

Data collection

Good Growth Plan



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BACKGROUND INFORMATION

Market Probe is an independent market research agency specialized in agricultural research. For “The Good Growth Plan”, we are currently collecting farm data as part of a global project. This document is your guide for the collection of your farm data. We will already go through some topics, but we will also ask you to fill out some of the data yourself and send the information back to the market research agency.

- After planting (intermediary data transfer): PART I + II + III + IV
 - o Part V has to be left with the farmer
- After harvesting (final data transfer): PART V + VI + VII

In case of questions, don't hesitate to contact the local help desk (insert helpdesk number here).

Before we start data collection, we will guide you through the questionnaire, in order to make all questions clear to you. We will also give some more background information on the Good Growth Plan.

Please note that the data will not be used individually, but will always be used in an aggregated way.

To be included in background information:

- Grower communication
- Reference to previous data collection
- Foresee background text for possible new participants + include training package
- Season of focus and suggestion for appointments (to check whether this meets the actual growing season of the grower)

Interviewer help document: List of CPP (on country crop level)

PART I: SCREENING (OLD participants - participated in 2014)

Interviewer note: please proceed with these questions if the grower already participated in the GGP in 2014. If the grower did not participate, please go to PART I Screening NEW participants.

1. Please fill out the unique code, given by the interviewer:

UNIQUE CODE: XX X XXX

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

1. B. Please fill out the date of the interview:

Date (Date in DD.MM.YYYY)

1. C. Have you already participated in the Good Growth Plan last year (2014)?

→ Please circle what applies.

Yes	1
No	2

If no → go to screening for new participants

IF Q1C=1 (farm participated in 2014)

1. C2. Could you please share any questions or remarks you have related to the farmer report that you have received?

→ Please describe.

1. F. We are conducting this survey on behalf of a manufacturer of crop protection products. Would it be okay for you for this company to contact you with follow-up information?

Yes	1
No	2

1. G. Are you fine with receiving Good Growth Plan communication?

Yes	1
No	2

2. Please note down the country:

→ Interviewer note: this question is for screening purposes only

Algeria	01	Egypt	12	Jordan	23	Poland	34
Argentina	02	France	13	Kenya	24	Russia	35
Australia	03	Ghana	14	Korea	25	South Africa	36
Bangladesh	04	Guatemala	15	Malaysia	26	Spain	37
Belgium	05	Honduras	16	Mexico	27	Taiwan	38
Brazil	06	Hungary	17	Morocco	28	Thailand	39
China	07	India	18	The Netherlands	29	Ukraine	40
Colombia	08	Indonesia	19	Pakistan	30	USA	41
Costa Rica	09	Italy	20	Paraguay	31	Venezuela	42
East Africa	10	Ivory Coast	21	Peru	32	Vietnam	43
Ecuador	11	Japan	22	Philippines	33	Zambia	44

IF Q1C=1 (farm participated in 2014)

2. B. Does your profile still meet the profile description?

[INSERT CLUSTER DESCRIPTION]

→ Please circle what applies.

Yes	1
No	2

3. Please indicate the location in which your farm is located.

→ Interviewer note: this question is for screening purposes only

xxx	1	xxx	11
xxx	2	xxx	12
xxx	3	xxx	13
xxx	4	xxx	14
xxx	5	xxx	15
xxx	6	xxx	16
xxx	7	xxx	17
xxx	8	xxx	18
xxx	9	xxx	19
xxx	10	xxx	20

4. Please note down the **target crop**. For your country and cluster this is: (we fill in the correct crop)
→ Please circle the crop that applies.

→ Interviewer note: this question is for screening purposes only

Apples	1	Pepper	12
Banana	2	Potato	13
Barley	3	Rice	14
Cauliflower for processing industry	4	Soybean	15
Cocoa	5	Stone fruit	16
Coffee	6	Sugarcane	17
Corn	7	Sunflower	18
Cotton	8	Tomato	19
Grape	9	Watermelon	20
Oilseed rape	10	Wheat	21
Pear	11		

4. B. Do you still **cultivate** [TARGET CROP]?

→ Please circle what applies.

Yes	1
No	2

If Q4B=1 → proceed with Q4D

If Q4B=2 → proceed with Q4C

IF Q4B=2 (not cultivate [TARGET CROP])

4. C. Please explain why you do not cultivate [TARGET CROP] anymore.

→ Please describe.

If Q4B=2 → close interview (but complete screening questions (all questions after Q6 until PART II))

IF Q4B=1 (still cultivate [TARGET CROP])

4. D. For how many **years** have you been **growing** [TARGET CROP]?

→ Please write down the number of years.

Number of years	... years
-----------------	-----------

5000. Do you cultivate [target crop] in the season of focus (planting in ... and harvesting in ...)?

→ Please circle what applies.

Yes	1
No	2

If Q5000=2 → close interview (but complete screening questions (all questions after Q6 until PART II))

FILTER FOR FURTHER QUESTIONS

- IF Q2B=1 (farm participated in 2014 and same profile description) → proceed with Q56
- IF Q2B=2 (NOT THE SAME PROFILE DESCRIPTION) → continue with Q5 and detailed screening questions

5. What is your total cultivated area of [TARGET CROP] in hectare?

.....ha

If size < cut-off size → close interview

Check: Q5 cannot be larger than Q6

6. What is the size of your cultivated area in hectare? This is the area used for growing crops (including fields that are used for pasture in a crop rotation).

→ Please write down the size of your cultivated area.

.....ha

INCLUDE COUNTRY/CROP SPECIFIC SCREENING QUESTIONS

Focus in screening questions has to be on target crop if requested by screening. Focus in screening questions has to be on farm level if requested by screening

699. NOTE DOWN NUMBER of CLUSTER:

We now would like to ask you to select the 2 main growing areas for your [TARGET CROP] cultivation (in case of more than 2 main growing areas, please select the 2 largest growing areas). A growing area is defined as the area where the treatment and the conditions are unique, like one [TARGET CROP] variety, one program, one soil condition, one planting year in case of trees, ...

If reference farm: Please select those growing areas on which you follow the protocol of Syngenta (this can include advice on crop protection usage, timing, advice on farming in general,...).

Interviewer note: the name of the protocol is "[INCLUDE NAME OF PROTOCOL IF AVAILABLE]"

56. Please note down the growing area name (f.e. D-block, windmill field, ...).

→ Please note down the name of each growing area.

→ The names of both growing areas should be different.

	Growing area A	Growing area B
Field description		

56. A. Is this the same growing area of [TARGET CROP] as last year?

→ Please circle your answer. (SR)

		Growing area A	Growing area B
Yes		1	1
No		2	2

57. What is the size of each growing area for [TARGET CROP]?

→ Please write down the size of each growing area.

	Growing area A	Growing area B
Size of growing area	.....ha	.....ha

Check: the sum of the size of growing area A and growing area B cannot be larger than Q5 and/or Q6

PART I: SCREENING (NEW participants - participate in 2015)

Interviewer note: please proceed with these questions if the grower did NOT participate in the GGP in 2014. If the grower did participate, please go to PART I Screening OLD participants.

1. Please fill out the unique code, given by the interviewer:

UNIQUE CODE: XX X XXX

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

1. B. Please fill out the date of the interview:

Date (Date in DD.MM.YYYY)

1. C. Have you already participated in the Good Growth Plan last year (2014)?

→ Please circle what applies.

Yes	1
No	2

If yes → please go back to the screening for old participants

1. F. We are conducting this survey on behalf of a manufacturer of crop protection products. Would it be okay for you for this company to contact you with follow-up information?

Yes	1
No	2

1. G. Are you fine with receiving Good Growth Plan communication?

Yes	1
No	2

2. Please note down the country:

→ Interviewer note: this question is for screening purposes only

Algeria	01	Egypt	12	Jordan	23	Poland	34
Argentina	02	France	13	Kenya	24	Russia	35
Australia	03	Ghana	14	Korea	25	South Africa	36
Bangladesh	04	Guatemala	15	Malaysia	26	Spain	37
Belgium	05	Honduras	16	Mexico	27	Taiwan	38
Brazil	06	Hungary	17	Morocco	28	Thailand	39
China	07	India	18	The Netherlands	29	Ukraine	40
Colombia	08	Indonesia	19	Pakistan	30	USA	41
Costa Rica	09	Italy	20	Paraguay	31	Venezuela	42
East Africa	10	Ivory Coast	21	Peru	32	Vietnam	43
Ecuador	11	Japan	22	Philippines	33	Zambia	44

3. Please indicate the location in which your farm is located.

→ Please circle the location that applies.

→ Interviewer note: this question is for screening purposes only

xxx	1	xxx	11
xxx	2	xxx	12
xxx	3	xxx	13
xxx	4	xxx	14
xxx	5	xxx	15
xxx	6	xxx	16
xxx	7	xxx	17
xxx	8	xxx	18
xxx	9	xxx	19
xxx	10	xxx	20

4. Please note down the target crop. For your country and cluster this is: (we fill in the correct crop)

→ Please circle the crop that applies.

→ Interviewer note: this question is for screening purposes only

Apples	1	Pepper	12
Banana	2	Potato	13
Barley	3	Rice	14
Cauliflower for processing industry	4	Soybean	15
Cocoa	5	Stone fruit	16
Coffee	6	Sugarcane	17
Corn	7	Sunflower	18
Cotton	8	Tomato	19
Grape	9	Watermelon	20
Oilseed rape	10	Wheat	21
Pear	11		

4. D. For how many years have you been growing [TARGET CROP]?

→ Please write down the number of years.

Number of years	... years
-----------------	-----------

5000. Do you cultivate [target crop] in the season of focus (planting in ... and harvesting in ...)?

→ Please circle what applies.

Yes	1
No	2

If Q5000=2 → close interview (but complete screening questions (all questions after Q6 until PART II))

5. What is your total cultivated area of [TARGET CROP] in hectare?

 ha
--	----------

If size < cut-off size → close interview

Check: Q5 cannot be larger than Q6

6. What is the size of your cultivated area in hectare? This is the area used for growing crops (including fields that are used for pasture in a crop rotation).

→ Please write down the size of your cultivated area.

ha
--	---------

INCLUDE COUNTRY/CROP SPECIFIC SCREENING QUESTIONS

Focus in screening questions has to be on target crop if requested by screening. Focus in screening questions has to be on farm level if requested by screening

699. NOTE DOWN NUMBER of CLUSTER:

We now would like to ask you to select the 2 main growing areas for your [TARGET CROP] cultivation (in case of more than 2 main growing areas, please select the 2 largest growing areas). A growing area is defined as the area where the treatment and the conditions are unique, like one [TARGET CROP] variety, one program, one soil condition, one planting year in case of trees, ...

If reference farm: Please select those growing areas on which you follow the protocol of Syngenta (this can include advice on crop protection usage, timing, advice on farming in general,...).

Interviewer note: the name of the protocol is "[INCLUDE NAME OF PROTOCOL IF AVAILABLE]"

56. Please note down the growing area name (f.e. D-block, windmill field, ...).

→ Please note down the name of each growing area.

→ The names of both growing areas should be different.

	Growing area A	Growing area B
Field description		

57. What is the size of each growing area for [TARGET CROP]?

→ Please write down the size of each growing area.

	Growing area A	Growing area B
Size of growing area	.....ha	.....ha

Check: the sum of the size of growing area A and growing area B cannot be larger than Q5 and/or Q6

PART II: CONTACT INFORMATION

FILTERS:

If farm participated in 2014 (Q1C=1):

- Ask Q1D
- If Q1D=1 → proceed with Q35C
- If Q1D=2 → proceed with Q1E

If new farm participant in 2015 (Q1C=2):

- Ask Q19 until Q35

IF Q1C=1 (farm participated in 2014)

1. D. Is your contact information still the same as indicated in the contact form?

→ Please circle what applies.

Yes	1
No	2

IF Q1D=1 → proceed with Q35C on page xx

IF Q1D=2 → proceed with Q1E

IF Q1D=2

1. E. Please explain why the contact information is different.

→ Please write down the reason.

IF Q1C=2 OR IF Q1D=2 → answer Q19 to Q35

19. **Surname**

→ Please write down the surname in capital letters.

20. **First name**

→ Please write down the first name in capital letters.

21. **Phone number**

→ Please write down the phone number, including the country and region codes.

22. **E-mail address**

→ Please write down the e-mail address in capital letters.

22. B. Farm Name

→ Please write down the farm name in capital letters.

23. Farm address - street

→ Please write down the street name of the location of the farm in capital letters.

24. Farm address - street number

→ Please write down the street number.

25. Farm address - postal code

→ Please write down the postal code of the city in which the farm is located.

26. Farm address - city

→ Please write down the city in which the farm is located.

27. Age

→ Please write down the age in years.

 years

28. Gender

→ Please circle the gender.

	Male	1
	Female	2

30. Are you a full-time or part-time farmer?

→ Please circle your answer. Only one answer possible.

I am a full-time grower (no other activities generating income apart from farming)	1
I am a part-time grower (having other activities generating income, like teaching, ...)	2
Don't know / no answer	99

31. Until what age did you go to school?

→ Please write down the age until when the grower went to school.

 Until..... year

32. What is your **highest level of education**?

→ Please circle the answer. Only one answer possible.

No education	1
Primary/Elementary school	2
Secondary school	3
Higher education (not university)	4
University degree	5
Other. Specify:	98
Don't know / no answer	99

IF Q32 is 2 or 3 or 4 or 5

33. Was this an **agronomical/agricultural** education?

→ Please circle the answer.

Yes	1
No	2

34. Are you a member of a producer group, association or cooperative?

→ Please circle the answer.

Yes	1
No	2

IF YES (CODE 1 in Q34)

35. A. What is the **name of the producer group/association/cooperative** that you are a member of?

→ Please note down the answer. If member of several, please note down all.

IF BELGIUM

35. B. Do you collaborate with a growing consultancy agency (e.g. TACO)?

→ Please circle the answer.

Yes	1
No	2

35. C. Overall, how **satisfied** would you say you are with your life these days? Please use a scale from 1 to 10, where 1 means "not satisfied at all" and 10 means "very satisfied".

→ Please write down the satisfaction level on a scale from 1 to 10. Please use 99 in case of don't know.

..... (scale from 1 to 10)

35. D. Please explain your answer.

→ Please explain and provide as much detail as possible.

→ Please probe for activities related to farming if the grower does not mention this.

35. E. To which extent do you agree with the following statements?

→ Please tick what applies. Only one answer possible for each statement.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know
a. I am optimistic about the future.	5	4	3	2	1	99
b. What I do in life is worthwhile.	5	4	3	2	1	99
c. I am free to decide how to live my life.	5	4	3	2	1	99
d. In my daily life, I seldom have time to do the things I really enjoy.	5	4	3	2	1	99
e. I am left out of society.	5	4	3	2	1	99
f. Life has become so complicated today that I almost can't find my way.	5	4	3	2	1	99
g. The value of what I do is recognized by others.	5	4	3	2	1	99
h. Some people look down on me because of my job situation or income.	5	4	3	2	1	99
i. I am close to people in the area where I live.	5	4	3	2	1	99

PART III: FARM CHARACTERISTICS

C. Soil erosion measures

37. A. Water erosion signs range from the “splashing” of soil particles over the soil surface and onto crops after heavy rain or irrigation, to the formation of small rills or larger gulleys down hillslopes, traversing down slopes like streams. Do you have signs of soil erosion by water on your farm?

→ Please circle what applies. (SR)

Yes	1
No	2

37. B. Wind erosion signs range from the appearance of dust clouds, especially on dry days, particularly when the soil is ploughed to “sandblasting” effects of fine sand particles hitting leaves and marking them. Do you have signs of soil erosion by wind on your farm?

→ Please circle what applies. (SR)

Yes	1
No	2

IF Q37A=1 (signs of soil erosion by water)

41. A. Which measures do you use to manage water erosion on your farm?

→ Spontaneous, multiple response.

Reduced tillage	1
No-tillage	2
Mulch tillage	3
Maintain vegetative cover on fields by planting cover crops between cash crops	4
Maintain vegetative cover on fields by planting crops in strips with different planting times	5
Maintain vegetative cover on fields by not burying crop residues after harvest	6
Maintain vegetative cover on fields by not cultivating soil between harvest and planting of the next crop	7
Maintain vegetative cover on fields by planting grassed waterways where runoff flows down as a streams in “natural valleys”	8
Field operations across the slope, such as ploughing and placing grass buffers or terraces	9
None	90
Other specify 1:	96
Other specify 2:	97
Other specify 3:	98
Don't know / no answer	99

IF Q37A=1 (signs of soil erosion by water)

41. B. Have the measures helped to reduce soil erosion?

→ READ, single response.

Under control due to measures taken	1
Measures taken did not help to control soil erosion	2
Other specify 1:	98
Don't know / no answer	99

IF Q37B=1 (signs of soil erosion by wind)

41. C. Which measures do you use to manage wind erosion on your farm?

→ Spontaneous, multiple response.

Establish windbreaks (trees and shrubs)	1
Maintain vegetative cover on fields by planting cover crops between cash crops	2
Maintain vegetative cover on fields by planting crops in strips with different planting times	3
Maintain vegetative cover on fields by not burying crop residues after harvest	4
Maintain vegetative cover on fields by not cultivating soil between harvest and planting of the next crop	5
For cropping, reduced tillage	6
For cropping, no-tillage	7
For cropping, mulch tillage	8
For grazing, reduce the stocking numbers	9
None	90
Other specify 1:	96
Other specify 2:	97
Other specify 3:	98
Don't know / no answer	99

IF Q37B=1 (signs of soil erosion by wind)

41. D. Have the measures helped to reduce soil erosion?

→ READ, single response.

Under control due to measures taken	1
Measures taken did not help to control soil erosion	2
Other specify 1:	98
Don't know / no answer	99

E. Biodiversity conservation measures

46. A. Many types of native and wild plants and animals can flourish in the environment alongside the production of crops and livestock. How aware are you of the potential benefits to your farm from these organisms?

→ Please circle what applies. (SR)

I know what they do for soil fertility, pollination and pest management	3
I have some idea of the benefits they bring, but not in detail	2
I know that they do something, but I don't really know what	1
Don't know / no answer	99

46. B. Do you have pieces of land on your farm that you keep unmanaged to allow natural vegetation to develop, for example areas in crop margins, natural woodland or forest, and next to rivers and streams?

→ Please circle your answer. (SR)

Yes	1
No	2

46. C. Do you have pieces of land on your farm that you actively manage to improve natural vegetation to provide habitats for natural plants and animals?

→ Please circle your answer. (SR)

Yes	1
No	2

46. D. Which of the following types of habitat do you have on your farm?

→ Please circle all that applies. (MR)

Habitats that contain flowering plants rich in pollen and nectar for pollinators, e.g. bees & butterflies.	1
Habitats that contain plants that produce seed grains to support populations of farmland birds.	2
Habitats that contain grasses to provide cover and nesting habitats for insects, birds, small mammals and beetles.	3
Habitats that contain hedges or tall shrubs / short trees and provide nesting and feeding grounds for other species.	4
None	90
96. Other. Specify 1: ...	96
97. Other. Specify 2: ...	97
98. Other. Specify 3: ...	98
Don't know / no answer	99

46. E. Which of the following applies to the way you manage your land under pasture?

→ Please circle all that applies. (MR)

I don't actively manage my pasture	1
I partially manage all or parts of my pasture by improving soil fertility for better plant nutrition	2
I manage all or parts my pasture by sowing specific grasses and other plants to maximize productivity.	3
I do not have land under pasture.	90
96. Other. Specify 1: ...	96
97. Other. Specify 2: ...	97
98. Other. Specify 3: ...	98
Don't know / no answer	99

F. Safety measures

52. In the past 12 months, did you or someone else on the farm have an accident with pesticide poisoning?

→ Please circle your answer. (SR)

Yes	1
No	2

IF YES in Q52 (accidents with pesticide poisoning)

53. What were the immediate actions taken to treat the pesticide poisoning?

→ Please note down all immediate actions to treat pesticide poisoning that you applied.

--

55. E1. Have you followed a training to keep updated with crop growing in general and environment management in the past 2 years?

→ Please circle what applies. (SR)

Yes	1
No	2

IF Q55E1=1 (Yes)

55. E2. By whom was this training organized?

→ Please circle what applies. (MR)

Syngenta representative	1
Internet	2
Extension officer	3
Cooperative	4
Agronomist /advisor	5
Supplier	6
Governmental organization (e.g. Ministry)	7
Other specify 1:	96
Other specify 2:	97
Other specify 3:	98
Don't know / no answer	99

IF Q55E1=1 (Yes)

55. E3. What did you learn during this training?

→ Please describe.

--

IF BELGIUM

55. F. Do you have a phyto licence this season?

→ Please circle what applies. (SR)

	Yes	1
	No	2

IF Q55F=1 (YES)

55. G. Which kind of phyto licence do you have?

→ Please circle what applies. (SR)

	P1	1
	P2	2
	P3	3
	NP	4
	P2s	5
Other. Specify:		98
	Don't know / no answer	99

G. Description of growing area

36. What are all the **crops** you are cultivating on your farm/business across all possible sites, including the ones you cultivate in a rotation scheme?

→ Spontaneous, multiple response.

→ Interviewer note: please check the table for other crops on the next page

TARGET CROPS

Apples	1	Pepper	12
Banana	2	Potato	13
Barley	3	Rice	14
Cauliflower for processing industry	4	Soybean	15
Cocoa	5	Stone fruit	16
Coffee	6	Sugarcane	17
Corn	7	Sunflower	18
Cotton	8	Tomato	19
Grape	9	Watermelon	20
Oilseed rape	10	Wheat	21
Pear	11		

OTHER CROPS

Alfalfa/lucerna	22	Leek	57
Asparagus	23	Lettuce	58
Avocado	24	Longan	59
Beets/roots (turnip, yam,...)	25	Managu (African nighshade)	60
Berries	26	Mango	61
Bitter melon	27	Millet	62
Broccoli	28	Mushroom	63
Brussels sprout	29	Nuts	64
Cabbage	30	Oats	65
Carrot	31	Olive	66
Cassava	32	Onion	67
Cauliflower (in general)	33	Other melons	68
Celeriac	34	Other peppers	69
Celery	35	Other potatoes	70
Cherry	36	Other rice	71
Chicory	37	Other wheat	72
Citrusfruit (orange, lemon)	38	Palm oil	73
Coconut (palm tree)	39	Papaya	74
Cover crop	40	Passion fruit	75
Cucumber	41	Peach	76
Dasheen	42	Pineapple	77
Eggplant	43	Pomme granate	78
Eucalyptus	44	Prune	79
Fennel	45	Pulses (lentils, beans, peas,...)	80
Flax	46	Pumpkin/squash	81
Flowers	47	Quinoa	82
Forage	48	Radish	83
Garlic	49	Rubber	84
Grass	50	Seeds (chia, sesame,...)	85
Grassland (pasture/artificial/temporary)	51	Spelt	86
Guava	52	Spinach	87
Herbs (coriander, cinnamon,...)	53	Strawberry	88
Jute	54	Sugar beet	89
Kale	55	Zucchini	90
Lady finger (Okra)	56		
Other. Specify 1:			96
Other. Specify 2:			97
Other. Specify 3:			98
Don't know / no answer			99

For the next topics, we will focus on [TARGET CROP] on the selected growing areas.

A growing area is defined as the area where the treatment and the conditions are unique, like one [TARGET CROP] variety, one program, one soil condition, one planting year in case of trees, ...

If reference farm: Please remember this should be those growing areas on which you follow the protocol of Syngenta (this can include advice on crop protection usage, timing, advice on farming in general,...)

58. In general, what is the topography of each growing area for [TARGET CROP]?

→ Please note down the slope of each growing area. Please write down other if needed. (SR)

	Growing area A	Growing area B
Hilly	1	1
Flat	2	2
Gentle slope	3	3
Steep slope	4	4
Valley	5	5
98. Other. Specify:	...	...
Don't know / no answer	99	99

65. Do you practice intercropping (growing multiple crops on the same growing area in the same season) on each growing area for [TARGET CROP]?

→ Please circle your answer. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q65=1 (intercropping)

66. Which crops do you intercrop on each growing area with [TARGET CROP]?

→ Please circle all crops you intercrop. Note down other crops if not in list. (MR)

→ Interviewer instruction: Check with Q36. Also include [TARGET CROP]

→ Interviewer instruction: Use same code list as Q36

	Growing area A	Growing area B
Apples	1	1
Banana	2	2
Barley	3	3
Cauliflower for processing industry	4	4
Cocoa	5	5
Coffee	6	6
Corn	7	7
Cotton	8	8
Grape	9	9
Oilseed rape	10	10
Pear	11	11
Pepper	12	12
Potato	13	13
Rice	14	14
Soybean	15	15
Stone fruit	16	16
Sugarcane	17	17
Sunflower	18	18
Tomato	19	19
Watermelon	20	20
Wheat	21	21
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

60. Do you rotate crops on each growing area for [TARGET CROP]?

→ Please circle your answer. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q60=1 (crop rotation)

60. B. Which crops will you cultivate on each growing area for [TARGET CROP] in 2016?

→ Please circle your answer. If not in list, please write down. If multiple crops, please indicate all crops. (MR)

→ Interviewer instruction: Use same code list as Q36

	Growing area A	Growing area B
Apples	1	1
Banana	2	2
Barley	3	3
Cauliflower for processing industry	4	4
Cocoa	5	5
Coffee	6	6
Corn	7	7
Cotton	8	8
Grape	9	9
Oilseed rape	10	10
Pear	11	11
Pepper	12	12
Potato	13	13
Rice	14	14
Soybean	15	15
Stone fruit	16	16
Sugarcane	17	17
Sunflower	18	18
Tomato	19	19
Watermelon	20	20
Wheat	21	21
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

IF Q60=1 (crop rotation)

60. C. Which crops will you cultivate on each growing area for [TARGET CROP] in 2017?

→ Please circle your answer. If not in list, please write down. If multiple crops, please indicate all crops.

(MR)

→ Interviewer instruction: Use same code list as Q36

	Growing area A	Growing area B
Apples	1	1
Banana	2	2
Barley	3	3
Cauliflower for processing industry	4	4
Cocoa	5	5
Coffee	6	6
Corn	7	7
Cotton	8	8
Grape	9	9
Oilseed rape	10	10
Pear	11	11
Pepper	12	12
Potato	13	13
Rice	14	14
Soybean	15	15
Stone fruit	16	16
Sugarcane	17	17
Sunflower	18	18
Tomato	19	19
Watermelon	20	20
Wheat	21	21
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

IF Q60=1 (crop rotation)

60. D. For how many years have you been performing crop rotations on each growing area for [TARGET CROP]?

→ Please indicate the number of years. (SR)

	Growing area A	Growing area B
0-1 year	1	1
1-3 years	2	2
3-5 years	3	3
> 5 years	4	4
Don't know / no answer	99	99

67. What is the soil type of each growing area for [TARGET CROP]?

→ Spontaneous Note down other soil type if not in list. (SR)

	Growing area A	Growing area B
clay soil	1	1
silty clay soil	2	2
silty clay loam soil	3	3
clay loam soil	4	4
loam soil	5	5
silt loam soil	6	6
silt soil	7	7
sandy clay soil	8	8
sandy clay loam soil	9	9
sandy loam soil	10	10
loamy sand soil	11	11
sand soil	12	12
98. Other. Specify:		
Don't know / no answer	99	99

IF Q67=99 (don't know soil type)

67. B. What type of texture is your soil on each growing area for [TARGET CROP] this season?

→ READ. (SR)

	Growing area A	Growing area B
Heavy – this includes clayey soils that are hard to plough, especially if dry	1	1
Medium – this includes loamy soils that are moderately hard to plough	2	2
Light – this includes sandy soils that are easy to pull a plough through, even when dry	3	3
Don't know / no answer	99	99

68. A. From your point of view, can you give your opinion on the productivity of your soil of each growing area for [TARGET CROP] this season?

→ READ. (SR)

	Growing area A	Growing area B
Very high	4	4
High	3	3
Moderate	2	2
Poor	1	1
Don't know / no answer	99	99

68. B. To which extent do you think your soil is degraded due to soil erosion, soil compaction, organic matter loss, poor water holding capacity, soil pH too high or too low, soil salinity, soil crusting of each growing area for [TARGET CROP] this season?

→ READ. (SR)

	Growing area A	Growing area B
High level of degradation	4	4
Moderate level of degradation	3	3
Low level of degradation	2	2
No apparent degradation	1	1
Don't know / no answer	99	99

PART IV: FARMING PRACTICES - BEFORE HARVEST

A. Planting and fruit development - SOYBEAN

71. Could you please note down the soybean variety that has been used for each growing area for soybean?

→ Please note down the soybean variety that has been used for each growing area.

	Growing area A	Growing area B
Soybean variety

72. When did the first field preparation start for each growing area for soybean?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and crop protection product applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

73. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for soybean?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram per hectare</u>	.....kg/ha	.....kg/ha

IF Q73 can't be answered in kg/ha

73. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for soybean?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....bags/ha	.....bags/ha

IF Q73B is answered in bags per hectare

73. C. What is the weight of one bag of seeds used in kilogram for each growing area for soybean?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	.....kg (of one bag)

74. **When** have the seeds been sown/planted for each growing area for soybean?

→ Please write down the date of sowing/planting for each growing area.

	Growing area A	Growing area B
Sowing/planting date	_____._____._____._____. (DD.MM.YYYY)	_____._____._____._____. (DD.MM.YYYY)

382. Please describe per growing area the **type of machinery/equipment** used and indicate the **amount of labor** used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

	Growing area B				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10.Sowing or planting					

B. Planting and fruit development - CEREALS (WHEAT)

77. Could you please note down the wheat variety that has been used for each growing area for wheat?

→ Please note down the wheat variety that has been used for each growing area.

	Growing area A	Growing area B
Wheat variety

78. When did the first field preparation start for each growing area for wheat?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

79. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for wheat?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram</u> per <u>hectare</u>	.....<u>kg/ha</u>	.....<u>kg/ha</u>

IF Q79 can't be answered in kg/ha

79. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for wheat?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....bags/ <u>ha</u>	.....bags/ <u>ha</u>

IF Q79B is answered in bags per hectare

79. C. What is the weight of one bag of seeds used in kilogram for each growing area for wheat?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....<u>kg</u> (of one bag)	.....<u>kg</u> (of one bag)

80. When was the crop sown/planted for each growing area for wheat?

→ Please write down the date of sowing/planting for each growing area.

	Growing area A	Growing area B
Sowing/planting date	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

C. Planting and fruit development - CEREALS (BARLEY)

85. Could you please note down the barley variety that has been used for each growing area for barley?

→ Please note down the barley variety that has been used for each growing area.

	Growing area A	Growing area B
Barley variety

86. When did the first field preparation start for each growing area for barley?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	--.---.---- (DD.MM.YYYY)	--.---.---- (DD.MM.YYYY)

87. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for barley?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram</u> per <u>hectare</u>	.....<u>kg/ha</u>	.....<u>kg/ha</u>

IF Q87 can't be answered in kg/ha

87. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for barley?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....<u>bags/ha</u>	.....<u>bags/ha</u>

IF Q87B is answered in bags per hectare

87. C. What is the weight of one bag of seeds used in kilogram for each growing area for barley?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....<u>kg</u> (of one bag)	.....<u>kg</u> (of one bag)

88. When have the seeds been sown/planted for each growing area for barley?

→ Please write down the date of sowing/planting for each growing area.

	Growing area A	Growing area B
Sowing/planting date	--.---.---- (DD.MM.YYYY)	--.---.---- (DD.MM.YYYY)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

D. Planting and fruit development - GRAPE

94. Could you please note down the grape variety that has been used for each growing area for grape?

→ Please note down the grape variety that has been used for each growing area.

	Growing area A	Growing area B
Grape variety

95. What is the year of planting of the grape vines for each growing area for grape?

→ Please note down the year of planting for each growing area.

	Growing area A	Growing area B
Year of planting

96. What is the total number of grape vines for each growing area for grape?

→ Please note down the total number of grape vines for each growing area.

	Growing area A	Growing area B
Number of grape vines	.....grape vines	.....grape vines

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

	Growing area B				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

E. Planting and fruit development - CORN

102. Could you please note down the corn variety that has been used for each growing area for corn?

→ Please note down the corn variety that has been used for each growing area.

	Growing area A	Growing area B
Corn variety

103. When did the first field preparation start for each growing area for corn?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

104. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for corn?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram</u> per <u>hectare</u>	.....kg/ha	.....kg/ha

IF Q104 can't be answered in kg/ha

104. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for corn?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....bags/ha	.....bags/ha

IF Q104B is answered in bags per hectare

104. C. What is the weight of one bag of seeds used in kilogram for each growing area for corn?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	.....kg (of one bag)

105. When have the seeds been sown/planted for each growing area for corn?

→ Please write down the date of sowing/planting for each growing area.

	Growing area A	Growing area B
Sowing/planting date	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

F. Planting and fruit development - COTTON

109. Could you please note down the cotton variety that has been used for each growing area for cotton?

→ Please note down the cotton variety that has been used for each growing area.

	Growing area A	Growing area B
Cotton variety

110. When did the first field preparation start for each growing area for cotton?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

111. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for cotton?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram</u> per <u>hectare</u>	.....kg/ha	.....kg/ha

IF Q111 can't be answered in kg/ha

111. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for cotton?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....bags/ha	.....bags/ha

IF Q111B is answered in bags per hectare

111. C. What is the weight of one bag of seeds used in kilogram for each growing area for cotton?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	.....kg (of one bag)

112. When have the seeds been sown/planted for each growing area for cotton?

→ Please write down the date of sowing/planting for each growing area.

	Growing area A	Growing area B
Sowing/planting date	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10.Sowing or planting					

G. Planting and fruit development - RICE

114. Could you please note down the rice variety that has been used for each growing area for rice?

→ Please note down the rice variety that has been used for each growing area.

	Growing area A	Growing area B
Rice variety

115. When did the first field preparation start for each growing area for rice?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

116. What production system (ways of planting rice) is used on each growing area for rice? Was it....?

→ Please tick what applies for each growing area. Only one answer possible per growing area. Note down other if not in list.

	Growing area A	Growing area B
Transplanted (TR)	1	1
Direct-seeded (DS)	2	2
Direct-seeded, wet-sown (DSWS)	3	3
Direct-seeded, dry-sown (DSDS)	4	4
System of Rice Intensification (SRI)	5	5
98. Other. Specify		
Don't know / no answer	99	99

117. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for rice?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram</u> per <u>hectare</u>	.....kg/ha	.....kg/ha

IF Q117 can't be answered in kg/ha

117. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for rice?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....bags/ha	.....bags/ha

IF Q117B is answered in bags per hectare

117. C. What is the weight of one bag of seeds used in kilogram for each growing area for rice?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	..... kg (of one bag)

118. When have the seeds or seedlings been planted for each growing area for rice?

→ Please write down the date of planting for each growing area.

	Growing area A	Growing area B
Planting date	---.---.---- (DD.MM.YYYY)	---.---.---- (DD.MM.YYYY)

119. Please indicate the inter-row space that is applied on each growing area for rice?

→ Please note down the inter-row space in centimeter for each growing area.

	Growing area A	Growing area B
Inter-row space	.....cm	.....cm

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

H. Planting and fruit development - POTATO	
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→ Please note down the potato variety that has been used for each growing area.

	Growing area A	Growing area B
Potato variety

→ Please note down the type of potato that has been cultivated for each growing area. (SR)

	Growing area A	Growing area B
Potatoes for fresh use	1	1
Potatoes for process use	2	2
Starch potatoes	3	3
Seed potatoes	4	4
98. Other. Specify:	98	98
Don't know / no answer	99	99

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	<div> <div></div> <div>(DD.MM.YYYY)</div> </div>	<div> <div></div> <div>(DD.MM.YYYY)</div> </div>

→ Please note down the total amount of seeds in **kilogram** per **hectare** for each growing area.

	Growing area A	Growing area B
Seed density in kilogram per hectare	..... kg/ha	..... kg/ha

125. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for potato?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per hectare	.....bags/ha	.....bags/ha

IF Q125B is answered in bags per hectare

125. C. What is the weight of one bag of seeds used in kilogram for each growing area for potato?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	..... kg (of one bag)

126. When have the seeds been sown for each growing area for potato?

→ Please write down the date of sowing for each growing area.

	Growing area A	Growing area B
Sowing date	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

I. Planting and fruit development - OILSEED RAPE

128. Could you please note down the oilseed rape variety that has been used for each growing area for oilseed rape?

→ Please note down the oilseed rape variety that has been used for each growing area.

	Growing area A	Growing area B
Oilseed rape variety

129. When did the first field preparation start for each growing area for oilseed rape?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

130. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for oilseed rape?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in kilogram per <u>hectare</u>	.....kg/ha	.....kg/ha

IF Q130 can't be answered in kg/ha

130. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for oilseed rape?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....bags/ha	.....bags/ha

IF Q130B is answered in bags per hectare

130. C. What is the weight of one bag of seeds used in kilogram for each growing area for oilseed rape?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	.....kg (of one bag)

131. When have the seeds been sown for each growing area for oilseed rape?

→ Please write down the date of sowing for each growing area.

	Growing area A	Growing area B
Sowing date	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

J. Planting and fruit development - SUNFLOWER

134. Could you please note down the sunflower variety that has been used for each growing area for sunflower?

→ Please note down the sunflower variety that has been used for each growing area.

	Growing area A	Growing area B
Sunflower variety

135. When did the first field preparation start for each growing area for sunflower?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

136. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for sunflower?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram</u> per <u>hectare</u>	.....kg/ha	.....kg/ha

IF Q136 can't be answered in kg/ha

136. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for sunflower?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per <u>hectare</u>	.....bags/ha	.....bags/ha

IF Q136B is answered in bags per hectare

136. C. What is the weight of one bag of seeds used in kilogram for each growing area for sunflower?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	.....kg (of one bag)

137. When have the seeds been sown/planted for each growing area for sunflower?

→ Please write down the date of sowing/planting for each growing area.

	Growing area A	Growing area B
Sowing/planting date	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

138. What is the inter-row space that is used when planting sunflower on each of the growing areas?

→ Please note down the inter-row space in cm for each growing area.

	Growing area A	Growing area B
Inter-row space	.....cm	.....cm

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

K. Planting and fruit development - SUGARCANE

141. Could you please note down the sugarcane variety that has been used for each growing area for sugarcane?

→ Please note down the sugarcane variety that has been used for each growing area.

	Growing area A	Growing area B
Sugarcane variety

142. What is the year of planting for each growing area for sugarcane?

→ Please note down the year of planting for each growing area.

	Growing area A	Growing area B
Year of planting	..... (Year)	.....(Year)

143. What is the average age of the plants in each growing area for sugarcane?

→ Please note down the average age of the plants for each growing area.

	Growing area A	Growing area B
Age of plants	.....years	.....years

145. Which of the following planting types have been used for each growing area for sugarcane?

→ Please tick what applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
Mechanical planting	1	1
Manual planting	2	2
Both mechanical and manual planting	3	3
98. Other. Specify		
Don't know / no answer	99	99

146. What is the replanting cycle (generation) for each growing area for sugarcane?

→ Please circle the replanting cycle that applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
First cycle: plant cane	1	1
Second cycle/ratoon	2	2
Third cycle/ratoon	3	3
Fourth cycle/ratoon	4	4
Fifth cycle/ratoon	5	5
Sixth cycle/ratoon	6	6
Seventh cycle/ratoon	7	7
Eight cycle/ratoon	8	8
Ninth cycle/ratoon	9	9
Tenth cycle/ratoon	10	10
Other specify:	98	98
Don't know / no answer	99	99

IF Q146=1 (first cycle)

147. When have the young plants been planted for each growing area for sugarcane?

→ Please write down the date of planting for each growing area.

	Growing area A	Growing area B
Planting date	(DD.MM.YYYY)	(DD.MM.YYYY)

IF Q146≠1 (not first cycle)

149. For the plant cane in the first cycle, what was the total ton of cane per hectare that has been achieved for each growing area?

→ Please write down the total **tons** of cane per **hectare** for each growing area.

	Growing area A	Growing area B
Total tons of canes per hectare plant cane	.....ton/ha	.....ton/ha

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

L. Planting and fruit development - TOMATO

150. Could you please note down the tomato variety that has been used for each growing area for tomato?

→ Please note down the tomato variety that has been used for each growing area.

	Growing area A	Growing area B
Tomato variety

151. Are tomatoes grown on open field or in greenhouse for each growing area?

→ Please indicate what applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
Open field	1	1
Greenhouse	2	2
98. Other. Specify 1:	...	...
Don't know / no answer	99	99

IF Q151=2 (greenhouse)

152. Are tomatoes grown in an active greenhouse or a passive greenhouse for each growing area?

→ Please indicate what applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
Active greenhouse	1	1
Passive greenhouse	2	2
98. Other. Specify 1:	...	...
Don't know / no answer	99	99

153. When did the first field preparation start for each growing area for tomato?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	_____._____._____._____. (DD.MM.YYYY)	_____._____._____._____. (DD.MM.YYYY)

154. A. What is the number of plants that has been transplanted per m^2 for each growing area for tomato?

→ Please note down the number of plants that has been transplanted per m^2 for each growing area.

	Growing area A	Growing area B
Plant density	.....number of plants/ m^2	..... number of plants / m^2

→ Please write down the date of sowing/planting for each growing area.

D. How many hours was the machinery/equipment used for this activity?



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Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

M. Planting and fruit development - PEPPER

157. Could you please note down the pepper variety that has been used for each growing area for pepper?

→ Please note down the pepper variety that has been used for each growing area.

	Growing area A	Growing area B
Pepper variety

158. Are peppers grown on open field or in greenhouse for each growing area?

→ Please indicate what applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
Open field	1	1
Greenhouse	2	2
98. Other. Specify 1:	...	...
Don't know / no answer	99	99

IF Q158=2 (greenhouse)

159. Are peppers grown in an active greenhouse or a passive greenhouse for each growing area?

→ Please indicate what applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
Active greenhouse	1	1
Passive greenhouse	2	2
98. Other. Specify 1:	...	...
Don't know / no answer	99	99

160. When did the first field preparation start for each growing area for pepper?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

161. A. What is the number of plants that has been transplanted per m² for each growing area for pepper?

→ Please note down the number of plants that has been transplanted per m² for each growing area.

	Growing area A	Growing area B
Plant density	.....number of plants/m ²	..... number of plants /m ²

→ Please write down the date of sowing/planting for each growing area.

D. How many hours was the machinery/equipment used for this activity?



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	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10.Sowing or planting					

N. Planting and fruit development - WATERMELON

164. Could you please note down the watermelon variety that has been used for each growing area for watermelon?

→ Please note down the watermelon variety that has been used for each growing area.

	Growing area A	Growing area B
Watermelon variety

165. Are watermelons grown on open field or in greenhouse for each growing area?

→ Please indicate what applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
Open field	1	1
Greenhouse	2	2
98. Other. Specify 1:	...	...
Don't know / no answer	99	99

IF Q165=2 (greenhouse)

166. Are watermelons grown in an active greenhouse or a passive greenhouse for each growing area?

→ Please indicate what applies. Please write down other if needed. (SR)

	Growing area A	Growing area B
Active greenhouse	1	1
Passive greenhouse	2	2
98. Other. Specify 1:	...	...
Don't know / no answer	99	99

167. When did the first field preparation start for each growing area for watermelon?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	_____._____._____._____. (DD.MM.YYYY)	_____._____._____._____. (DD.MM.YYYY)

168. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for watermelon?

→ Please note down the total amount of seeds in kilogram per hectare for each growing area.

	Growing area A	Growing area B
Seed density in <u>kilogram</u> per <u>hectare</u>	.....kg/ha	.....kg/ha

IF Q168 can't be answered in kg/ha

168. B. What is the amount of bags of seeds that has been sown per hectare for each growing area for watermelon?

→ Please note down the number of bags of seeds per hectare for each growing area.

	Growing area A	Growing area B
Seed density in number of bags per hectare	.....bags/ha	.....bags/ha

IF Q168B is answered in bags per hectare

168. C. What is the weight of one bag of seeds used in kilogram for each growing area for watermelon?

→ Please note down the weight of one bag in kilogram for each growing area.

	Growing area A	Growing area B
Weight of one bag	.....kg (of one bag)	..... kg (of one bag)

169. When have the seeds/young plants been sown/planted for each growing area for watermelon?

→ Please write down the date of sowing/planting for each growing area.

	Growing area A	Growing area B
Sowing/planting date	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

O. Planting and fruit development - BANANA

171. Could you please note down the banana variety that has been used for each growing area for banana?

→ Please note down the banana variety that has been used for each growing area.

	Growing area A	Growing area B
Banana variety

172. What is the year of planting for each growing area for banana?

→ Please note down the year of planting for each growing area.

	Growing area A	Growing area B
Year of planting

173. What is the average age of the trees in each growing area for banana?

→ Please note down the average age of trees for each growing area.

	Growing area A	Growing area B
Age of trees	.....years	.....years

174. What is the total number of trees for each growing area for banana?

→ Please note down the total number of trees for each growing area.

	Growing area A	Growing area B
Tree density	.....trees	.....trees

179. Did you leave the field fallow in the past before re-planting for each growing area for banana?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

	Growing area B				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

P. Planting and fruit development - APPLE

180. Could you please note down the apple variety that has been used for each growing area for apple?

→ Please note down the apple variety that has been used for each growing area.

	Growing area A	Growing area B
Apple variety

181. What is the year of planting for each growing area for apple?

→ Please note down the year of planting for each growing area.

	Growing area A	Growing area B
Year of planting

182. What is the total number of trees for each growing area for apple?

→ Please note down the total number of trees for each growing area.

	Growing area A	Growing area B
Tree density	.....trees	.....trees

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

- A. What is the number of hours spent by all workers for that specific operation?
 e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
 Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
 e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

R. Planting and fruit development - COFFEE

196. Could you please note down the coffee variety that has been used for each growing area for coffee?

→ Please note down the coffee variety that has been used for each growing area.

	Growing area A	Growing area B
Coffee variety

197. What is the year of planting for each growing area for coffee?

→ Please note down the year of planting for each growing area.

	Growing area A	Growing area B
Year of planting

198. What is the total number of trees for each growing area for coffee?

→ Please note down the total number of trees for each growing area.

	Growing area A	Growing area B
Tree density	.....trees	.....trees

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

	Growing area B				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

S. Planting and fruit development - COCOA

205. Could you please note down the cocoa variety that has been used for each growing area for cocoa?

→ Please note down the cocoa variety that has been used for each growing area.

	Growing area A	Growing area B
Cocoa variety

206. What is the year of planting for each growing area for cocoa?

→ Please note down the year of planting for each growing area.

	Growing area A	Growing area B
Year of planting

207. What is the total number of trees for each growing area for cocoa?

→ Please note down the total number of trees for each growing area.

	Growing area A	Growing area B
Tree density	.....trees	.....trees

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

	Growing area B				d. Number of machinery hours
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					
21. Top/side grafting					

T. Planting and fruit development - CAULIFLOWER FOR PROCESSING INDUSTRY

214. Could you please note down the cauliflower varieties that have been used for each growing area for cauliflower for the processing industry?

→ Please note down the cauliflower varieties that have been used for each growing area.

	Growing area A	Growing area B
Cauliflower varieties

215. When did the first field preparation start for each growing area for cauliflower?

→ Please write down the date of the first field preparation for each growing area.

→ Interviewer note: compare this date with fertilizer and CPP applications. First field preparation should take place before sowing.

	Growing area A	Growing area B
Date first field preparation	_____._____._____._____. (DD.MM.YYYY)	_____._____._____._____. (DD.MM.YYYY)

216. When have the young plants been delivered to the farm for each growing area for cauliflower?

→ Please write down the date of delivery for each growing area.

	Growing area A	Growing area B
Delivery date	_____._____._____._____. (DD.MM.YYYY)	_____._____._____._____. (DD.MM.YYYY)

217. Which type of plant is planted on each growing area for cauliflower?

→ Please tick what applies for each growing area. Multiple response.

	Growing area A	Growing area B
Peat pot	1	1
Tray	2	2
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

217. B. What is the number of plants that has been transplanted per m² for each growing area for cauliflower?

→ Please note down the number of plants that has been transplanted per m² for each growing area.

	Growing area A	Growing area B
Plant density	.....number of plants/m ²	..... number of plants /m ²

218. When have the young plants been planted for each growing area for cauliflower?

→ Please write down the date of planting for each growing area.

	Growing area A	Growing area B
Planting date	..... (DD.MM.YYYY)	..... (DD.MM.YYYY)

220. What is plant distance between the rows and within the row for each growing area for cauliflower?

→ Please note down the plant distance within the row and between rows for each growing area.

	Growing area A			Growing area B		
Plant distance	.....cm	x	.....cm	.....cm	x	.....cm

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

- A. What is the number of hours spent by all workers for that specific operation?
 ▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 ▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
 ▪ Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
 ▪ e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
1. Clearing					
2. Ploughing					
3. Digging					
4. Ridging					
5. Ripping					
6. Land levelling					
9. Mulching					
10. Sowing or planting					

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
1. Clearing				
2. Ploughing				
3. Digging				
4. Ridging				
5. Ripping				
6. Land levelling				
9. Mulching				
10. Sowing or planting				

W. Seed treatment - Belgium

231. Can you please indicate where you buy your young plants for each growing area for [TARGET CROP]?

→ Please circle your answer. Multiple answers possible. Please write down other if needed.

	Growing area A	Growing area B
Cooperative	1	1
Other farmers	2	2
Retailer or manufacturer	3	3
Own nursery	4	4
Other nursery	5	5
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

232. From which supplier do you buy your young plants for each growing area for cauliflower?

→ Please circle your answer. Multiple answers possible. Please write down other if needed.

	Growing area A	Growing area B
Vermeulen	1	1
Blomme	2	2
D'Hondt	3	3
WPG	4	4
Denolf	5	5
Nollet	6	6
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

235. Have the seeds of the young plants been coated for each of the growing areas for cauliflower?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q235=1 (coated seeds)**236. Which coating has been used for each of the growing areas for cauliflower?**

→ Please write down the different coatings that have been used for each growing area.

Growing area A	Growing area B

237. A. Which of the following seedbed treatments has been performed by the nursery for each of the growing areas for cauliflower?

→ Please tick what applies. (MR)

	Growing area A	Growing area B
Phyto-drip	1	1
Dummy pil	2	2
Don't know / no answer	99	99

IF Q237A=1 (Phyto-drip)**B. Which compound has been used by the nursery for each of the growing areas for cauliflower?**

→ Please fill in the compound.

	Growing area A	Growing area B
Compound		

IF Q237A=2 (Dummy pil)**C. Which compound has been used by the nursery for each of the growing areas for cauliflower?**

→ Please fill in the compound.

	Growing area A	Growing area B
Compound		

238. Do you use on-farm tray treatment for each of the growing areas for cauliflower?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q238=1 (on-farm tray treatment)

239. Could you please note down, for each growing area of cauliflower, when the tray treatment took place, which products (growth regulators, fertilizers or crop protection) have been used and the dose rate?

→ Please note down the following details. Please look in your storage room in you don't know all details by heart.

- a. Date on which the product has been applied
- b. Brand product name
- c. Dosage and measurement unit

GROWING AREA A

Product number	a. Timing of product application	b. Brand product name	c. Dosage	
			Dose per 1000 plants	Measurement unit
1	(DD.MM.YYYY)			
2	(DD.MM.YYYY)			
3	(DD.MM.YYYY)			
4	(DD.MM.YYYY)			
5	(DD.MM.YYYY)			
6	(DD.MM.YYYY)			
7	(DD.MM.YYYY)			
8	(DD.MM.YYYY)			
9	(DD.MM.YYYY)			
10	(DD.MM.YYYY)			

GROWING AREA B

Product number	a. Timing of product application	b. Brand product name	c. Dosage	
			Dose per 1000 plants	Measurement unit
1	(DD.MM.YYYY)			
2	(DD.MM.YYYY)			
3	(DD.MM.YYYY)			
4	(DD.MM.YYYY)			
5	(DD.MM.YYYY)			
6	(DD.MM.YYYY)			
7	(DD.MM.YYYY)			
8	(DD.MM.YYYY)			
9	(DD.MM.YYYY)			
10	(DD.MM.YYYY)			

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
20. Seed treatment				

Growing area B				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
20. Seed treatment				

W. Seed treatment

ONLY FOR SEEDS, NOT FOR TREE CROPS

230. Do you buy seeds or do you use saved seeds for each growing area for [TARGET CROP]?

→ Please tick what applies for each growing area. (MR)

	Growing area A	Growing area B
Bought seeds	1	1
Saved seeds	2	2
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

IF Q230=1 (bought seeds)

231. Can you please indicate where you buy your seeds for each growing area for [TARGET CROP]?

→ Please circle your answer. Multiple answers possible. Please write down other if needed.

	Growing area A	Growing area B
Cooperative	1	1
Other farmers	2	2
Retailer or manufacturer	3	3
Own nursery	4	4
Other nursery	5	5
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

IF Q230=1 (bought seeds)

231. B. Are the seeds coated with crop protection products?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q231B=1 (Yes)

233. Do you use on-farm or pre-treated seed treatment to treat the seeds for each growing area for [TARGET CROP]?

→ Please circle the answer. (SR)

	Growing area A	Growing area B
On-farm seed treatment	1	1
Pre-treated seed treatment	2	2
None	90	90
Not applicable	91	91
Don't know / no answer	99	99

IF Q230=2 (saved seeds)

233. B. Are the seeds coated on-farm?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q231B=1 (coated bought seeds) or IF Q233B=1 (coated saved seeds)

233. C. Could you please describe the crop protection products that have been used to treat the seeds for each growing area for [TARGET CROP]? In case the seeds have been pre-treated, please check the label to know the details of the seed treatment.

- On what date did you apply the treatment?
- What is the type of product you applied?
 - Fungicide, insecticide, herbicide, plant growth regulator/harvest aids/adjuvants
- What is the brand product name?
 - e.g. Engeo. Please include all details of the product name.
- What is the brand product formulation?
 - e.g. 247 SC
- What is the dosage that you applied?
 - Note down dosage in g/ha or in grams per kilogram of seeds for solid products.
 - Note down dosage in ml/ha or in milliliter per kilogram of seeds for liquid products.
 - Always refer to the concentrate of a product (not the solution in water)
- What is the unit of quantity of the product applied?
 - Indicate the unit of quantity: grams or milliliter per hectare OR grams/kg of seeds or ml/kg of seeds
- What is the amount of water in which you have solved the product (per hectare)?
- What is the pest/disease/weed that is targeted?

GROWING AREA A

GROWING AREA B

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 8=Plant growth regulator /harvest aids/adjuvants	c. Brand product name	c2. Brand product formulation	d. Dosage	e. Unit of quantity 1=Gram/hectare 2=Mililiter/Hectare 3= g/kg of seeds 4= ml/kg of seeds	f. Amount of H ₂ O solved in liters per hectare	g. Pest/disease/weed targeted
1	_____. _____. _____ (DD.MM.YYYY)							
2	_____. _____. _____ (DD.MM.YYYY)							
3	_____. _____. _____ (DD.MM.YYYY)							
4	_____. _____. _____ (DD.MM.YYYY)							
5	_____. _____. _____ (DD.MM.YYYY)							

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 8=Plant growth regulator /harvest aids/adjuvants	c. Brand product name	c2. Brand product formulation	d. Dosage	e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ Hectare 3= g/kg of seeds 4= ml/kg of seeds	f. Amount of H ₂ O solved in liters per hectare	g. Pest/disease/ weed targeted
1	____.____._____ (DD.MM.YYYY)							
2	____.____._____ (DD.MM.YYYY)							
3	____.____._____ (DD.MM.YYYY)							
4	____.____._____ (DD.MM.YYYY)							
5	____.____._____ (DD.MM.YYYY)							

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
20. Seed treatment				

Growing area B				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
20. Seed treatment				

PART V: FARMING PRACTICES - AFTER HARVEST

Repeat background information and include expectations on next part.

Interviewer note: please explain the following questions in detail and leave the after harvest pages (PART V) with the farmer.

242. Please fill out the unique code, given by the interviewer (has to be the same as in Q1):

UNIQUE CODE: XX X XXX

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

242. A. Please fill out the date of the interview:

Date (Date in DD.MM.YYYY)

V. Fertilizer usage

224. Do you apply organic fertilizers on each of the growing areas for [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q224=1

225. What was the quantity used in ton per hectare on each of the growing areas for [TARGET CROP]?

→ Please note down the quantity in ton per hectare.

	Growing area A	Growing area B
Organic fertilizer quantity	.....ton/ha	..... ton/ha

IF Q224=1

225. B. Which types of organic fertilizer have you used?

→ Please tick what applies. Multiple response. Please write down other if not in list.

	Growing area A	Growing area B
Animal manure	1	1
Compost	2	2
Green manure	3	3
96. Other specify 1:		
97. Other specify 2:		
98. Other specify 3:		
Don't know / no answer	99	99

226. Do you apply chemical fertilizers on each of the growing areas for [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

ONLY FOR BELGIUM: IF Q226=1

227. Do you carry out row-by-row and/or broadcast (entire field) fertilizer spreading on your cauliflower plots?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Only row by row fertilizer	1	1
Only broadcast fertilizer	2	2
A combination of row by row and broadcast fertilizer	3	3
Don't know / no answer	99	99

IF Q226=1

228. What was the quantity used in kilograms per hectare on each of the growing areas for [TARGET CROP]?

→ Please note down the quantity in kilograms per hectare.

	Growing area A	Growing area B
Chemical fertilizer quantity	.....kg/ha	..... kg/ha

IF Q224=1 AND/OR IF Q226=1

229. B. Could you please note down the total number of applications you perform with chemical and organic fertilizers on each of the growing areas for [TARGET CROP]?

→ Please note down the total amount of fertilizer applications that applies for each growing area.

	Growing area A	Growing area B
A. Number of chemical fertilizer applications
B. Number of organic fertilizer applications

IF Q224=1 AND/OR IF Q226=1

229. C. Could you please note down all chemical and organic fertilizers that have been used for growing area A and growing area B for [TARGET CROP] from field preparation onwards?

→ Interviewer note: Please note down the date of first field preparation (see Qxx):

	Growing area A	Growing area B
First field preparation	(DD.MM.YYYY)	(DD.MM.YYYY)

IF TREE CROPS: (delete instruction above)

→ Interviewer note: From field preparation onwards means after the last harvest or first pruning of this season.

➔ Please note down the following details per product. Please look in your crop protection products storage room if you don't know all details by heart.

- a. On what date did you apply the fertilizer?
- b. Is this a chemical or an organic fertilizer?
- c. What is the brand name of the fertilizer or product description?
 - o Please provide as much detail as possible
 - o e.g. NPK 15-15-15
- d. What is the amount of fertilizer you applied?
 - o Please note down dosage in kg/ha for solid products.
 - o Please note down dosage in L/ha for liquid products.
 - o Always refer to the concentrate of a product (not the solution in water)
- e. What is the unit of quantity: kilogram or liter per hectare?
- f. What is the amount of water in which you have solved the product (per hectare)?
- g. What is amount (in percentage) of N that the fertilizer contains?
- h. What is amount (in percentage) of P (P_2O_5) that the fertilizer contains?
- i. What is amount (in percentage) of K (K_2O) that the fertilizer contains?
- j. Which type of application equipment did you use?
 - o hand operated sprayers (e.g. knapsack), motorized boom sprayer, airblast sprayer, granular applicator, Aerial applicator, other. If other, please specify.
- k. What is the total price of one package of the product that you applied? (not per liter or per kilogram)
- l. What is the amount of one package of the product that you applied? (in liter or kilogram)

[illegible]

GROWING AREA B

Product number	a. Timing of product application	b. Type of product 1=Chemical fertilizer 2=Organic fertilizer	c. Brand product name or product description	d. Dosage (in kg/hectare or liter per hectare)	e. Unit of quantity 1=Kilogram/hectare 2=Liter/hectare	f. Amount of H ₂ O solved in liters per hectare	g. Percentage N (in %)	h. Percentage P (P ₂ O ₅) (in %)	i. Percentage K (K ₂ O) (in %)	j. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	k. Price of product for one package (in USD)	l. Total amount of product in kilogram or liter for one package
1	_____._____._____._____. (DD.MM.YYYY)											
2	_____._____._____._____. (DD.MM.YYYY)											
3	_____._____._____._____. (DD.MM.YYYY)											
4	_____._____._____._____. (DD.MM.YYYY)											
5	_____._____._____._____. (DD.MM.YYYY)											
6	_____._____._____._____. (DD.MM.YYYY)											
7	_____._____._____._____. (DD.MM.YYYY)											
8	_____._____._____._____. (DD.MM.YYYY)											
9	_____._____._____._____. (DD.MM.YYYY)											
10	_____._____._____._____. (DD.MM.YYYY)											

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
8. Applying fertilizers				

Growing area B				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
8. Applying fertilizers				

X. Crop protection products

240 B. What measures do you take to prevent the build-up of pests on each of the growing areas for [TARGET CROP]?

→ Please describe.

Growing area A	Growing area B

240 C. Which of the following measures do you take to prevent the build-up of pests on each of the growing areas for [TARGET CROP]?

→ Please tick all that apply.

	Growing area A	Growing area B
I use pesticides as recommended by local field experts and comply with dose rates as stated on the product label	1	1
I use recommendations from local field experts or agronomists	2	2
I only spray when a certain threshold of pest presence in the crop is reached at which crops can be damaged	3	3
I apply targeted spraying of pesticides	4	4
I select crop varieties with pest and disease resistant traits	5	5
I practice crop rotation	6	6
I regularly inspect fields and monitor for pests and identify the presence of beneficial insects that feed on pests that damage the crop in order to determine what pest control measure to use	7	7
I make use of mechanical mechanisms to control pests, e.g. hand picking, barriers, vacuuming or traps	8	8
I make use of natural mechanisms to control pests, e.g. allow for the presence of beneficial insects that feed on harmful pests	9	9
None of these	90	90
Don't know / no answer	99	99

240 D. Could you please note down the total number of treatments you perform with crop protection products (fungicide, insecticide, herbicide, miticides/acaricides, rodenticides, nematocides/molluscicides, plant growth regulator/harvest aids/adjuvants) on each of the growing areas for [TARGET CROP]?

→ Please note down the total amount of crop protection product applications that applies for each growing area.

	Growing area A	Growing area B
Number of crop protection product applications

241. Could you please note down, on the next page, all crop protection products that have been used for growing area A and growing area B for [TARGET CROP]?

→ Interviewer note: Please note down the date of first field preparation (see Q.xx)

	Growing area A	Growing area B
First field preparation	---.---.--- (DD.MM.YYYY)	---.---.--- (DD.MM.YYYY)

IF TREE CROPS: (delete instruction above)

→ Interviewer note: From field preparation onwards, so after the last harvest or first pruning of this season.

→ Please note down the following details per product. Please look in your crop protection products storage room if you don't know all details by heart.

→ Please note this information down per treatment. Consider one table on one page for one treatment.

- On what date did you apply the treatment?
- What is the type of product you applied?
 - Fungicide, insecticide, herbicide, miticides/acaricides, rodenticides, nematocides/molluscicides, plant growth regulator/harvest aids/adjuvants
- What is the brand product name?
 - e.g. Engeo. Please include all details of the product name.
- What is the brand product formulation?
 - e.g. 247 SC
- What is the dosage that you applied?
 - Note down dosage in g/ha for solid products.
 - Note down dosage in ml/ha for liquid products.
 - Always refer to the concentrate of a product (not the solution in water)
- What is the unit of quantity of the product applied?
 - Indicate the unit of quantity: grams or milliliter per hectare.
- What is the amount of water in which you have solved the product (per hectare)?
- What is the pest/disease/weed that is targeted?
- What is the level of pest/disease/weed pressure? Is this low, medium or high?
- What is the percentage of the area that is treated against pests/diseases/weeds?
- What is the percentage of the area that is free of pests/diseases/weeds at harvest?
- Which type of application equipment did you use?
 - hand operated sprayers (e.g. knapsack), motorized boom sprayer, airblast sprayer, granular applicator, Aerial applicator, other.
 - If other, please specify.
- What is the total price of one package of the product that you applied? (not per liter or per kilogram).
- What is the amount of one package of the product that you applied? (in liter or kilogram)

[illegible]

UNIQUE CODE:

GROWING AREA A - Treatment 3

GROWING AREA A - Treatment 4

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div></div> <div>(DD.MM.YYYY)</div>													
2														
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Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div></div> <div>(DD.MM.YYYY)</div>													
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3														
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UNIQUE CODE:

GROWING AREA A - Treatment 5

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>----- (DD.MM.YYYY)</div>													
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GROWING AREA A - Treatment 6

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
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UNIQUE CODE:

GROWING AREA A - Treatment 7

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
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GROWING AREA A - Treatment 8

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
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UNIQUE CODE:

GROWING AREA A - Treatment 9

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>----- (DD.MM.YYYY)</div>													
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GROWING AREA A - Treatment 10

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>----- (DD.MM.YYYY)</div>													
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UNIQUE CODE:

GROWING AREA B - Treatment 1

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
0	02.05.2015	2	Engeo	247 SC	500	2	200	Tuta absoluta	2	90	100	2	400	5
1	<div>----- (DD.MM.YYYY)</div>													
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GROWING AREA B - Treatment 2

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>----- (DD.MM.YYYY)</div>													
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5														

UNIQUE CODE:

GROWING AREA B - Treatment 3

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formula tion	d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>-----</div> <div>(DD.MM.YYYY)</div>													
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GROWING AREA B - Treatment 4

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formula tion	d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>-----</div> <div>(DD.MM.YYYY)</div>													
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UNIQUE CODE:

GROWING AREA B - Treatment 5

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>----- (DD.MM.YYYY)</div>													
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GROWING AREA B - Treatment 6

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
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UNIQUE CODE:

GROWING AREA B - Treatment 7

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>----- (DD.MM.YYYY)</div>													
2														
3														
4														
5														

GROWING AREA B - Treatment 8

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formulation	d. Dosage (in gram/hectare or milliliter/hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/hectare 2=Milliliter/hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>----- (DD.MM.YYYY)</div>													
2														
3														
4														
5														

UNIQUE CODE:

GROWING AREA B - Treatment 9

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formula tion	d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>-----</div> <div>(DD.MM.YYYY)</div>													
2														
3														
4														
5														

GROWING AREA B - Treatment 10

Product number	a. Timing of product application	b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants	c. Brand product name	c1. Brand product formula tion	d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know	e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare	f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know	g. Pest/disease/ weed targeted	h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure	i. Percentage of the area treated against pests/ diseases/ weeds (in %)	j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %)	k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify	l. Price of product for one package (in USD) Use '-2' if subsidized	m. Total amount of product in kilogram or liter for one package
1	<div>-----</div> <div>(DD.MM.YYYY)</div>													
2														
3														
4														
5														

242. B. Could you please describe to which extent your crop protection program differs compared to the previous season for each growing area of [TARGET CROP]? Please think about differences in products, formulations of products, dosages, techniques,...

→ Please describe.

Growing area A	Growing area B

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
11. Scouting for pests and diseases				
12. Applying pesticides				
15. Weeding (mechanical)				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
11. Scouting for pests and diseases				
12. Applying pesticides				
15. Weeding (mechanical)				

A. Harvest timing & quality per crop - SOYBEAN

75. What is the final stand - i.e. the number of plants - per m² for each growing area for soybean?

→ Please note down the final stand (number of plants) per m² for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/m ²	.....plants/m ²

76. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for soybean? This is when the stem bends over near the ground level.

→ Please note down the percentage for each growing area.

	Growing area A	Growing area B
% plot area lodged%%

243. When was the harvest period for each growing area for soybean?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

244. What is the shelled yield (marketable yield) that has been achieved for each growing area for soybean?

→ Please write down the shelled yield for each growing area.

	Growing area A	Growing area B
Shelled yield	.....ton/ha	.....ton/ha

246. What percentage of the harvest of soybean of each growing area is used for each purpose?

→ Please note down what applies for each growing area. The sum of the percentages should add up to 100%.

	Growing area A	Growing area B
1. Feeding livestock % %
2. Harvest sold % %
	100%	100%

IF Q246 2. HARVEST SOLD > 0% (entirely or partly)

247. What is the price per ton per buyer that has been obtained for each growing area for soybean?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 2:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 3:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 4:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 5:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

251. What is the percentage of grains damaged at harvest (total lost - not marketable) for each growing area for soybean?

→ Please write down the percentage of grains damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of grains damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

B. Harvest timing & quality per crop - CEREALS (WHEAT)

83. What is the final stand - i.e. the average total number of plants - per square meter for each growing area for wheat?

→ Please note down the total number of plants per m² for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/ <u>m²</u>	.....plants/ <u>m²</u>

84. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for wheat? This is when the stem bends over near the ground level

→ Please note down the percentage for each growing area.

	Growing area A	Growing area B
% plot area lodged%%

252. When was the harvest period for each growing area for wheat?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

253. What is the grain yield (marketable yield) that has been achieved for each growing area for wheat?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....<u>ton/ha</u>	.....<u>ton/ha</u>

255. What percentage of the harvest of wheat of each growing area is used for each purpose?

→ Please note down what applies for each growing area. The sum of the percentages should add up to 100%.

	Growing area A	Growing area B
1. Home consumption% %
2. Feeding own livestock % %
3. Harvest sold % %
	100%	100%

IF Q255 3. HARVEST SOLD > 0% (entirely or partly)

256. What is the price per ton per buyer that has been obtained for each growing area for wheat?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 2:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 3:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 4:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 5:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

259. What is the percentage of grains damaged at harvest (total lost - not marketable) for each growing area for wheat?

→ Please write down the percentage of grains damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of grains damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

- A. What is the number of hours spent by all workers for that specific operation?
- e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 - Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
- Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
- e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

C. Harvest timing & quality per crop - CEREALS (BARLEY)

89. What is the final stand - i.e. the average total number of plants per square meter for each growing area for barley?

→ Please note down the total number of plants per m² for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/ <u>m²</u>	.....plants/ <u>m²</u>

93. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for barley? This is when the stem bends over near the ground level

→ Please note down the percentage for each growing area.

	Growing area A	Growing area B
% plot area lodged%%

260. When was the harvest period for each growing area for barley?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From (DD.MM.YYYY)	A	From (DD.MM.YYYY)
	B	Until (DD.MM.YYYY)	B	Until (DD.MM.YYYY)

261. What is the grain yield (marketable yield) that has been achieved for each growing area for barley?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....<u>ton/ha</u>	.....<u>ton/ha</u>

263. What percentage of the harvest of barley of each growing area is used for each purpose?

→ Please note down what applies for each growing area. The sum of the percentages should add up to 100%.

	Growing area A	Growing area B
1. Feeding livestock % %
2. Harvest sold % %
	100%	100%

IF Q263 2.HARVEST SOLD > 0% (entirely or partly)

264. What is the price per ton per buyer that has been obtained for each growing area for barley?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

267. What is the percentage of grains damaged at harvest (total lost - not marketable) for each growing area for barley?

→ Please write down the percentage of grains damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of grains damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

- A. What is the number of hours spent by all workers for that specific operation?
- e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 - Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
- Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
- e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

D. Harvest timing & quality per crop - GRAPE

97. Do you prune each growing area for grape?

→ Please circle your answer.

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q97=1 (YES)

98. When did the pruning of the grape vines occur for each growing area for grape?

→ Please write down the period of pruning for each growing area.

	Growing area A		Growing area B	
Pruning period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

IF Q97=1 (YES)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

Growing area B				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

99. When did the first grape vines reach the flowering stage for each growing area for grape?

→ Please write down the flowering date for each growing area.

	Growing area A	Growing area B
Flowering date	..... (DD.MM.YYYY)	..... (DD.MM.YYYY)

100. Could you please indicate the average number of grape bunches per vine for each growing area for grape?

→ Please write down the average number of grape bunches per vine for each growing area.

	Growing area A	Growing area B
Average number of grape bunches per vine	.....grape bunches/vine	..... grape bunches/vine

101. Could you please indicate the average number of berries per bunch for each growing area for grape?

→ Please write down the average number of berries per bunch for each growing area.

	Growing area A	Growing area B
Average number of berries per bunch	.....berries/bunch	..... berries/bunch

268. When was the harvest period for each growing area for grape?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From (DD.MM.YYYY)	A	From (DD.MM.YYYY)
	B	Until (DD.MM.YYYY)	B	Until (DD.MM.YYYY)

269. What is the grape yield (marketable yield) that has been achieved for each growing area?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....ton/ha	.....ton/ha

270. What is the price per ton per buyer that has been obtained for each growing area for grape?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

MEASUREMENT UNITS TO BE CHECKED BY LISA

271. What is the sugar content for each growing area for grape?

→ Please write down the sugar content for each growing area.

	Growing area A	Growing area B
Sugar content%%

271. B. What is the weight of 100 berries for each growing area of grape?

→ Please write down the weight of 100 berries for each growing area.

	Growing area A	Growing area B
Weight of 100 berries	.....kg	.....kg

IF WINE GRAPES

271. C. What is the potential alcohol content of the grapes for each growing area of grape?

→ Please write down the potential alcohol content for each growing area.

	Growing area A	Growing area B
Potential alcohol content%%

271. D. What is the total acidity content in gram H₂SO₄ per liter of the grapes for each growing area of grape?

→ Please write down the total acidity content for each growing area.

	Growing area A	Growing area B
Total acidity content in gram H ₂ SO ₄ per liter	.....g H ₂ SO ₄ /liter	.....g H ₂ SO ₄ /liter

271. E. Please indicate the pH content of the grapes in percentage for each growing area of grape.

→ Please write down the pH content in percentage for each growing area.

	Growing area A	Growing area B
pH content%%

271. F. Please indicate the NH₄⁺ content of the grapes in percentage for each growing area of grape.

→ Please write down the NH₄⁺ content in percentage for each growing area.

	Growing area A	Growing area B
NH ₄ ⁺ content%%

271. G. Please indicate the total polyphenols index (TPI) of the grapes in mg/L of gallic acid for each growing area of grape.

→ Please write down the total polyphenols index in mg/L of gallic acid for each growing area.

	Growing area A	Growing area B
Total polyphenols index (TPI) in mg/L gallic acid	.....mg/L gallic acid	.....mg/L gallic acid

271. H. Please indicate the total anthocyanins index of the grapes in mg/L of skin for each growing area of grape.

→ Please write down the total anthocyanins index in mg/L of skin for each growing area.

	Growing area A	Growing area B
Total polyphenols index (TPI) in mg/L gallic acid	.....mg/L of skin	.....mg/L of skin

272. What is the percentage of fruits damaged at harvest (total lost - not marketable) for each growing area for grape?

→ Please write down the percentage of fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

E. Harvest timing & quality per crop - CORN

106. What is the final stand - i.e. the average total number of plants per square meter for each growing area for corn?

→ Please note down the total number of plants per m² for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/ <u>m²</u>	.....plants/ <u>m²</u>

107. Could you please indicate the average number of cobs per square meter during flowering for each growing area for corn?

→ Please write down the average number of cobs per m² for each growing area.

	Growing area A	Growing area B
Average number of cobs per <u>m²</u>	.....cobs/ <u>m²</u>	.....cobs/ <u>m²</u>

108. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for corn? This is when the stem bends over near the ground level

→ Please note down the percentage.

	Growing area A	Growing area B
% plot area lodged%%

273. When was the harvest period for each growing area for corn?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

273. B. Please indicate the % of the area that is harvested for grain corn and silage corn.

→ Please note down the percentage.

	Growing area A	Growing area B
% area for grain corn%%
% area for silage con%%

274. What is the yield (marketable yield) that has been achieved for each growing area for corn?

→ Please write down the grain yield for each growing area.

	Growing area A	Growing area B
Grain yield	.....<u>ton/ha</u>	.....<u>ton/ha</u>
Silage yield	.....<u>ton/ha</u>	.....<u>ton/ha</u>

276. What percentage of the harvest of corn of each growing area is used for each purpose?

→ Please note down what applies for each growing area. The sum of the percentages should add up to 100%.

	Growing area A	Growing area B
1. Feeding livestock % %
2. Harvest sold % %
	100%	100%

IF Q276 2. HARVEST SOLD > 0% (entirely or partly)

277. What is the price per ton per buyer that has been obtained for each growing area for corn?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 2:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 3:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 4:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 5:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

280. What is the percentage of grains damaged at harvest (total lost - not marketable) for each growing area for corn?

→ Please write down the percentage of grains damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of grains damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

F. Harvest timing & quality per crop - COTTON

113. What is the **final stand** - i.e. the average total number of plants per **square meter** for each growing area for cotton?

→ Please note down the total number of plants per **m²** for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/ m²	.....plants/ m²

281. When was the **harvest period** for each growing area for cotton?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

282. What is the **fibre/lint yield** (marketable yield) that has been achieved for each growing area for cotton?

→ Please write down the fibre/lint yield for each growing area.

	Growing area A	Growing area B
Fibre/lint yield	.....ton/ha	.....ton/ha

283. What is the **seed yield** (marketable yield) that has been achieved for each growing area for cotton?

→ Please write down the seed yield for each growing area.

	Growing area A	Growing area B
Seed yield	.....ton/ha	.....ton/ha

284. What is the price per ton FIBRE yield per buyer that has been obtained for each growing area for cotton?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 2:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 3:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 4:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 5:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

285. What is the price per ton SEED yield per buyer that has been obtained for each growing area for cotton?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 2:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 3:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 4:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 5:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

286. What is the fibre/lint quality (like fibre strength, fineness, ...) for each growing area for cotton?

→ Please select the fibre quality that applies best. (SR)

	Growing area A	Growing area B
Good quality	1	1
Medium quality	2	2
Low quality	3	3
Don't know / no answer	99	99

2860. What is the percentage of cotton fruits damaged at harvest (total lost - not marketable) for each growing area for cotton?

→ Please write down the percentage of cotton fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of cotton fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
d. Number of machinery hours				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

G. Harvest timing & quality per crop - RICE

287. When was the harvest period for each growing area for rice?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
	A		A	
Harvest period	A	From (DD.MM.YYYY)	A	From (DD.MM.YYYY)
	B	Until (DD.MM.YYYY)	B	Until (DD.MM.YYYY)

289. What is the grain yield (marketable yield) that has been achieved for each growing area for rice?

→ Please write down the grain yield for each growing area.

	Growing area A	Growing area B
Grain yield	.....ton/ha	.....ton/ha

291. What percentage of the harvest of rice of each growing area is used for each purpose?

→ Please note down what applies for each growing area. The sum of the percentages should add up to 100%.

	Growing area A	Growing area B
1. Home consumption% %
2. Harvest sold % %
	100%	100%

IF Q291 2.HARVEST SOLD > 0% (entirely or partly)

292. What is the price per ton per buyer that has been obtained for each growing area for rice?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

295. What is the level of broken (percentage of grains broken in the milling process) in percentage for each growing area for rice?

→ Please write down the level of broken for each growing area.

	Growing area A	Growing area B
Level of broken%%

297. What is the percentage of colored grains and contaminants for each growing area for rice?

→ Please write down the percentage of colored grains and contaminants for each growing area.

	Growing area A	Growing area B
Percentage of colored grains and contaminants%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

- A. What is the number of hours spent by all workers for that specific operation?
- e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 - Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
- Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
- e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

	Growing area A			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
d. Number of machinery hours				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

H. Harvest timing & quality per crop - POTATO

127. What is the **final stand** - i.e. the average total number of plants per **square meter** for each growing area for potato?

→ Please note down the total number of plants per **m²** for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/ m²	.....plants/ m²

298. When was the **harvest period** for each growing area for potato?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From (DD.MM.YYYY)	A	From (DD.MM.YYYY)
	B	Until (DD.MM.YYYY)	B	Until (DD.MM.YYYY)

299. What is the **tuber yield** (marketable yield) that has been achieved for each growing area for potato?

→ Please write down the tuber yield for each growing area.

	Growing area A	Growing area B
Tuber yield	.....ton/ha	.....ton/ha

300. What is the **price per ton per buyer** that has been obtained for each growing area for potato?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 2:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 3:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 4:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Buyer 5:	a. ...%	b. \$/ton	a. ...%	b. \$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

301. What is the starch content per potato for each growing area?

→ Please write down the starch content per potato for each growing area.

	Growing area A	Growing area B
Starch content per potato%%

302. What is the percentage of decay for each growing area for potato?

→ Please write down the percentage of decay for each growing area.

	Growing area A	Growing area B
Percentage of decay%%

303. What is the percentage of shrink loss for each growing area for potato?

→ Please write down the percentage of shrink loss for each growing area.

	Growing area A	Growing area B
Percentage of shrink loss%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
d. Number of machinery hours				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

I. Harvest timing & quality per crop - OILSEED RAPE

132. What is the final stand - i.e. the average total number of plants per square meter for each growing area for oilseed rape?

→ Please note down the total number of plants per m² for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/m ²	.....plants/m ²

133. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for oilseed rape? This is when the stem bends over near the ground level

→ Please note down the percentage per growing area.

	Growing area A	Growing area B
% plot area lodged%%

305. When was the harvest period for each growing area for oilseed rape?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

306. What is the seed yield (marketable yield) that has been achieved for each growing area for oilseed rape?

→ Please write down the seed yield for each growing area.

	Growing area A	Growing area B
Seed yield	.....ton/ha	.....ton/ha

308. What is the price per ton per buyer that has been obtained for each growing area for oilseed rape?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

309. Have you been meeting the requirements of the crushers in terms of oil content for each growing area for oilseed rape?

→ Please tick what applies for each growing area.

	Growing area A	Growing area B
Yes	1	1
No	2	2

310. Have you been meeting the requirements of the crushers in terms of glucosinolate content for each growing area for oilseed rape?

→ Please tick what applies for each growing area.

	Growing area A	Growing area B
Yes	1	1
No	2	2

311. What is the percentage of grains damaged at harvest (total lost - not marketable) for each growing area for oilseed rape?

→ Please write down the percentage of grains damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of grains damaged at harvest%%

312. What is the percentage of pod shattering at harvest for each growing area for oilseed rape?

→ Please write down the percentage of pod shattering at harvest for each growing area.

	Growing area A	Growing area B
Percentage of pod shattering%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

J. Harvest timing & quality per crop - SUNFLOWER

139. What is the final stand - i.e. the average total number of plants per square meter for each growing area for sunflower?

→ Please note down the total number of plants per m² for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/m ²	.....plants/m ²

140. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for sunflower? This is when the stem bends over near the ground level

→ Please note down the percentage.

	Growing area A	Growing area B
% plot area lodged%%

313. When was the harvest period for each growing area for sunflower?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

314. What is the seed yield (marketable yield) that has been achieved for each growing area for sunflower?

→ Please write down the seed yield for each growing area.

	Growing area A	Growing area B
Seed yield	.....ton/ha	.....ton/ha

316. What is the price per ton per buyer that has been obtained for each growing area for sunflower?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

318. What is the percentage of sunflower kernels damaged at harvest (total lost - not marketable) for each growing area for sunflower?

→ Please write down the percentage of sunflower kernels damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of sunflower kernels damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

- A. What is the number of hours spent by all workers for that specific operation?
- e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 - Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
- Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
- e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
16.Harvesting					
17.Post-harvest handling (incl. dipping)					
18.Processing (incl. sorting)					
19.Transport					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
16.Harvesting					
17.Post-harvest handling (incl. dipping)					
18.Processing (incl. sorting)					
19.Transport					

K. Harvest timing & quality per crop - SUGARCANE

144. What is the **final stand** - i.e. the average total number of plants per **square meter** for each growing area for sugarcane?

→ Please note down the total number of plants per **m²** for each growing area.

	Growing area A	Growing area B
Final stand/Plant density	.....plants/ m²	.....plants/ m²

148. C. Could you please indicate the **number of sugarcane failures in %-age at 60 days after planting** for each growing area for sugarcane?

→ Please note down the percentage.

	Growing area A	Growing area B
Number of sugarcane failures at 60 days after planting%%

148. D. Could you please indicate the **number of sugarcane failures in %-age at 200 days after planting** for each growing area for sugarcane?

→ Please note down the percentage.

	Growing area A	Growing area B
Number of sugarcane failures at 200 days after planting%%

148. E. Prior to harvest, could you please indicate the **percentage** of the plot area that is **lodged** for each growing area for sugarcane? This is when the stem bends over near the ground level

→ Please note down the percentage.

	Growing area A	Growing area B
% plot area lodged%%

319. When was the **harvest period** for each growing area for sugarcane?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

320. What is the **total tons of cane per hectare** that has been achieved for each growing area for sugarcane?

→ Please write down the total **tons of canes per hectare** for each growing area.

	Growing area A	Growing area B
Total tons of canes per hectare	.....ton/ha	.....ton/ha

321. What is the **TRS (total recovered sugar)** for each growing area for sugarcane?

→ Please write down the TRS for each growing area.

	Growing area A	Growing area B
TRS	.....ton/ha	.....ton/ha

322. What is the **use of the sugarcane harvest** in percentage for each growing area?

→ Please write down the percentage of usage. Please write down others if needed.

	Growing area A	Growing area B
1. Ethanol production	...%	...%
2. Refined sugar production	...%	...%
96. Other. Specify 1:%	...%
97. Other. Specify 2:%	...%
98. Other. Specify 3:%	...%
Don't know / no answer	99	99

323. What is the **price per ton per buyer** that has been obtained for each growing area for sugarcane?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

324. What is the **nitrogen (N) content** for each growing area for sugarcane?

→ Please write down the nitrogen content of sugar cane for each growing area.

	Growing area A	Growing area B
Nitrogen (N) content%%

325. What is the percentage of canes damaged at harvest (total lost - not marketable) for each growing area for sugarcane?

→ Please write down the percentage of canes damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of canes damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
d. Number of machinery hours				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

L. Harvest timing & quality per crop - TOMATO

156. What is the **final stand** - i.e. the average total number of plants per **square meter** for each growing area for tomato?

→ Please note down the total number of plants per **m²** for each growing area.

	Growing area A	Growing area B
Final stand/plant density	.....plants/m ²	.....plants/m ²

326. When was the **harvest period** for each growing area for tomato?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

327. Please indicate the **number of harvests** per year for each growing area for tomato?

→ Please write down the number of harvests for each growing area.

	Growing area A	Growing area B
Number of harvests per year	.... Harvests/year	.... Harvests/year

328. What is the **yield** (marketable yield) that has been achieved for each growing area for tomato?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....ton/ha	.....ton/ha

329. What is the price per ton per buyer that has been obtained for each growing area for tomato?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

330. What is the percentage of tomato fruits damaged at harvest (total lost - not marketable) for each growing area for tomato?

→ Please write down the percentage of tomato fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of tomato fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

- A. What is the number of hours spent by all workers for that specific operation?
- e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 - Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
- Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
- e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
7. Greenhouse management					
16. Harvesting					
17. Post-harvest handling (incl. dipping)					
18. Processing (incl. sorting)					
19. Transport					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
7. Greenhouse management					
16. Harvesting					
17. Post-harvest handling (incl. dipping)					
18. Processing (incl. sorting)					
19. Transport					

M. Harvest timing & quality per crop - PEPPER

163. What is the **final stand** - i.e. the average total number of plants per **square meter** for each growing area for pepper?

→ Please note down the total number of plants per **m²** for each growing area.

	Growing area A	Growing area B
Final stand/plant density	.....plants/ m²	.....plants/ m²

331. When was the **harvest period** for each growing area for pepper?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

332. Please indicate the **number of harvests** per year for each growing area for pepper?

→ Please write down the number of harvests for each growing area.

	Growing area A	Growing area B
Number of harvests per year	.... Harvests/year	.... Harvests/year

333. What is the **yield** (marketable yield) that has been achieved for each growing area for pepper?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....ton/ha	.....ton/ha

334. What is the price per ton per buyer that has been obtained for each growing area for pepper?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

335. What is the percentage of pepper fruits damaged at harvest (total lost - not marketable) for each growing area for pepper?

→ Please write down the percentage of pepper fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of pepper fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

- A. What is the number of hours spent by all workers for that specific operation?
- e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 - Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
- Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
- e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
7. Greenhouse management					
16. Harvesting					
17. Post-harvest handling (incl. dipping)					
18. Processing (incl. sorting)					
19. Transport					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	
7. Greenhouse management					
16. Harvesting					
17. Post-harvest handling (incl. dipping)					
18. Processing (incl. sorting)					
19. Transport					

N. Harvest timing & quality per crop - WATERMELON

170. What is the final stand - i.e. the average total number of plants per square meter for each growing area for watermelon?

→ Please note down the total number of plants per m² for each growing area.

	Growing area A	Growing area B
Final stand/plant density	.....plants/ <u>m²</u>	.....plants/ <u>m²</u>

336. When was the harvest period for each growing area for watermelon?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

337. What is the yield (marketable yield) that has been achieved for each growing area for watermelon?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....<u>ton/ha</u>	.....<u>ton/ha</u>

338. What is the price per ton per buyer that has been obtained for each growing area for watermelon?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. <u>\$/ton</u>	a. ...%	b. <u>\$/ton</u>
Buyer 2:	a. ...%	b. <u>\$/ton</u>	a. ...%	b. <u>\$/ton</u>
Buyer 3:	a. ...%	b. <u>\$/ton</u>	a. ...%	b. <u>\$/ton</u>
Buyer 4:	a. ...%	b. <u>\$/ton</u>	a. ...%	b. <u>\$/ton</u>
Buyer 5:	a. ...%	b. <u>\$/ton</u>	a. ...%	b. <u>\$/ton</u>
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

3380. What is the percentage of watermelon fruits damaged at harvest (total lost - not marketable) for each growing area for watermelon?

→ Please write down the percentage of watermelon fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of watermelon fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
7. Greenhouse management				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

	Growing area B			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
7. Greenhouse management				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

O. Harvest timing & quality per crop - BANANA

175. Do you prune each growing area for banana?

→ Please circle your answer.

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q175=1 (YES)

176. When did the pruning of the trees start for each growing area for banana?

→ Please write down the period of pruning for each growing area.

	Growing area A		Growing area B	
Pruning period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

IF Q175=1 (YES)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

Growing area B				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

177. When was the last replanting of the trees - i.e. date when the last trees were replanted - for each growing area for banana?

→ Please indicate the last replanting of the trees for each growing area.

	Growing area A	Growing area B
Last replanting	....(Year)	....(Year)

178. Please indicate the percentage of trees that has been replanted during the last replanting phase for each growing area for banana?

→ Please indicate the percentage of trees that has been replanted for each growing area.

	Growing area A	Growing area B
Percentage of trees replanted%%

339. When was the harvest period for each growing area for banana?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

340. In which months does the harvest peak for each growing area for banana?

→ Please circle the harvest peak months for each growing area. (MR)

	Growing area A	Growing area B
January	1	1
February	2	2
March	3	3
April	4	4
May	5	5
June	6	6
July	7	7
August	8	8
September	9	9
October	10	10
November	11	11
December	12	12
Don't know / no answer	99	99

341. What is the yield per hectare or the number of boxes per hectare (standard box of 18,14 kg box) that has been achieved for each growing area for banana?

→ Please write down the banana yield for each growing area.

	Growing area A	Growing area B
1. Banana yield in boxes per hectare	.....boxes/ha	.....boxes/ha
2. Banana yield in ton per hectare	.....ton/ha	.....ton/ha

342. What is the ratio as number of boxes per bunch (standard box of 18,14 kg box) for each growing area for banana?

→ Please write down the number of boxes per bunch for each growing area.

	Growing area A	Growing area B
Number of boxes per bunch	.....boxes/bunch	.....boxes/bunch

343. What is the price per box per buyer that has been obtained for each growing area for banana?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

344. Which percentage of the yield of each growing area for banana is exported and which percentage is used for local market?

→ Please give the percentage of the yield that is exported and the percentage that is used for the local market. The sum should be 100%.

	Growing area A	Growing area B
1. Percentage exportable fruits	...%	...%
2. Percentage for local market	...%	...%
	100%	100%

345. What is the percentage fruit losses for each growing area for banana?

→ Please write down the percentage fruit losses for each growing area.

	Growing area A	Growing area B
Percentage fruit losses%%

346. What is the number of leaves at harvest for each growing area for banana?

→ Please write down the number of leaves for each growing area.

	Growing area A	Growing area B
Number of leaves at harvest	.....leaves	.....leaves

347. What is bunch weight in kilogram for each growing area for banana?

→ Please write down the bunch weight in kilogram for each growing area.

	Growing area A	Growing area B
Bunch weight	.....kg	.....kg

348. What is for each growing area for banana the ratooning, i.e. the number of harvests per year?

→ Please write down the ratooning for each growing area.

	Growing area A	Growing area B
Ratooning (number of harvests per year)	.....harvest(s) per year	.....harvest(s) per year

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
16.Harvesting					
17.Post-harvest handling (incl. dipping)					
18.Processing (incl. sorting)					
19.Transport					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
16.Harvesting					
17.Post-harvest handling (incl. dipping)					
18.Processing (incl. sorting)					
19.Transport					

P. Harvest timing & quality per crop - APPLE

183. Do you prune each growing area for apple?

→ Please circle your answer. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q183=1 (YES)

184. When did the winter pruning of the trees start for each growing area for apple?

→ Please write down the period of pruning for each growing area.

	Growing area A		Growing area B	
Pruning period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

IF Q183=1 (YES)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

Growing area B				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

185. When did the first trees reach the flowering stage for each growing area for apple?

→ Please write down the flowering date for each growing area.

	Growing area A	Growing area B
Flowering date	_____._____._____ (DD.MM.YYYY)	_____._____._____ (DD.MM.YYYY)

186. What is the average number of flowers per tree at the flowering stage for each growing area for apple?

→ Please tick what applies for each growing area. Single response.

	Growing area A	Growing area B
No flowers	1	1
Few flowers	2	2
Normal amount of flowers	3	3
A lot of flowers	4	4
Don't know / no answer	99	99

187. Could you please indicate the average number of apples per tree for each growing area for apple?

→ Please write down the average number of apples per tree for each growing area.

	Growing area A	Growing area B
Average number of apples per tree	.....apples/tree	.....apples/tree

349. When was the harvest period for each growing area for apple?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From _____._____._____ (DD.MM.YYYY)	A	From _____._____._____ (DD.MM.YYYY)
	B	Until _____._____._____ (DD.MM.YYYY)	B	Until _____._____._____ (DD.MM.YYYY)

350. In which months does the harvest peak for each growing area for apple?

→ Please circle the harvest peak months for each growing area. (MR)

	Growing area A	Growing area B
January	1	1
February	2	2
March	3	3
April	4	4
May	5	5
June	6	6
July	7	7
August	8	8
September	9	9
October	10	10
November	11	11
December	12	12
Don't know / no answer	99	99

351. A. What is the yield (immediately after harvest) that has been achieved for each growing area for apple?

→ Please write down the apple yield for each growing area.

	Growing area A	Growing area B
Apple yield (after harvest)	.....ton/ha	.....ton/ha

351. B. What is the yield (after storage) that has been achieved for each growing area for apple?

→ Please write down the apple yield for each growing area.

	Growing area A	Growing area B
Apple yield (after storage)	.....ton/ha	.....ton/ha

352. A. Could you please indicate the after storage harvest in ton/ha for each of the apple sizes that apply for each growing area for apple?

→ Please write down the harvest in ton/ha for each apple size that applies.

Size in millimeter	Growing area A	Growing area B
60-65	.....ton/ha	.....ton/ha
65-70	.....ton/ha	.....ton/ha
70-75	.....ton/ha	.....ton/ha
75-80	.....ton/ha	.....ton/ha
80-85	.....ton/ha	.....ton/ha
rot	.....ton/ha	.....ton/ha
total	.....ton/ha	.....ton/ha

352. B. Could you please indicate the after storage harvest in ton/ha for each of the pear sizes that apply for each growing area for pear?

→ Please write down the harvest in ton/ha for each pear size that applies.

Size in millimeter	Growing area A	Growing area B
45-50	.....ton/ha	.....ton/ha
50-55	.....ton/ha	.....ton/ha
55-60	.....ton/ha	.....ton/ha
60-65	.....ton/ha	.....ton/ha
65-70	.....ton/ha	.....ton/ha
70-75	.....ton/ha	.....ton/ha
75-80	.....ton/ha	.....ton/ha
80-85	.....ton/ha	.....ton/ha
rot	.....ton/ha	.....ton/ha
total	.....ton/ha	.....ton/ha

353. What is the price per ton per buyer that has been obtained for each growing area for apple?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

354. Which percentage of the yield of each growing area for apple can be sold and which percentage is used in the processing industry ?

→ Please give the percentage of the yield that can be sold and the percentage that is used in the processing industry. The sum should be 100%.

	Growing area A	Growing area B
1. Percentage salable product	...%	...%
2. Percentage for processing industry	...%	...%
	100%	100%

3540. What is the percentage of apple fruits damaged at harvest (total lost - not marketable) for each growing area for apple?

→ Please write down the percentage of apple fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of apple fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
16. Harvesting					
17. Post-harvest handling (incl. dipping)					
18. Processing (incl. sorting)					
19. Transport					

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
d. Number of machinery hours				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

R. Harvest timing & quality per crop - COFFEE

199. Do you prune each growing area for coffee?

→ Please circle your answer. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q199=1 (YES)

200. When did the pruning of the trees start for each growing area for coffee?

→ Please write down the period of pruning for each growing area.

		Growing area A		Growing area B
Pruning period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

IF Q199=1 (YES)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning					

	Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning					

201. When did the first trees reach the **flowering stage** for each growing area for coffee?

→ Please write down the flowering date for each growing area.

	Growing area A	Growing area B
Flowering date	_____._____._____._____. (DD.MM.YYYY)	_____._____._____._____. (DD.MM.YYYY)

202. What is the **average number of flowers per tree** at the flowering stage for each growing area for coffee?

→ Please tick what applies for each growing area. Single response.

	Growing area A	Growing area B
No flowers	1	1
Few flowers	2	2
Normal amount of flowers	3	3
A lot of flowers	4	4
Don't know / no answer	99	99

203. When did the **fruit development** start for each growing area for coffee?

→ Please write down the fruit development date for each growing area.

	Growing area A	Growing area B
Fruit development date	_____._____._____._____. (DD.MM.YYYY)	_____._____._____._____. (DD.MM.YYYY)

204. Could you please indicate the **average number of coffee fruits per tree** for each growing area for coffee?

→ Please write down the average number of coffee fruits per tree for each growing area.

	Growing area A	Growing area B
Average number of coffee fruits per tree	.....coffee fruits/tree	.....coffee fruits/tree

360. When was the **harvest period** for each growing area for coffee?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From _____._____._____._____. (DD.MM.YYYY)	A	From _____._____._____._____. (DD.MM.YYYY)
	B	Until _____._____._____._____. (DD.MM.YYYY)	B	Until _____._____._____._____. (DD.MM.YYYY)

361. In which months does the **harvest peak** for each growing area for coffee?

→ Please circle the harvest peak months for each growing area. (MR)

	Growing area A	Growing area B
January	1	1
February	2	2
March	3	3
April	4	4
May	5	5
June	6	6
July	7	7
August	8	8
September	9	9
October	10	10
November	11	11
December	12	12
Don't know / no answer	99	99

362. What is the **coffee yield** (marketable yield - dried beans) that has been achieved for each growing area for coffee?

→ Please write down the coffee yield for each growing area.

	Growing area A	Growing area B
Coffee yield	.....ton/ha	.....ton/ha

363. What is the **price per ton per buyer** that has been obtained for each growing area for coffee?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

3630. What is the **percentage of coffee fruits damaged at harvest** (total lost - not marketable) for each growing area for coffee?

→ Please write down the percentage of coffee fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of coffee fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours)

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

S. Harvest timing & quality per crop - COCOA

208. Do you prune each growing area for cocoa?

→ Please circle your answer. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q208=1 (YES)

209. When did the pruning of the first trees occur for each growing area for cocoa?

→ Please write down the period of pruning of the first trees for each growing area.

	Growing area A		Growing area B	
Pruning period	A	From ____ . ____ . ____ (DD.MM.YYYY)	A	From ____ . ____ . ____ (DD.MM.YYYY)
	B	Until ____ . ____ . ____ (DD.MM.YYYY)	B	Until ____ . ____ . ____ (DD.MM.YYYY)

IF Q208=1 (YES)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d).

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

Growing area B				
a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven	d. Number of machinery hours
14. Pruning				

210. When did the first trees reach the flowering stage for each growing area for cocoa?

→ Please write down the date that the first trees reached the flowering stage for each growing area.

	Growing area A	Growing area B
Date flowering stage of first trees	_____._____._____ (DD.MM.YYYY)	_____._____._____ (DD.MM.YYYY)

211. What is the average number of flowers per tree at the flowering stage for each growing area for cocoa?

→ Please tick what applies for each growing area. Single response.

	Growing area A	Growing area B
No flowers	1	1
Few flowers	2	2
Normal amount of flowers	3	3
A lot of flowers	4	4
Don't know / no answer	99	99

212. Rain during flowering damages the flowers. What percentage of the trees were damaged for each growing area for cocoa?

→ Please note down the percentage of trees damaged for each growing area.

	Growing area A	Growing area B
Percentage of trees damaged% %

213. What is the average number of green pods per 25 trees (randomly selected) before the green pods become orange for each growing area for cocoa?

→ Please randomly select 25 trees that have pods per growing area. Please note down the average number of green pods of these 25 trees for each growing area.

	Growing area A	Growing area B
Average number of green pods per 25 trees	.....green pods/25 trees	..... green pods/25 trees

364. When was the harvest period for each growing area for cocoa?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From _____._____._____ (DD.MM.YYYY)	A	From _____._____._____ (DD.MM.YYYY)
	B	Until _____._____._____ (DD.MM.YYYY)	B	Until _____._____._____ (DD.MM.YYYY)

365. In which months does the **harvest peak** for each growing area for cocoa?

→ Please circle the harvest peak months for each growing area. (MR)

	Growing area A	Growing area B
January	1	1
February	2	2
March	3	3
April	4	4
May	5	5
June	6	6
July	7	7
August	8	8
September	9	9
October	10	10
November	11	11
December	12	12
Don't know / no answer	99	99

366. What is the **yield** (marketable yield) that has been achieved for each growing area for cocoa?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....ton/ha	.....ton/ha

367. What is the **price per ton per buyer** that has been obtained for each growing area for cocoa?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

368. What is the **percentage of cocoa damaged at harvest** (total lost - not marketable) for each growing area for cocoa?

→ Please write down the percentage of cocoa damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of cocoa damaged at harvest%%

369. What is the weight of the dried cocoa yield at the end of the post-harvest process (with humidity close to 8%) for each growing area for cocoa?

→ Please write down the weight of dried cocoa yield for each growing area.

	Growing area A	Growing area B
Weight dried yield	..... ton/ha	..... ton/ha

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

	Growing area A			
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
d. Number of machinery hours				
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

T. Harvest timing & quality per crop - CAULIFLOWER FOR PROCESSING INDUSTRY

219. What is the final stand - i.e. the average total number of plants per hectare for each growing area for cauliflower?

→ Please note down the total number of plants per ha for each growing area.

	Growing area A	Growing area B
Final stand/plant density	.....plants/ha	.....plants/ha

370. When was the harvest period for each growing area for cauliflower?

→ Please write down the harvest period for each growing area.

	Growing area A		Growing area B	
Harvest period	A	From (DD.MM.YYYY)	A	From (DD.MM.YYYY)
	B	Until (DD.MM.YYYY)	B	Until (DD.MM.YYYY)

371. How many times do you pick each variety on each cauliflower field?

→ Please write down the number of harvests for each variety for each field.

	Growing area A		Growing area B	
	Variety	Number of harvests	Variety	Number of harvests
Number of harvests variety 1:				
Number of harvests variety 2:				
Number of harvests variety 3:				
Number of harvests variety 4:				
Number of harvests variety 5:				

372. What is the yield (marketable yield - bolted cauliflower) that has been achieved for each growing area for cauliflower?

→ Please write down the yield for each growing area.

	Growing area A	Growing area B
Yield	.....ton/ha	.....ton/ha

373. What is the total yield in ton per hectare for the total production of cauliflower for the processing industry?

→ Please write down the total yield for the total production of cauliflower for the processing industry.

Total yieldton/ha
-------------	-------------

374. What is the price per ton per buyer that has been obtained for each growing area for cauliflower?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid. The sum of the percentages cannot exceed 100%.

	Growing area A		Growing area B	
Buyer 1:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 2:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 3:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 4:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Buyer 5:	a. ...%	b. ....\$/ton	a. ...%	b. ....\$/ton
Harvest not yet sold/not yet paid	-2	-2	-2	-2
Don't know/no answer	-1	-1	-1	-1

375. What is the percentage of cauliflower fruits damaged at harvest (total lost - not marketable) for each growing area for cauliflower?

→ Please write down the percentage of cauliflower fruits damaged at harvest for each growing area.

	Growing area A	Growing area B
Percentage of cauliflower fruits damaged at harvest%%

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

- A. What is the number of hours spent by all workers for that specific operation?
- e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours
 - Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)
- B. How many people were involved in this operation?
- Including yourself, seasonal workers, contractors,...
- C. What is the type of machinery/equipment that was used for this operation?
- e.g. 2 tractors and 1 plough
- C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?
- D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
16. Harvesting				
17. Post-harvest handling (incl. dipping)				
18. Processing (incl. sorting)				
19. Transport				

Y. After harvest

4000. What do you do with your harvested crop for each growing area of [TARGET CROP]?

→ Please circle all that apply. (MR)

	Growing area A	Growing area B
I store it for own consumption	1	1
I store a part of it for own consumption	2	2
I dry it before selling it	3	3
I sell it on the local market	4	4
I sell it to a trader	5	5
I sell it to a wholesaler	6	6
I sell it to a feed processing plant	7	7
I sell it to a cooperative I am part of	8	8
I sell it directly to the mill	9	9
I sell it directly to a retailer as part of a quality contract	10	10
I sell it to a government owned rural collection center	11	11
96. Other. Specify 1:		
97. Other. Specify 2:		
98. Other. Specify 3:		
Don't know / no answer	99	99

4001. What is the percentage of crop lost in-between harvest and storage or selling for each growing area of [TARGET CROP]?

→ Please write down the percentage of crop lost in-between harvest and storage or selling for each growing area.

	Growing area A	Growing area B
Percentage of crop lost in-between harvest and storage or selling%%

4002. Do you take measures to prevent post-harvest loss for each growing area of [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q4002=1 (YES)

4003. Which measures do you take to prevent post-harvest loss for each growing area of [TARGET CROP]?

→ Please describe the measures that you take.

Growing area A	Growing area B

IF Q4002=1 (YES)

4004. What is the benefit of the measures that you take to prevent post-harvest loss for each growing area of [TARGET CROP]?

→ Please describe the benefits of the measures that you take to prevent post-harvest loss.

Growing area A	Growing area B

4005. Besides crop damage, what are other reasons due to which you cannot market your harvest for each growing area of [TARGET CROP]?

→ Please describe other reasons due to which you cannot market your harvest.

Growing area A	Growing area B

4006. What critical pain points do you face when growing [TARGET CROP] for each growing area?

→ Please describe the critical pain points.

Growing area A	Growing area B

PART VI - OTHER INPUTS - AFTER HARVEST

376. Please fill out the unique code, given by the interviewer (has to be the same as in Q1):

UNIQUE CODE: XX X XXX

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

376. B. Please fill out the date of the interview:

Date (Date in DD/MM/YYYY)

A. Input costs

377. What is the estimated revenue in dollars per hectare for each growing area of [TARGET CROP]?

→ Please write down in \$/ha.

	Growing area A	Growing area B
Estimated <u>revenue</u>	... \$/ha	... \$/ha
Don't know / no answer	-1	-1

IF Q377= -1 (don't know) for growing area A or B

378. Could you please indicate the estimated revenue for [TARGET CROP] in general?

→ Please write down the general estimated revenue in \$/ha.

Estimated <u>revenue</u>	... \$/ha
Don't know / no answer	-1

379. How would you rate your profitability for each growing area for [TARGET CROP] compared to past season?

→ Please circle what applies. (SR)

	Growing area A	Growing area B
Very high	5	5
High	4	4
Average	3	3
Low	2	2
Very low	1	1
Don't know / no answer	99	99

380. What is your total input cost for each growing area of [TARGET CROP] from first field preparation until harvest? Please consider trees/seeds, fertilizers, pesticides, labor, machinery, water use, fuel, electricity, gas.

→ Please write down in \$/ha.

	Growing area A	Growing area B
Total input cost	... \$/ha	... \$/ha

381. And how would you split this out in percentages for each category in terms of importance of the total input cost for each growing area for [TARGET CROP]?

→ Please indicate the percentage for each category. The sum should add up to 100%.

	Growing area A	Growing area B
1. Trees/Seeds	... %	... %
2. Fertilizers	... %	... %
3. Pesticides	... %	... %
4. Labor	... %	... %
5. Machinery	... %	... %
6. Water use	... %	... %
7. Fuel	... %	... %
8. Electricity	... %	... %
9. Gas	... %	... %
98. Other specify 1	... %	... %
Don't know / no answer	-1	-1

IF Q381 other specify > 0%

381. B. Could you please specify the other input costs for each growing area for [TARGET CROP]?

→ Please describe.

Growing area A	Growing area B

381. C. Have you received a subsidy for your inputs for each growing area of [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q381C= 1 (subsidy received)

381. D. Which kind of subsidy have you received for each growing area of [TARGET CROP]?

→ Please circle what applies. (MR)

	Growing area A	Growing area B
Free seeds	1	1
Free fertilizers	2	2
Free crop protection products	3	3
Advice	4	4
Sales of products	5	5
96. Other. Specify 1: ...	96	96
97. Other. Specify 2: ...	97	97
98. Other. Specify 3: ...	98	98
Don't know / no answer	99	99

B. Abiotic stress

IF TREES = DURING PRUNING

383. During and right after planting of [TARGET CROP], did you face an external stress problem that impacted your planting operations or crop development (e.g. emergence)?

→ Please tick what applies. (SR)

Yes	1
No	2

IF Q383=1 (if problem) AND IF TREES = DURING PRUNING

384. Which kind of external stress problems were you faced with during and right after planting of [TARGET CROP]?

→ Please tick all that applies. Note down other if not in list. (MR)

Excess of rain	1
Lack of rain	2
Heat	3
Frost	4
Wind	5
Hail	6
Destruction by animals	7
Lack of beneficial insects (e.g. pollinators)	8
96. Other. Specify 1: ...	96
97. Other. Specify 2: ...	97
98. Other. Specify 3: ...	98
Don't know / no answer	99

385. During the season of [TARGET CROP], did you face an external stress problem that impacted your crop operations or crop development (e.g. flowering, fruit development, etc.)?

→ Please tick what applies. (SR)

Yes	1
No	2

IF Q385=1 (if problem)

386. Which kind of external stress problems were you faced with during the season of [TARGET CROP]?

→ Please tick all that applies. Note down other if not in list.

Excess of rain	1
Lack of rain	2
Heat	3
Frost	4
Wind	5
Hail	6
Destruction by animals	7
Lack of beneficial insects (e.g. pollinators)	8
96. Other. Specify 1: ...	96
97. Other. Specify 2: ...	97
98. Other. Specify 3: ...	98
Don't know / no answer	99

IF Q385=1 (if problem)

387. What was the impact on the [TARGET CROP]?

→ Please tick what applies, multiple answers possible. Note down other if not in list.

Reduced yield	1
Reduced yield quality	2
No impact	90
96. Other. Specify 1: ...	96
97. Other. Specify 2: ...	97
98. Other. Specify 3: ...	98
Don't know / no answer	99

388. Would you say the rain level during the season was ...?

→ Please tick what applies. (SR)

A lot less than usual	1
Somewhat less than usual	2
The same as usual	3
Somewhat more than usual	4
A lot more than usual	5
Don't know / no answer	99

C. Irrigation

389. What is the **MAIN water source** of each growing area of [TARGET CROP] during this season? Only one answer possible.

→ READ. Note down other if not in list. (SR)

	Growing area A	Growing area B
Irrigated using irrigation equipment (e.g. rain, ponds, river, tap water,...)	1	1
Rain-fed (no equipment, only natural rainfall)	2	2
Swamp/wetland	3	3
98. Other. Specify 1:	...	...
Don't know / no answer	99	99

IF Q389=1 (if irrigation)

B. Which water source has been used for irrigation?

→ Spontaneous. Note down other if not in list. Multiple response

	Growing area A	Growing area B
Private connection to pipeline	1	1
Private well	2	2
Private borehole	3	3
Public river, stream	4	4
Public lake, pond	5	5
Rainwater in a tank	6	6
Water vendor	7	7
96. Other specify 1:		
97. Other specify 2:		
98. Other specify 3:		
Don't know / no answer	99	99

IF Q389=1 (if irrigation)

390. What is the number of days you have been irrigating each growing area of [TARGET CROP]?

→ Please write down the number of days.

	Growing area A	Growing area B
Number of days of irrigation	...days	...days

IF Q389=1 (if irrigation)

391. What is the average amount of hours per day you have been irrigating each growing area of [TARGET CROP]?

→ Please write down the average amount of hours per day.

	Growing area A	Growing area B
Average amount of hours per day	...hours/day	...hours/day

IF Q389=1 (if irrigation)

392. What is the amount of liters that is discharged per hour on each growing area of [TARGET CROP]?

→ Please write down the average amount of liters per hour.

→ Interviewer instruction: Please ask for the type of pump the grower used, as this indicated the amount of liters discharged per hour.

	Growing area A	Growing area B
Average amount of liters per hour	...L/hour	...L/hour

IF Q389=1 (if irrigation) AND IF DIFFICULTY TO GIVE AN ANSWER PER GROWING AREA

393. What is the number of days you have been irrigating in total?

→ Please write down the number of days.

Number of days of irrigationdays
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IF Q389=1 (if irrigation) AND IF DIFFICULTY TO GIVE AN ANSWER PER GROWING AREA

394. What is the average amount of hours per day you have been irrigating in total?

→ Please write down the average amount of hours per day.

Average amount of hours per dayhours/day
---------------------------------	----------------

IF Q389=1 (if irrigation) AND IF DIFFICULTY TO GIVE AN ANSWER PER GROWING AREA

395. What is the amount of liters that is discharged per hour in total?

→ Please write down the average amount of hours per day.

→ Interviewer instruction: Please ask for the type of pump the grower used, as this indicated the amount of liters discharged per hour.

Average amount of liters per hourL/hour
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ONLY FOR BELGIUM: IF Q389=1 (if irrigation)

396. When do you irrigate each growing area of cauliflower?

→ Please tick what applies. (MR)

	Growing area A	Growing area B
In the morning	1	1
At noon	2	2
In the evening	3	3
Don't know / no answer	99	99

IF Q389=1 (if irrigation)

382. Please describe per growing area the type of machinery/equipment used and indicate the amount of labor used for each operation performed during the season for [TARGET CROP].

→ Please fill out the table. If not applicable, please leave the row open.

→ Please fill in '-1' if you conduct the activity but don't know the amount of hours (column a/d)

A. What is the number of hours spent by all workers for that specific operation?

▪ e.g. if 5 workers worked 8 hours for clearing the field, this represents 40 hours

▪ Please note that this includes all hours spent for all types of labor regarding that operation (e.g. also for driving a machine)

B. How many people were involved in this operation?

▪ Including yourself, seasonal workers, contractors,...

C. What is the type of machinery/equipment that was used for this operation?

▪ e.g. 2 tractors and 1 plough

C1. For each type of equipment: Is this machinery/equipment man, fuel or energy driven?

D. How many hours was the machinery/equipment used for this activity?

Growing area A				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
13. Irrigating				

Growing area B				
	a. Number of hours spent by all workers	b. Number of people involved	c. Type of machinery/equipment used	c1. Man, fuel or energy driven 1=Man driven 2=Fuel driven 3=Energy driven
13. Irrigating				

PART VII - FEEDBACK

397. Have you received a recommended growing protocol from an agricultural advisor for each growing area of [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q397=1 (have received a recommended growing protocol)

397. B. From whom did you receive the protocol for each growing area of [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Dealer/store	1	1
Manufacturer/representative	2	2
Independent advisor	3	3
Cooperative	4	4
98. Other specify:		
Don't know / no answer	99	99

IF Q397=1 (have received a recommended growing protocol)

397. C. Did you receive a protocol from Syngenta for each growing area of [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Yes	1	1
No	2	2

IF Q397C=2 (No)

397. D. Would you like to tell us from which manufacturer you've received a protocol for each growing area of [TARGET CROP]?

Growing area A	Growing area B

IF Q397=1 (have received a recommended growing protocol)

397. E. What is the name of the protocol for each growing area of [TARGET CROP]?

→ Please write down the name of the protocol.

Growing area A	Growing area B

IF Q397=1 (have received a recommended growing protocol)

397. F. Could you please give a description of the protocol for each growing area of [TARGET CROP]?

→ Please write down the description of the protocol.

→ Please probe for items such as dose rates, seed treatment, product names, amount of water,... Several different activities can be included in the protocol.

Growing area A	Growing area B

IF Q397=1 (have received a recommended growing protocol)

397. G. To which extent did you follow the protocol for each growing area of [TARGET CROP]?

→ Please tick what applies. (SR)

	Growing area A	Growing area B
Completely followed	1	1
Partially followed	2	2
Not followed at all	3	3
Don't know / no answer	99	99

IF Q397=1 (have received a recommended growing protocol)

399. Please explain why you follow or do not follow the protocol.

→ Please write down why you have or have not followed the protocol.

Growing area A	Growing area B

IF Q397 G=1 OR 2 (completely or partially follow the recommended protocol)

399. A. Please indicate on which percentage of the total crop area of [TARGET CROP] you have followed the protocol?

	... %
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IF Q397 G=1 OR 2 (completely or partially follow the recommended protocol)

399. B. For how many years have you been following the protocol for each growing area of [TARGET CROP]?

→ Please write down the number of years.

	Growing area A	Growing area B
Number of years	... years	... years

IF Q397=1 (have received a recommended growing protocol)

399. C. How satisfied are you with the protocol for each growing area of [TARGET CROP]? Please indicate this on a 5 point scale, where 1 means not satisfied at all and 5 means very satisfied.

→ Please circle what applies.

	Growing area A	Growing area B
Very satisfied	5	5
Rather satisfied	4	4
Nor satisfied, nor dissatisfied	3	3
Rather unsatisfied	2	2
Not satisfied at all	1	1
Don't know / no answer	99	99

IF Q399C=1 OR 2 OR 3 OR 4 OR 5

399. D. Please explain your answer for each growing area of [TARGET CROP]?

→ Please explain.

Growing area A	Growing area B

399. E. What is your opinion on the Good Growth Plan?

→ Please describe.

402. Generally, which aspects do you think are the most important to achieve a good crop yield and/or quality?

→ Please note the most important aspects.

403. What are the main problems that you face as a farmer with growing and selling crops?

→ Please note the main problems.

IF REFERENCE FARM

404. What additional services did you receive from Syngenta?

→ Please circle the additional services that apply. In case of others, please note down.

Advice from farmers cooperative	1	Brochures/books	12
Advice on crop protection/use of CPP	2	Free crop protection products	13
Advice on cultivation in general	3	Free fertilizers	14
Advice on equipment/machinery	4	Free plants/seeds	15
Advice on marketing/sales	5	Good payment terms	16
Advice on planting/seeds	6	Information on pests	17
Advice on safety	7	Logbook to register information	18
Advice on use of fertilizers	8	Monetary incentive	19
Advice on water quality treatment	9	Seminars, conferences, meetings	20
Advice from agronomist	10	Technical advice	21
General advice	11	Warning services (e.g. sms alerts)	22
Other. Specify 1:			96
Other. Specify 2:			97
Other. Specify 3:			98
Don't know / no answer			99

IF BENCHMARK FARM

405. What additional services did you receive from a crop input supplier?

→ Please circle the additional services that apply. In case of others, please note down.

Advice from farmers cooperative	1	Brochures/books	12
Advice on crop protection/use of CPP	2	Free crop protection products	13
Advice on cultivation in general	3	Free fertilizers	14
Advice on equipment/machinery	4	Free plants/seeds	15
Advice on marketing/sales	5	Good payment terms	16
Advice on planting/seeds	6	Information on pests	17
Advice on safety	7	Logbook to register information	18
Advice on use of fertilizers	8	Monetary incentive	19
Advice on water quality treatment	9	Seminars, conferences, meetings	20
Advice from agronomist	10	Technical advice	21
General advice	11	Warning services (e.g. sms alerts)	22
Other. Specify 1:			96
Other. Specify 2:			97
Other. Specify 3:			98
Don't know / no answer			99

4007. In terms of follow-up information, which kind of feedback would you be interested in?

→ Please describe.

This completes the data collection guide. Thank you for your cooperation!