness of unknown local producers which “*opened up a whole world*”.

Some customers found the website “*a bit confusing*” while others perceived “*a lot of convenience on the online interface*”. Many participants identified restrictions to accessing the platform such as the timing of the pick-up system, community awareness of the WOFM and inconsistency of producers and products available on the market.

“*the once a week you know, pickup or, or that delivery that came in the end that that's kind of restricts the place*”

Additionally, given the “*simple*” ordering system and convenience of “*click and collect*” some customers proposed adaptations of the WOFM business model to be a hybrid model of bulk food businesses and farmers’ markets.

“*a combination of a farmers’ market and the...bulk food thing together*”.

### **Producer Themes**

All three producers who participated in the research project were fruit and/ or vegetable growers, respectively. One participant was a backyard producer, while another participant’s business model was based on community supported agriculture (CSA). The range of operation for the food businesses was from four years up to fourteen years. The customer base for two of the producers are local customers who “*care about food and the*

*environment*". The producers supplied a range of products to the WOFM including pre-packaged items and fresh produce.

### Theme 1: Community engagement in the local food system

Participants perceived both barriers and solutions to community engagement in the local food system as being awareness and education. Producers were of the opinion that awareness of the local food system did not increase as a result of the WOFM because the consumers were comprised of community members who were already engaged in the local food system, and they did not think that the WOFM had managed to attract new groups of people.

*"...the same people that are buying the stuff from the online farmers market... they're the same people that are engaged with the food system..."*

Participants believed that increased community participation in the WOFM and engagement in the local food system would have been improved through wider promotion and communication of the online market to the local community.

*"could have had a bigger impact if the local people have been communicated with more".*

Producers want the community to have *"more education"* about the importance of engaging in the local food system for improving environmental sustainability.

*"people don't even understand how the food system fits in with sustainability".*

### Theme 2: Creating a resilient local food system

Producers identified that there were many challenges to creating a resilient local food system. They identified that urbanisation was a barrier to producing and accessing local food within backyard gardens.

*“backyards are disappearing under concrete driveways, and buildings”.*

Producers also believed that unaffordability of locally produced food is another barrier to customer participation in sustainably produced produce.

*“people think that organic food is too expensive, but it's actually conventional food that is too cheap...we are passing the cost of that regeneration on to future...onto younger people”.*

Producers expressed their expectation for governmental support to create a sustainable local food system because bottom-up approaches are limited in impact.

*“our food future needs to have food that is sustainably produced and that needs to come from government policy”.*

Producers also wanted greater transparency of all produce so consumers could easily identify locally produced food and make an informed decision to support local food suppliers.

*“more transparency about where everything is coming from...”*

### Theme 3: Disconnect of the WOFM business model

Participants identified challenges of the online farmers' market business model. A barrier for fruit and vegetable producers was quantification of produce in advance of the ordering cycle.

*“the ordering cycle was just too, too far behind when I had to pick and deliver”.*

Some producers felt like *“a physical farmers market”* would have been easier as product quantity does not need to be confirmed so far in advance. Participants believe many



producers used the WOFM platform to sell their excess products rather than prioritise products to sell on the platform. They expressed their concern with producers to commit to the online platform as the weekly differentiation of products and product quantity may have created uncertainty for consumers.

*“The platform was a bit of a... platform for people to sell their excess produce...”*

Some participants perceived the aspect of uncertainty was also caused by interruptions of access to the WOFM due to closure of the market for school holidays and other events.

*“there should never be a break because if you want people to be relying on this market for their organic local food, you need to be absolutely reliable”*.

Some producers believed that the marketing messaging of the WOFM were confusing and provided a barrier for community engagement.

*“instead of saying "orders closing", they would have "market closing". ... And in people's minds...that means the business is closing...”*

Generally, participants thought that the producer audit fee was “reasonable” but said that this fee may not be able to be absorbed into the profit margin for smaller producers. Additionally, the audit fee was a percentage of a producer’s revenue in the market and not a flat rate which is commonly used for traditional in-person farmers’ market. Producers identified they may accumulate a higher fee if they sell a larger amount of products using the online platform compared to a traditional in-person farmers’ market. Furthermore, the weekly revenue payment to producers after their sales could have been more streamlined.

*“if you were selling a significant amount, that fee could actually get to be quite high, especially compared to an in-person farmers market”*.

## DISCUSSION

This exploratory, retrospective mixed-methods study provides insight into the feasibility of the Wollongong Online Farmers' Market through the triangulation of data from the perspectives of producers, repeat customers and sales records. In this current study, a general negative trend was observed in the monthly market revenue over the 10 months of operation. Perceived reasons for this revenue decline were reflected in the seven main themes that were developed from consumer and producer interviews and focus groups. Of which, motivators and barriers for consumer engagement in the market, and more broadly the local food system, were identified. All participants expressed a desire for government to support providing consumers with education about the relationship between environmental sustainability and the conventional food system. Additionally, application and operation challenges of the market were highlighted and suggestions for adaptation of the WOFM business model was conveyed by both groups.

Given the limited academic research about online farmers' markets, to the best of our knowledge, only one study has provided retrospective insights into the feasibility and learnings of a virtual farmers' market in rural Ohio, USA (22), using a reflective essay research design. Findings related to sales of the WOFM mostly agreed with the results of the Miami County Virtual Farmers' Market in rural Ohio (22), however, there were some inconsistencies. Both virtual farmers' markets were run by not-for profit organisations and were unable to meet overhead costs despite a 10% market fee for producer participation (and consumers who participated in the WOFM) (22). Interestingly, the successful multi-project virtual farmers' market in Europe, 'The Food Assembly' operates similarly to the WOFM using a 20% market fee (23). Moreover, the WOFM accumulated a greater amount of total revenue with lower total customers and while operating for 24 weeks less than the Miami County market (22). This suggests the WOFM had a smaller but more engaged customer base

in comparison to the virtual market in rural Ohio. However, further research into the economic feasibility of virtual farmers' markets is required for a more in-depth understanding of the relationship between consumer engagement, profit margins and market fees of successful online farmers' markets.

Current study findings of consumer perceptions of a local food system are consistent with academic research (24–26), in which heterogeneity perspectives of local food and their supply chain exist (24,26). Consumer participants of this current study believe a local food system is within a geographic proximity of 50-100km radius or diameter of where they live; and provides them with a relationship with local actors (such as producers). Consumers expressed they perceived a greater connection with producers from smaller communities. This is consistent with literature related to consumer purchasing behaviours of local food for the perceived pro-social benefits for small-scale businesses (25,26) and adds to the growing research of understanding consumer perception of a local food system.

Findings related to consumer motivators and barriers agree with research about consumer values for participating in the European multi-project virtual farmers' market 'REKO' (14,16). Consumer motivators for participation in the WOFM community initiative, and more broadly the local food supply chain, were related to pro-social and environmental benefits as well as the convenient food purchasing aspect of the WOFM business model. While impediments for participation in the local food system related to access had a two-fold meaning. Firstly, consumers perceived they have limited access to growing their food in relation to the reduction of agricultural land and increasing housing density as minimising access to backyards and community gardens. This barrier was mirrored by some producers. Furthermore, financial access to the WOFM was perceived as another barrier by majority of participants, in which some products were considered potentially inaccessible for some consumers of the local area. However, as seen in table 1, most of the top 10 successful

producer types were those who offered dietary staples. Perceived cost of local food as a higher value is aligned with findings on consumer purchasing behaviours at REKO (14), where self-identity was negatively associated with price of products as participants perceived local food from REKO to be more expensive than conventional food at a supermarket. Further research assessing the dollar value as well as social and environmental cost of conventional food compared to locally produced food would be beneficial in understanding the cost difference.

Furthermore, education was a theme common to both consumers and participants as a means for engaging community members in the local food supply chain. Producer participants believe there is a need for education about the environmental impact of the conventional food system to create awareness of the importance of supporting locally and sustainably produced food. Some consumers suggested educating children about the relationship between the environment and food system to create an understanding of the multi-benefits of locally produced food and build skills to grow produce. These findings align with the well documented multi-benefits of school food interventions in supporting healthy and sustainable food behaviours and skills from a young age (27–30). Moreover, labelling of food products or the area where products are stored such as shelving, were identified as solutions to aid consumer awareness of locally produced food and allow consumers to make informed decisions about purchasing products. Recommendations offered by both participant groups was the use of carbon miles to compare products by their environmental food print; and / or the origin of food and production location such as farm sites or regional area to identify where food products have come from. This is consistent with recent literature about traceability and sustainability labels having a positive effect on consumer purchasing behaviour or intent to purchase food products with these labels (31–33). Overall, different

forms of education aimed at various age demographics may aid in consumer engagement in the local food system.

In this current study, participants suggested improvements of the current WOFM business model. From this, recommendations for the business model and further academic research were developed. Given the limited academic attention on virtual farmers' markets, we present here for the first-time, challenges of the WOFM business model from the perspectives of producers using a retrospective research design. These challenges included issues with quantifying produce over a week in advance of consumer collection, inconsistency of products each order cycle, and interruptions to consumer access to the weekly order cycle. Additionally, one producer recommended a need for the market to be more inclusive of all consumers with promotion and payment methods. This was similar to recommendations by the virtual market in Ohio (22). The main challenge conveyed by consumers was the perceived participation restriction related to the once a week pick up or delivery. From these challenges, the recommendation of a hybrid in-person and online farmers' market business model was developed. In the proposed hybrid model, pre-packaged products and pantry staples would be offered online and fresh produce would be offered twice a week at the pick-up location. Further recommendations from this study include the use of sustainability labels to aid consumers in identifying locally produced food. We also recommend various avenues for research which are proposed throughout the discussion, with a focus on studies about virtual farmers' markets and community engagement.

We acknowledge there are limitations to this study. Given the low uptake of participation, the small pool of consumers who participated in the study are likely the most engaged consumers of the WOFM. Therefore, their opinion and experiences of the WOFM and the local food system are not generalisable to all customers who participated in the WOFM. Similarly, all producer participants were fruit and vegetable growers, therefore their experiences with the

WOFM business model may not be reflective of all producer types which partnered with the WOFM. Furthermore, given this research is explorative, suggested associations have not been tested formally and are therefore not correlative.

## **CONCLUSION**

In conclusion, the current study offers novel findings to the scarce literature about virtual farmers' markets and provides recommendations for adaptation of the current WOFM business model. In addition, participants have expressed suggestions of how to inform consumers of locally produced food, in which a sustainability label was recommended. Furthermore, this research has highlighted potential avenues for further studies to be conducted, with a need for more academic literature about online farmers markets such as research assessing the environmental sustainability of these business models.

## **ACKNOWLEDGEMENTS**

I would like to thank my supervisors Professor Karen Charlton, Kelly Andrews and Berbel Franse for their support and feedback. Thank you, Karen, for guiding and supporting me with this research project throughout the year and for reading my drafts. Thank you, Kelly, and Berbel for helping me to always think critically and providing feedback on my final draft.

I would also like to thank Anne McMahon for helping me in the final research block with guiding me through the process of analysing my qualitative data into themes and writing my results.

I would also like to thank the participants of this study for volunteering their time to be interviewed and make this research project possible.

Lastly, a big thank you to my friends and family for supporting me throughout the long research period. I wouldn't have been able to complete this research project without their support.

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## TABLES and FIGURES

**Table 1:** Top 10 most successful type of producer who partnered with the WOFM in order of total revenue.

Type of Producer	Total Number of Products Sold	Total Revenue
Fruit Grower; Alcohol and Honey Producer	620	\$6,959.66
Bakery	851	\$6,466.00
Ready Meals Provider	218	\$4,672.83
Dairy Producer	445	\$3,885.60
Dairy, Bread and Condiments Producer	316	\$3,626.80
Ready Meals Provider; Herbs, Spices, Pulses and Grains Producer	345	\$3,613.60
Ready Meals Provider; Pulses and Grains Producer	467	\$2,753.25
Poultry and Eggs Provider	391	\$2,672.00
Pulses, Grains, Herbs and Spice Producer	281	\$2,650.41
Fruit and Vegetable Grower	453	\$2,519.81

Table 2: Selected key exemplar quotes for each subtheme within the four major consumer themes developed.

Theme	Quotation
<b>Perspectives of a local food system</b>	
Geographical Location	<p>Local food systems to me would be food that is grown or produced within, I don't know, 50 or 100 kilometres of where I live so that minimizes food miles. (P5 – 60y woman)</p> <p>To be able to really source, source whatever it is, know where it came from, potentially know more about the producers, or really reduce those food miles to support local, you know, backyard farmers and, and makers. (P2 – 43y woman)</p>
Social Connection	<p>The food system to me is about reconnecting people with produce. I think of community run things... (P1 – 50y woman)</p> <p>It's interesting, because I, I see a lot of connection with the South Coast, not Sydney. I feel like, you know, because there's this smaller communities and things that are produced here that aren't there. And I think some of the online farmers market stuff was from bit further south. And in my head, it's just like, oh, that's okay. (P9 – 57y woman)</p>
Resilience	<p>A local food system is one that is maximizing ...what that local community can provide to its own food system, if that makes sense. So relying less on external food as much as possible. And so that means supporting local food businesses and local individuals, local producers as much as possible. It's a system that kind of more broadly, tries to maximize access to food throughout the local community. And, and one that, I think I guess there's also that kind of resilience. Part of it one one that can manage through the ups and downs. (P4)</p>
<b>Participating in a Sustainable Local Food System</b>	
Impediments	<p>So, in terms of, you know, sort of commercial farming and, and small farm producing, like with, there's, there's not a lot of agricultural land left in our area, but also land in terms of I mean, housing density, and where people live. And in medium high density, they may not have access to land or places where they can grow food if they want to. There is not a sort of region or even LGA wide approach to community gardens and things like that yet, so it's not that's not happening yet. (P2 – 43y woman)</p> <p>The yard spaces that maybe people have traditionally had where they could possibly even look at growing (food) themselves at home is now less likely. Yeah, it's like any</p>

house with a decent block of land is being fought by developers. The land is filled. (P6 – 45y woman)

Totally understand it from a producer's point of view because we you know, we totally get how much it takes, hours, everything else to reduce food and the cost involved in that. But if you're, it's a very narrow part of the population that could afford to actually spend that sort of money on a block of cheese or the veggies weren't too bad. You know, I thought they were fairly reasonable priced. (P3 – 53y woman)

Affordability or more perceived affordability like people you know, may think that it's more expensive to buy fruit and veg not from places like Woolworths, but it's actually not like that for the fruit and veg I don't think that it's more expensive. I think other fancy stuff is more expensive, but generally, the fruit and veg I find that if you're buying it local. (P6 – 45y woman)

**Motivators and Incentives** I imagine, you know, in the coop, there's that little wall at the back behind the counter where they've got the picture of all the different producers. I imagine a map like that, but with many, many more producers on it. And like a graphic of the supermarket's just like shrinking and shrinking and shrinking. And yeah, more local producers, more local, things like WOFM online and offline farmers markets, more small backyard producers, maybe more. Yeah, more what are they called? the, like community gardens, like the Woonona community garden, and some of the little ones that are about like a lot more of those. (P7 – 50y woman)

I think the other thing for me is, probably everyone, if you have a philosophical commitment to climate action, and sustainable living, it's (participating in the WOFM) one way you can take some power within your own world, in your own means. I mean, I didn't buy a lot, but I would buy regularly. And then you feel like, you know, because otherwise it becomes a very hopeless big mess that we're all trying to swim around in. So, I think we all need hope. (P9 – 57y woman)

I really hate at Aldi how they put everything in a seal plastic bag. We've just had our local grocer taken over by Food Works. Everything is now one little section of fruit and veg, and everything is like almost everything is refrigerated plastic fruit and veg and it's wall to wall of packaged products. (P6 – 45y woman)

**Government Support For  
Creating a Local Food  
System  
Policy**

	<p>... I feel like there's a lot of community sort of groundswell in different areas. But it happens in pockets. And it would be really great if there was leadership and policy that drove it forward. And, and recognized it as critical in terms of, you know, the future of our community and food security and, and the longer-term greater impacts of that as well....</p> <p>Even in terms of, you know, what, junk food producers are able to do advertise how much visual representation they get in a supermarket or sporting like, it's, that all needs to be driven from the top, I guess, and then it's, if there's already sort of enough community groundswell to, to sort of bridge that, that gap. I think, I hope. (P2 – 43y woman)</p> <p>Let's, let's we're all categories of food packaging move towards fully biodegradable options and require that in you know, legislation like massive research investment, stop focusing on recycling and reusing plastic and stop, stop allowing it to be produced. (P7 – 50y woman)</p>
Accountability	<p>...the levels of government, so something like food systems, food security, and, you know, farming, all those kinds of things. They're, they're a really, really important factor at the national level, at the state level and at the local level. So it definitely seems like it's one of those problems, it's really hard to get action on and momentum on, because the responsibilities could be seen as being at any of those levels in government....So there's got to be there's got to be accountability and action, kind of at all levels. (P4)</p>
Education	<p>Engage with children to participate and contribute to the food economy when we have got so much space, right? We've got space and kids that want to learn. They just love being outside and doing those jobs, surprisingly. So. Yeah, so that's on my list. Education is is our key to kind of overcome, like we've got a massive population growth thing happening in Wollongong with all this high rise and no infrastructure for the food economy. Yeah, education, education, education. (P1 – 50y woman)</p> <p>...how do you encourage people to, to buy local to look at the carbon miles if you're, you know, and that's the sort of term we looked at carbon miles or the waste involved in the product you're buying and how do you get that information out? I don't know. Like, what's the measurement tool? And how, you know, if we could see that information, it would be quite amazing... but if you knew on that product, all of that information to make an informed decision. But in saying that, do we already, are we already saturated with too much information? (P3 – 53y woman)</p> <p>... all different levels of education, I would say, you know, starting from creating an understanding first kids in schools, in childcare, where there is, you know, an opportunity to</p>

## Applications & Operations of the WOFM

### Convenience

grow things and make things, building that connection, again, between their environment and what we produce, and then the impact on our bodies, all that sort of stuff. (P2 – 43y woman)

Well, because we've all, after COVID, we've all hit that online. It's kind of like, almost best now for some things, but the fact that that makes it easy, because you don't have to go. I mean, we all like to go to markets and most of us do. But finding another source. And even for some of the producers, it was good for them to be able to sell online rather than having people come to their store or wherever else say, farm getting and all of that so it gives them options as well. (P1 – 50y woman)

I think that you can't not kind of, say the once a week you know, pickup or, or that delivery that came in the end that that's kind of restricts the place. So, there's a lot of convenience on the online interface, but that part is less convenient. But at the same time, that's also a like, you know, there's got to be some kind of restriction there. That's impossible to avoid. Just like you would have a physical market only on during certain hours of, you know, like once a week or once a month. So, you know, so that wasn't that far different from what you get through other markets anyway. (P4)

I know that there's all this great stuff in the Illawarra. But I don't know where all the shops are. And I don't know what the shops, you know, which ones to go to, and all that kind of other stuff. So, it, it kind of gave that a bit bit of a one stop shop kind of aspect to it. Obviously, it wasn't going to have everything. But it was it was a kind of a centralized point, instead of instead of having to find all the individual stores, if you didn't already know them. (P4)

### Awareness

Opened up a whole world (of producers). (P10 – 67y woman)  
So there was a lot of products and producers that I hadn't heard of before. So in my head, it was really nice to see the number of producers and products increase over the year or over the 10 months (P5 – 60y woman)

...awareness wasn't necessary. I mean, I'm guessing here that like, there wasn't really enough awareness. Already, that then when the deliveries came in for that. Really, you know, what does it like massively change things...But I'm guessing if more people knew about it, then the delivery thing would have been all weighed up from that, well, now I can use it because I don't have to go and pick it up on in a certain window. So that that was something they brought in. But that was I think that was really, really important. (P4)

## Interface

I did find sometimes the ordering of items available on the website was a bit confusing, like some of them have some vegetables and then it would go into some ready meals and then it would go into the more vegetables so I saw. I thought it would might have been nice to either order things so that they were like things grouped together or potentially have some categories. But I appreciate that everything like that adds complexity and then the structure that might not be the way that that it evolved in the future. (P7 – 50y woman)

I did like the website with the list of producers, and then the links that you could go to, to see who they were, where they were, and then kind of spend time there because they offer things like at the farm gate kind of thing like down in Gerringong which she's got cooking lessons and all sorts. (P10 – 67y woman)

## Accessing the WOFM

I was like, especially before they got the delivery, because I'm from the southern suburbs. So, I mean, Dapto I would be like, ah, if they were just closer, you know, a lot of the coops and things in this space tend to be in the northern suburbs are long gone up. But you know, there's reasons why. And a lot of that, actually, is to do with, I guess, money in itself. Because if, I could only probably do all this because I don't have to work full time ... I couldn't imagine if I was a busy mom working part time, which most you know, that's the norm. I'm a little bit older. So, I wonder if that impact. So just having everything in this space seems to be up the north. So even if you want to try to buy locally, and you don't live in those areas, those areas, transport, you've got transport then on top of it.... (P3 – 53y woman)

I did notice that some food items dropped in and out. And they weren't things that were seasonal things, it was more like the prep some of the some of the, like, there was a really beautiful custard that we had in the beginning ... So you know, I, you know, get used to those things, and then you have that repeat experience and you get a bit sad. (P1 – 50y woman)

## Business Model

Another major benefit for me was the model, I really like the idea of just putting in the order for everything on one day, and then picking it up on another day, like it made it simple for me, and I compare that mentally with the the effort of, for example, having to go shopping, and wander through the aisles and think about what to buy and what not to buy. (P7 – 50y woman)

If I can click and collect from it (a business) even better, like employ people to to do the job of bagging up my stuff in cardboard or in a reusable glass or whatever reusable glass I pay them to do that for me I'm happy to pay and be able to



just pick that up and not be using plastics and ... be getting everything as local as I possibly can. (P1 – 50y woman)  
I would like to see a combination of a farmers' market and the ... bulk food thing together. That's what I reckon, that's my dream shop. (P1 – 50y woman)

Table 3: Selected key exemplar quotes for each subtheme within the three major producer themes developed.

Theme	Quotation
<p><b>Community Engagement in the Local Food System</b></p> <p>Awareness</p>	<p>Just in talking to my neighbours in the local area, who live within 500 meters of the market place hub, none of them were aware that it existed.... I just felt it (the WOFM marketing) missed a demographic. Like there is lots of older people around the area, the local area. I just felt that it's sort of wasn't catering for the older people. Maybe could, you know, would have been happy to walk up there on a Thursday, and pick up the things, that who wanted to pay cash ... so I just felt there were lots and lots of things missing in the promotion to the local people. Yeah. I just think it could have had a bigger impact if the local people have been communicated with more. Like I don't know how they would do that like letterbox drops or just you know, those Facebook groups or whatever. Just giving producers like me some flyers.... (Backyard Producer)</p> <p>..it definitely is the same people that are buying the stuff from the online farmers market. They're the same people that are engaged with the food system...but they're only got, like, so much budget they can spend and they only want to buy so much like, you can only buy so much fresh produce and stuff. (Fruit and Vegetable Grower)</p> <p>it was all in the same sort of networks of people that are like already engaged in that system. And it's like the same people that like yeah, like I didn't see it the like spread out into other groups of friends that I have that aren't as involved, which like it, you don't really expect it to but it's, it was just sort of in that same sort of network of people. (Fruit and Vegetable Grower)</p>
<p>Education</p>	<p>I honestly think the biggest challenge is that people do not care enough. If I had to boil it down to something. People are thinking about how much things cost, they're wanting the cheapest option. And that's what they're going for, and not, they're not asking for change from a higher level, they're not asking, you know, they're not expecting our elected officials to act in this front. ... And I think that partially, that's because people don't even understand how the food system fits in with sustainability... I think that a lot more education has to happen. (Community Supported Agriculture)</p> <p>I think a lot of it does lie in education and just engagement of communities. So that people realize what a difference it does make like you can, if everybody in the world, if everyone in our, let's say let alone the world, if everyone in our community started saying that they want to buy local and</p>

that they're, you know, willing to pay the cost... I would love to see more initiatives to help people understand what a difference that makes. And it definitely exists in some parts of the community. Like there's lots of people that are passionate about that stuff, but there's so many people who are disengaged from it. That it would be nice to it would be nice for more people to care... (Community Supported Agriculture)

It always is the same thing. But just like more funding to support small scale producers and yeah, in the area to access land, and capital. And just yet further education around potential, urban and Peri urban farming sort of opportunities. (Fruit and Vegetable Grower)

### **Creating a resilient local food system**

#### Government Policy

I just I guess, more transparency about where everything is coming from so like yeah, it's good to like just put-up signs saying like, Oh, this is like locally produced stuff. But like, you're also have to put up signs to say where everything else is coming from as well, because, like, everyone needs to be transparent. And that's the only way you sort of get a you're going to sort of come up on top to the local side of stuff. So yeah, I think, yeah, just as much transparency as we can from a retail sort of standpoint. (Fruit and Vegetable Grower)

I think the government needs to basically ban new toxic chemicals in agriculture. I think more agriculture needs to be stable. Like we don't have an option on this. With climate change upon us there is no option anymore. Food production on the big scale, the medium scale, small scale it has to be sustainable. We need to be looking at the health of our rivers, you know, our agricultural land, our forests, our cities, our suburban areas like yeah, so our food future needs to have food that is sustainably produced and that needs to come from government policy. And, yeah, ideally, we need to be reducing our food miles, dramatically encouraging local, local farmers, so we need some stimulus for local farmers. We need tax breaks and incentives for small farmers, urban farms, you know, we could have you know, some some greenhouse type of agriculture, intensive agriculture. We can have a lot more urban farms. We could have rooftop agriculture and all the city buildings. There's so much space available on city buildings that's not being used. Could you imagine all of the rooftop community gardens, it could be available. It's phenomenal the potential we have got, and how people could be so engaged. (Backyard Producer)

I think the, the local government and state government policies on urbanization, are increasing density of urban development, are a bit of a disaster, for allowing residents to grow their own food. Because what's happening, as you

probably know, is nearly every normal sized house block in the Illawarra, has been cut in half and turned into dual occupancy or, you know, blocks of units. And what that means is, backyards are disappearing under concrete driveways, and buildings. So people have basically no where to grow things anymore. And I'm quite passionate people should have a sovereign right to produce their own food, if they want to. And then right has been taken away by government policy. So I think urban farming needs to be encouraged and not obliterated by government policy. (Backyard Producer)

### True Cost of Sustainable Farming

...people think that organic food is too expensive, but it's actually conventional food that is too cheap, we aren't we are not paying the true cost for our food, when we're spilling chemicals on the land. And, you know, like wiping away every other living thing, just so we can grow food into that land is not going to we're not going to be able to keep doing that that land will die. And we are passing the cost of that regeneration on to future, you know, onto younger people. We are not paying the true cost of farming food sustainably. The we're getting a cheap version now. But someone's going to pay for that. It's just not us right now. So I just don't think people understand that. (Community Supported Agriculture)

Ideally, you know, food should be growing in a more environmentally friendly way, within (in audible), but that's not always possible. So I think just by by minimizing the environmental impact of you know, the transport and single, but also the what do you call it, the sort of marketing aspect of it. If food is only going to a large supermarket and it's genuinely not local, because the local, sorry, the supermarket's only buy things in great quantities. So they're genuinely precludes, local produces, you know, just from economies of scale. So I think the importance of the local food economy is that its supporting local producers in my local area, and not not saving money, at the time you buy things in the supermarket, comes in from overseas. Yeah, so it's having, it's really important to be keeping money within your economy. Because it is hard for small producers to survive economically, especially when everything's soaking towards the supermarket chain of supply. (Backyard Producer)

### Disconnect of the WOFM Business Model

#### Administration

I think if it could work out in the future, the best way to do it would be that we put the produce up. The farmers market sells it and then they just send us the money rather than us. Like we have an account with them and they just send us money rather than them sending us the report of how much stuff they sold, us going through it all. Making up an invoice

sending it back to them again. Yeah. And then them paying us with and then sending us a receipt. Like that seemed like it was a bit of overkill. I feel like that could be done more efficiently.... yeah, like really the fee, the fee should just come out of it at that point for the farmers market, and then the rest just gets passed back. Yes. Because like, I mean, it was so much work on everyone's end really, I feel like that would make it so much easier. (Fruit and vegetable grower)

I thought that 20% fee I mean, that was reasonable, because I understand they had big costs.... But what it meant was that I had to, you know, mark up my products 20% and sometimes I felt ... I was actually marketing things at a 20% loss to what I would be getting... because I couldn't add 20% on to what I was already getting. So bananas, I can easily get \$5 a kilo at the garden gate, for organically grown banana but you it was hard for me to put 20% on top of that again. (Backyard Producer)

I didn't think it was exorbitant at all but I think I mean, the logistics of running an online farmers markets, I think are more intense..... So they have to cover their costs. ... But I think you know, if if you were selling a significant amount, that fee could actually get to be quite high, especially compared to an in-person farmers market...if you're selling a lot, that's actually a disincentive for, potentially, potentially, for producers, that that that fee could actually grow quite a lot. (Community Supported Agriculture)

#### Uncertainty for Producers and Consumers

I think one of the main things that was really problematic for me, as a small producer, was the ordering cycle was just too, too far behind when I had to pick and deliver. So it was like nine days, you know, opened up to nine days before I would have to deliver those products. When you're growing fresh fruit and vegetables and you know, the weather is so unpredictable. You can't really predict, you know, if you're going to have five kilos of bananas ripe. (Backyard Producer)

So what didn't work for us is like a physical farmers market would have been much, much, much more easy like would have would have worked for us much, much better. The reason being with the online format, we have to tell the market like the online market, how much of what we have, like how much of each item that we have in advance ... like almost a week in advance. And for a producer, so much can happen in a week... Because there's a lot of factors that play into how well things are going to grow weather pests are going to take over all of those things..... If they had had an in person market we could have harvested like we could have brought what we have. (Community Supported Agriculture)

I felt sometimes, like they would have Facebook posts would say things like, that was just before the orders close. You know whatever day the orders closed, so Monday I think it was, but instead of saying "orders closing", they would have "market closing". Okay. You see now on Facebook, there are lots of those ads for businesses that say, you know, "business closing", you know, "cheap prices get in now", meaning the whole business was closing but every week ... And in people's minds, because we've been conditioned by all those Facebook ads. That means the business is closing...  
(Backyard Producer)

#### Interruptions to Access

The platform was a bit of a ... platform for people to sell their excess produce, which, yeah, in the short term, it it kind of works. Because you get like a couple of like, backyard producers, like have a bit of this on one day, I have a bit of this on another day. But like that doesn't give the consumers any sort of confidence to come back to the platform and any sort of reliability. So yeah, I think just, you just need engagement in the long term from actual producers. So there's always something there. But yeah, again, that work needs to be done, like a year in advance to try and get those things going. (Fruit and vegetable grower)

I think the market should just continue every week regardless of the international bicycle races or school holidays. There should never be a break because if you want people to be relying on this market for their organic local food, you need to be absolutely reliable. Yeah. Reliability was just not there. And that's one of the things I think just made people look elsewhere because there were too many gaps. (Backyard Producer)

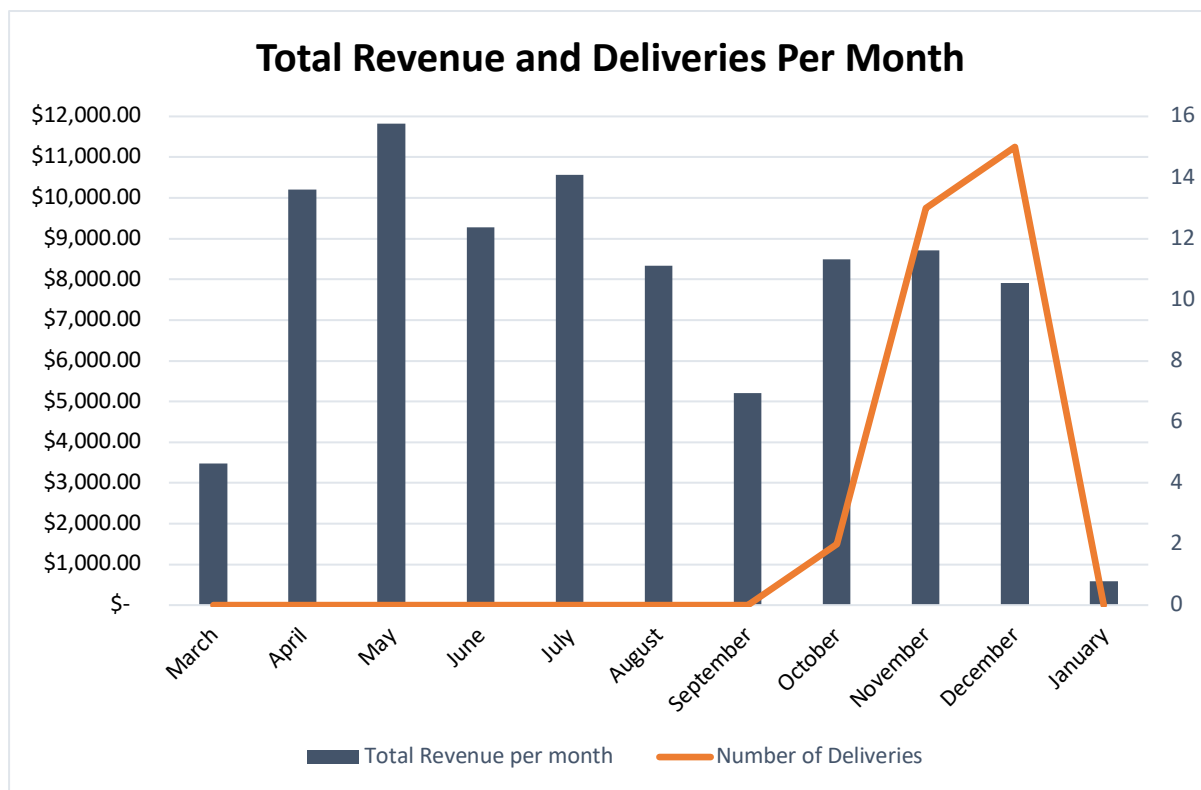
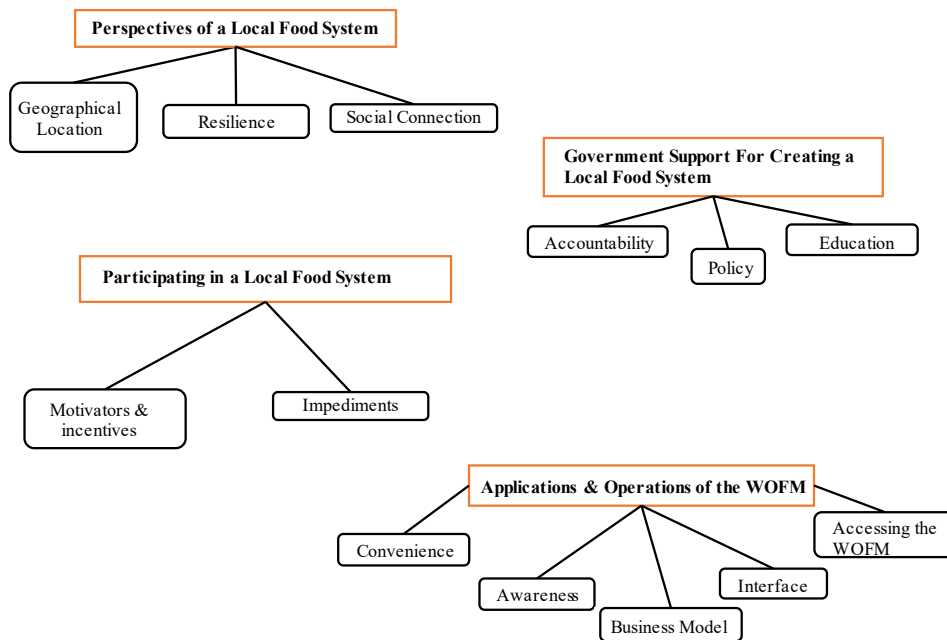


Figure 1: Total revenue of the WOFM per month across the 10 months the WOFM operated. Included in graph is the total number of deliveries per month. Deliveries were offered to customers from late October to late December.

**Consumer Themes & Sub-Themes**



**Producer Themes & Sub-Themes**

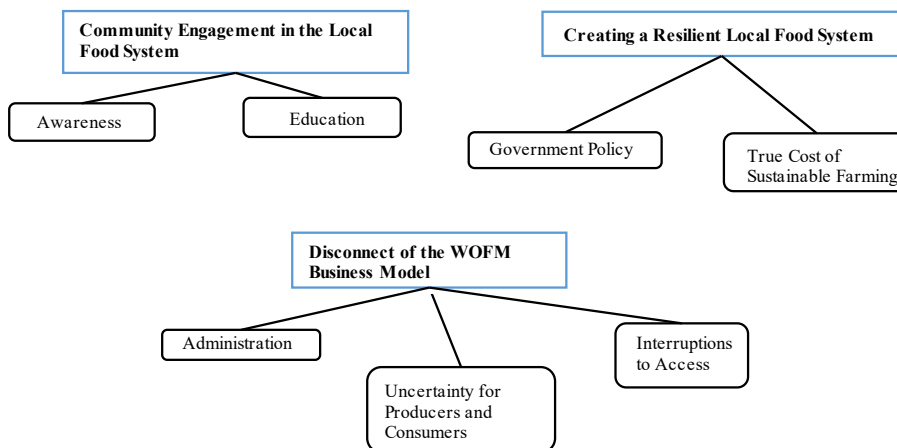


Figure 2: Developed thematic map of seven major themes, separated by consumer and producer themes and the corresponding sub themes.



## APPENDICES

### A. Consumer Participant Information Sheet



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#### Evaluation of consumers' perceptions of the Wollongong Online Farmers Market

##### Participant Information Sheet

1. What is the study about?

The study aims to interview customers who participated in the Wollongong Online Farmers Market (WOFM) to gain an understanding of the feasibility to inform future virtual farmers markets.

2. Who is running the study?

The study is being run by the following researchers:

- Ms Ashleigh Walter (Master of Nutrition and Dietetics student, School of Medical, Indigenous and Health Sciences, UOW)
- Prof Karen Charlton (School of Medical, Indigenous and Health Sciences, UOW; [Tel: 02 4221 4754](tel:0242214754))
- Ms Berbel Franse (Healthy Cities Illawarra)
- Ms Kelly Andrews (Healthy Cities Illawarra)

3. What will the study involve for participants?

If you agree to participate in the study, you will be asked to attend a focus group at the University of Wollongong (parking provided). Between 3 and 10 people will be invited to each focus group discussion at a time that is convenient. The groups are expected to run for *45-60 minutes* and will be audio recorded so that the discussions can later be transcribed for the purpose of summarising the outcomes. You have the right not to answer any questions that you feel uncomfortable about, with no reason required. You are able to end and leave the focus group at any time.

4. Who can participate?

Anyone who purchased foods from the WOFM on more than one occasion between March – December 2022 was eligible to be contacted.

5. Can I withdraw from the study?

Participating in this study is voluntary. Not participating will **not** impact your current nor future relationships with the University of Wollongong or Healthy Cities Illawarra, nor with the researchers involved. You can withdraw from the study by exiting the focus group/interview if you wish. However, due to deidentification of data for the purpose of analysis, we cannot exclude your data at a later stage.

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6. Are there any risks or concerns associated with being in the study?

There are no risks or concerns for participating in the study apart from a 1 hour time commitment. You can freely comment on your experiences without being concerned about identification. Your interview data will be de-identified before sharing the analyses with the research team members from Healthy Cities Illawarra.

7. What are the benefits of the research?

The current food system is heavily influenced by corporate supermarket giants, making it difficult for locally produced food to be accessed by consumers. By participating in this research, valuable information about the feasibility and desirability of alternative food supply chains will be collected. This will be used to inform the development of future strategies by which local food can be sold.

8. What will happen to the information collected about me during the study?

By consenting to being a participant in this study, the information you provide us will be stored securely and kept confidential. Your information will only be used for the purpose of the study and as outlined in this Participant Information sheet. No individual names will be used in the analysis. At the end of the study, the audio recordings will be destroyed.

9. Can I tell people about the study?

Yes, you are welcome to tell other people about the study.

10. What if you would like more information about the study?

If you have any questions about the study or would like more information at any stage of the study, please feel free to contact any of the researchers below:

- Ashleigh Walter ([aw77@uowmail.edu.au](mailto:aw77@uowmail.edu.au))
- Prof Karen Charlton ([karenc@uow.edu.au](mailto:karenc@uow.edu.au))
- Barbel Franse ([berbel@healthycities.org.au](mailto:berbel@healthycities.org.au))
- Kelly Andrews ([kelly@healthycities.org.au](mailto:kelly@healthycities.org.au))

11. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. This feedback will be in the form of a short summary of the results written in plain English. You will receive this feedback after the study is finished. It will also be made available on the Healthy Cities Illawarra website.

PIS\_Consumer\_Interview\_V3\_02052023



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12. How will the data be used and the results disseminated?

The results will be submitted as a student thesis for the degree of Masters of Nutrition and Dietetics, will be submitted to a scientific journal for publication, and possibly presented at a conference as well as reported in a summary format on the website of Healthy Cities Illawarra.

13. How to make a complaint about the study?

The ethical aspects of this study have been approved by the Human Research Ethics Committee of the University of Wollongong [HREC 2023/041]. As part of this process, we have agreed to carry out the study according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect people who agree to take part in research studies. If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the university using the details outlined below. Please quote the study title and number.

**Address:** Ethics Officer, Human Research Ethics Committee, University of Wollongong

**Telephone:** 02 4239 2191

**Email:** [uow-humanethics@uow.edu.au](mailto:uow-humanethics@uow.edu.au)

## B. Producer Participant Information Sheet



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AUSTRALIA

### Evaluation of producers' perceptions of the Wollongong Online Farmers Market

#### Participant Information Sheet

1. What is the study about?

The study aims to interview producers who participated in the Wollongong Online Farmers Market (WOFM) to gain an understanding of the feasibility to inform future virtual farmers markets.

2. Who is running the study?

The study is being run by the following researchers:

- Ms Ashleigh Walter (Master of Nutrition and Dietetics student, School of Medical, Indigenous and Health Sciences, UOW)
- Prof Karen Charlton (School of Medical, Indigenous and Health Sciences, UOW)
- Ms Berbel Franse (Healthy Cities Illawarra)
- Ms Kelly Andrews (Healthy Cities Illawarra)

3. What will the study involve for participants?

If you agree to participate in the study, you will be asked a series of questions in an in-person interview, phone or zoom interview by one of the researchers. The interview will be conducted for *30-45 minutes* and will be audio recorded so it can later be transcribed for the purpose of the study. If the interview is conducted via zoom, both video and audio will be recorded once you have provided your consent for this to occur. The video-recording will be deleted immediately after the interview and only the audio-recording will be retained for transcription purposes and analysis. Prior to analysis of the interview scripts, you will have the opportunity to look at your transcript (if you wish) to assure it is accurate. You have the right to not answer any question you feel uncomfortable answering, with no reason required. You are able to end and leave the interview at any time.

4. Who can participate?

All producers who took part in the WOFM are invited to participate.

5. Can I withdraw from the study?

Participating in this study is voluntary. Not participating will **not** impact your current or future relationship with the University of Wollongong, Healthy Cities Illawarra nor the researchers involved.

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You have the right to withdraw from the study at any time during the study period, even once you have completed your interview. You can do this by contacting one of the researchers by email provided in section 9. If you wish to withdraw your information from the study, your interview recording will be deleted.

6. Are there any risks or concerns associated with being in the study?

There are no risks or concerns for participating in the study except for a small time commitment of between 30-45 minutes. You can freely comment on your experiences without being concerned about identification. Your interview data will be de-identified before sharing the analyses with the research team members from Healthy Cities Illawarra.

7. What are the benefits of the research?

The current food system is heavily influenced by corporate supermarket giants, making it difficult for locally produced food to be accessed by consumers. By participating in this research, valuable information about the feasibility and desirability of alternative food supply chains will be collected. This will be used to inform the development of future strategies by which local food can be sold.

8. What will happen to the information collected about me during the study?

By consenting to being a participant in this study, the information you provide us will be stored securely and kept confidential. Your information will only be used for the purpose of the study and as outlined in this Participant Information Sheet. At the end of the study, the interview recording will be deleted.

9. Can I tell people about the study?

Yes, you are welcome to tell other people about the study.

10. What if you would like more information about the study?

If you have any questions about the study or would like more information at an stage of the study, please feel free to contact any of the researchers below:

- Ashleigh Walter ([aw77@uowmail.edu.au](mailto:aw77@uowmail.edu.au))
- Prof Karen Charlton ([karenc@uow.edu.au](mailto:karenc@uow.edu.au); Tel 02 4221 4754)
- Barbel Frances ([berbel@healthycities.org.au](mailto:berbel@healthycities.org.au))
- Kelly Andrews ([kelly@healthycities.org.au](mailto:kelly@healthycities.org.au))

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11. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can tell us that you wish to receive feedback by ticking the relevant box on the Consent form. This feedback will be in the form of a short summary of the results written in plain English. You will receive this feedback after the study is finished.

12. How will the data be used and the results disseminated?

The results will be submitted as a student thesis for the degree of Bachelor of Nutrition and Dietetics (Hons), and submitted to a scientific journal for publication, and possibly presented at a conference, and reported in a summary format on the website of Healthy Cities Illawarra.

13. How to make a complaint about the study?

The ethical aspects of this study have been approved by the Human Research Ethics Committee of the University of Wollongong [HREC2023\_041]. As part of this process, we have agreed to carry out the study according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect people who agree to take part in research studies. If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the university using the details outlined below. Please quote the study title and number.

**Address:** Ethics Officer, Human Research Ethics Committee, University of Wollongong

**Telephone:**

02 4239 2191

**Email:** [uow-humanethics@uow.edu.au](mailto:uow-humanethics@uow.edu.au)

## C. Consumer Facilitators Guide

### Facilitator Guide for Consumers

Welcome – invite Tea + coffee etc

Invite to look at consent forms and sign these...

Thank you for giving up your time to come here today. My name is Ashleigh Walter, and I am a nutrition and dietetics student at the University of Wollongong. This is Professor Karen Charlton my research supervisor and chief investigator of this study. The University of Wollongong is conducting a study to assess the feasibility of Wollongong Online Farmers Market (WOFM) to inform future virtual farmers markets. To do this, we are looking at the sales data from the business as well as interviewing both customers and producers who participated in WOFM.

Wollongong Online Farmers Market (WOFM) opened its doors in March 2022 and was operating for 10 months before unfortunately closing in January of 2023. It was created to be a sustainable hub to connect farmers with customers and create a resilient local food system. Customers could order their products during an online ordering window between 12pm Wednesday to 11pm the following Monday, produce was picked and packed from Tuesday to Thursday and customers collected their items from Healthy Cities Illawarra offices on Thursday afternoon between the hours of 3pm to 6pm. During the last 2 months of operation, a delivery option was also made available between the hours of 12pm to 8pm, and some of you may have used this to get the goods delivered to your home.

You are here today because you have been identified as repeat customers of the WOFM business, meaning that you have purchased from them more than once. We have invited all repeat customers to take part in this research.

Today we wanted to gain your perspective of the generally, identify your experiences purchasing from the WOFM and explore any idea you may have about ways to grow a more local and sustainable food system. The information will be important to inform the development of future online farmers markets.

I would like to assure you that this is a safe environment for you to share your opinion without judgement. You can freely comment on your experiences without being concerned about identification. Your interview data will be de-identified before sharing the analyses with the research team members from Healthy Cities Illawarra. This group interview will be audio recorded so we can transcribe and analyse the interview to understand the overarching attitudes and perspectives of the customers, however no names will be used in the analysis, and you will not be identifiable. We will also be interviewing producers who participated in the WOFM to understand their perceptions.

You have all consented to being audio recorded but I would like to clarify again whether everybody is in agreement with this?

Facilitator Guide Consumer V2\_01052023

Lastly, before we begin, I must remind you that your participation is voluntary. You can withdraw from the study by exiting the focus group if you wish. However, it will not be possible to withdraw any data that you have already contributed up until that point, as individual responses are difficult to identify and remove from recordings of focus group discussions. Not participating will **not** impact your current and future relationship with University of Wollongong, Healthy Cities Illawarra and the researchers involved.

Is everyone comfortable if we proceed with the group interview?

To start today's open discussion, I would like you to consider what you understand by the term "local food system" and what this means to you. Please write your responses on the post it notes provided and then we will have time to discuss as a group.

OK, let's have some open discussion about this.

Let's now turn our attention to your opinions and experiences of the Wollongong Online Farmers Markets.

**Prompts for Consumers:**

- What motivated you to purchase from the WOFM?
- What aspects did you like about WOFM?
- What aspects did you dislike about WOFM?
- How was your experience with the online ordering system?
- How was your experience with the click and collect pick up system?
- How did you find the selection of products that was available?
- How was the quality of the products?
- How did it financially compare to produce from other retail stores such as supermarkets or greengrocers?
- What aspects of WOFM could have been improved?
- Were there any producers or products that you would buy from again?
- In an ideal world, what would you like to see in retail outlets that might inform your decisions to buy locally produced food?
- Did WOFM have an impact on your knowledge of local food, producers and seasonality?

To end our group today, I would like to ask you three broad questions. Could you please write down your answer on the post-it notes, and we will have a group discussion at the end.

- What are the challenges faced in our region and generally regarding food, farming, sustainability, and health?
- What do you think the solutions and opportunities are to change this?
- What's your vision for our food future?

Okay, now let's have an open discussion about these questions.

Facilitator Guide Consumer V2\_01052023



Thank you for that. I think we have covered everything we needed to today. Again, thank you for participating in this study about WOFM. If you have any further questions don't hesitate to contact myself or the other researchers involved, our contact information will be found in the participation information sheet that was emailed to you when we invited you to participate.

Interview results will be collated and summarised by November. A summary of these will be made available on the Food Fairness Illawarra website.

Karen –

As part of a much larger project on creating a more local, sustainable and healthy food system in the Illawarra and Shoalhaven that will be conducted over the next 4 years by Professor Karen Charlton, you were asked to tick a box on the Consent form if you were willing to be approached at a later date to take part in some stakeholder consultations. There is no obligation to do so, but if you would like to be considered please make sure you have ticked that box before you leave.

Thank you again for your participation today.

## D. Producer Facilitators Guide

### Facilitator Guide: Producers

Hi (producer's name)

This is Ashleigh Walter from the University of Wollongong calling for our interview about Wollongong Online Farmers Market? Are you still available to talk?

I just want to start off by saying thank you for participating today. My name is Ashleigh, and I am a nutrition and dietetics student at the University of Wollongong. As you know, the University of Wollongong is conducting a study to assess the feasibility of Wollongong Online Farmers Market (WOFM) to inform future virtual farmers markets. To do this, we are looking at the sales data from the business as well as interviewing both the customers and producers who participated in WOFM.

You have been invited to partake in this study because you are a producer who participated in WOFM and we, the researchers, wanted to gain your perspective of the WOFM in order to inform the feasibility of future ways of selling local food.

Wollongong Online Farmers Market opened its doors in March 2022 and was operating for 10 months before unfortunately closing in January of 2023. It was created to be a sustainable hub to connect producers with customers and create a resilient local food system. Customers could order their products during an online ordering window between 12pm Wednesday to 11pm the following Monday, produce was picked and packed from Tuesday to Thursday and customers collected their items from Healthy Cities Illawarra offices on Thursday afternoon between the hours of 3pm to 6pm. During the last 2 months of operation, a delivery option was also made available between the hours of 12pm to 8pm for customers.

Today we wanted to gain your perspective of the food system generally, identify your experiences selling your products through the WOFM and explore any ideas you may have about ways to grow a more local and sustainable food system. The information will be important to inform the development of future online farmers markets or alternative food markets.

I would like to assure you that this is a safe environment for you to share your opinion without judgement. This interview will be audio recorded so we can transcribe and analyse the content. No names will be used in the analysis, and you will not be identifiable.

We will also be interviewing customers who purchased from the WOFM to understand their perceptions.

Can I confirm that you consent to being audio recorded?

FacilitatorGuide\_Producer\_V2\_05052023

If you decide later that you wish to withdraw your data, this needs to be done before XXX (*a month from now*) as after that time the data will have been deidentified for analysis and it will not be possible to identify your contributions.

Is everything clear so far and are you comfortable if we proceed?

To start today's interview, I would like to begin with some broad questions.

Firstly, I would like you to consider what you understand by the term "local food system" and what this means to you.

Ok, thank you.

What are the market, ethical, and/or health factors that impacts your decision where and how you sell your products? I realise this is a big question so perhaps you may wish to take a short while to think about this before responding.

Ok, thank you for that.

Many consumers are interested in knowing more about where and how the food they buy is grown, how it is processed and finally transported. Do you think there are any ways that would make it easier for consumers to get this information? (Prompt: at point of purchase, or on food labels etc).

Following on from this, is there anything, in your opinion, that could be done in retail outlets that might inform customers' decisions to buy more locally produced food?

Let's now turn our attention to your opinions and experiences of the Wollongong Online Farmers Market.

**Prompts for Producers:**

- What encouraged you to participate in the WOFM?
- What did you like about WOFM?
- What did you dislike about WOFM?
- What impact did the WOFM have on the Wollongong community?
- How did WOFM compare to your other distribution channels?
- How well did your products sell at WOFM? How did you expect your products to perform at WOFM?
- What did you think about the producer order fee? How did this compare to your other distribution channels?
- How did you feel the WOFM allowed awareness of your brand and connection with customers?

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- How did you feel about the online advertisement of your brand?
- What improvements could have been made?
- Do you have any additional comments about your experience participating in the WOFM?

Now for some questions about your company:

- How long have you been operating?
- What is your main target customer base?
- Where do you sell your products? What distribution channels does your business usually use?
- Other than WOFM, do you or did sell through other online platforms?
- Are there other distribution channels that are available to sell local food?

To end today, I would like to ask a few broad questions.

- What are the challenges faced in our region and generally regarding food, farming, sustainability, and health?
- What do you think the solutions and opportunities are to change this?
- What's your vision for our food future?

Thank you. I think we have covered everything we needed to today. Again, thank you for participating in this study about WOFM. If you have any further questions don't hesitate to contact myself or the other researchers involved, our contact information will be found in the participation information sheet that was emailed to you when we invited you to participate.

A summary of the final results of the study will be emailed to you in November. The results will also be made available on the Food Fairness Illawarra website.

As part of a much larger project on creating a more local, sustainable and healthy food system in the Illawarra and Shoalhaven that will be conducted over the next 4 years by Professor Karen Charlton, you were asked to tick a box on the Consent form if you were willing to be approached at a later date to take part in some stakeholder consultations. There is no obligation to do so, but if you would like to be considered and did not tick that box, please indicate that now and I will make a note. Thank you again for your participation today.

FacilitatorGuide\_Producer\_V2\_05052023