

## Supplementary Table S1

### Questionnaire for Informal/Semiformal farmers (in English)

Participant number:

#### Section A: Demographics and General Information

1.1) Gender

a) Male	b) Female
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1.2) Age

a) <20	21-35	36-45	46-55	56-65	>65
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1.3) Highest Level of education completed

a) None, can't read or write	d) Grade 8-12 (secondary)
b) None, but can read and write	e) Vocational
c) < Grade 7 (primary)	f) Other

1.4) Sources of income

a) Remittance	b) Social Grant	c) Pension	d) Farming	e) Job wages/salary	f) Other
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1.5) If farming is practiced, which markets are supplied

a) Street hawkers	c) Retail Stores
b) Fresh produce markets	

1.6) Type of farming practiced

a) Conventional	b) Organic
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1.7) Potential interest in farming, with the aim of earning an income from sale of products

Interest Scale	Mark with an X
a) Not interested	
b) Interested only if there's no alternate	
c) Interested for additional income purposes	
d) Very interested, sole source of income	

1.8) Marital Status of farmer

a) Never Married	b) Married	c) Divorced	d ) Widowed
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1.9) How much income does the household receive per month?

a )500 and less	b )500-800	c) 900-1000	d ) 1000 and more
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1.10) What is the main livelihood strategy for the household?

a ) Farming	b ) Self Employed	c ) Casual Labour	d ) Other
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1.11) If farming, what are the farming systems employed by farmers?

a) Crop farming	b) Livestock keeper	c) Crop and Livestock	d )Others
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## Section B: Pre-and post-harvest methods employed

### Pre harvest

2.1) What vegetables do you plant?

Vegetable	Mark with an X if applicable	Vegetable	Mark with an X if applicable
a) Carrot		f) Beetroot	
b) Green beans		g) Onion	
c) Potato		h) Lettuce	
d) Spinach		i) Cabbage	
e) Tomato		j) Swiss chard	

2.2) What are your reasons for growing these specific vegetables?

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2.3) Which vegetables (top 5) generally generate the highest income?

1 \_\_\_\_\_ 2 \_\_\_\_\_  
3 \_\_\_\_\_ 4 \_\_\_\_\_  
5 \_\_\_\_\_

2.4) What is the approximate size of your farm or the land that is cultivated (ha)?

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2.5) What type of fertilizer is used?

Type of fertilizer	Mark with an X
a) Store bought fertilizer	
b) Animal manure	

c) Self-made compost (excluding animal manure)	
d) No fertilizer	

2.6) What is the source of your irrigation water?

Source of Irrigation water	Mark with an X
a) Tap water	
b) River	
c) Borehole	
d) Greywash ( water that has been previously used e.g. water from washing clothes or dishes etc.	

2.7) Name the equipment used in pre-harvest practices?

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2.8) What is the nature of the pre-harvest equipment used?

Nature of equipment	Mark with an X
a) Metal	
b) Plastic	
c) Other	

2.9) If pesticides are used, what type or brand is used?

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## Collection

2.10) What tools are used for harvesting?

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2.11) What is the nature of the pre-harvest equipment used?

Nature of equipment	Mark with an X
a) Metal	
b) Plastic	
c) Other	

2.12) What time are the crops harvested?

Time of day	Mark with an X
a) Early morning	
b) Midday	
c) Afternoon	
d) Anytime	

2.13) What are the vegetables collected in?

Collection equipment	Mark with an X
a) Baskets	
b) Plastic Dishes	
c) Boxes	
d) Other	

### Storage

2.14) How long is the produce kept before transporting to a particular market?

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2.15) What type of packaging is used to package vegetables?

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2.16) Are the vegetables stored in refrigeration before being transported?

Yes		No	
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### Transportation

2.17) What type of transport is used to transport your vegetables?

Type of transport	Mark with an X
a) Own	
b) Hired	
c) Trader's transport	
d) Public	
e) Other	

2.18) What is the approximate distance of the market from the farm in km?

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2.19) Are there stops (multiple) before transport reaches the markets? (e. g. Alternate collection from other farmers)

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2.20) Is the transport system in use, refrigerated?

Yes		No	
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### Labour

2.21) Do you have enough family labour for your farming activities?

Yes		No	
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2.22) if you do not have enough family labour, during which operations is there labour shortage?

Farming operation	Mark with an X
a) Land preparation	
b) Planting	
c) Weeding	
d) Harvesting	

2.23) If there isn't sufficient family labour, how do you deal with the situation?

Solution to labour deficit	Mark with an X
a) Hired labour	
b) Extended hours	
c) Other	

2.24) if the labour is out-sourced, do you train the persons before allowing them to participate in operations?

Yes		No	
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### Section C: Food Habits and General Practices

3.1) What is the main component of your household diet?

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3.2) What type of fresh produce do you consume?

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3.3) Do you consume your own fresh produce?

Yes		No	
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3.4) How often do you consume your own fresh produce?

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3.5) How do you handle/process it before consumption?

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3.6) When storing fresh produce, do you refrigerate it?

Yes		No	
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## Section D: Safety and Hygiene

4.1) Type of animal manure used in farming operations?

Type of manure	Mark with an X
a) No manure	
b) Chicken	
c) Cow	
d) Sheep	
e) Other	

4.2) Is the manure prepared/pretreated?

Yes		No	
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4.3) Is water which is used for irrigation and other farming operations treated before it is used?

Yes		No	
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4.4) How is the water treated?

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4.5) Do you adhere to any of the following with regards to personal hygiene before and after farming operations

Hygiene activity	Mark with an X where applicable
a) Washing hands	
b) Washing gum boots and clothing items	
c) Washing all pre and post-harvest equipment	
d) Go to the farm/garden as you are	
e) Other	

4.6) What is done with bruised or damaged vegetables?

Action	Mark with an X
a) Sold to neighbours	
b) Taken for personal use	
c) Discarded	
d) Sold to the market at a discount price	

4.7) If the vegetables are sold to the market at a discount price, are they separated from the undamaged vegetables before being transported?

Yes		No	
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4.8) Are the vegetables subjected to any additional post-harvest treatment?

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### Section E: Capacity Building & Health

5.1) Are you part of any farmers group?

Yes		No	
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5.2) Have you been exposed to or involved in any form of pre- and post-harvest training?

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5.3) Who provided the training?

Trainer	Mark with an X
a) Government	
b) NGO	
c) Private company	
d) Other	

5.4) Where was the training held?

Area of training	Mark with an X
Within the district	
Within Durban	
Further than Durban	

5.5) According to your knowledge what can be potential sources of bacterial contamination?  
(Mark with an X all that are applicable)

Source	Mark with an X
a) Water	
b) Soil	
c) Compost/Fertilizer	
d) Equipment	
e) Other	

5.6) What are the potential hazards of bacterial contamination?

Hazard	Mark with an X
a) No hazard	
b) Loss of trust of customers	
c) Health complications (e.g. getting sick etc.)	
d) Other	

5.7) Do you have any knowledge of outbreaks/sickness linked to harvested fresh produce in your community?

Yes		No	
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5.8) When was the last time you took antibiotics?

Within the last week		Within the last month		>3months ago	
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5.9) According to your knowledge, is there enough awareness about produce quality and safety in your community?

Yes		No	
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5.10) If no, what do you think should be done to improve awareness?

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5.11) What training related to hygienic safety of vegetables do you think you need? Please explain.

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5.12) What is your mother tongue language?

5.13) What language was the training delivered in?



**Supplementary Table S2****Questionnaire for Commercial Farm workers (in English)****Participant Number:****Section A: Demographics and General Information**

1.1) Gender

1.2) Age

Gender	Mark with an X
a) Male	
b) Female	

Age	Mark with an X
a) <20	
b) 21-39	
c) >40	

1.3) Highest Level of education completed    1.4) Sources of income

Level of Education completed	Mark with an X
a) <Grade 7	
b) Grade 8-12	
c) >Grade 12	
d) No formal education	

Income Source	Mark with an X
a) Remittance	
b) Social Grant	
c) Pension	
d) Farming	
e) Job wages/ salary	
f) Other	

1.5) Type of farming carried out at your work place

Type of farming	Mark with an X
a) Conventional	
b) Organic	

1.6) Potential interest in farming at home (after hours), with the aim of earning an income from sale of products

Interest Scale	Mark with an X
a) Not interested	
b) Interested only if there's no alternate	
c) Interested for additional income purposes	
d) Very interested, sole source of income	

**Section B: Pre-and post-harvest methods employed****Pre harvest**

2.1) What vegetables do you work with?

Vegetable	Mark with an X if applicable	Vegetable	Mark with an X if applicable
a) Carrot		f) Beetroot	
b) Green beans		g) Onion	

c) Potato		h) Lettuce	
d) Spinach		i) Cabbage	
e) Tomato		j) Swiss chard	

2.2) What type of fertilizer is used at your work place?

Type of fertilizer	Mark with an X
a) Store bought fertilizer	
b) Animal manure	
c) Self-made compost (excluding animal manure)	
d) No fertilizer	

2.3) What is the source of your irrigation water at your work place?

Source of Irrigation water	Mark with an X
a) Tap water	
b) River	
c) Borehole	
d) Greywash ( water that has been previously used e.g. water from washing clothes or dishes etc.	

2.4) Name the equipment used in pre-harvest practices?

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2.5) What is the nature of the per-harvest equipment used?

Nature of equipment	Mark with an X
a) Metal	
b) Plastic	
c) Other	

2.6) If pesticides are used, what type or brand is used?

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## Collection

2.7) What tools are used for harvesting?

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2.8) What is the nature of the pre-harvest equipment used?

Nature of equipment	Mark with an X
a) Metal	
b) Plastic	
c) Other	

2.9) What time are the crops harvested?

Time of day	Mark with an X
a) Early morning	
b) Midday	
c) Afternoon	
d) Anytime	

2.10) What are the vegetables collected in?

Collection equipment	Mark with an X
a) Baskets	
b) Plastic Dishes	
c) Boxes	
d) Other	

### Storage

2.11) How long is the produce kept before transporting to a particular market?

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2.12) What type of packaging is used to package vegetables?

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2.13) Are the vegetables stored in refrigeration before being transported?

Yes		No	
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### Transportation

2.14) What type of transport is used to transport your vegetables?

Type of transport	Mark with an X
a) Own	
b) Hired	
c) Trader's transport	
d) Public	
e) Other	

2.15) Is the transport system in use, refrigerated?

Yes		No	
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### Section C: Food Habits and General Practices

3.1) What is the main component of your household diet?

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3.2) What type of fresh produce do you consume?

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3.3) Do you consume the fresh produce produced at your work place?

Yes		No	
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3.4) How often do you consume fresh produce?

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3.5) How do you handle/process it before consumption?

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3.6) When storing fresh produce, do you refrigerate it?

Yes		No	
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#### **Section D: Safety and Hygiene**

4.1) Type of animal manure used in farming operations?

Type of manure	Mark with an X
a) No manure	
b) Chicken	
c) Cow	
d) Sheep	
e) Other	

4.2) Is the manure prepared/pretreated?

Yes		No	
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4.3) Is water which is used for irrigation and other farming operations treated before it is used?

Yes		No	
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4.4) How is the water treated?

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4.5) Do you adhere to any of the following with regards to personal hygiene before and after farming operations

Hygiene activity	Mark with an X where applicable
a) Washing hands	
b) Washing gum boots and clothing items	
c) Washing all pre and post-harvest equipment	
d) Go to the farm/garden as you are	
e) Other	

4.6) Do you wear gloves at any point during production and processing?

Yes	
No	

4.7) What is done with bruised or damaged vegetables?

Action	Mark with an X
a) Sold to neighbours	
b) Taken for personal use	
c) Discarded	
d) Sold to the market at a discount price	

4.8) If the vegetables are sold to the market at a discount price, are they separated from the undamaged vegetables before being transported?

Yes		No	
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4.9) Are the vegetables subjected to any additional post-harvest treatment?

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## Section E: Capacity Building

5.1) Are you part of any farmers group?

Yes		No	
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5.2) Have you been exposed to or involved in any form of pre- and post-harvest training?

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5.3) Who provided the training?

Trainer	Mark with an X
a) Employer	
b) NGO	
c) Private company	
d) Other	

5.4) Where was the training held?

Area of training	Mark with an X
At place of employment	
Within the district	

5.5) According to your knowledge what can be potential sources of bacterial contamination?  
(Mark with an X all that are applicable)

Source	Mark with an X
a) Water	
b) Soil	
c) Compost/Fertilizer	
d) Equipment	
e) Other	

5.6) What are the potential hazards of bacterial contamination?

Hazard	Mark with an X
a) No hazard	
b) Loss of trust of customers	
c) Health complications (e.g. getting sick etc.)	
d) Other	

5.7) Do you have any knowledge of outbreaks/sickness linked to harvested fresh produce at your work place?

Yes		No	
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5.8) When was the last time you took antibiotics?

Within the last week		Within the last month		>3months ago	
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5.9) According to your knowledge, is there enough awareness about produce quality and safety at your work place?

Yes		No	
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5.10) If no, what do you think should be done to improve awareness?

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5.11) What training related to hygienic safety of vegetables do you think you need? Please explain.

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5.12) What is your mother tongue language?

5.13) What language was the training delivered in?

**Supplementary Table S3: Summary of responses from key-informant interviews with the organic farm owner and semi-conventional farm manager.**

Questions	Responses
<b>Which type of farming do you identify with more, organic or conventional?</b>	<b>Semi-conventional farmer:</b> ‘...conventional, as I use pesticides and by my fertilizer from the shops. It is synthetic fertilizer. When I have access to manures, such as horse manure, I mix it in with the store-bought fertilizer...’
<b>Are you interested in gaining market access?”</b>	<b>Organic farmer:</b> ‘I have my own retail store that sells organic products and I also sell at fresh produce markets on weekends’ <b>Semi-conventional farmer:</b> ‘the aim of the school community garden is to supply produce to the hostel for meals and for staff and students to take home when there is extra. It is not intended for sale, so market interest doesn’t exist for me’
<b>What types of farmer training have you had, if any?</b>	<b>Organic farmer:</b> ‘ I have been to many workshops regarding soil health and how to make the most waste organic matter through composting’ <b>Semi-conventional farmer:</b> ‘ I have had some training on composting processes’ <b>Semi-organic farmers:</b> ‘intercropping’, ‘composting’, ‘irrigation methods’
<b>Do you pre-treat your fertilizer prior to use?</b>	<b>Organic farmer:</b> “My fertilizer is a combination of animal manures, as well as other organic matter such as plant matter, mulch etc. I also allow my fertilizer to mature for six months prior to use, as it needs to get to the appropriate temperatures to allow for the killing of pathogenic microorganisms.”
<b>How do you pre-treat irrigation water?</b>	<b>Semi-conventional farmer:</b> “I generally use store-bought fertilizers and thus do not pre-treat my fertilizer. Sometimes I add in horse manure, when it’s available, however I just mix it in with the store-bought manure prior to use.” <b>Semi-organic farmers:</b> ‘before watering my crops I add Jik (household bleach) to it’ ‘I add sunlight liquid to mine, but only very little’ ‘when there is water from the river, we boil it for bathing, if there is left over we water the crops’