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## Appendix 1: Questionnaire of farmer survey with conventional Syrian farmers of fresh fruit and vegetables

### Two advices for the interviewer to consider

1. The interviewer has to inform the farmers before starting the survey that their answers will be anonymised. They may, at any time, withdraw their participation, including the withdrawal of any information they have provided. If they complete the interview, however, it will be understood that they have consented to participate in this research and agree to the publication of the overall results of this research with the understanding that anonymity of the interviewees will be taken into account.
2. Furthermore, the interviewer has to be aware that some questions in this questionnaire have extra information which are italicised in brackets. Thus, the interviewer should read this extra information only in case of the question is not clear for the interviewees.

### Part I: Fertilisers and pest control methods

1. How do you preserve soil fertility?
  - Fertilisation (*Chemicals, animal manure, green manure etc*)
  - Crop rotation (*Cultivation of a series of dissimilar types of crops in the same area in sequential seasons*)
  - Intercropping (*Cultivation of two or more dissimilar types of crops in the same area in the same season*)
  - Tillage
  - Other (specify): .....
- In case fertilisers are applied, which kinds do you use?
  - Chemical fertilisers
  - Organic fertilisers (*non-chemicals like animal manure, green manure, compost, etc.*)
    - ❖ In case organic fertilisers are used, can you specify the type?
      - Livestock manure
      - Poultry manure
      - Green manure (*Type of crops cultivated primarily to enrich the soil with nutrients and organic matter through ploughing it into the soil when flowering begins*)
      - Other (specify): .....
- In case that crop rotation, and/or intercropping and/or green manure are practiced, do you integrate legumes?
  - Yes
  - No

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2. How do you control pests and diseases?

- Biological & organic control methods (*non-chemical control methods*)
- Integrated pest management (IPM) methods
- Chemical pesticides (treatment), specify what do you use?  
.....
- Other methods (specify).....

➤ In case of non-chemical methods for plant protection are used. Can you specify that?

- Mechanical ways
- Physical and pheromone traps
- Biological enemies of pests
- Other (specify): .....

3. How do you control weeds?

- By burning plant residues after harvesting.
- By grazing through animals.
- By mechanical weeding (*tillage, mowing and/or manual*).
- By crop rotation and/or intercropping
- By chemical herbicides, specify what do you use? .....

4. Have you ever heard about 'organic farming'?

- Yes
- No

➤ If yes, could you briefly specify what does 'organic farming' mean for you?

.....

.....

.....

## Part II: Attitudinal interview towards organic farming

Before asking the interviewee further questions, the interviewer(s) should clarify for them what is meant by organic farming as follows:

*Organic production is an overall system of farm management and food production that combines environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes. It is a way of farming that relies on techniques such as crop rotation, green manure, compost, crop residues, animal manure, legumes, off-farm organic wastes, mechanical cultivation, mineral bearing rocks, and aspects of biological pest control to maintain soil productivity and fertility, to supply plant nutrients, and to control insects, weeds, and other pests. Thus, organic farming uses natural fertilizers and pesticides but excludes or strictly limits the use of manufactured (synthetic) fertilizers, pesticides (which include herbicides, insecticides and fungicides), plant growth regulators such as hormones, livestock antibiotics, food additives, genetically modified organisms, etc.*

### 1. General attitudes towards organic farming adoption

Attitude statements	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Organic farming gives a positive image to a farm					
Organic farming is a step back to farming of the past					
Local markets for organic products are available					
Organic farming is more profitable than conventional farming					
Organic certification bodies are available					
Use of chemical inputs is negative for health of people and animals					
Obtaining information regarding organic farming is difficult					
Organic farming is too labour intensive					
Without using chemical pesticides, high pest infestation can happen					

<b>Attitude statements (Cont.)</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
Governmental support to organic farming is important					
Organic yields are too low					
Local consumers would be willing to pay higher prices for organic products					
Obtaining consulting and advices regarding organic farming is difficult					
Use of chemical inputs improves product appearance					
Organic fertilisers and pesticides are available					
Organic products can be sold for higher prices compared to conventional products					
Organic farmers live more in harmony with nature					
MAAR programs for organic farming are not sufficient					
Conversion into organic farming requires high investment costs					
Use of chemical fertilisers improves product taste					
Organic farming requires high certification and inspection costs					
Organic farming reduces chemical output to the environment					
There is a lack of subsidies for organic farming					
Organic products are healthier for the family					
Organic fertilisers and pesticides are expensive					
It is hard to find business buyers (e.g. wholesalers) who pay higher prices for organic products					
Obtaining information about export markets of organic products is difficult					

## 2. Components of the Theory of Planned Behaviour

### A. Behavioural beliefs:

Please consider the following pairs of statements carefully. Indicate for the first statement whether you agree or disagree to it. For the second statement please indicate how important or unimportant it is for you

As an advice for the interviewer(s) to consider that each of the following questions has two statements should be measured on two different scales. We take Question (1) as an example:

- The first statement: If you produce organic fruit and vegetables you will save on production costs: should be measured on five-point scale Agree/Disagree
- And the second statement: *Saving on production costs is:* (should be measured on five-point scale Important/Unimportant)

Behavioural beliefs	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	Very unimportant	Unimportant	Neither important nor unimportant	Important	Very important
1. If you produce organic fruit and vegetables you will save on production costs ( <i>mainly fertilizer and pesticide costs</i> )					
<i>Saving on production costs is:</i>					
2. If you produce organic fruit and vegetables you will receive higher prices					
<i>Receiving higher prices is:</i>					
3. If you produce organic fruit and vegetables you will increase farm income					
<i>Increasing farm income is:</i>					
4. If you produce organic fruit and vegetables you will get opportunities to reach other markets (e.g. markets with higher prices; markets with better prospects compared to the current market)					
<i>Getting opportunities to reach better markets is:</i>					
5. Producing organic fruit and vegetables on your farm is not a modern way of farming					
<i>Being modern in farming is:</i>					

Behavioural beliefs (Cont.)	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	Very unimportant	Unimportant	Neither important nor unimportant	Important	Very important
6. Producing organic fruit and vegetables on your farm can improve soil fertility and soil structure  <i>Improving soil fertility and soil structure is:</i>					
7. Producing organic fruit and vegetables on your farm will protect the environment  <i>Protecting the environment is:</i>					
8. Producing organic fruit and vegetables on your farm will provide healthy food for your family  <i>Providing healthy food for your family is:</i>					
9. For you, it would be risky to convert to organic fruit and vegetable production  <i>In general, playing it safe is:</i>					

## B. Control beliefs:

Please consider the following statements carefully and then express your opinion whether you agree or disagree with the statement by ticking one box in each line

Control beliefs	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. You have the possibility to get access to information sources about organic farming  <i>Having access to information resources about organic farming would make it easier for you to produce fruit and vegetables organically on your within the next five years</i>					
2. Soil fertility on your farm is suitable for fruit and vegetable cultivation  <i>Having good soil fertility would make it easier for you to produce fruit and vegetables organically on your farm within the next five years</i>					
Control beliefs (Cont.)	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

<p>3. The size of your farm is big enough for making the cultivation of fruit and vegetables economically viable</p> <p><i>Having a sufficient farm size for an economic cultivation of fruit and vegetables would make it easier for you to produce fruit and vegetables organically on your farm within the next five years</i></p>					
<p>4. You have the possibility to cultivate fruit and vegetables with organic instead of chemical fertilizers.</p> <p><i>Being able to farm with organic instead of chemical fertilizers would make it easier for you to produce organic fruit and vegetables on your farm within the next five years.</i></p>					
<p>5. You have the means to afford the certification and inspection costs of organic farming</p> <p><i>Being able to afford the certification and inspection costs of organic farming would make it easier for you to produce organic fruit and vegetables on your farm within the next five years</i></p>					
<p>6. You have access to credits for fruit and vegetable cultivation</p> <p><i>Being able to have access to credits would make it easier for you to produce organic fruit and vegetables on your farm within the next five years.</i></p>					
<p>7. You have access to governmental subsidies for fruit and vegetable cultivation</p> <p><i>Being able to have access to governmental subsidies would make it easier for you to produce organic fruit and vegetables on your farm within the next five years.</i></p>					
<p>8. You work collectively with other farmers to solve farming problems (production and marketing problems)</p> <p><i>Being able to work collectively with other farmers would make it easier for you to produce organic fruit and vegetables on your farm within the next five years.</i></p>					

**C. Normative beliefs:**

**C1. How motivated would you be to follow the advice of those listed below regarding the production of organic fruit and vegetables on your farm within the next five years? (Motivation to comply with significant referents)**

<b>Motivation to comply with significant referents</b>	<b>Not at All</b>	<b>Little</b>	<b>Moderately</b>	<b>Much</b>	<b>Very Much</b>
<b>1. Your family</b>					
<b>2. Other farmers (fellow farmers and friends)</b>					
<b>3. MAAR and GCSAR agronomists</b>					
<b>4. Information events/ field days</b>					
<b>5. Agricultural press and news</b>					
<b>6. Governmental support programs</b>					
<b>7. Farm advisors</b>					

**C2. How likely is it that the following referents think you should produce organic fruit and vegetables on your farm within the next five years?**

<b>Normative beliefs of significant referents (Strength of normative beliefs)</b>	<b>Very Unlikely</b>	<b>Unlikely</b>	<b>Neutral</b>	<b>Likely</b>	<b>Very Likely</b>
<b>1. Your family</b>					
<b>2. Other farmers (fellow farmers and friends)</b>					
<b>3. MAAR and GCSAR agronomists</b>					
<b>4. Information events/ field days</b>					
<b>5. Agricultural press and news</b>					
<b>6. Governmental support programs</b>					
<b>7. Farm advisors</b>					



#### D. Attitudes, Subjective norm and Perceived behaviour control

Please consider the following statements/questions carefully and then express your opinion by ticking one box in each line.

<i>Attitudes towards producing organic fruit and vegetables on your farm within the next five years</i>	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Producing organic fruit and vegetables on your farm within the next five years would be a good idea					
2. Producing organic fruit and vegetables on your farm within the next five years would be possible					
3. Producing organic fruit and vegetables on your farm within the next five years would be more profitable than the conventional farming					
4. Producing organic fruit and vegetables on your farm within the next five years would be foolish(not wise) compared to conventional farming					
<i>Subjective norm towards producing organic fruit and vegetables on your farm within the next five years</i>	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Your family favours the idea that you should produce organic fruit and vegetables on your farm within the next five years					
2. If you are thinking to produce organic fruit and vegetables on your farm within the next five years, would your best friends and colleague farmers favour it?					
3. In general, people whose opinion is important to you disapprove of you producing organic fruit and vegetables on your farm within the next five years					
<i>Perceived behavioural control towards producing organic fruit and vegetables on your farm within the next five years</i>	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. You think that you have the technical ability to produce organic fruit and vegetables on your farm within the next five years					
2. You think that you are capable of dealing with organic farming on your farm within the next five years					
3. You think that you can meet the regulations of organic farming on your farm within the next five years					
4. You think that you can afford the costs of conversion to organic farming on your farm within the next five years					
5. You think that you can meet the amount of work needed for organic farming on your farm within the next five years					

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### **E. Information seeking and communication about organic farming**

1. How informed do you feel about organic farming (regulation, certification, inspection, cost, profits, etc)

Not at all informed	Only little	Moderately	Well informed	Very well informed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How often do you discuss about organic farming or conversion to organic farming?

Never	Seldom	Sometimes	Often	Very often
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How important is organic farming as a topic of discussion?

Very unimportant	Unimportant	Neither important nor unimportant	Important	Very important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **F. Intention and conversion**

1. How likely is it that you will (think seriously to) produce organic fruit and vegetables on your farm within the next five years?

Very likely	Likely	Undecided	Unlikely	Very unlikely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Do you have the intention to produce organic fruit and vegetables on your farm within the next five years?

Definitely no	Probably no	Undecided	Probably yes	Definitely yes
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. For you, is the conversion to organic farming within the next five years possible?

Definitely impossible possible	Impossible	Undecided	Possible	Definitely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. For you, how probable is that you will start the conversion to organic farming within the next five years?

Highly probable	Probable	Maybe	Not probable	Not probable at all
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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### Part III: Farm and household attributes

1. Age of the farmer: ..... years old
2. Gender: .....
3. Current size of farmer's household (*Current number of people living in your house*): ..... persons
4. Educational level of the farmer:
  - Less than elementary level (*Illiterate*)
  - Elementary to less than high school
  - High school
  - Two years college
  - University or above
5. Farmer's experience in agriculture (*years*):
  - a. Farmer's experience in farming in general: ..... years
  - b. Farmer's experience in fruit and vegetable cultivation: ..... years
6. Total land property of the farmer: ..... Donum<sup>1</sup>
  - a. Land area of fruit and vegetables owned by farmer: ..... Donum
  - b. Land area of fruit and vegetables rented by farmer: ..... Donum
7. What is the share of the income from fruit and vegetables in your household income?
  - Up to 25 %
  - 26 – 50 %
  - 51 – 75 %
  - 76 – 100 %
8. To whom do sell your products?
  - Directly to consumers
  - Retailers
  - Wholesalers
  - Exporters
  - Processors
  - Governmental corporation for storage and marketing of agricultural products
  - Selling through Damman
  - Other (specify): .....

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<sup>1</sup> Donum is a unit for measuring the land area, it is equal to 1000 m<sup>2</sup> (or 0.1 ha). Since this unit is better known than hectare among Syrian farmers, Donum will be used in the questionnaire as area unit.

9. Can you please specify the most important three varieties of citrus fruit or tomatoes you do produce on your farm?

.....  
.....  
.....

**Further expectation of farm future**

How do you imagine the future of your farm in the next 10 years? *(please tick one box only)*

- You will continue business as usual
- You will continue and expand farming business
- You will allow family member(s) to manage the farm
- You will sell/rent it for agricultural purpose
- Other (please specify).....

***Thank you very much for participating in this interview!***

Participant ID: _____ Date of visit: _____
Name of interviewee: _____
Town: _____ Governorate: _____
Telephone number of interviewee: _____
Interviewer: _____ Email: _____
Telephone number of interviewer: _____
Observations and comments of the interviewer: _____ _____