Annex 1 - Example questionnaires for commodity system components

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Component 01 - Relative importance of crop

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Overall agriculture setting:
Total national land area: _____(sq mi, acres, ha)
Area suitable for agriculture: _____(sq mi, acres, ha)

Marginal land area:

Steepland _____
Deep peat _____
Acid sulphate _____
Marsh land _____
Salty soils _____
Others (specify)_____

2. Area (ha, acres) suitable for cultivation of crop group, e.g., fruit cultivation:_____
_____
__
Area (ha, acres) suitable for specific crop cultivation, e.g., starfruit cultivation:
_____
_____
__

3. Common Name:
_____
Scientific Name:
_____
Commercial Clones:

1._____
2._____
3._____

4. Total crop area planted and level of production for the past five years.

Year	Hectares	Production
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

5. Projected hectarage cultivated and expected level of production for the next five years (based on normal growth trend).

13. Summary of problems identified which may affect production, processing, postharvest handling or marketing of crop:

1.
2.
3.
4.

Component 02 - Public sector policies

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Policies and strategies: Identify and describe existing governmental policies and strategies which directly or indirectly affect the production and/or marketing of this product or groups of products.

Policies:_____
_____
_____
_____
_____
_____

If yes, what are they:_____
_____

5. Which policy or policies most strongly impact the crop production system, to what degree, and why?

_____
_____
_____

6. Do any of the policies/strategies impact the postharvest losses?

Yes ( ) no ( )

Explain:_____
_____

7. Summary of problems identified which may impact production, processing, postharvest handling or marketing of crop.

1.
2.
3.
4.
5.

Component 03 - Relevant institutions

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

6. Private sector institutions/organizations involved with crop:

Name	Functions or actions
_____	_____
_____	_____
_____	_____

7. Other ministries/departments directly or indirectly involved in the development of crop:

Ministry/Department	Responsibility or functions
_____	_____
_____	_____
_____	_____
_____	_____

8. Identify the coordinating body, if any, responsible for the development of the crop industry and describe its function: Name of coordinating body:_____

Functions

a. _____
b. _____
c. _____

9. Indicate level of coordination of the various institutional activities:

	Well coordinated	Satisfactory	Poorly coordinated
Planning	( )	( )	( )
Production	( )	( )	( )
Processing	( )	( )	( )
Marketing	( )	( )	( )
Research	( )	( )	( )

10. Summary of key public and private sector institutions for the development of the crop industry:

Name of institution, unit, department, or organization	Principal constraints
_____	_____
_____	_____

Component 04 - Facilitating services

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Transportation:

a. Farm accessibility (road conditions)
( )good ( )acceptable ( )poor
Observations:_____
_____

b. Availability of vehicles for:

	Good	Acceptable	Poor
- Production inputs	( )	( )	( )
- Farm to packinghouse	( )	( )	( )
- Farm to market	( )	( )	( )
- Packinghouse to wholesaler	( )	( )	( )
- Packinghouse to port	( )	( )	( )
- Export: air shipments	( )	( )	( )
- Export: see shipments	( )	( )	( )

c. Describe priority constraints affecting transportation:

1. _____
2. _____

2. Information (info):

	Production		Postharvest		Markets		Prices	
	Yes	No	Yes	No	Yes	No	Yes	No
Institutional info available?	( )	( )	( )	( )	( )	( )	( )	( )
Sufficient for decision making?	( )	( )	( )	( )	( )	( )	( )	( )
Sources of institutional info?	_____		_____		_____		_____	
	_____		_____		_____		_____	
Other sources of information?	_____		_____		_____		_____	
	_____		_____		_____		_____	

Describe priority constraints related to information:
_____

3. Credit:

Sources	Type of collateral required	Interest rate	Limits of credit	Sufficient Yes	Sufficient No
_____	_____	_____	_____	( )	( )

_____	_____	_____	_____	( )	( )
_____	_____	_____	_____	( )	( )

Describe constraints with respect to credit:

a. _____
b. _____

4. Farm inputs:

Types of farm input	Available when needed		Principal source of input
	Yes	No	
- fertilizers	( )	( )	_____
- chemicals	( )	( )	_____
- tools	( )	( )	_____
- irrigation equipment	( )	( )	_____
- natural pesticides	( )	( )	_____
- others_____	( )	( )	_____

Describe constraints related to supply of farm inputs:

a. _____
b. _____

5. Technical assistance (TA):

	TA is available			TA is sufficient	
Operation	Yes	No	Source of TA	Yes	No
Production	( )	( )	_____	( )	( )
Postharvest	( )	( )	_____	( )	( )
Marketing	( )	( )	_____	( )	( )
Processing	( )	( )	_____	( )	( )

Describe constraints with respect to technical assistance:

a. _____
b. _____

6. Postharvest facilities:

		Is capacity sufficient?		Is service efficient?	
	Owner/Operator	Yes	No	Yes	No
Cold room	_____	( )	( )	( )	( )
Packinghouse	_____	( )	( )	( )	( )
Refrigerated truck	_____	( )	( )	( )	( )
Others (specify)	_____	( )	( )	( )	( )

7. Describe constraints with respect to postharvest facilities:

a. _____
b. _____

8. Identify and describe any other existing or needed services or infrastructure relevant to the production, processing, postharvest handling, or marketing of the crop in question:
_____
_____

Component 05 - Farmer organizations

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify the active farmer organizations involved with the production or marketing of the crop. For each organization identified, provide the following information:

a. Name of organization:_____

b. Name of key person:_____

c. Location, address:_____

d. Number of active members:_____

e. Types of commodities handled:_____

f. Services offered to members, e.g., information, technical assistance, credit, transport, storage, grading of produce, farm input, supply, marketing, etc.:
_____
_____
_____

g. Important experiences of the organization in production, postharvest handling, processing or marketing:
_____
_____

h. Quantify the organization's resources (human resources, financial resources, vehicles, equipment, buildings, etc.)
_____
_____

i. The management/administration of this organization is considered:
very good( ), good( ), satisfactory( ), poor( ), very poor( ).

j. Does this farmer organization have full time management?
yes ( ) no ( )

k. Does this farmer organization have an established financial accounting system?
yes u00 Tz ( )T7M0.08pR l. How i48 Tf 100is on or maf. S 100 Tz ( )Tj /F1 2048 Tk. Does this farmer organi

_____
_____

4. If there are no farmer organizations dealing with the commodity, explain why not:

_____
_____

Recommendations with respect to farmer organizations:

_____
_____

5. Summarize the principal problems affecting the development of farmer organizations.

1.
2.

Component 06 - Environmental requirements and constraints

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Optimum growing conditions for crop:

1.1 Soil:
a. type:_____
b. pH:_____
c. slope:_____

1.2 Monthly water requirements:_____
1.3 Temperature range within which crop does well:_____
1.4 Humidity range within which crop does well:_____
1.5 Photo-period (length of daylight required):_____
1.6 Other:_____

2. Crop sensitivity to weather conditions:

	Sensitive	Moderate	Tolerant	Remarks
- drought	( )	( )	( )	_____
- heavy rain	( )	( )	( )	_____
- water logging	( )	( )	( )	_____
- strong winds	( )	( )	( )	_____
- high temperatures	( )	( )	( )	_____
- low temperatures	( )	( )	( )	_____

3. Optimum storage conditions:

	Shelflife (days)	
	Minimum	Maximum
- ambient temperature	_____	_____
- cool storage (@____°C)	_____	_____

4. Quality of soils in the production area in question are considered:

very good ( ), adequate( ), or deficient( ).

5. Typical soil conditions in production area:

Soil:

a. type:_____
b. pH:_____
c. slope:_____

6. Rainfall (mm) in the production area during the growing season:

Minimum _____ Maximum _____ Average _____

7. Rainfall is considered excessive( ), adequate( ), or insufficient( ).
Explain:_____

8. Are rains torrential to the degree of damaging the crop? yes( ) no( )

9. Does the crop suffer from water logging (excessive amounts of standing water) at any time during the growing season? yes( ) no( )
Explain:_____

10. Does the area suffer from flooding during the growing season? yes( ) no( )
Explain:_____

11. In case of drought conditions, is irrigation available? yes( ) no( )
Explain:_____

12. What is the temperature of the area during the growing season?
minimum _____ maximum _____ average _____

13. Is frost or cold temperature a constraint in this area? yes( ) no( )
Explain:_____

14. Are high temperatures a problem for this crop in this area? yes( ) no( )
Explain:_____

15. What is the average relative humidity of the area during the growing season? ____ %
Is there a significant daily variation? yes( ) no( )
Explain:_____

16. What is the slope of most of the land in the growing area?

very flat( ), gently sloping( ), moderately sloping( ), steep( ), very steep( ), rolling( ), mixed flat and sloping( ).

17. How do the above ecological conditions generally affect crop production and/or yields?
_____

18. Summarize problems which may impact production and/or postharvest handling:

1.
2.

Component 07 - Availability of seeds and planting materials

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Commercial seeds available:

	Name	Source
1.		

14. If obtained from the public sector, are they subsidized? yes( ) no( )
Explain:_____

15. Age of plants when moved from nursery to field?_____

16. Are they seedlings( )? or grafted( )? If grafted, are they trained? yes( ) no( )

17. Grafting success rate high( ), medium( ), low( ).

18. Are plants certified disease free( )? appear to be disease free( )? or do they appear diseased( )?

19. Are plants available in sufficient quantity to meet demand? yes( ) no( )
Explain:_____

20. Is credit available to the farmers to allow purchase of seeds or plant stock?
_____

21. Are seeds or plant stocks generally available at the proper time of year?
_____

22. Based on available seeds or planting material, are productivity and quality expected to be high( ), medium( ), or low( )?

23 Summary of problems identified which may affect the production, processing, or postharvest life of product.

1.
2.
3.

24. Other Observations:_____
_____
_____

Component 08 - Farmers' cultural practices

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Why does the farmer grow this crop?

( ) no other alternative, ( ) tradition, ( ) best money-making alternative,
( )other (specify)_____

2. Most common type of farming system:
( )mono crop ( )intercrop ( )rotation ( )backyard garden
( )slash and burn ( )plantation
( )other (specify)_____

3. How is the ground prepared for planting?
( )plowed by tractor ( )plowed with animals ( )worked by hand
Describe:_____

4. Planting hole size and method of preparation:_____

5. Describe type of planting material used:_____

6. Describe planting distance and pattern used:_____

7. Do farmers carry out a plant protection spray program for pests and disease?
yes( ) no( ). If yes, describe methods:_____
_____

8. Do farmers fertilize the crop? yes( ) no( ). If yes, describe method, formula, frequency, and quantity used: _____

9. Do farmers use irrigation? yes( ) no( ). If yes, describe the method and frequency:___

10. What is the principal source of labor?
( )family, ( )exchange of labor with neighbors, ( )hired full-time, ( )hired part-time,
( )other (specify)_____

11. Is the supply of labor a problem during production? yes( ) no( ).
During harvest? yes( ) no( ). Explain_____

12. Laborers are: ( )highly skilled, ( )satisfactory, ( )poorly skilled.

13. Are attempts made to control shade? yes( ) no( ). Describe method/frequency of control.
_____

14. Do farmers prune this crop? yes( ) no( )
If yes, how?_____

15. Describe method, frequency, and adequacy of weed control. _____
_____

16. How do farmers make the decision when to harvest the crop?
( )Maturity ( )Market price ( )danger from theft
( )Other (specify) _____

17. How is crop harvested? ( )Mechanically, ( )Manual labor, ( )Family labor,
( )Other (specify)_____

18 What tools are used during harvest?_____

19. What is the average area (hectares, acres) planted by typical farmers?
_____ minimum _____ maximum

20. Does the farmer grow the crop on land that is ( )owned, ( )rented, ( )share-cropped,
( )communally farmed, ( )other?_____

21. What changes in cultural practices might contribute most to an improvement in product quality?
_____

22. What changes in cultural practices might contribute most to an increase in production?
_____

23. What changes in cultural practices might contribute most to a decrease in per unit production costs?
_____

24. Summarize the cultural practices which are likely to impact production, processing, postharvest handling, or marketing of product.

1.
2.

Component 09 - Pests and diseases

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

List all pests and diseases which impact upon the productivity or quality of the crop by order of importance. In each case, indicate economic or quarantine significance.

Name of pest	Significance (Econ or Quar)	Name of disease	Significance (Econ or Quar)
1._____	_____	1._____	_____
2._____	_____	2._____	_____
3._____	_____	3._____	_____
4._____	_____	4._____	_____

For each pest or disease listed above, complete the following questionnaire.

1. The following information pertains to a pest( ), or disease( ) or economic( ), or quarantine( ) significance.

2. Common name:_____

3. Scientific name:_____

4. The damage done by this pest or disease affects the following:

	Yes	No	Describe negative impact
- Quantity available for market	( )	( )	_____
- Quality of product	( )	( )	_____
- Price of product	( )	( )	_____
- Consumer demand	( )	( )	_____
- Other_____	( )	( )	_____

5. Technologies are available to prevent( ), eradicate( ), or control( ), the pest and/or disease, or are not available( ).

6. Costs of control are economically feasible( ), or not economically feasible( ).

7. In the case of export crops, in which foreign market(s) is this pest or disease of QUARANTINE significance? _____

8. What preharvest control methods are presently used for this pest or disease?_____

9. What postharvest control methods are presently used for this pest or disease?____

10. What alternatives exist to control this pest or disease?

Preharvest: _____
Postharvest: _____

11. Does chemical treatment produce a residue hazard? yes( ) no( ). If yes, explain:
_____

12. Does chemical treatment affect other organisms beneficial to the yield and quality of the crop?
_____

13. How do the farmers decide to spray for the pest or disease in question? (Does the farmer apply chemicals at the first sign of insects or disease or only after the crop is severely infested?)
_____

14. Type of pesticide most commonly used?_____

15. With what frequency do farmers spray?_____

16. Who does the spraying (farmer, worker, co-operative, Ministry of Agriculture, other)?
_____

17. Does the farmer consciously attempt to minimize his spraying costs? yes( ) no( )
If yes, how does s/he do this? _____

18. What type of equipment do farmers have for spraying? knapsack sprayers( ), tractor operated( ), airplane( ), other
_____

19. What is the magnitude of the pest/disease damage with:

a. No control/treatment?_____
b. Optimum control/treatment?_____

Component 10 - Preharvest treatments

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Do the farmers in the region carry out any type of physical treatment to the crop prior to harvest which may affect production or its postharvest quality? yes( ) no( )

If yes, please describe each treatment:

a. Name of physical treatment:_____
b. Description of action taken:_____
_____
c. Why is this action taken?_____
d. Who carries out the action?_____
e. When is the action carried out?_____
f. Description of the impact or results of the action taken (how is the quantity, quality, storage, shelf lif 2DTct or 6Apa9oneut oetc.,ct proded)?F1 2048 Tf 100 Tz ( )Tj /F1 2048 Tf 0.08935 0 0 -0.0

a._____
b._____
c._____
d._____

5. Summarize the problems resulting from preharvest treatments which may affect production, processing, postharvest, and marketing of the crop.

1.
2.
3.
4.
5.

Component 11 - Production and marketing costs

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify and select different farming alternatives to be analyzed, e.g., alternative A could be 1 hectare size farms and alternative B could be 20 hectare size farms.

2. For each alternative, establish basic assumptions about how the farm is operated, e.g.:

a. Labor: small farm may use all family labor and minimum purchased farm inputs; larger farm may hire labor and use optimum level of recommended farm inputs.
b. Market: small farmer may sell all produce at farmgate while large farmer might export 60% of production
c. Product sales price: maximum, minimum, average
d. Product yield: high, low, average
e. Number of plants/hectare
f. Number of years productivity of perennials
g. Production or expected production
h. Intended market
i. Others

3. Identify all the cost components and calculate their contribution to the cost of a unit Quantity of the product

A. Capital investment:

1. land premium
- rent
- taxes

2. land clearing
3. drainage
4. fencing
5. buildings
6. vehicles
7. irrigation equipment
8. electricity
9. farm equipment/machinery
10. office equipment
11. processing facilities

- coldrooms
- ripening room
- table
- weighing machine

12. others

B. Operating and maintenance:

1. rent
2. road and drainage maintenance
3. fencing maintenance
4. vehicle maintenance
5. facilities maintenance
- water supply
- insurance
- building maintenance

6. agriculture tool replacement
7. fixed salary end wages
8. administration end management
9. costs of credit
10. others

C. Crop production costs:

1. land preparation
2. holing
3. planting
- material
- labor
- fertilizers
- replacement plants

4. fertilization

- labor
- material
-

- labor
- material
- equipment

8. bagging fruit on trees

- material
- labor

9. pruning and training

- labor
- equipment

10. harvesting cost

- labor
- boxes and baskets
- equipment

11. in-field transportation

- labor
- materials

12. other production costs

- pollinating agents
- others

D. Postharvest and marketing costs:

1. cleaning, sorting, grading, and selection
- material
- labor
- postharvest treatments

2. packaging and wrapping

- material
- labor

3. cooling
4. storage
5. loading/unloading
6. transportation cost

- field to packinghouse
- packinghouse to port

7. document & custom form
8. custom fees
9. freight charges
10. handling

E. Other costs

Component 12 - Crop harvest

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Who harvests the crop?_____

2. Describe in detail the harvest operation:_____

3. Why is the crop harvested in this particular manner?_____
_____

4. When is the harvest undertaken? Time of day_____

5. Under what conditions? Temperature_____ Relative humidity_____

6. Does the present method of harvest appear to affect: quantity of produce available for market( ), quality of produce available for market( ), value of produce available for market( )? Explain
_____

7. Does the volume of produce unsuitable for market appear to be: high( ), medium( ), low( )? Describe the causes, e.g., size of product, weather damage, pest damage, disease damage, lack of soil nutrients, sun damage, harvest damage, others _____

8. Estimate percentage of crop suitable for market: _____ %

9. Identify and describe the harvesting tools: _____

10. Is all of the crop harvested at one time? yes() no(). If no, why not and how is selection made for that part which is
harvested?_____
_____

11. Identify harvest seasons for each cultivar or variety of crop (if more than one):

Cultivar	Months of harvest	No. months in crop cycle
_____	_____	_____
_____	_____	_____
_____	_____	_____

12. Which, if any, cultivar produces off season?_____

13. Optimum harvesting parameters:
Moisture content_____
Color/appearance_____
Tenderness/texture_____

14. Maturity index known: yes( ) no( ). If yes, describe:_____

15. What criteria are used by the pickers in selecting the product for harvest?
_____

16. For the principal cultivar(s):
What is a good yield per hectare under good growing conditions? _____ tons
What is a good yield per hectare under average conditions? _____ tons

17. Sensitivity to mechanical damage during harvest: high( ), medium( ), low( ).

18. Sensitivity to dehydration: highs( ), medium( ), low( ).

19. Summarize the problems occurring at harvest which may affect the processing, postharvest handling, or marketing of the product.

1.
2.
3.
4.
5.

20. Observations:

Component 13-A - Selection

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify the points in the postharvest system where some form of selection takes place.

POINT IN THE SYSTEM	ACTION THAT TAKES PLACE
_____	_____
_____	_____
_____	_____

2. For each action identified above provide the following information:

a. Name of action:_____
b. Time required for the action to take place:_____
c. Describe the action:_____
d. Who is responsible for conducting the action?_____
e. When is the action carried out?_____
f. Why is this action carried out?_____
g. Where is this operation carried out?_____
h. Is the activity carried out with laborers? yes( ) no( )
If yes, how many?_____
i. Is the activity carried out with machines/tools/equipment? yes( ) no( )
If yes, identify and describe:_____
j. What criteria are used in this action?

	Yes	No	Describe
- product shape	( )	( )	_____
- product size	( )	( )	_____
- product weight	( )	( )	_____
- maturity	( )	( )	_____
- color	( )	( )	_____
- pest/disease damage	( )	( )	_____
- physical injury	( )	( )	_____
- mechanical injury	( )	( )	_____
- cleanliness	( )	( )	_____
- other____	( )	( )	_____

k. Is this operation required to meet market demand?
yes( ) no( ) Explain:_____

i. What is (are) the probable end use(s) of culled product?_____
_____

3. If the product is divided into different groups or categories at this point due to the selection process, identify the different categories and the approximate % of produce moving into each channel.

For example:

Grade	% of Total	Destination
1st Grade	40%	Export
2nd Grade	35%	Domestic market
3rd Grade	15%	Agro-processing
Culls	10%	Animal feed
Total	100%	

4. What portion of culled product, if any, is a complete loss and does not generate any economic return?_____ %
Explain_____
_____

5. Identify any problems occurring at this point which may affect postharvest losses.

1.
2.
3.
4.
5.

Component 13-B - Sizing and grading

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify the points in the postharvest systems where some form of sizing or grading takes place.

POINT IN THE SYSTEM	ACTION THAT TAKES PLACE
_____	_____
_____	_____
_____	_____

2. For each action identified above provide the following information:

a. Name of action:_____
b. Time required for the action to take place:_____
c. Describe the action:_____
_____
d. Who is responsible for conducting the action?_____
e. When is the action carried out?_____
f. Why is this action carried out?_____
g. Where is this operation carried out?_____
h. Is the activity carried out with laborers? yes( ) no( )
If yes, how many?_____

3. Are any sizing or grading standards used for this commodity? yes( ) no( )
If yes, identify and describe the standard:_____
_____

4. If the product is divided into different groups or categories at this point due to the sizing or grading process, identify the different categories and the approximate % of

Component 13-C - Inspection

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify the points in the postharvest systems where some form of inspection takes place.

POINT IN THE SYSTEM	ACTION THAT TAKES PLACE
_____	_____
_____	_____
_____	_____

2. For each action identified above provide the following information:

a. Name of action:_____
b. Time required for the action to take place:_____
c. Describe the action:_____
_____
d. Describe the sampling procedure:_____
_____
e. Who is responsible for conducting the action?_____
f. When is the action carried out?_____
g. Why is this action carried out?_____
h. Where is this operation carried out?_____
i. Is the activity carried out with machines/tools/equipment? yes( ) no( )
If yes, identify and describe:_____
_____
_____
j. What criteria are used in this action?

(A) Quality control (packinghouse line)

	Yes	No	Describe
- product shape	( )	( )	_____
- product size	( )	( )	_____
- product weight	( )	( )	_____
- maturity	( )	( )	_____
- color	( )	( )	_____
- pest/disease damage	( )	( )	_____
- physical injury	( )	( )	_____
- mechanical injury	( )	( )	_____
- cleanliness	( )	( )	_____
- other_____	( )	( )	_____

(B) Plant quarantine (exporting and importing)

	Yes	No	Describe
- disease	( )	( )	_____
- pest	( )	( )	_____
- chemical residues	( )	( )	_____
-other_____	( )	( )	_____

(C) Customs

	Yes	No	Describe
- drug control	( )	( )	_____
- pest/disease	( )		

Component 14 - Postharvest chemical and physical treatments

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

CHEMICAL TREATMENT

1. Is any chemical applied to the commodity awing the postharvest stage? yes( ) no( ) If yes, list the chemicals below:

Generic name: a. _____ Brand name: a. _____
b. _____ b. _____
c. _____ c. _____

2. For each chemical used, answer the following questions.

a What is the name of the chemical?_____
b. Why is the chemical used?_____
c. Who applies the chemical?_____
d. When is the chemical applied?_____
e. Where is the chemical applied?_____
f. How often is the chemical applied?_____
g. How is the chemical applied (spray, dip, etc.)?_____
h. In what concentration is it applied?_____
i. Does the use of this chemical represent a health hazard for workers?_____
yes( ) no( ); for consumers? yes( ) no( ). If yes, explain:_____
_____
j. Costs of treatment?_____

Observations:

PHYSICAL TREATMENT

1. Does this product receive any special physical treatment in the postharvest stage which affects its quality, shelf life marketability? yes( ) no( )

2. If yes, identify each type of physical treatment:

a._____
b._____
c._____

3. For each physical treatment, provide the following information:

a. Name of physical treatment:_____
b. Description of treatment:_____
c. Purpose of treatment:_____

d. Who undertakes the treatment?_____
e. When is the treatment done?_____
f. Where is the treatment undertaken?_____
_____
g. What costs are involved in the treatment?_____
_____

Observations:

4. Summarize the problems at this point which may affect processing or postharvest losses of product.

1.
2.
3.
4.
5.

Component 15 - Packaging

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify the points in the postharvest system where packaging or repackaging occur:

	Yes	No	Describe
- on the farm	( )	( )	_____
- rural collection pant	( )	( )	_____
- regional collection point	( )	( )	_____
- packinghouse	( )	( )	_____
- local market	( )	( )	_____
- wholesale market	( )	( )	_____
- cottage industry	( )	( )	_____
- agro-industry	( )	( )	_____
-supermarket	( )	( )	_____
- point of export	( )	( )	_____
- other_____	( )	( )	_____

2. For each instance where packaging takes place, provide the following information:

a Why is it necessary to package?_____
b. Who undertakes the packaging?_____
c. Where does the packaging take place?_____
d. When does the packaging take place?_____
e. How long does the packaging process take?_____
f. How is the product handled/packaged (describe)?_____
_____
g. What type of packaging material is used?_____
h. Why is that particular packaging material used?_____
_____
i. What is the size of the package used?
- dimensions (cm)_____ ×_____ ×
- number of units of product per package____
- weighs of package: gross_____ net_____
j. Does the particular package have the mechanical strength to adequately protect the product during:

	Yes	No	Comments
- handling	( )	( )	_____
- transportation	( )	( )	_____
- stacking	( )	( )	_____
- storage	( )	( )	_____
- other	( )	( )	_____

k. Is the packaging material readily available? yes( ) no( )

l. Does the package meet the handling and marketing requirements in terms of:

	DOMESTIC MARKET		EXPORT MARKET		IF NEGATIVE
	Yes	No	Yes	No	Explain
- weight	( )	( )	( )	( )	_____
- size	( )	( )	( )	( )	_____
- shape	( )	( )	( )	( )	_____
- material	( )	( )	( )	( )	_____
- design	( )	( )	( )	( )	_____
- labelling	( )	( )	( )	( )	_____

m. Can the package be re-used? yes( ) no( )
If yes, state the estimated number of times:_____

n. Who owns the package (container)?_____

o. If the containers are reused, explain the procedure._____
_____
p. What is the per unit cost of the package or container?_____
_____
q. What is the cost of the labor involved in packaging?_____

3. a. Is cushioning material used? yes( ) no( )
If yes, what type?_____
Why that particular type?_____
b. Can the cushioning material be re-used? yes( ) no( )
If yes, state the estimated number of times:_____
c. What is the cost of the cushioning material per container?_____

4. If produce is not packaged, why not? Not needed( ) Lack of knowledge( )
Lack of materials( ) Not economical( )
Other_____

5. Summarize problems which affect postharvest losses due to packaging or lack of:

1.
2.
3.
4.
5.

6. Observations

Component 16 - Cooling

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Does this product undergo cooling? yes( ) no( )
If no, why not?_____
_____
If yes, provide the following information:

2. What time of day is the product normally harvested? early morning( ), morning( ), afternoon( ), evening( ), anytime( )

3. What is the normal air temperature during harvest?_____

4. Is it considered important to precool this crop? yes( ) no( )
Explain:_____
_____

5. What method of cooling is used? standard cool room( ), hydro( ), icing( ), evaporative( ), forced air( ), air conditioning( ), other
_____
_____

6. How is cooling carried out (describe procedure and equipment used)?
_____
_____

7. How long after harvest is the cooling performed? 0-3 hours( ), 4-7 hours( ), 8-16 hours( ), 17-24 hours( ), more than 24 hours( ).

8. Where is the cooling carried out? on-the-farm( ), collecting center( ), packing center( ), market( ), other
_____
_____

9. Who performs the cooling? farmer( ), middleman( ), buyer( ), government( ), other
_____
_____

10. How long is the cooling period?_____ hours

11. What is the temperature range of the cooling medium?_____

12. Once cooled, is the product ever removed from the cool chain on its way to the final market? yes( ) no( )
Describe:_____
_____

13. What are the costs of the cooling operation, per kg of produce?_____

14. Summarize problems identified at this point which may affect postharvest losses and/or marketing of the product.

1.
2.
3.
4.
5.

15. Observations:

Component 17 - Storage

Describe:_____
n. Is the product normally stored by itself( ), or with other producer( )? If with other produce, specify what kind:_____
o. Describe the type of container in which the product is packaged during storage.
_____
p. Who owns the storage facilities?_____
q. Who operates the storage facilities?_____
r. What is the cost of holding the produce?_____
s. Is the storage facility operated efficiently? yes( ) no( )
If no, explain:_____
_____

3. Summarize storage problems which may affect postharvest losses.

1.
2.
3.

4. Observations:

Component 18 - Transport

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify each point in the commodity system where the product undergoes movement from one point to another with the purpose of getting it to a new location.

	Where transportation takes place	Method of transport
a.	from_____ to_____	_____
b.	from_____ to_____	_____
c.	from_____ to_____	_____
d.	from_____ to_____	_____
e.	from_____ to_____	_____

2. For each case identified above, provide the following information:

a. From_____ to_____
b. Who is responsible for the transportation? farmer( ), middleman ( ),wholesaler( ), retailer( ), government( ), other_____
c. When is produce normally transported? early morning( ), morning( ), afternoon( ), evening( ), night( ), anytime( ).
d. Method of transport? human( ), animal( ), motorcycle( ), truck( ), ship( ), airplane( ), other

_____
e. Describe the transportation process._____
_____
f. Describe the containers used during this stage of transport._____
_____
g. How is produce stacked during transport?_____
_____
h. Identify and describe any type of damage/bruising which occurs to the product during transport.

_____
i. Identify the costs involved during this stage of transportation:

Type costs	Yes	No	Type unit	Cost/unit
- labor	( )	( )	_____	_____
- packaging	( )	( )	_____	_____
- animal rental	( )	( )	_____	_____
- vehicle service	( )	( )	_____	_____
- containers	( )	( )	_____	_____
- other_____	( )	( )	_____	_____

j. What is the duration of this stage of transport?

hours_____
days_____

k. What is the distance covered?_____

l. Who owns the containers during this stage of transport? _____
_____

m. Who owns the product during transport?_____
_____

3. Summary of problems during transport which may affect processing, postharvest handling, or marketing.

1.
2.
3.
4.
5.

4. Observations:

Component 19 - Delays or waiting

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify all those points in the postharvest system where delays or waiting occur.

	Yes	No	Describe
- on the farm	( )	( )	_____
- during transport	( )	( )	_____
- at packinghouse	( )	( )	_____
- at wholesale market	( )	( )	_____
- at retail market	( )	( )	_____
- at processing factory	( )	( )	_____
- at supermarket	( )	( )	_____
- at airport	( )	( )	_____
- at seaport	( )	( )	_____
- other_____	( )	( )	_____

2. For each instance of delay or waiting, provide the following information:

a. Point in system where delay or waiting occurs (from 1 above)_____
_____
b. What is the cause of delay?_____
c. Who is responsible for the delay?_____
d. How long is the normal delay at this point? minutes_____ hours_____ days_____
e. What can be done to reduce the time of the delay?_____
_____
f. How is the product protected at the point of delay?_____
_____
g. What are the environmental conditions for the product at the point of delay? direct sunlight or shade _____, temperature _____, relative humidity _____, air movement _____, other debilitating environmental conditions:_____

h. Describe how the delay or waiting may affect the quality of the product (changes in appearance, texture, aroma, flavor, weight loss/gain, disease development, etc.)._____
_____
_____
i. Does the delay affect the price of the produce? yes( ) no( )
If yes, explain:_____
_____
_____

3. Summarize those problems caused by delays/waiting which may negatively affect processing, postharvest handling, or marketing.

1.
2.
3.
4.
5.

4. Observations:

Component 20 - Other operations

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Operation name Point in food system where operation occurs

_____ _____
_____ _____
_____ _____
_____ _____

2. For each operation, provide the following information:

a. Name of operation._____
b. Describe what takes place._____
c. Who executes the operation?_____
d. Where is the operation carried out?_____
e. When is the operation carried out?_____
f. Why is it done in the present manner?_____
g. What is the impact of this operation on quality or quantity of the product?___
_____
h. How could this operation be improved?_____
_____

3. Identify and describe all problems related to these operations which can affect processing, postharvest handling, or marketing of the product.

1.
2.
3.
4.
5.

4. Observations:

9. Is the estimated demand for the processed output greater than( ), equal to( ), or less than( ), the supply?

10. Intended market for processed output:_____ % export,_____ % domestic

11. Why is the product processed?

( ) to satisfy consumer demand (import substitution)
( ) to reduce postharvest losses
( ) to extend shelf-life
( ) other (specify)_____

12. Does the processor contract for raw materials? yes( ) no( )
If no, what guarantee does the processor have to receive adequate supply of raw materials?
_____

13. What are the principal constraints to processing?

( ) insufficient raw materials
( ) lack of packaging materials
( ) high costs of raw materials
( ) high costs of other inputs (specify)_____
( ) insufficient energy
( ) expensive energy costs
( ) lack of qualified labor
( ) antiquated equipment/machinery
( ) other (specify)_____

14. Observations:

Component 22 - Marketing intermediaries

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify the different types of intermediaries involved with the marketing of the product under study.

Type of intermediary	Brief description
Local collectors/traders:	
_____	_____
_____	_____
Wholesalers:	
_____	_____
_____	_____
Retailers:	
_____	_____
_____	_____
Government buyers:	
_____	_____
_____	_____
Institutional buyers:	
_____	_____
_____	_____
Exporters:	
_____	_____
_____	_____
Agroprocessors:	
_____	_____
_____	_____
Others:	
_____	_____
_____	_____

2. For each type of intermediary identified in 1, provide the following information:

a. Describe the principal functions of this type of intermediary_____
_____
b. How does the intermediary carry out these functions?_____
_____
c. Where are these functions carried out?_____
_____
d. When are these functions carried out?_____
_____
e. Other persons involved in carrying out these functions?_____
_____

f. Why are these actions carried out in the present manner?_____
_____
g. What facilities, equipment, vehicles, etc., does the intermediary use to carry out the activities?
_____
h. What is an average sized operation for this type of intermediary (tons of product handled per calendar year)?
_____
_____
i. How could the handling of this product be improved?_____
_____
j. Would improvement in handling increase costs for the operation? yes( ) no( )
k. If yes, can this cost be passed on to consumers? yes( ) no( )
l. What are the principal constraints for this intermediary which affect the efficient handling of the product?
_____
_____

3. Are there any ethnic groups which specialize in marketing? yes( ) no( )
If yes, how does this affect:

a. Quality_____
b. Price_____
c. Cost_____

4. If possible, collect the following information from each type of intermediary:

a. How is price determined?_____
_____
b. Who determines the price?_____
c. Is product quality a problem? yes( ) no( )
d. Is obtaining sufficient volume a problem? yes() no()
Explain:_____
_____
e. What tricks do farmers use when selling produce to intermediaries (e.g. adding foreign material, placing best produce on top, etc.)?
_____
_____

5. Summarize problems relating to intermediaries which affect postharvest handling and/or marketing and/or processing.

1.
2.
3.

Component 23 - Market information

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Is statistical price information available for the commodity under study?
yes( ) no( )

2. If yes, for what calendar years?_____

3.

Type of price information available	Frequency of Information			
	daily	weekly	monthly	yearly
Farm gate	( )	( )	( )	( )
Wholesale	( )	( )	( )	( )
Retail	( )	( )	( )	( )
Export	( )	( )	( )	( )

4. Has a seasonal price index been prepared for this crop? yes( ) no( )

5. If a seasonal price index exists, which are the months of the year when prices are lowest?_____ highest?_____

6. During those months when prices are lowest, are the low prices due to:

	Yes	No
- decline in consumer demand	( )	( )
- favorable growing conditions/excess supply	( )	( )
- poor production planning/excess supply	( )	( )
- increase in imports	( )	( )
- reduction of exports	( )	( )
- trade regulations	( )	( )
- increase in supply of substitutes	( )	( )
- other_____	( )	( )

7. During those months when prices are highest, are the high prices due to:

	Yes	No
- increase in consumer demand	( )	( )
- poor growing conditions/scarcity	( )	( )
- poor production planning/scarcity	( )	( )
- reduction in imports	( )	( )
- increase of exports	( )	( )
- trade regulations	( )	( )

- decline in supply of substitutes ( )

1.
2.

Component 24 - Consumer demand

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. What percent of total national production of this product is sold on the domestic market?_____ % export market?_____ %

2. What percent of the production in the geographical area under study goes to the domestic market?_____ % export market_____ %

3. Which consumers purchase the product in domestic and export markets.

	Domestic market	Export market
- low income consumers	_____%	_____%
- medium income consumers	_____%	_____%
- high income consumer	_____%	_____%
Total(%)	100	100

4. Indicate ethnic group consumption of this product:

Ethnic group	Domestic market	Export market
_____	_____%	_____%
_____	_____%	_____%
_____	_____%	_____%
Total (%)	100	100

5. For each important consumer group identified above, provide the following information for the applicable questions:

a. Preferred cultivar?_____
b. Preferred size?_____
c. Preferred color?_____
d. Desired flavor?_____
e. Desired texture?_____
f. Preferred degree of maturity?_____
g. Preferred type of package?_____

5 /F1 20 Tz ( )Tj /F1 2042 0893567 9o204-0.08 789h 42i100 Tz ( )Tj /F1 2048 Tf 0.0

l. Desired product characteristics for religious, cultural, and medicinal uses:

religious:_____
cultural:_____
medicinal uses:_____
other:_____

6. Summarize the characteristics of consumer demand which are most likely to affect the marketability of the product in question.

1.
2.
3.
4.
5.

7. Observations:

Component 25 - Exports

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Name of crop to be exported:_____
Variety/cultivar/clone:_____

2. Characteristics of external demand:

a. For each potential export destination (e.g., UK, Japan, USA, or Germany) complete the following information:

- preferred cultivar_____
- preferred size_____
- preferred weight_____
- preferred color_____
- desired flavor_____
- acid/brix ratio_____
- preferred texture_____
- preferred degree of maturity_____
- desired packaging_____
- pest control requirements_____
- disease control requirements_____
- chemical residue limits_____
- grades & standards used_____
- other desired crop characteristics (e.g., due to religious or cultural preferences)
_____

b. Is this market very susceptible to:

Yes

6. Can the farmers/intermediaries meet the external demand requirements with respect to:

	Yes	No	Comments
- proper cultivar/variety	( )	( )	_____
- product size	( )	( )	_____
- product weight	( )	( )	_____
- color	( )	( )	_____
- flavor	( )	( )	_____
- texture	( )	( )	_____
- maturity	( )	( )	_____
- freedom from pests	( )	( )	_____
- freedom from disease	( )	( )	_____
- appearance	( )	( )	_____
- quarantine controls	( )	( )	_____
- health regulations	( )	( )	_____
- trade restrictions	( )	( )	_____
- packaging requirements	( )	( )	_____
- product quantity	( )	( )	_____
- product quality	( )	( )	_____
- price	( )	( )	_____
- others:_____	( )	( )	_____
_____	( )	( )	_____

7. Summary of principal problems with respect to exports.

1.
2.
3.
4.
5.

8. Observations:

Component 26 - Postharvest and marketing costs

NAME OF DATA COLLECTOR: _____TEL:_____
TITLE: _____ INSTITUTION: _____

1. Identify each step (operation) in the marketing channel (for the product being studied), from the point of harvest to sales, and present them in a list. Consider such aspects as: harvest, selection, grading, packaging, cooling, transport, processing, wholesaling, retailing, exporting, and others.

2. Prepare a list of all the different types of participants involved in the marketing of the product in question, considering: farmers, farmer organizations, rural traders, intermediaries, wholesalers, retailers, supermarkets, agro-processors, marketing boards, government institutions, transport companies, cool storage suppliers, packing house operators, customs, port personnel, and others.

3. For each participant in the commodity system, identify respective postharvest and marketing costs which affect the price of the commodity, considering such things as: labor, materials, equipment, chemical and physical treatments, vehicles, transportation fees, storage, processing, cooling services, packaging, grading/sorting, inspection, custom fees, technical assistance, and others.

4. From point of harvest to retail, list the operations (steps in marketing channel) in the order in which they occur. For each operation, list the respective participants, type of cost, and the respective cost. For example:

Operation	Participants	Cost items	Costs
Harvest	Traders	Supervision	$8.00/day
	Pickers	Picking, selection	$0.06/kg
Packing	Packers	Labor	$0.01/kg
		Cushion material	$0.04/kg
		Cartons	$1.35/kg

Annex 2 - Example questionnaires for collecting information on public sector institutions, farmer organizations, and development projects

Annex 2-A - Format for the collection of information on public sector institutions affecting agricultural commodity systems

1. Name of the institution:_____
Relevant subdivisions:_____

2. Names/titles of key persons within the institutions who directly or indirectly affect the commodity system of interest, and how:

Name/Title ex: Sammy Jones/Project Officer	How person makes impact formulated potato project
_____	_____
_____	_____

3. List staff who work with or in some way affect the product of interest:

8. Identify and describe planned projects by this institution which will affect the commodity:

Name of project	Begin date	End date	Cost	Source of $
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

9. Summarize principal institutional actions and activities which affect the product of interest (repeat for each action/activity):

Action/activity #1:_____
Effective dates: from_____ to_____
Description:_____
_____

10. Summarize services provided by the institution which affect the commodity system (repeat for each service):

Service #1:_____
Type service: ex: price information, credit, training_____
Description:_____
_____

11. Summarize principal institutional constraints affecting the product (repeat for each constraint):

Constraint #1:_____
Description of constraint:_____
_____
Impact of constraint (how it affects product):_____
_____

12. Other observations:_____
_____

Annex 2-B - Information on farmer organizations

1. Name of farmer organization:_____
2. Year founded:_____
3. Address/location:_____
4. Name

a. Other farmer organizations:_____
b. Public sector institutions:_____
c. Support organizations:_____
d. Donor organizations:_____
e. Others (specify):_____

Annex 2-C - Inventory of development projects and activities affecting the commodity system

1. Prepare a list of all projects and activities which may affect the product being studied.

2. For each project or activity, answer the following questions:

a. Name of the project or activity:_____
_____
b. Beginning date:_____ Ending date:_____
c. Sponsoring institution:_____
d. Total cost: US $_____ Local $_____
e. Objectives:_____
_____
f. Status: ( )ahead of schedule, ( )on schedule, ( )behind schedule
g. Principal constraints affecting project:_____
_____
h. Expected impact on the product being studied:_____
_____

3. For each project activity, identify the technical personnel associated with the product of interest.

Name	Area of expertise	Time to be in country
_____	_____	_____
_____	_____	_____
_____	_____	_____

Annex 3 - Summary of the production process for starfruit in Malaysia, 1988

ACTION **WHO**

						up to 80%
Weed control	farmer hired labor	mechanical and/or chemical	circle or clear weeding	as necessary	to reduce pest infestations and competition for nutrients	farm
Pollination	farmer	reared honey bees to improve pollination; graft clones with high pollen production	1 beehive per acre; 1 graft per tree	pollination is continuous	the B10 clone appears to be self-infertile; experience with cross pollination shows increased fruit set and production	on the tree
Pruning & training	farmer hired labor	excessive water shoots removed; branches trained to grow horizontally	manually cut; branches weighed down with strings & weights	prunning water shoots as necessary; prunning to control height at 4-5 years; continuous training	facilitates bagging & harvesting; remove unproductive water shoots	on the tree
Thinning & bagging	farmer hired skilled labor	select & maintain one good fruit per inflorescence	manually bag for pest & disease control	thin to leave one well formed fruit/cluster; bag 2-3 weeks after flowering	produce good quality (uniform big size & clean) and insect free fruits	on the tree
Harvesting	farmer hired labor	bagged fruits are handpicked		60-65 days after fruit set; in the morning	to get turgid fruits; to enable packing and transport in the afternoon	farm

Source: Malaysian Agricultural Research and Development Inst., 1988, pp. 33-34.

Annex 4 - Magnitude of losses relating to preharvest factors for starfruit in Malaysia, 1988

OPERATIONS	INSIGNIFICANT		SIGNIFICANT		VERY SIGNIFICANT	
	Qlty	Qnty	Qlty	Qnty	Qlty	Qnty
1. Land preparation	nd	nd				
2. Lining & holing	nd	nd				
3. Planting material			< 3%	< 3%[a]		

h - Thinning is carried out to select one fruit per florescence to increase individual fruit size and quality.

Source: Malaysian Agricultural Research and Development Inst. 1988, pp. 35-36.