

# Sampling and Data Collection Methods for Rapid Appraisal of Value Chains

*There is method in the madness!*



# Learning Outcomes

By the end of this session, you should have a good understanding of:

- How to design a rapid value chain appraisal
- Data collection methods, tools and strategies



# Structure of the Presentation

1. Team Size and Composition
2. Data Collection Methods
3. Sampling
4. Data Validation / Interpretation





# I. Team Size and Composition



- Research teams should be small (2-4 people)
- Team members should have complementary knowledge and skills
  - ⇒ Technical (agronomy, post-harvest, processing...)
  - ⇒ Economics (agricultural economics, socio-economics, sub-sector analysis)
  - ⇒ Business and marketing
  - ⇒ Interviewing skills





## II. Data Collection Methods





# Common Data Collection Methods in Rapid Value Chain Appraisals

Review of  
secondary  
data

Focus group  
discussions  
with farmers

Structured  
farmer  
questionnaires

Individual, semi-structured interviews with  
knowledgeable observers, chain participants  
and support service providers

Direct  
observation



# 1. Review of Secondary Data

- ❑ Draws on existing statistics, academic papers, surveys, studies, reports and other grey literature
- ❑ Cost-effective way of accessing *quantitative* and *qualitative* data
- ❑ Scope for further analysis!
- ❑ Provides an understanding of research and data gaps
- ❑ Should inform the design of primary surveys
  - ⇒ Address gaps in secondary data
  - ⇒ Validation of secondary data





## 2. Focus Group Discussions w/ Farmers

Informal and open discussion around key research issues with a small group of farmers from one village or a cluster of villages, conducted by one or two trained moderators with the assistance of a checklist or script



## some observations about FGD...

- ❑ Cost-effective way of learning about *local* production systems and *local* marketing systems
- ❑ No. of FGD depends on geographical coverage and heterogeneity in farming and marketing systems
- ❑ No. of participants per FGD: 5 to 7 is ideal!
- ❑ Group composition matters!
- ❑ Encourage different perspectives and viewpoints: avoid dominant voices and group thinking!
- ❑ Be aware of participants' tendency to try to please researchers with their answers!
- ❑ Be aware of social desirability bias!



# facilitating focus group discussions with farmers...





### 3. Structured farmer questionnaires

- ❑ Most common purpose is collection of farm cost and farm revenue data for different types of farmers
- ❑ Sample of farmers is small
- ❑ Consequently, data only has illustrative power: it provides an indication of orders of magnitude, but should not be presented as representative estimates



collecting gross margin data from farmers...



## 4. Semi-structured, Key Informant Interviews

*Semi-structured interviews* consist of discussions with key informants based on a set of pre-determined questions or issues, i.e. a **checklist**, but with a flexible format that allows for in-depth investigation of issues as they arise during the interview  
(who, what, when, where, how, why)





# Key Informant Categories

## Chain Participants and Service Providers

- ✓ Input suppliers
- ✓ Farmers
- ✓ Collectors
- ✓ Assembly traders
- ✓ Wholesalers
- ✓ Retailers
- ✓ Processors
- ✓ Importers and exporters
- ✓ Transporters
- ✓ Other service providers

## Knowledgeable Observers

- ✓ Academics / researchers
- ✓ Government officers
- ✓ NGO staff
- ✓ Donor staff
- ✓ (...)



# *farmers as key informants*

## **Advantages**

- a. Knowledge of input sources, seasonal patterns, production technologies and practices, prices, and marketed surplus in *their own area*.
- b. Knowledge of production and marketing constraints faced by producers in a *given area*.

## **Disadvantages**

- a. Limited understanding of wider marketing systems
- b. Limited knowledge of marketing opportunities.



## *collectors*

### **Advantages**

- a. Detailed knowledge of exchange arrangements with producers and assembly traders or wholesalers.
- b. Knowledge of production and prices in particular areas.
- c. May have some knowledge of marketing opportunities.

### **Disadvantages**

- a. Knowledge rarely extends beyond relatively small geographical areas.





# *wholesalers*

## **Advantages**

- a. Broad, systemic perspective of marketing systems (bird's eye view).
- b. Knowledge of production, product flows, prices, and demand in different rural and urban areas.
- c. Good understanding of marketing constraints.

## **Disadvantages**

- a. Extremely busy and often difficult to interview for more than a short period.
- b. May be uncooperative informants for fear that the information provided may be disclosed to government officials or competitors.



# *retailers*

## **Advantages**

- a. May have better knowledge of consumer behavior and preferences than most other market participants
- b. Knowledge of wholesaler-retailer exchange arrangements

## **Disadvantages**

- a. In many countries small retailers are relatively homogeneous, conservative, and lack a system-wide perspective.



# *importers / exporters*

## **Advantages**

- a. Knowledge of magnitude, timing and prices of imports and exports.
- b. Detailed understanding of import and export practices, procedures and regulations.
- c. Some knowledge of wholesale and retail distribution systems.
- d. Good understanding of the potential and constraints for success in export markets.

## **Disadvantages**

- a. May know little about how commodities are assembled for export, or how they are distributed after importation.
- b. May be unwilling to report export/import volumes and prices if involved in smuggling or under-invoicing.
- c. May be unwilling to share business practices if informal payments were made to obtain export / import rights.





## *processors*

### **Advantages**

- a. Have a broad perspective of marketing systems.
- b. Knowledge of production and prices in selected rural areas, and the demand for processed products in urban markets.
- c. Detailed knowledge of marketing arrangements and risk-sharing mechanisms with suppliers of raw materials and buyers of processed commodities.

### **Disadvantages**

- a. May be uncooperative respondents due to fear that the information provided might be disclosed to government officials or competitors.
- b. May under-report production in order to evade taxation.



# *transporters*

## **Advantages**

- a. Knowledge of direction and magnitude of product flows.
- b. Familiar with the structure of commodity trade. Can often identify large-volume traders and processors.
- c. Can provide transportation cost data (transportation costs are often a significant proportion of total marketing costs).

## **Disadvantages**

- a. Do not actually participate in trade, so may lack knowledge of trading practices and commodity prices.



## *input manufacturers and distributors*

### **Advantages**

- a. Knowledge of input demand in different regions.
- b. Knowledge of input supply, flows, and prices at the wholesale and retail level.

### **Disadvantages**

- a. Suppliers who adulterate inputs may be uncooperative informants.
- b. Often lack critical knowledge about marketing systems for agricultural commodities.



## *extension staff*

### **Advantages**

- a. Knowledge of local farms (size, distribution, production technologies, etc).
- b. Familiar with local production and marketing practices.
- c. May have information about marketing arrangements between farmers, input suppliers and buyers.
- d. May have an understanding of production and marketing constraints in the local area.

### **Disadvantages**

- a. Knowledge rarely extends beyond relatively small geographical areas.





## *government officers*

### **Advantages**

- a. Can provide an understanding of government priorities, strategies, and policies for the development of specific commodity sub-sectors and chains.
- b. May have an historical perspective of the commodity sub-sector / chain.

### **Disadvantages**

- a. Often lack detailed knowledge of agricultural chains.
- b. May hold pre-conceived ideas of the constraints affecting the chain and the solutions required to address them.



## *academics and researchers*

### **Advantages**

- a. Knowledge of literature and secondary data sources, and their reliability.
- b. May have a good understanding of marketing systems and conceptual issues.

### **Disadvantages**

- a. May lack detailed knowledge of the business objectives, practices, and problems of participants at different stages of the marketing system.



## some ground rules for preparation of checklists

- ❑ *Key informant-specific* ⇔ reflect the position and function of the key informant within the marketing system
- ❑ Cover *key research issues*
- ❑ Focus on the activity of the market participants being interviewed, as well as their knowledge of production and marketing systems and other market actors
- ❑ List of questions and issues should have a *logical sequence*
- ❑ Checklists may need to be revised during the fieldwork



## Discussion

Please spend 5 minutes reviewing 3 checklists used in interviews with tomato chain participants in Indonesia.

What do you like and what don't you like about these checklists?





## Interaction w/ key informants prior to and at the start of the interview

- ☐ Inform key informants about the purposes of the research and the organizations involved
- ☐ Provide assurances regarding the purposes of the information collected and its confidentiality

## tips for interviewers (1)

- ☐ Adopt a friendly, relaxed attitude
- ☐ Ask simple, direct questions
- ☐ Use questions that start by “who, what, when, where, how, why”
- ☐ Avoid influencing replies
- ☐ Make the informant feel s/he is the expert
- ☐ Do not repeatedly interrupt the informant

## tips for interviewers (2)

- ☐ Use silence to encourage the informant to speak
- ☐ Ask for clarification when needed
- ☐ Paraphrase statements from key informants to make sure that their message has been clearly understood
- ☐ Question your informants when you are unsure about the accuracy of the information provided (e.g. give examples of different information or views from other informants)
- ☐ Give an opportunity for the informant to also ask questions (at the beginning, during, after the interview)

## tips for interviewers (3)

- ❑ Leave sensitive questions for last
- ❑ At the end of the interview, ask key informants for their telephone and e-mail contact for possible follow-up
- ❑ Avoid very long interviews, unless the key informant is happy to continue the conversation (market participants are busy!)



interviewing market participants...



## Discussion

Let's revisit the photos in the previous slide...

What important messages do they convey about interviewing?

## 5. Direct Observation

- ❑ Not to be confused with participant observation!
- ❑ Observation provides opportunities to document activities, behavior and physical aspects without having to depend on people's willingness or ability to respond to questions.

## Question

What can be learned from simple observation during visits to input retail outlets, farms, crop collection centers, trader facilities, markets, processing enterprises, retail outlets...?

- ⇒ scale of farm and other enterprises
- ⇒ technologies employed
- ⇒ marketing functions performed
- ⇒ quality management systems and product quality
- ⇒ inventories
- ⇒ marketing strategies
- ⇒ prices
- ⇒ gender division of labor
- ⇒ (...)



What information is being collected through observation?





## Question

When collecting primary value chain data should we follow the chain upstream or downstream?

Starting a value chain  
survey in *terminal markets*

when there is no particular  
geographical focus...

Starting a value chain  
survey in *production areas*

when there is a focus on  
particular geographical areas,  
say certain provinces or  
districts...

**NOTE:**

Even when focusing on particular geographical areas,  
it is important to gather information on competing  
production areas for benchmarking

### III. Sampling



# sample design is critical!

Choice of study sites

Selection of key informant categories

No. of interviews per key informant category

# Choice of Study Sites

1. “Target” production areas
2. Other important production areas for benchmarking
3. Key product assembly centers
4. Key product wholesaling centers
5. Key terminal consumption markets
6. Export and import points (ports, border posts)

# Sample Size?

- ❑ Minimum of 3-5 interviews at each stage of the chain
- ❑ At each point in the chain, the more heterogeneous the “population” the larger the number of interviews required
- ❑ Sample composition and size should be adjusted (fine-tuned) during the fieldwork
- ❑ Indication of right sample size: research team starts to gather a set of consistent responses from the same category of key informants



## Sample procedure: How to select key informants?

- ❑ Identify *key formal enterprises* for inclusion in the sample
- ❑ For other market actors, a combination of *snowball sampling* and *purposive random sampling* methods can be applied
- ❑ Sample should cover the *different types of enterprises*
  - ✓ Poor and wealthier farmers
  - ✓ Informal and formal traders
  - ✓ Small and large processors
  - ✓ Traditional and modern retailers
  - ✓ (...)

# Sample in a study of the mango value chain in East Java

	Input suppliers	FGD	Prod.	Traders	Retail	Proc.	Research	Govt.	Total
Jakarta	1			4	2			1	8
Bogor							1		1
West Java									
Bandung				2		1			3
Cirebon	1		1	3		1			6
Central Java									
Pemalang	1	1	2	1					6
East Java									
Situbondo	2	3	5	5		1	1	1	18
Probollingo	1	1	4	3		2		1	12
Surabaya				7	6				13
Malang				1					1
NTB									
Mataram	1			4	2		3	1	12
N. Lombok	5	2	8	4			1		20
Total	12	7	19	34	10	5	6	4	99

# Sample in a study of the aquaculture chain in Myanmar

Upstream	#	Midstream	#	Downstream	#	Other	#
Nursery	23	Fish farm	87	Fish trader	35	Capture fish trader	4
Feed trader	19	Mechanic services	5	Transport services	10	Local official	3
Hatchery	14	Transport services	3	Market manager/worker	5	Government official	2
Seed trader	6	Worker	3	Other ancillary services	2	Landless household	1
Ice manufacturer	5	Labor broker	2	Fish processor (small)	2		
Rice mill	5	Other ancillary services	1				
Other ancillary services	4						
Ice trader	3						
Transport services	3						
Feed mill	3						
Chemical supplier	1						
Total	86		101		54		10
Grand total	251						

***Table 1 Summary of interviews, by value chain segment, actor type and number of interviews conducted***

# How to approach key informants?

- ☐ Letter
- ☐ E-mail
- ☐ Telephone
- ☐ Prior visit
- ☐ Spot visits

## IV. Data Validation / Interpretation



## Data Triangulation

Method of cross-checking data from multiple sources to search for regularities.

## Methodological Triangulation

Results from different methods (FGD, SI, SSI, direct observation) are compared to identify regularities and inconsistencies.

Careful triangulation is essential to ensure that the data collected is properly interpreted and that the research findings reflect the actual situation, i.e. are reliable / accurate / valid / credible.



## Question

How is data triangulation reflected in the design of a checklist?

Mirror image interviewing

Gather the views of  
different key informants  
about the same issue

prices, grades and  
standards, quality  
management systems,  
contract design, market  
channel, ...

policies and regulations,  
trends, constraints,  
opportunities...