



**Sub-Regional Workshop on Implementing Chain Studies for
Agricultural and Food Products
Samoa, 7-9 April 2008**

Report

GTFS/RAS/198/ITA: Support to the Regional Programme for Food Security (RPFS) in the Pacific Island Countries



All Agricultural Commodity Programme



I. Background

Three subregional workshops on implementing chain studies for agricultural and food products were planned under the extension phase of the Italian funded project “Support to the Regional Programme for Food Security (RPFS) in the Pacific Island Countries (PICs)”. The workshops were designed as a follow-up to a set of commodity chain studies undertaken in three PICs between May and December 2006. A regional workshop at which the results of the exercise were presented was held in Fiji in February 2007. In the workshop, participating public and private sector stakeholders recommended that “training of trainers” should be undertaken by FAO at the subregional level in order to ensure that sufficient capacity is available in each country to implement chain studies and to adjust the investigation tools according to the products and countries to be studied.

The objectives of the subregional workshops were therefore to:

1. Train policy makers/sector analysts in both the public and private sectors to implement chain studies for agricultural and food products relevant to food security, import substitution, export development.
2. Adapt the investigation tools tested by the commodity chain studies completed in 2007 to the specific needs of selected subregions and products.
3. Establish and foster networks among key players for commodity chain studies, particularly in relation to trade policies and agriculture development.
4. Consider other regional activities and efforts on commodity chain studies.

PICs were divided in three subregions to ensure that the workshops tailored their specific agricultural and geographical characteristics:

- 1) Cook Islands, Niue, Samoa, Tonga, Tuvalu;
- 2) Fiji, Kiribati, Nauru, Papua New Guinea, Solomon Islands, Vanuatu;
- 3) Federated States of Micronesia, Marshall Islands, Palau.

II. Subregional workshop 1: Samoa

The workshop was held at FAO Subregional office for the Pacific Islands in Apia, Samoa, from 7 to 9 April 2008. It was attended by 17 delegates from five countries (Cook Islands, Niue, Samoa, Tonga and Tuvalu) and two regional bodies (USP¹ and SPREP²). Participants were nominated from the ministries of agriculture (seven) and trade (two), and the private sector (six). Five delegates from four participating countries had previously attended the regional workshop on the commodity chain studies held in Fiji in 2007. Resource persons included FAO staff based both in Rome (Trade and Markets Division) and Samoa. The list of participants is included in Annex 1.

The programme of the workshop was designed to provide the participants with:

- 1) an overview of the RPFS and the activities implemented under the horizontal component;
- 2) an introduction to the commodity chain studies implemented in Fiji, Kiribati and Vanuatu and the methodology applied, including the investigation tools used;

¹ University of the South Pacific.

² Pacific Regional Environment Programme.

- 3) a presentation on uses of, and approaches to, the commodity chain studies, including guidelines on how to select products for investigation, map the chain and determine information requirements;
- 4) an introduction on sampling concepts and approaches to collecting the type of information required in the application of chain investigations;
- 5) two exercises on how to formulate survey questionnaires and use alternative techniques to collect information;
- 6) a presentation on principles of data inputting and processing, followed by a simulation exercise on carrying out a survey and processing the information collected;
- 7) a mapping exercise of the papaya chain in Samoa and the identification of relevant investigation tools;
- 8) an overview on how to formulate a chain study project proposal at regional or national level;
- 9) information on ongoing activities and possible follow-up in developing chain studies in the Pacific region.

A copy of the workshop agenda is included in Annex 2. Each participant was provided with a copy of the Practical guide on implementing chain studies for agricultural and food products in the Pacific region, which was developed on the basis of the three studies undertaken under the RPFS. Additional material (such as a template spreadsheet for data inputting) and presentations were distributed during the workshop.

As a result of the workshop, participants were:

- 1) briefed on the objectives of the RPFS horizontal component and the linkage of the latter with the national projects developed under the vertical component. The commodity chain studies had been designed in order to provide information required to develop policy options in support of the agriculture sector development. Potential replications of the investigations would be linked to national projects development, on the basis of the three categories of products targeted in the commodity chain studies – i.e. products important for food security, import substitution and exports promotion.
- 2) introduced to the chain study methodology and related investigation tools included in the practical guide. Investigations tools were based on issues lists for the collection of secondary information and survey questionnaires targeting producers, traders, tourism operators, importers, exporters and consumers, for the collection of primary information.
- 3) introduced to the principles of the commodity chain study approach and the determinants of sample selection, including examples of how to identify and map a commodity chain
- 4) introduced to the use of different techniques to collect information. Focus was given to the difference between primary and secondary, and related considerations and tools to collect it.
- 5) trained in formulating, adjusting and validating survey questionnaires, and assessing what kind of information is needed and how it can be used. A first practical exercise focused on revisiting a questionnaire for producers of papaya, mango, tomato and carrot in Fiji. A second exercise focused on assessing which other techniques could be used as alternatives to a questionnaire designed for traders of breadfruit in Kiribati.
- 6) introduced to data inputting and processing principles, including coding, data transferring, verification and validation, and initial analysis. A practical exercise to simulate an interview with producers of indigenous nuts, record answers, code the information obtained and input the data into a spreadsheet was carried out.

- 7) assisted in mapping the papaya chain in Samoa and in identifying relevant investigation tools for collecting required information for further chain analysis. Papaya was selected by the participants as being a product important for food security and possessing potential to compete with similar fruits imports, particularly in the tourism sector, as well to be exported, on the basis of previous experience in Samoa. A brief summary of the exercise is provided as Annex 3.
- 8) introduced to the formulation, operational, financial and monitoring aspects of the commodity chain studies implemented under the RPFS. Resource materials and tools to design new chain investigations proposals were provided to the participants, including a project template document, terms of reference for regional/national coordinators and enumerators of a study, report outline, budget.
- 9) briefed on opportunities and instruments to potentially initiate additional chain investigations, such as the TCP facility, the expansion phase of the RPFS and the All ACP Agricultural Commodity Programme.

III. Findings and conclusions

The first subregional workshop on implementing chain studies for agricultural and food products was successfully completed for five PICs, namely Cook Islands, Niue, Samoa, Tonga and Tuvalu. Participants from both the public and private sectors acknowledged the utility and the appropriateness of commodity chain analysis in providing an objective assessment of the strengths and constraints of a specific chain and in formulating policy options and targeted interventions aimed at improving the investigated chain. The workshop also provided the opportunity to assess and adjust the methodology and the investigation tools developed within the RPFS.

It was acknowledged that the existing methodology developed under the RPFS should not be used as a blueprint approach in other countries and/or for other commodity chains. Rather, that any commodity chain study should commence with a mapping of the selected chain which could then be used to identify key information gaps. Approaches to collecting required information would then be selected as appropriate. Where a questionnaire survey approach is deemed necessary, the questionnaires included in the Guidelines could be used as a template but with adaptations as required. The sub-regional workshop provided some insights as to how the questionnaires might be adapted.

Selected questionnaires developed under the RPFS were used in group exercises. Exercise 1, which used the questionnaire for producers of papaya, mango, tomato and carrot in Fiji highlighted a number of issues that should be taken into consideration when adapting the investigation tool. These were linked to:

- (i) the wording of specific questions, which may require reformulation on the basis of exactly what information is actually needed (e.g. to determine product yields or labour capacities), what answer is expected (e.g. open or closed options to determine production shortcomings and how to overcome them), the complexity or ambiguity of a question (e.g. is inquiring on the use of Good Agricultural Practices relevant?).
- (ii) To the need to translate the questionnaires into the local language in some situations.
- (iii) That the questionnaire should reflect the level of development of a specific chain: in one case it was suggested that further elaboration of questions pertaining to the financing phase were needed, as this was considered as a key constraint of any commodity chain in several participating countries.

As a result of exercise 2, which used the questionnaire designed for traders of breadfruit in Kiribati, other techniques for data collection were assessed. Direct observation, focus group interviews, or informal discussions were identified by participants as appropriate alternatives, particularly in smaller islands or local commodity market systems. The mapping exercise on the papaya chain in Samoa also offered the opportunity to put into practice how to identify the information that may be required to further study a commodity chain and how to select effective tools to collect such information. Discussions around what type of investigation tools or techniques could be used highlighted a mix of approaches, including a structured questionnaire for the production and harvest phases, a semi-structured survey for importers, focus group interviews for exporters, direct observation to assess local markets structure, and quality papaya external markets and value adding studies.

In the case of using a structured questionnaire, exercise 3, on data inputting and processing highlighted issues related to the complexity, costs and benefits of applying detailed survey questionnaires. Whilst a full questionnaire survey approach can provide detailed information and allow generalizations about the population from which the surveyed sample is taken, it can require a significant amount of time (e.g. to refine and validate detailed questionnaires and process collected data into spreadsheet) as well as human and financial resources (e.g. local enumerators would need to be recruited and trained).

On the basis of the first sub-regional workshop, it is suggested that further workshops stress three key points in relation to the existing guidelines:

- (i) that chain mapping should be used to identify relevant information needs.
- (ii) that a questionnaire approach is one, but not always, the optimal approach to collecting the required information. The workshop should provide an indication of the strengths and weaknesses of alternative approaches to collecting this information (with a view to how it will be processed and analyzed).
- (iii) that where a questionnaire survey is deemed necessary, that the templates in the guidelines will need to be adapted. The workshop should provide pointers as to how adaptation of the questionnaires could be approached.

Consideration should also be given to strengthening the existing Guidelines document to incorporate sections elaborating on these three points.

Notwithstanding the extent to which the proposed methodology would need to be adapted to the specific country features of different commodity chain investigations, participants were provided with technical and operational tools tested in the RPFS (e.g. the terms of reference of the chain study coordinator, report outline, budget and timeframe), which were considered useful in designing new commodity chain studies of interest to PICs for national funding programmes or regional and international donors support.

In respect to the later, options to implement new studies were presented to the participants, such as the TCP (Technical Cooperation Project) Facility, the expansion phase of the RPFS and All ACP Agricultural Commodity Programme. It was reported that fifteen TCPs Facility, a relative new and fast approving FAO instrument, became operational between September 2007 and April 2008 worth about half million US\$ in the Pacific region. Such an instrument could be used to develop commodity chain studies quickly. To assist in taking new studies forward in the medium term, it was also emphasized that the Food Security and Sustainable Livelihoods Programme, which was formulated to expand the progress made by the RPFS,

envisioned three activity components. Focusing on trade development, component two of the programme allocated resources to implement targeted chain studies targeted in support national activities (component one) aimed at enhancing food production and generating income. Also, synergies with the EU-funded All ACP Agricultural Commodity Programme would be built in the Pacific in the aftermath of the kick-off workshop of the programme, which was held in Samoa in February 2008.

Discussions of possible product/country combinations in which commodity chain studies could be undertaken identified, for example, the honey chain in Niue, papaya in Samoa and Cook Islands, and squash and vanilla in Tonga. In all circumstances, any new study would need to be proposed and endorsed by national governments in consultation with relevant stakeholders and FAO.

Annex 1

SUBREGIONAL WORKSHOP ON IMPLEMENTING CHAIN STUDIES FOR AGRICULTURAL AND FOOD PRODUCTS APIA, SAMOA, 7 – 9 APRIL 2008

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Agenda of the subregional workshop in Samoa

Time	Topic	Speaker/Facilitator
Day 1		
08:30 – 09:00	Official Opening	Vili Fuavaao, FAO
09:00 – 09.30	Introduction/background of the regional component of the RPFS To include a summary of the outcome of the 2007 Fiji workshop on the commodity chain studies	Bismarck Crawley, FAO Massimo Diomedi, FAO
09:30 – 10:30	Why use Commodity Chain Studies? Using an example of a commodity chain, this session will provide an introduction to commodity chain studies: their uses, information requirements and alternative methodologies and investigation tools	Jamie Morrison, FAO
10.30 – 11.00	<i>Coffee Break</i>	
11:00 – 12:00	Determinants of sample selection This session will introduce concepts and approaches that need to be considered in selecting sample units (for example, producers, geographic areas targeted etc): Trade-offs between the need for precision/ ability to generalise and resource constraints The relative merits of different techniques identifying sample units	Jamie Morrison, FAO
12:00 – 13:30	Lunch break	
13:30 – 14.45	Collection of primary and secondary information This session will outline considerations in the use of different approaches to collecting information: (i) Survey/Questionnaire design (Structure of questionnaires; question types, recording answers) (ii) Using secondary information (iii) Participatory approaches	Massimo Diomedi, FAO
14.45 – 15.00	Introduction to group exercises	Massimo Diomedi, FAO

<i>15:00 – 15:30</i>	<i>Coffee break</i>	
<i>15:30 – 17:00</i>	<p style="text-align: center;"><u><i>Working in two groups</i></u></p> <p>Exercise 1 - Developing and adapting questionnaires:</p> <p>Using the Fiji producers questionnaire to consider:</p> <ul style="list-style-type: none"> • what information is actually needed • how should questions be formulated • how will the information be used <p>Reporting to plenary</p>	<p>Jamie Morrison, FAO Massimo Diomedi, FAO</p>
Day 2		
<i>09:00 – 10:30</i>	<p style="text-align: center;"><u><i>Working in two groups</i></u></p> <p>Exercise 2 - Selecting appropriate information collection techniques</p> <p>Using a subset of questions from the Kiribati Traders Questionnaire participants will evaluate alternative approaches to collecting information of a specific issue</p> <p>Reporting to plenary</p>	<p>Jamie Morrison, FAO Massimo Diomedi, FAO</p>
<i>10:30 – 11:00</i>	<i>Coffee Break</i>	
<i>11:00 – 12:00</i>	<p>Data inputting and processing</p> <p>This session would introduce principles in design of data input, validation and verification of data</p>	<p>Jamie Morrison, FAO</p>
<i>12:00 – 13:30</i>	Lunch break	
<i>13:30 – 15:00</i>	<p style="text-align: center;"><u><i>Working in groups</i></u></p> <p>Exercise 3 - Simulation exercise in questionnaire use, data input and data processing</p> <p>Using example of the study on nangai nuts in Vanuatu</p>	<p>Massimo Diomedi, FAO</p>
<i>15:00 – 15:30</i>	<i>Coffee break</i>	
<i>15:30 – 16:00</i>	<p style="text-align: center;"><u><i>Working in groups</i></u></p> <p>Exercise 3 - Simulation exercise in questionnaire use, data input and data processing (cont)</p> <p>Using example of the study on nangai nuts in Vanuatu</p>	

16.00 – 16.30	Plenary session addressing specific questions arising from the Simulation exercise	Jamie Morrison, FAO
16.30 – 17.00	Processing data – case study example	Massimo Diomedi, FAO
	Day 3	
08:30 – 10:00	Exercise 4 - Mapping of the papaya chain in Samoa for export purposes and identification of relevant primary and secondary investigations tools	Jamie Morrison, FAO
10:00 – 10:30	<i>Coffee Break</i>	
10:30 – 11:30	Exercise 4 - Mapping of the papaya chain in Samoa for export purposes and identification of relevant primary and secondary investigations tools (cont)	
12:00 – 13:30	<i>Lunch</i>	
13.30 – 15.00	Report outline, responsibilities, timeframe & budget, expected results Discussion	Massimo Diomedi, FAO
15.00 – 15.30	Follow-up to the workshop Closing of workshop	Vili Fuavaao, FAO

Annex 3 - Group exercise on the Samoan Papaya commodity chain

Introduction

As part of the sub-regional training workshop on Implementing Chain Studies for Agricultural and Food Products, held in Samoa 7-9 April 2008, a short group exercise³ was undertaken to illustrate key principles in using the value chain mapping approach to identify information required to analyse key constraints to chain development and to introduce the key determinants of the choice of approach to data collection. This brief summarises some key issues and findings from the exercise (which was not intended to be comprehensive).

Justification for selecting the Papaya

For the purpose of the exercise, Papaya was chosen as a product, production of which is widespread in Polynesia. Papaya also fulfils (or has the potential to fulfil) three key objectives:

- (i) food security
- (ii) export development – papaya has been exported to NZ in the past, but is not currently exported
- (iii) import substitution – local production substituting for import of temperate zone fruit

Papaya production is also possible year round, so there the seasonality issue which constrains the development of consistent supply in other commodity chains is not critical.

Delimiting the chain

For the purpose of the exercise, the Samoan commodity chain was selected. All papaya varieties produced in Samoa were included, although it was recognised that the local variety is not of required export specification. It was agreed that in the exercise, the chain would include components from inputs to production to final outlets both in NZ (for exported/potentially exported product) and in the domestic market.

It was noted that previous investment had been made in a Heat Treatment plant (but that this was of limited capacity).

Mapping the chain - process

The chain was first mapped (activities, linkages, relationships) and then information required to identify solutions to key “hypothesised” constraints was identified. On the basis of this approaches to information collation were discussed.

The steps followed were broadly as follows:

1. Select and delimit the value chain.
2. Identify approx six main activities between the start of the production process and sale to the final customer.
3. Identify distinct marketing channels or final outlets
4. Work backwards along the chain identifying the types of enterprises that carry out each successive function.

³ It should be noted that the exercise was illustrative, completed during a half day session and that the results of the exercise have not been validated.

5. Consider the governance relationships between adjacent enterprises in the chain using the following conventions:
 - A dotted line to denote an arm's-length market relationship.
 - A single unbroken line represents a persistent, network relationship between independent firms.
 - A thickened line represents vertical integration (successive stages are within the boundaries of a single enterprise).
6. Indicate areas for which adequate information is not available by placing question marks on the map.

Mapping the chain –some highlights

A representation of the mapped chain is provided overleaf. A number of points and questions arising are elaborated below.

- (1) It was agreed that it was not necessary to distinguish between different categories of farmers at the production stage. However, harvesting was considered as a separate activity from production, in which farmers and exporters were distinguished as the key actors. For potentially exported products two sub-chains were established between harvest and the Heat Treatment (HT) facility: (i) where “exporters” harvest, pre-grade and transport to the HT facility (ii) where farmers harvest, grade/box and transport export potential product to the HT plant, and other grades/surplus to domestic market outlets.

Questions raised included: who were the “exporters” who vertically integrated the chain from harvest to HT?; why has this practice (and indeed export of the product) stopped? What are the volumes/shares going to the different market outlets?

- (2) Grading, Quarantine, Standards certification and packing all take place at the HT location.

The issue was raised that the HT plant is of limited capacity. Alternatives technologies may include chilling? How could a policy/institutional environment be created in which there is coordinated investment along the chain? Is there sufficient volume to ensure investment in increased capacity is viable?

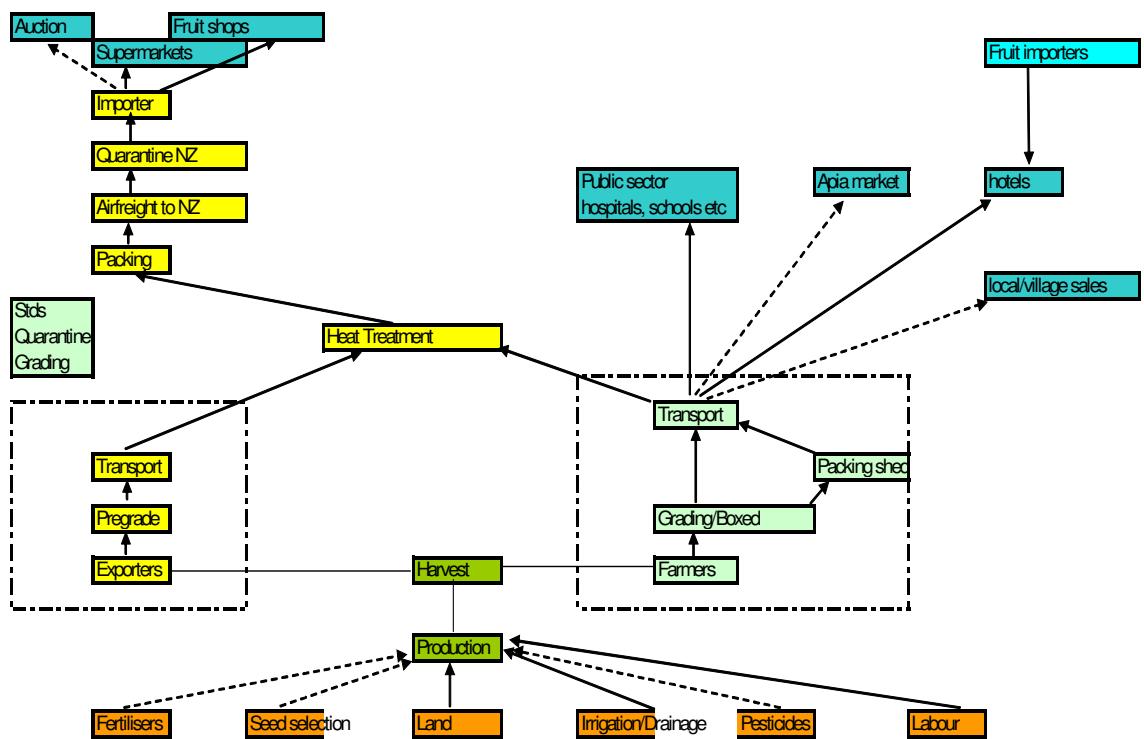
- (3) In the export market (only New Zealand) most product goes to auction rather than under contract to supermarkets/other shops.

It was thought necessary to understand the processes by which product is distributed within the export market and the relationships between exporters, importers and final outlets.

- (4) On the higher income/tourism segment of the domestic market, papaya competes with imported, mainly temperate fruits (apples, oranges etc).

A series of issues were discussed, including the perceived demand of tourists, the types of contractual relationships entered into by hotels etc, including their requirements, “penalties” for non-delivery etc

Map of the Samoan Papaya value chain



Information needs

On the basis of the mapped chain, information that would be needed to analyse constraints and options for their alleviation, and to answer questions such as those posed above, were identified.

1. Questionnaire survey of production and harvest level
Many of the identified information needs relate to sub-section of the chain from input procurement to harvest (see list below). Although the 2005 Census would provide some of the required data, much of the required detail is not included. It was agreed that a questionnaire survey of a randomly selected set of papaya producers would be appropriate approach to collecting this type of information. To select a random sample would require a listing of producers growing papaya as a sample frame (The 2005 Census could be used but recognising that a number of producers may have moved in or out of production).
2. Study of market potentials
An assessment of the potential and characteristics of different market outlets of export quality papaya would be required. This would cover both regional and international markets (also outside NZ) and cover both fresh fruit and processed product types
3. Study of potential for value added (canning, drying etc).
It was noted that markets for fresh fruit (given distances, logistics involved) may be limited and that processed papaya products may have more extensive market potential

(from point 2). A Cost Benefit analysis/ financial analysis (using info from points 1 and 2 above) would be appropriate.

4. Assessment of vertical integration of exporter activities (harvest – packing).

To answer questions above regarding the difficulties in sustaining this sub-chain (to understand the relative merits of vertical integration for quality control, consistency of supply etc), why it failed, prospects for restarting. The use of semi-structured survey/focus group approach would be one option for collecting require information for this assessment

5. Semi structured survey of Importers

It was noted that there is incomplete information on the network of importers in New Zealand, their activities, chains, types of contractual relationships used etc. A particular constraint identified was the difficulty faced by papaya importers in NZ of maintaining adequate cash flow. It was suggested that a semi structured survey to determine the types of importer and of the problems faced may be appropriate.

6. Local market assessment

There is incomplete information on the volumes of papaya entering the various market outlets and on the prices paid/received for the product. It was suggested that use of secondary information (volumes and prices) and direct market observation may be sufficient to obtain such information. Alternatively, a set of questions could be included in the producer survey.

Suggested information to be collected through a Producer survey

The information below is thought not to be available through the census or other secondary information on a systematic basis. The identified information needs and initial discussion as to what to ask summarised below are indicative. Decisions would be needed on how to construct the questionnaire (perhaps using the INEA methodology as a basis), how to phrase the questions, questions surplus to requirements etc

(i) Input supply

Fertilisers

Use of organic fertiliser

Use of inorganic fertiliser

Seed selection

Awareness of disease prevalence

Varieties used

Where/how sourced imported, locally procured, own seed

Land

Existing area under papaya

Access to additional suitable land (areas and procedures)

(Ownership thought not to be an issue)

Irrigation/Drainage

Used?

What practice?
Constraints?
Assistance?

Pesticides

Use?

Type?

Labour:

Access to
Cost per day
Quantity used

(ii) Production

Number of trees

(note recommended spacing of 3m*3m gives 1100/ha)
question could relate to spacing relative to recommendation

Practice – (tick/order)

Culling
Pruning/thinning
Weeding
Fertiliser application
Irrigation
Monoculture/intercrop (what with/ symbiotic?)

(iii) Harvest

Number of baskets
Number of crates (export)
Who harvests?

Graded (y/n)

if yes % export; % non export

Boxed (y/n)

Packing shed used (y/n)

(iv) Transport

How transported and by whom
Distance
Costs

It may also be possible to identify question sets to collect information to volumes marketed by segment, prices received etc as an alternative to the market assessment and/or to triangulate this information.