



## Mapping the Value Chain

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Australian Government

Australian Centre for  
International Agricultural Research



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# Overview

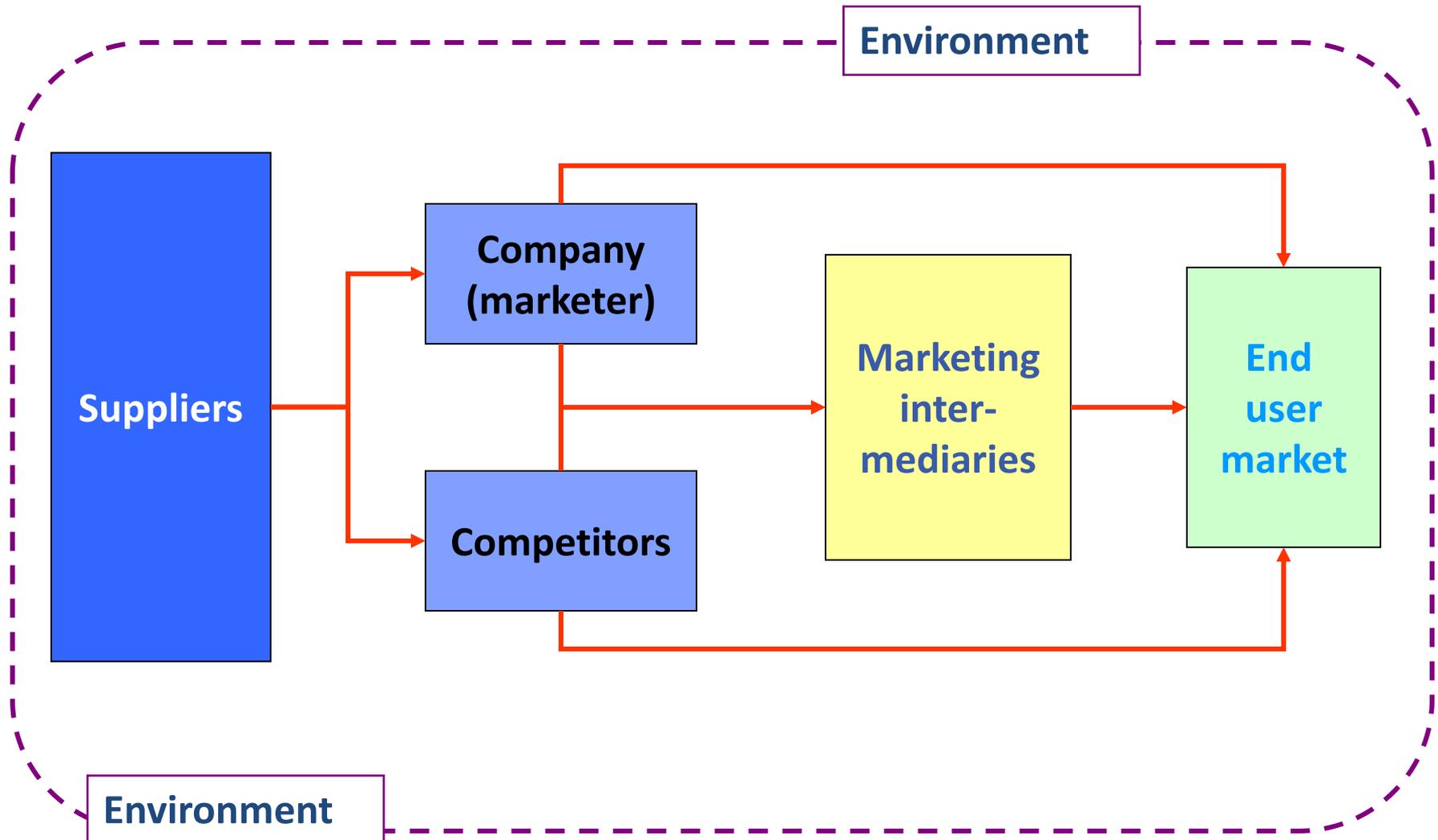
- Gain an understanding of terms and relationships between
  - “markets”
  - “value chains”
  - “mapping value chains”
  - “value chain analysis”
- Highlight value chain mapping techniques
- Examples of mapping techniques

# What is a “Market”

- Set of all actual & potential buyers and sellers of a product
  - Buyers share a particular need or want that can be satisfied through exchange with suppliers.
- Many types of markets:
  - Input markets
  - Labour markets
  - Commodity markets
  - Intermediate and wholesale markets
  - Retail markets, end-consumer markets (e.g. food product markets)
- *Markets interrelate with each other through the exchange process. This can occur on a local, national or even global scale*



# Marketing System



# 2 Components of Markets

- Demand-side: Consumers, Customers, Users of products and services etc.
  - Marketers refer to the demand side as “the market”
    - Utility and Value (marginal utility)
- Supply-side: Producers, traders, wholesalers, processors, retailers
  - Marketers refer to the supply side as “the industry”
    - Production function and Costs (marginal costs)

# Products

- ‘Anything that can be offered to a market for attention, acquisition, use or consumption that might satisfy a want or need.’ (p. 9, Kotler, et al.)
- Includes:
  - physical objects, services, persons, places, organisations and ideas.
- Satisfy consumers’ needs and wants
- Must be demand for product to have “value”
- Vehicles for “need satisfaction”
- Customer must “value”



# Marketing involves

- creating or refining the form, time, place and possession of commodity into a product and increasing its value to the consumer
- Bringing buyers and sellers together
- Establishing prices
- Making products more desirable
- Moving products
- VALUE ADDING

# Customer value

- **Customer Value**

*The difference between the values the customer gains from owning and using a product and the costs of obtaining the product.*

- Often times consumers perceive value differently than the product's actual monetary value.

# **VALUE CHAIN THINKING**

# A Field Guide to Value Chain Studies for BPTP and BBP2TP Staff

How to develop and use value chain studies  
for market focused research

Prepared by: Prof Randy Stringer, Global Food Studies,  
University of Adelaide  
Australian Centre for Agricultural Research (ACIAR)

June 2009





# Making Value Chains Work Better for the Poor

A Toolbook for Practitioners of Value Chain Analysis



# Value Chain Thinking

## What is a food chain?

- A series of organisations that link together to deliver a product or service to a consumer

## Limitations of a traditional supply chain

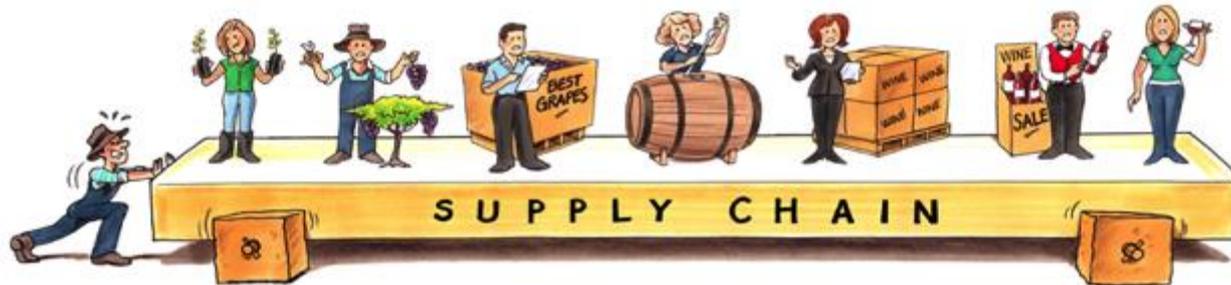
- Each organisation concentrates on their own business and pushes the product onto the next link in the chain

## Advantages of a value chain

- The focus changes from supply push to consumer demand pull. Every organisation works together to produce what the final consumer wants.

# Value Chain Thinking

## Traditional supply push



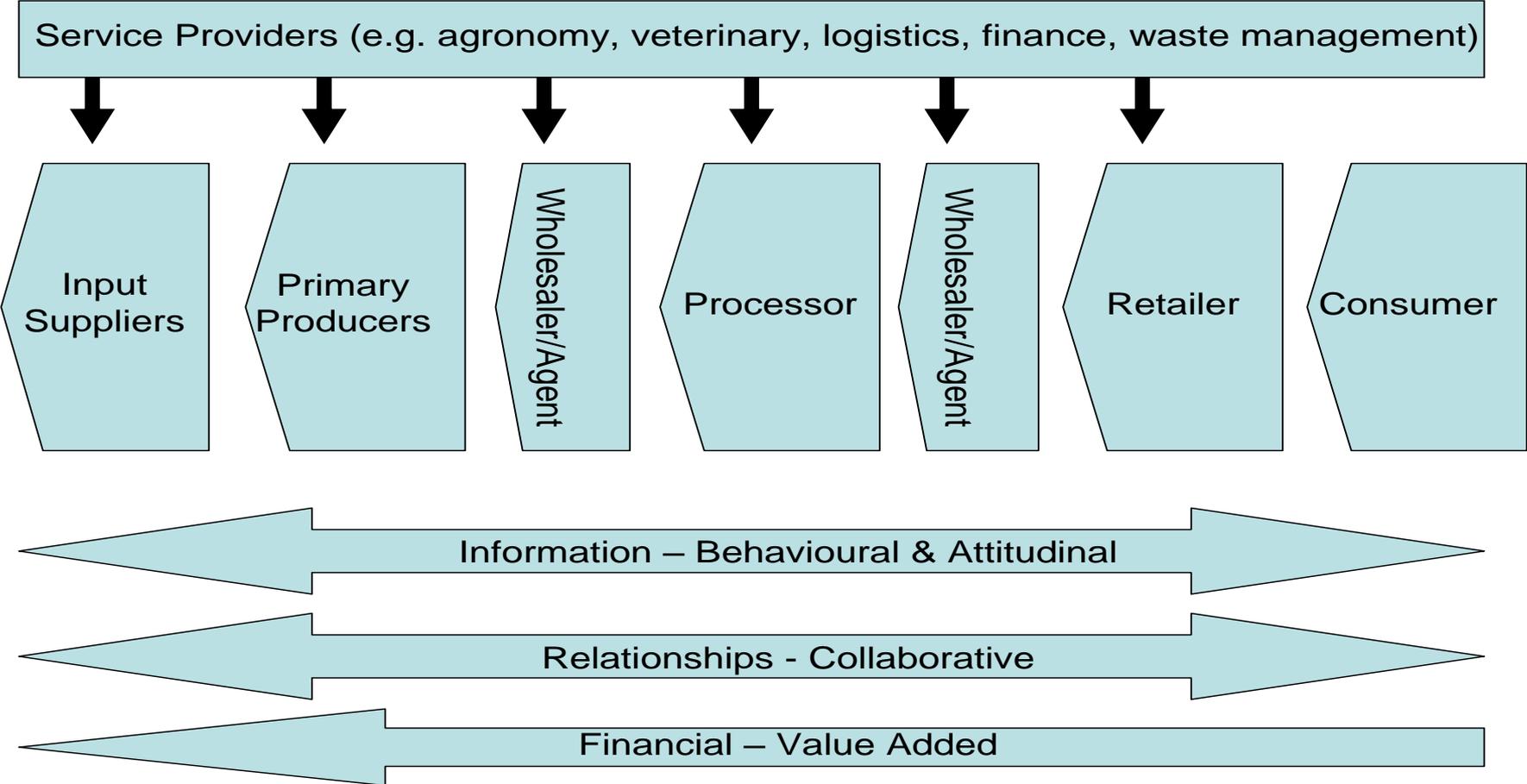
Traditional supply chain - supply push

## Value chain demand pull



Sustainable value chain - consumer demand pull

# Food Value Chain

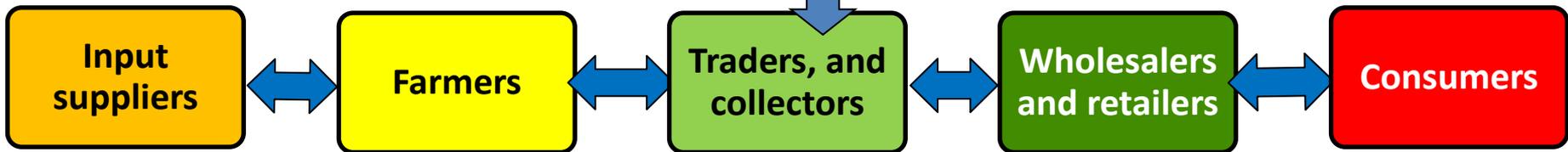


# Value Chains vs Supply Chains

## Supply chains



**Supply side push**



## Value chains

**Market demand pull**

**Knowledge, information, innovation, power, efficiency, value**

# A Value Chain Approach

- Examination of interactions between different actors (firms) in the chain and influencing the chain
  - Descriptive
  - Analytical
- Different methods
- “Right” or “Best” depends on
  - What questions you want answered
  - Budget (financial and time) available

# Overview of Value Chain Analysis (VCA)

- VCA normally focuses on a very specific chain
- Product is followed through (mapped) each step in an existing chain to the final consumer
- Mapping can involve determining
  - Product Flow
  - Information Flow
  - Relationships
- Used as a diagnostic tool to identify collaborative implementation projects that can benefit the whole chain

# Value Chain Analysis

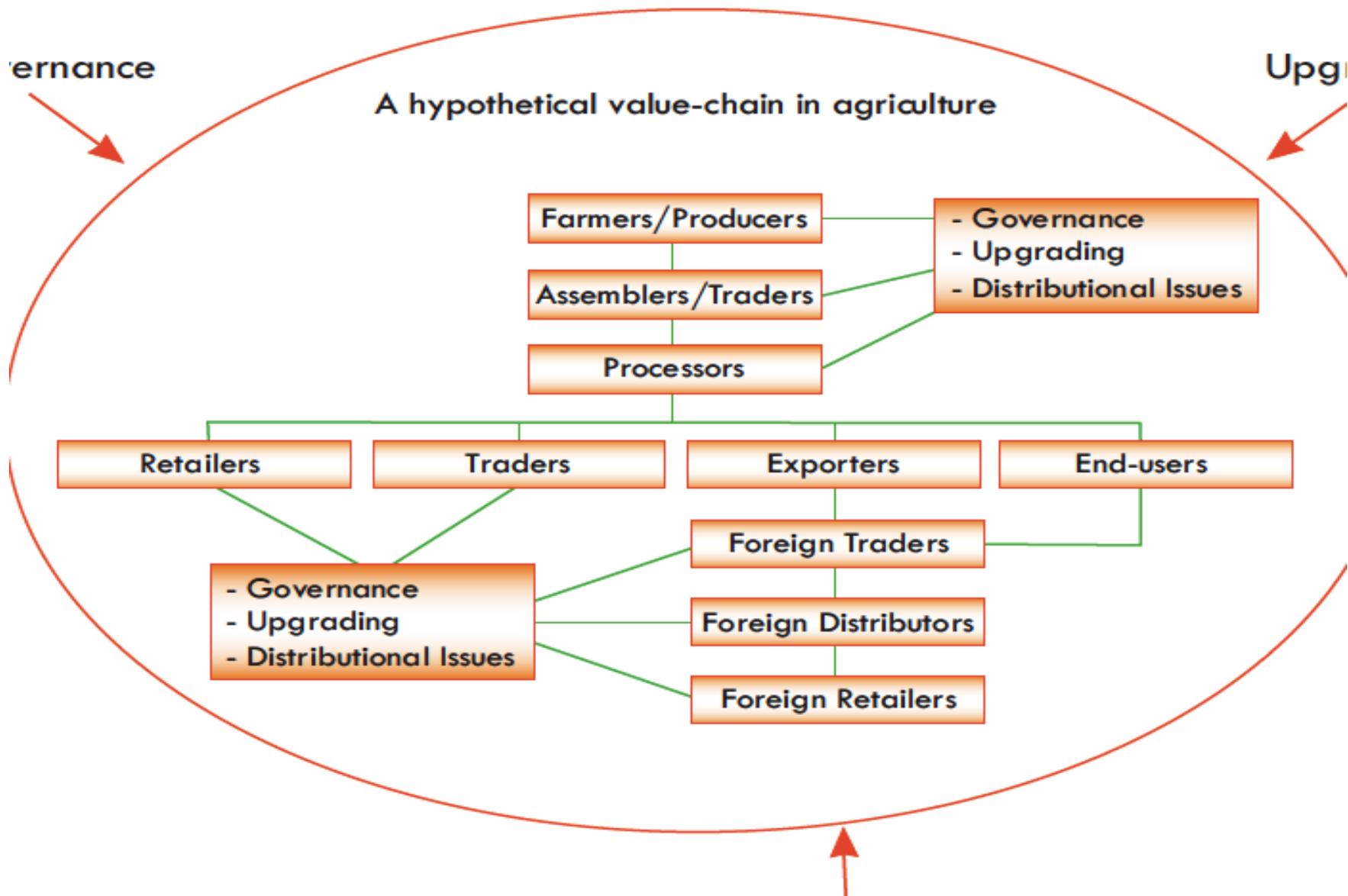
What does a VC study include?	What key criteria must be applied?
<ul style="list-style-type: none"> <li><input type="checkbox"/> Costs along the chain</li> <li><input type="checkbox"/> Where is most value added?</li> <li><input type="checkbox"/> Importance of different actors / governance structure (who decides on what, how and when has to be done); how strong are the different actors and what "drives" the different actors</li> <li><input type="checkbox"/> Institutional framework</li> <li><input type="checkbox"/> Political framework</li> <li><input type="checkbox"/> Identify and analyse bottlenecks</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Growth potential / market potential</li> <li><input type="checkbox"/> Size of sub-sector</li> <li><input type="checkbox"/> Specific target characteristics depending on desires of the client (gender, concerns of equity, etc.)</li> <li><input type="checkbox"/> Potential for rural income generation</li> <li><input type="checkbox"/> Potential for poverty reduction</li> <li><input type="checkbox"/> Potential for return on investment / effort-impact ratio</li> <li><input type="checkbox"/> Synergies with other initiatives</li> <li><input type="checkbox"/> Potential for upgrading / expanding</li> </ul>
Sources of information	Available Tools
<ul style="list-style-type: none"> <li><input type="checkbox"/> Interviews with key chain actors</li> <li><input type="checkbox"/> Literature review</li> <li><input type="checkbox"/> Statistical reviews</li> <li><input type="checkbox"/> Governmental offices</li> <li><input type="checkbox"/> Associations</li> <li><input type="checkbox"/> International sources of market information</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mapping: economic mapping / mapping of the functions of actors / mapping of performance and added value at each stage</li> <li><input type="checkbox"/> Trend analysis</li> <li><input type="checkbox"/> Competitiveness analysis</li> <li><input type="checkbox"/> Rapid Market Appraisals (RMA)</li> </ul>

Source Roduner 2007.

# Objectives of Mapping Value Chain

- Part of value chain analysis
- Overview of the value chain
- Identify constraints or blockages in chain
- Understand role of poor or targeted actors in the chain
- Visualize networks and relationships
- Understand structure
- Create awareness of all actors, markets and factors (e.g. infrastructure, policies, processes) affecting the performance of the value chain





# Key Questions Addressed (1)

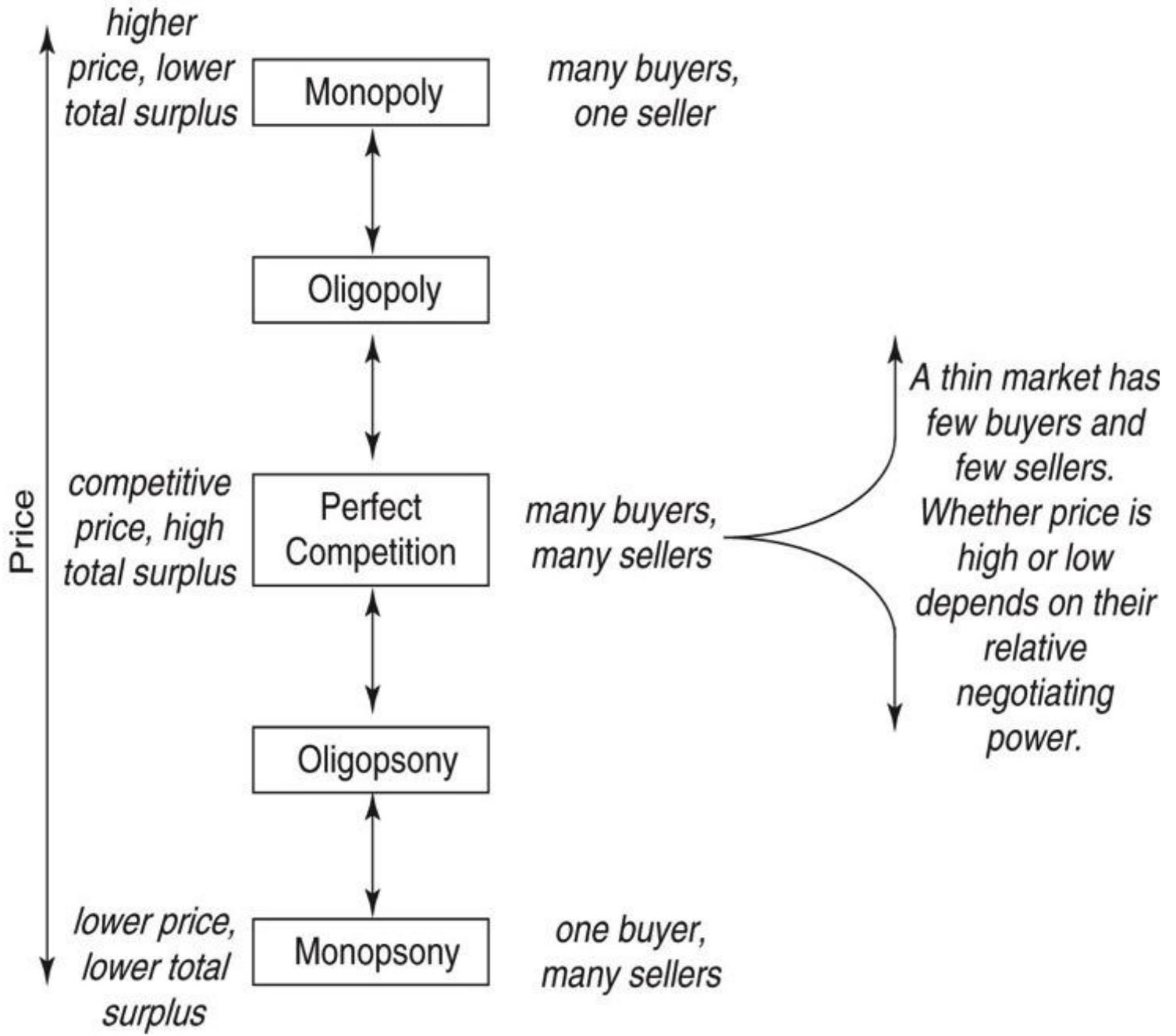
- Who are the main actors and how many of each type are there?
- What are the main activities and processes required
  - E.g. what does each actor actually do? What is their “value add”?
- How does product flow?
- What is the volume of product handled by each actor or type of actor?
  - Purchased, transformed and sold?
- How do information and knowledge flow?
  - e.g. information about end market, prices, quality, timing, supply
  - Does information flow up the chain from the retailer?
  - Do firms share their market knowledge?

# Key Questions Addressed (2)

- What is the the relative monetary value of the product at each link
- How many people are employed at each link?
  - Socio-economic characteristics
- What type of relationships and linkages exist between the businesses?
  - Strength, length or history
  - Power
- What support services feed into the chain?
- What are the key constraints faced by actors n the chain?
- What external factors are affecting the chain?

# Market Structure and Conduct

- Number of buyers and sellers
- Homogeneity
  - Type, variety, quality and end-use characteristics
- Number of close substitutes
  - More substitutes means buyers are more price sensitive
- Storability or perishability
- Transparency of price formation
  - Open auctions or contracting
- Ease of entry and exit (asset specificity)
- Ease of commodity transfer between buyers and sellers
  - More mobile means more spatial price differences
- Artificial restrictions on market
  - Government, policy, trade, collusion

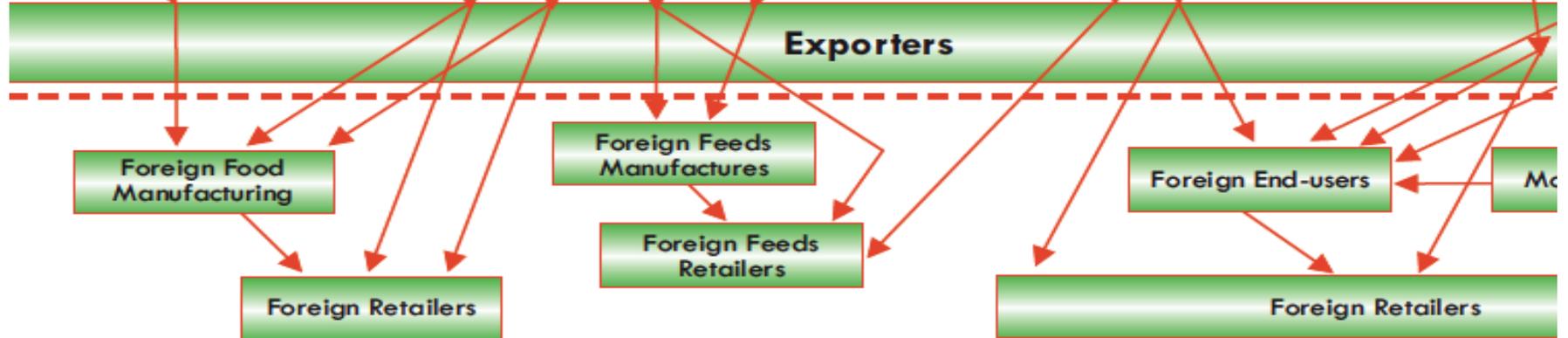
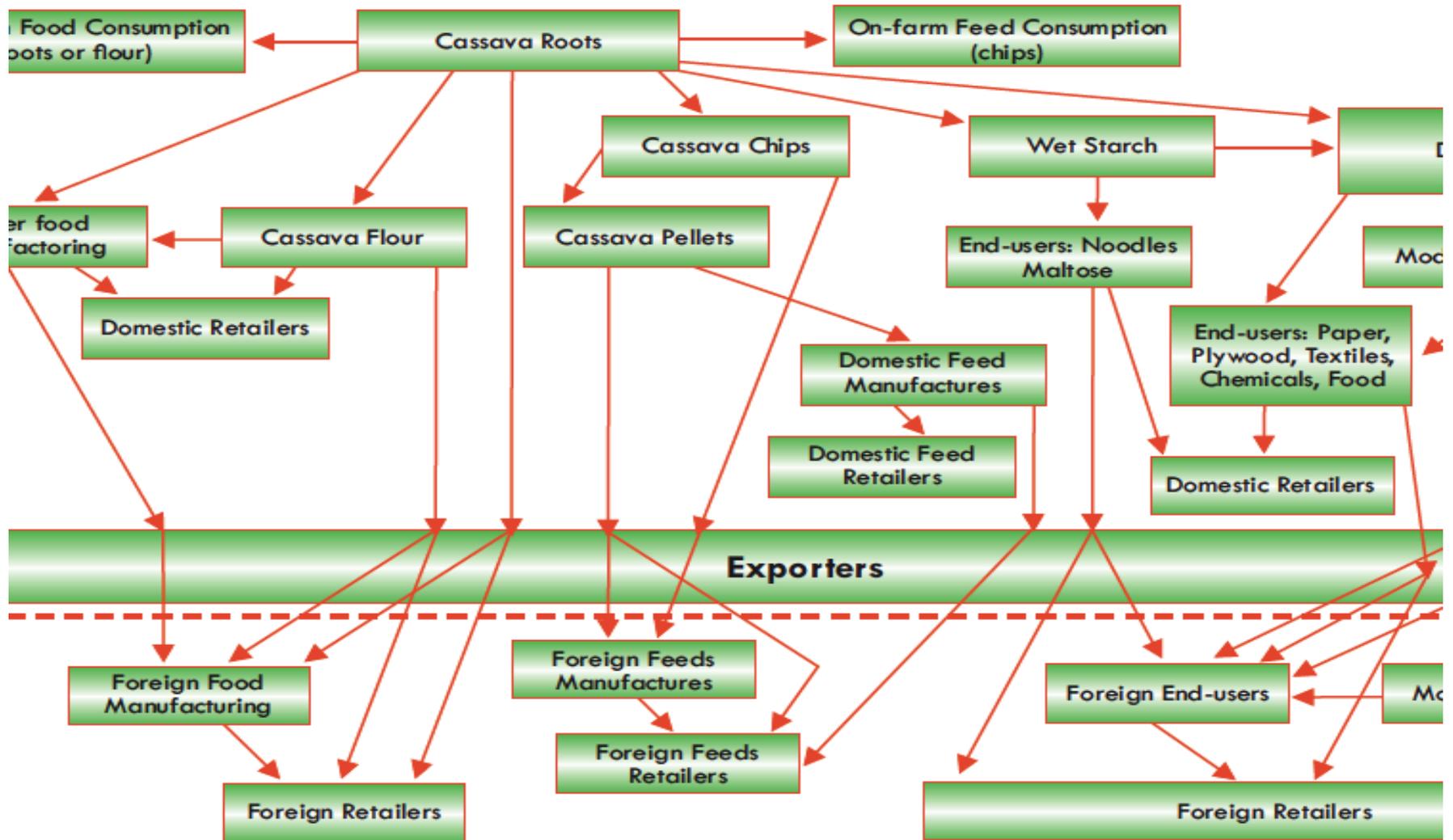


# Food Marketing Environment

- Food market is affected by many different forces
  - sociological
  - government regulations and policy
  - international trade conditions
  - science and technology
  - weather and other conditions affecting harvest conditions
    - Climate change
  - economic cycles
  - competitive conditions
  - media

# **Examples of Value Chain Mapping**

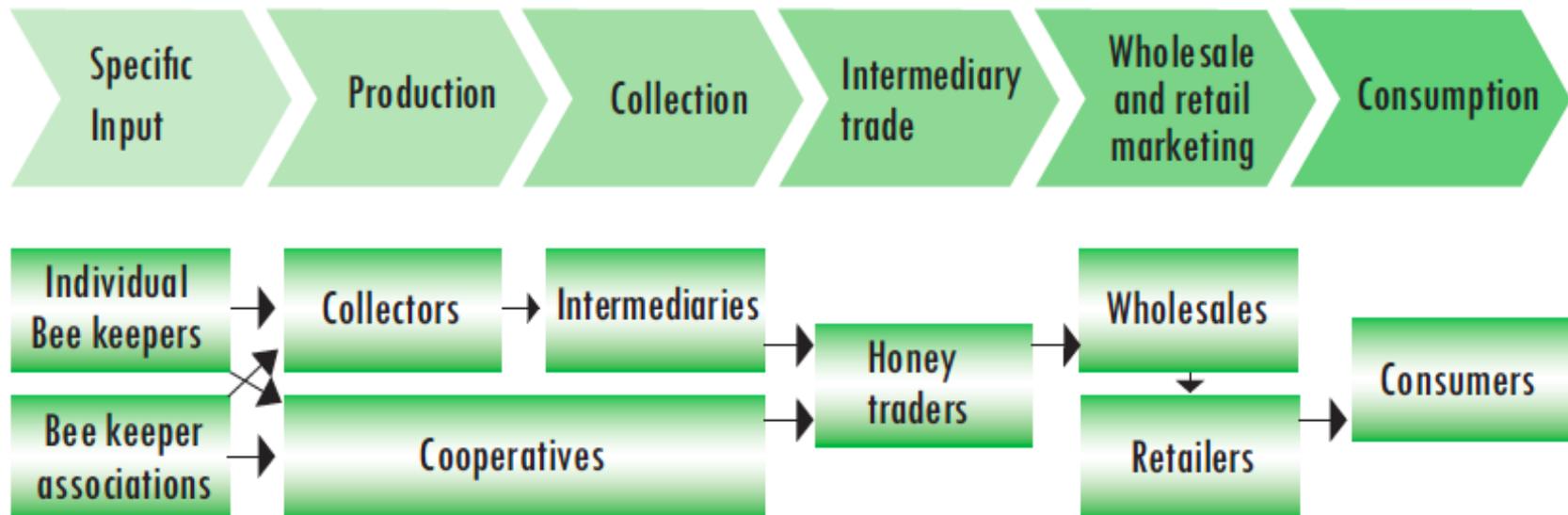
# Example: Mapping of Processes in Cassava VC



# Mapping Actors

## Box 3: Example of mapping actors.

An example of mapping actors comes from the Mexican honey value chain from the Calakmul region to the domestic market. This map categorises actors based on legal status and scale.



Source: A. Springer-Heinze, GTZ, 2005.

# Mapping Activities Undertaken by Actors

**Box 4: Example of mapping of specific activities undertaken by actors from core processes.**

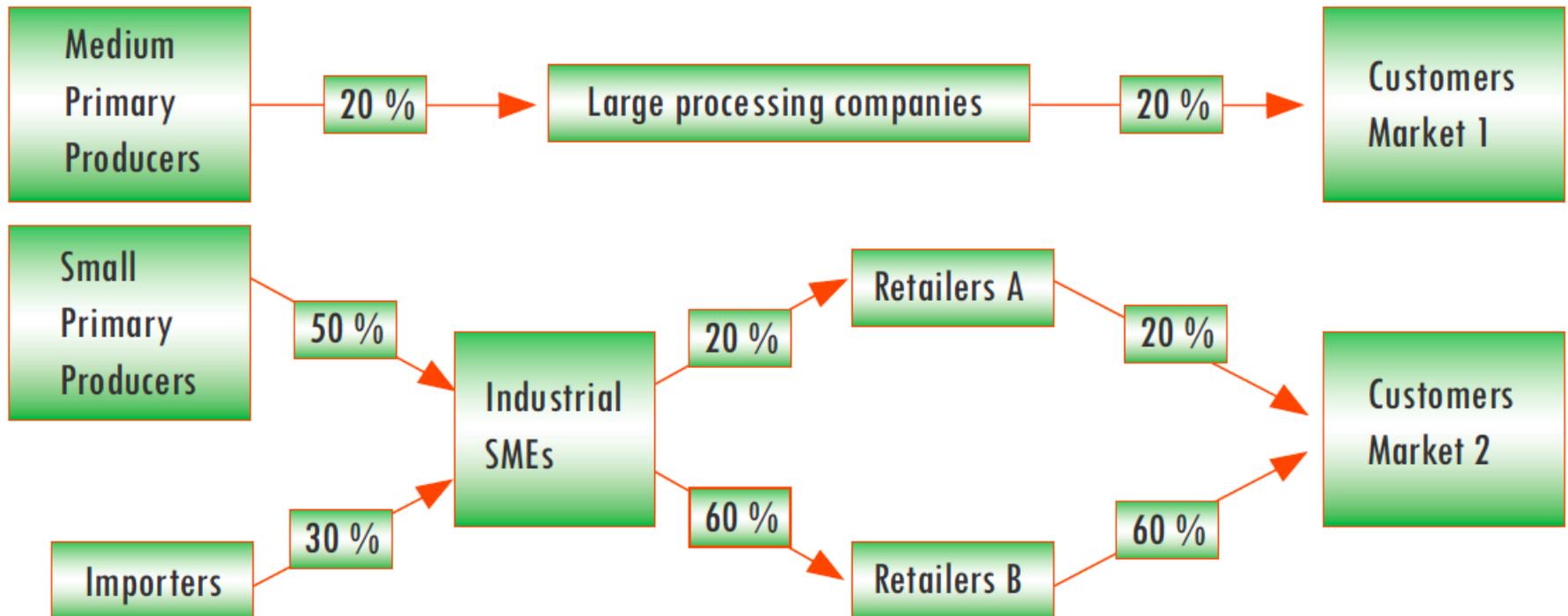
The example of sedge handicraft in Vietnam is used again.



Actors	Cooperatives, Private input suppliers	Sedge farmers	Collectors	Production enterprises	Exporters	Importers	Retailers
Activities		Growing Harvesting Cutting Drying Splitting	Collect Categorize Store Transport	Categorize Dry Weave Mould prevention Storage	Collect Quality control Storage Transport	Quality control Storage Transport	Storage Selling to final consumers

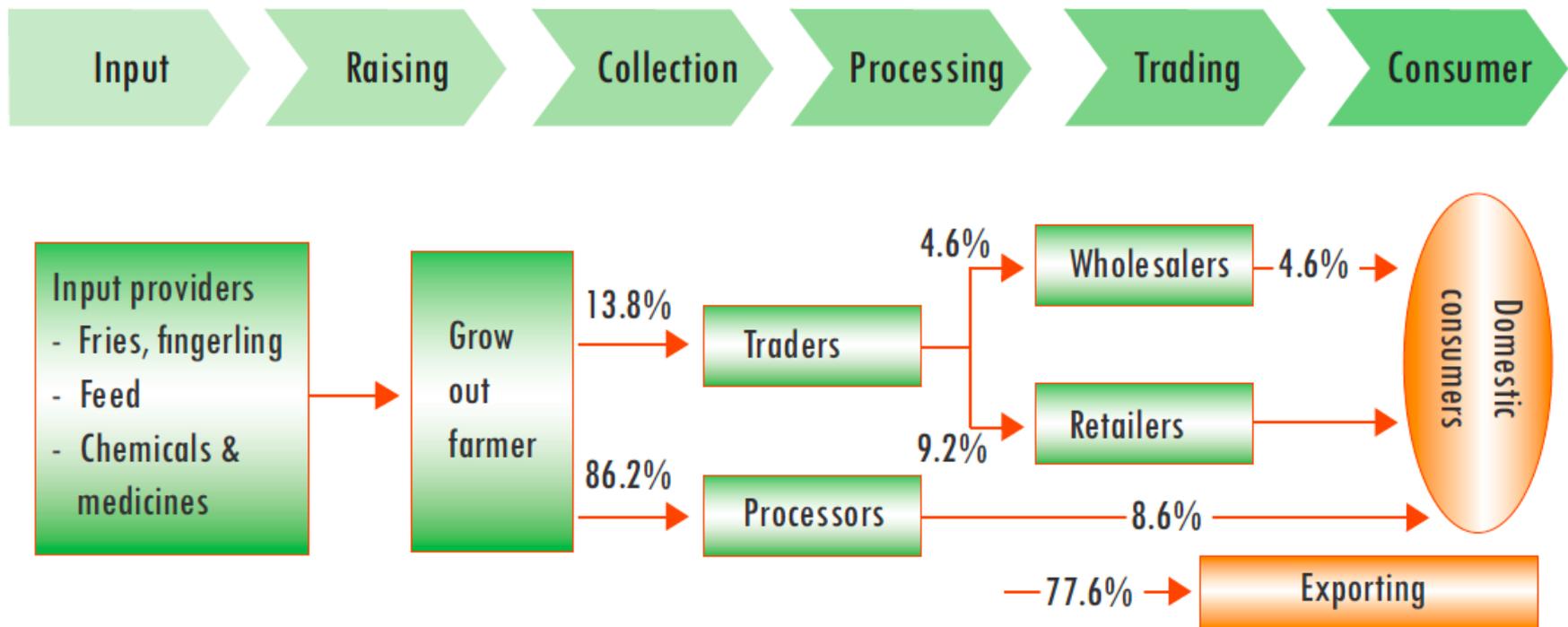
# Mapping Volume by Actors (1)

Box 7: Example of mapping volumes.



# Mapping Volume by Actors (2)

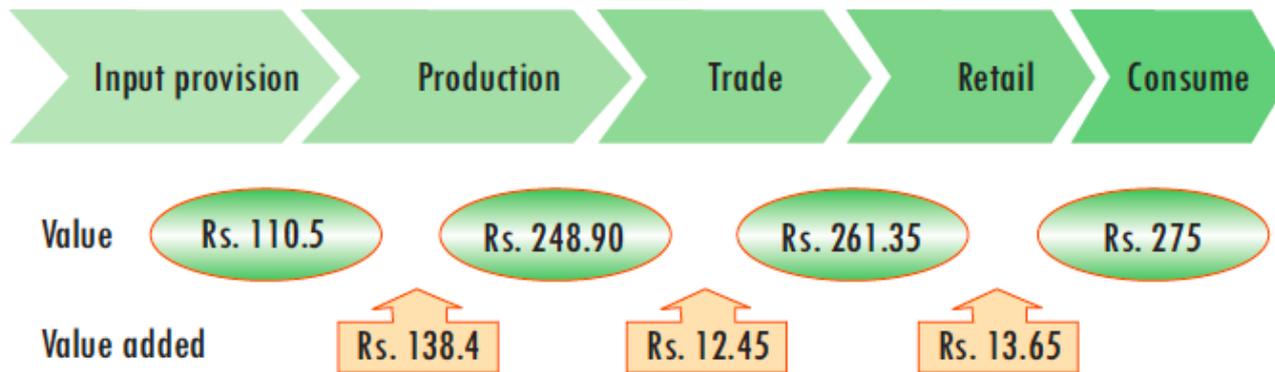
Box 9: An example of volume mapping in the catfish value chain



# Mapping Value Adding

## Box 11: Example of mapping value added throughout the chain.

In India, saris (women's dress) are made with handlooms. The following example is a map of the value chain in this sub-sector. The value is the price in rupees (Rs.) at which the sari is sold to the next actor in the chain.



This example shows that producers (weavers) actually add the most value, both absolutely (Rs. 138.4) and relatively (125% value addition). However, this does not tell us about the profit margin of the producers. To assess that parameter, an analysis of costs needs to be made (see Tool 6 – Analysing Costs and Margins).

*Source: (Padmanand and Patel 2004)*

# Interviews for Mapping

- Aim is to develop a comprehensive picture entire value chain.
- Multiple Stages:
  1. Key Informant Interviews:
    - identifying and meeting key partners and participants in the chain to understand any significant relationships among and between actors.
    - Scoping study
  2. In-depth interviews
    - develop a comprehensive picture of the value chain from the supply of farming inputs, via production, processing, logistics, retailing and finally to consumption.

# Main Interview Questions:

## Procurement

What:	Products & forms of product and volumes purchased
Who:	Number & types of sellers, proportions from each
Where:	Location of suppliers and purchases
How much:	Purchase price and other procurement costs
How much:	Risks (physical loss, theft, price change, etc)
How:	Technology of activity (vehicles, assets, methods)
How:	Degree of coordination or integration with suppliers <ul style="list-style-type: none"><li>» Credit, contracts, info exchange, resource provision, etc.</li><li>» Sources of information about suppliers, search cost</li></ul>
When:	Seasonality and volatility
When:	Changes over past 5 years
Why:	Ask any surprising or interesting information

# Main Interview Questions:

## **Value Adding**

- What: Value added activities & volumes  
» e.g Transportation, storage, sorting, packaging, cleaning, processing
- How much: Composition of costs for each activity
- How much: Risks (physical loss, theft, prices etc.)
- Where: Location of activities
- How: Technology of activity  
» assets, machinery, storage facilities, methods
- When: Seasonality and volatility
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# Main Interview Questions:

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# Main Interview Questions:

## Sales and Marketing

What:	Products & forms of product & volumes
Who:	Numbers and types of buyers, proportion to each
Where:	Location of buyers and sales transaction
How much:	Sale price and costs of marketing activities
How much:	Risks
Where:	Location of activity
How:	Technology of activity
How:	Degree of coordination or integration with buyers » Credit, contracts, info exchange, resource provision, etc. » Source of information about buyers, search cost
When:	Seasonality and volatility
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# Main Interview Questions:

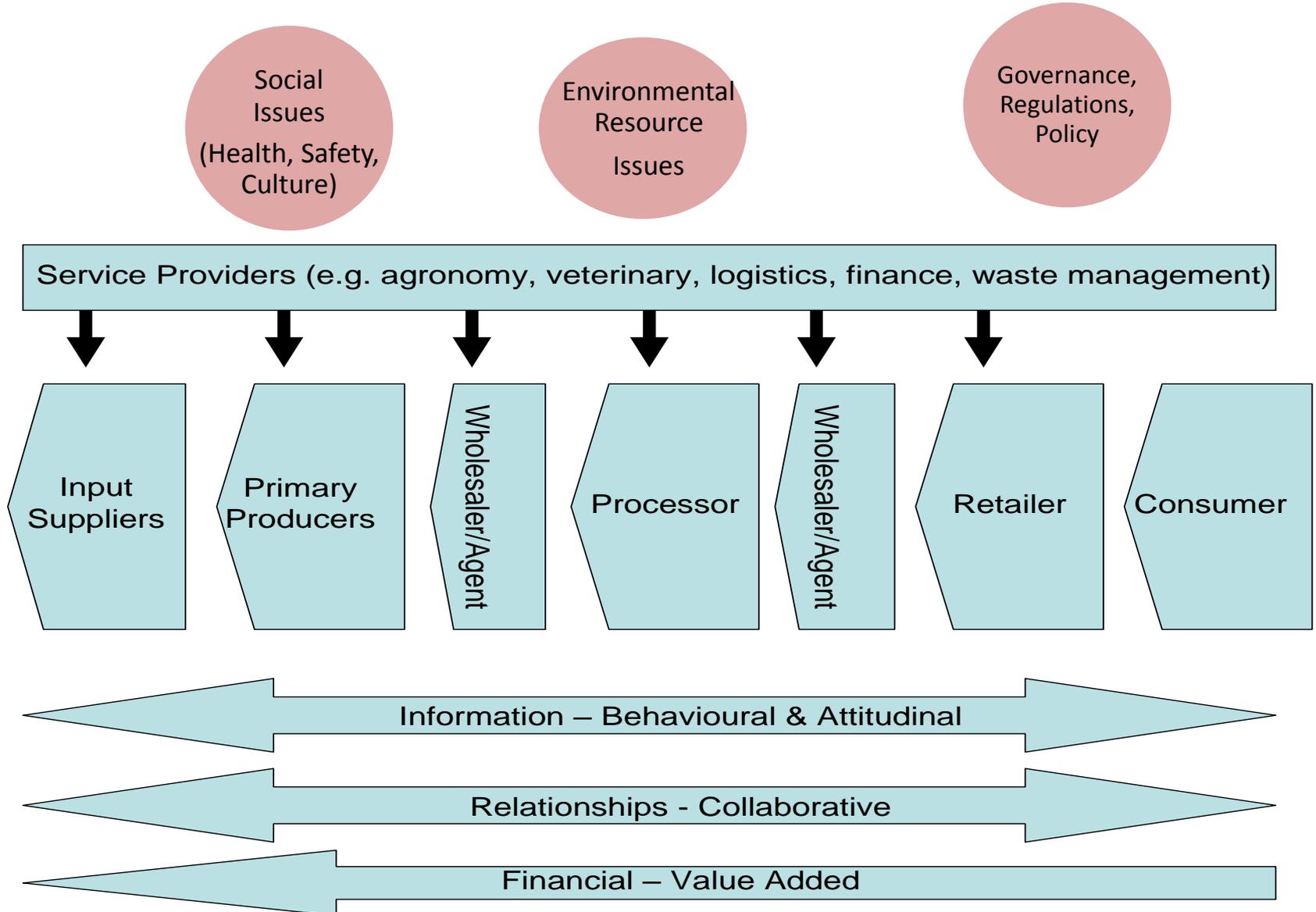
## **Business Environment**

- Who is your main competition?
- How do you compete?
- What external threats do you face?
- How do government policies, programs, and regulations affect you
- What support from government would be useful?

# Thinking About Market Structure

- Number of actors at each stage
- Type of actor (large, medium, small, vertically integrated?)
- Total volume that different actors handle
- Market power, i.e. who has bargaining power
- Has structure changed or is it changing?

# Food Value Chain Research



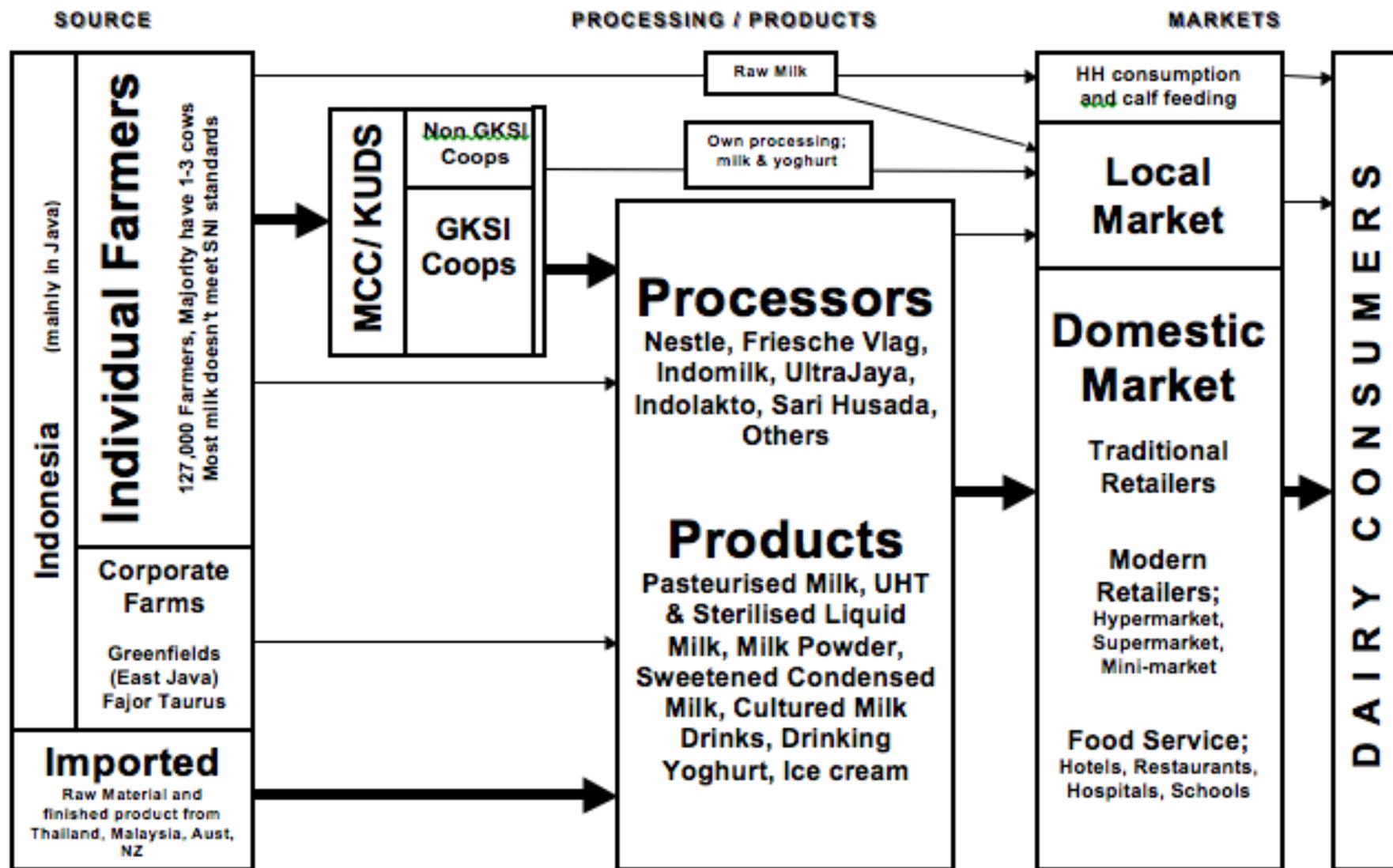
# **Examples of Value Chain Mapping**

**Source:**

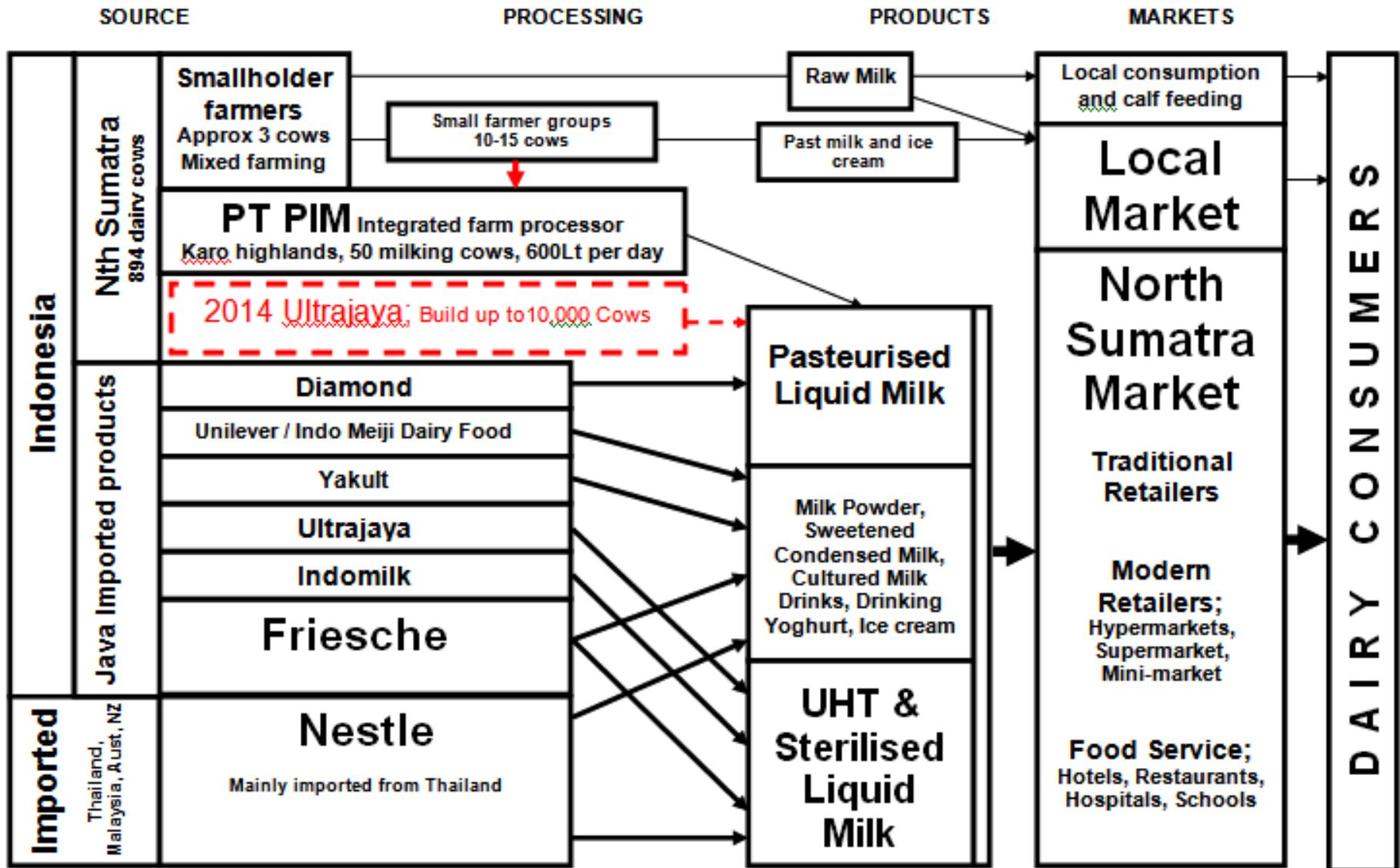
**Craig Johns,**

**University of Adelaide**

# Indonesia Dairy Industry Value Chain Map



# North Sumatra Dairy Industry Value Chain Map



Source: Johns, Craig 2013. "Indo Dairy Trip Report Nth Sumatra / Java"



# **PACIFIC PROJECT CASE STUDY**



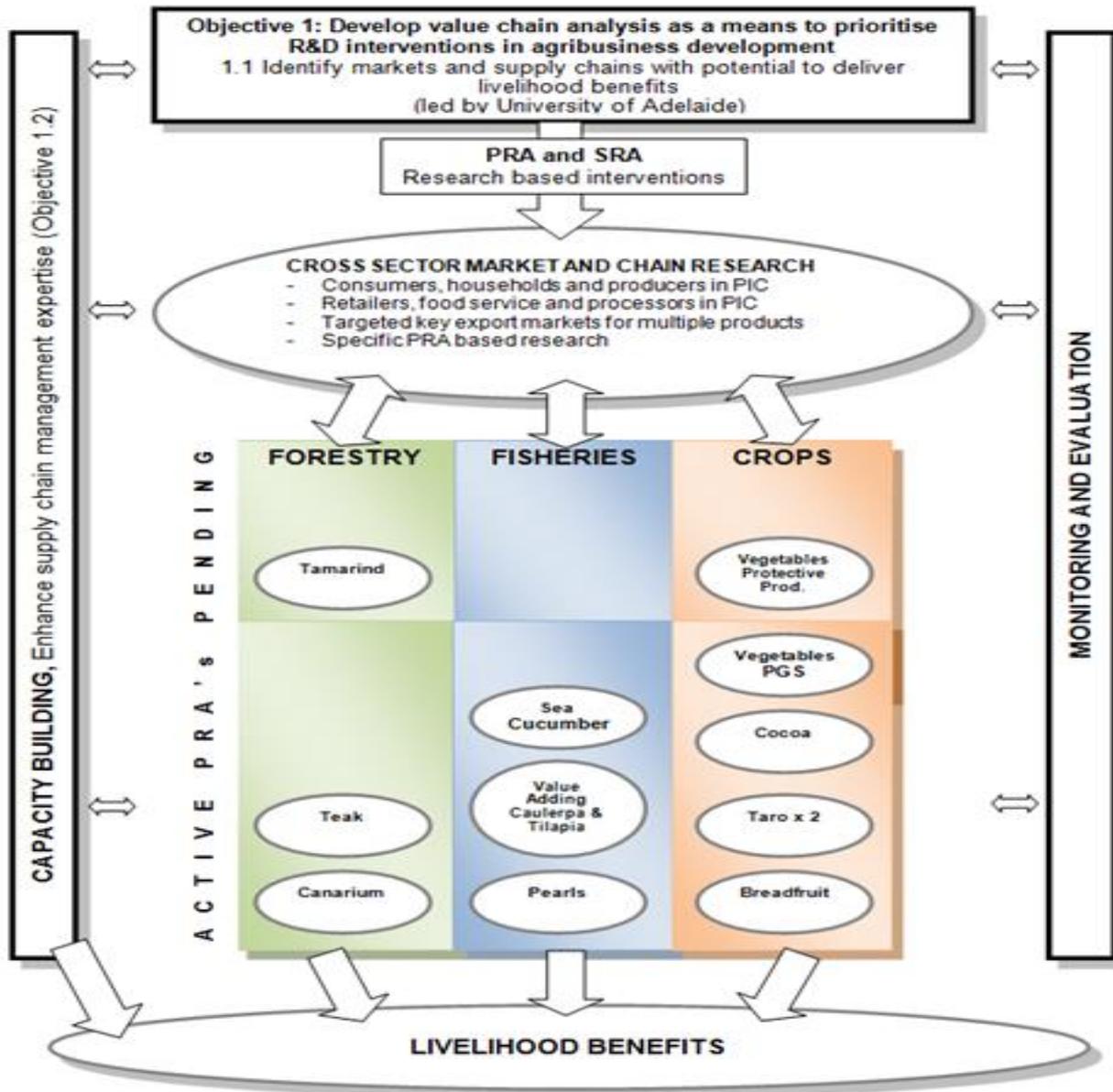
# Pacific PARDI Project

- PARDI stands for ‘Pacific Agribusiness Research for Development Initiative’
- Funding is through the Australian Centre for International Agricultural Research (ACIAR)
- University of Adelaide’s role in PARDI is to;
  - Identify market and chains capable of increasing livelihood benefits
  - Identify researchable constraints in these chains
  - Develop research based interventions with our collaborative partners

# Pacific PARDI Project

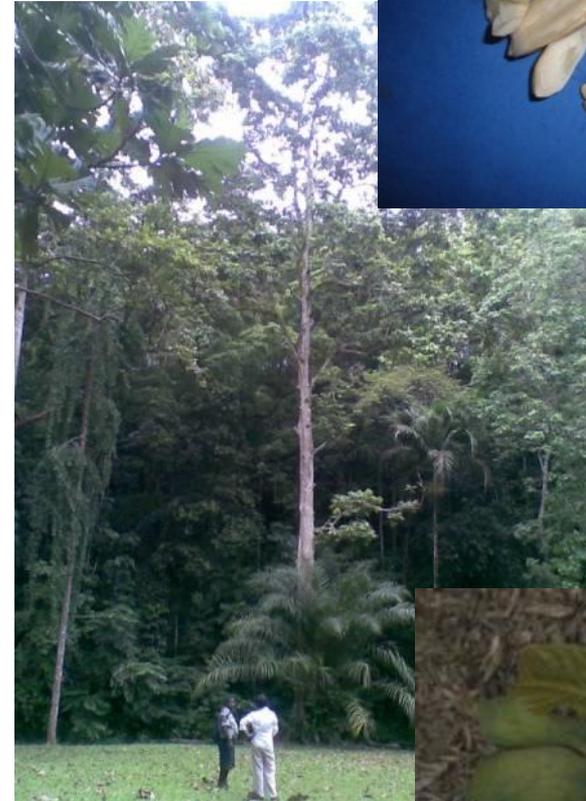
- Covers 6 Pacific countries
  - Fiji, Vanuatu, Solomon's, Samoa, Tonga, Kiribati
- Across 3 broad Sectors
  - Crops, Forestry and Marine
- Activities are both sector and country based i.e.
  - Sectors; Canarium Nut, Cocoa, Pearls, Tilapia, Sea Cucumber, Taro, Breadfruit, Vegetables, Tamarind and Teak
  - Cross sector; Fiji Retail Transformation

# PARDI Framework



# Canarium Nut

- Grows throughout the South Pacific
  - Vanuatu
  - Solomon Islands
  - PNG
- Traditional cultural food
- Traditional processing techniques



# Canarium Nut

Nut- in- pulp



Nut –in-shell



Kernel-in-testa

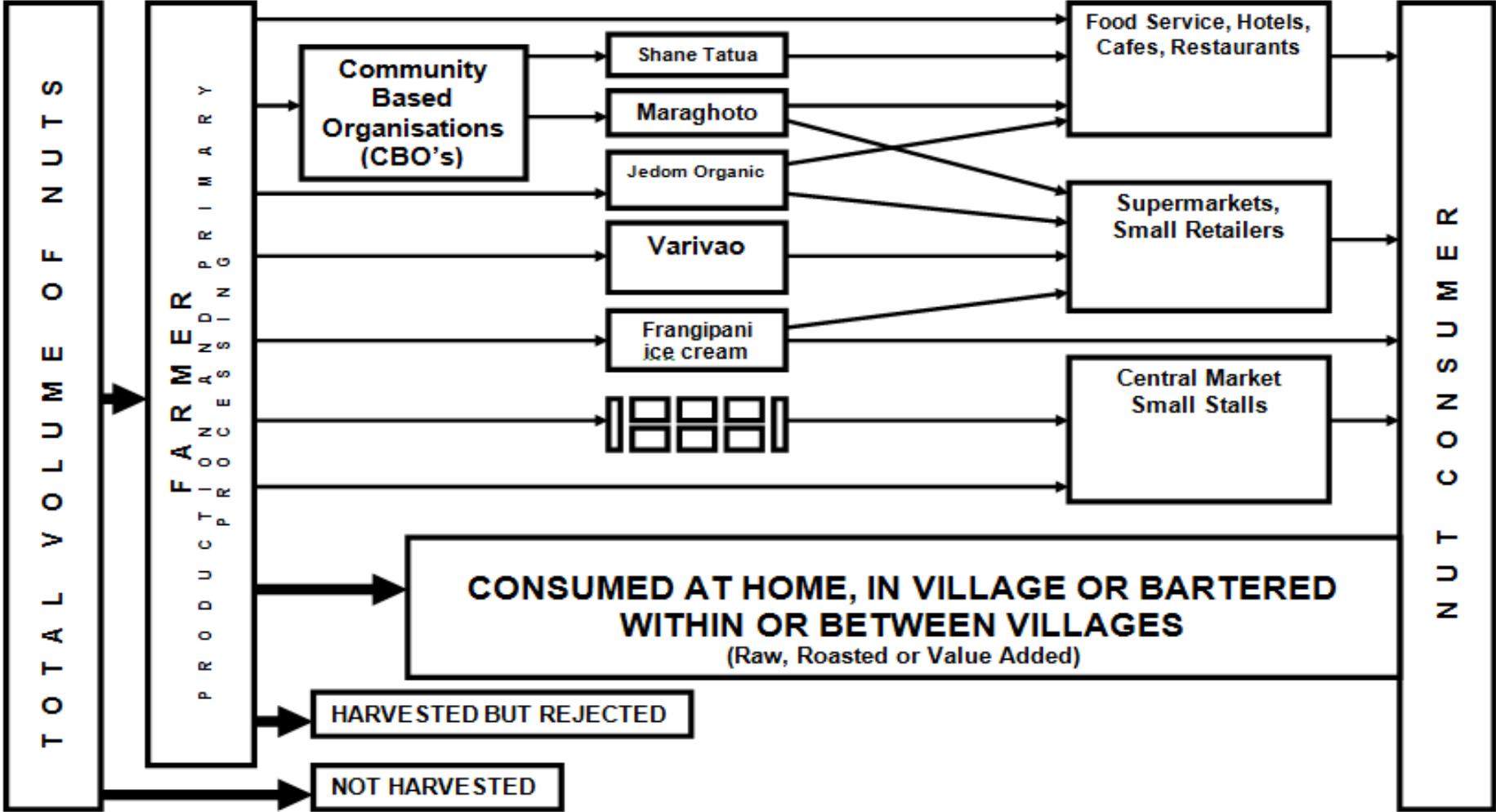
Kernel

# Solomon Islands Canarium Nut Industry

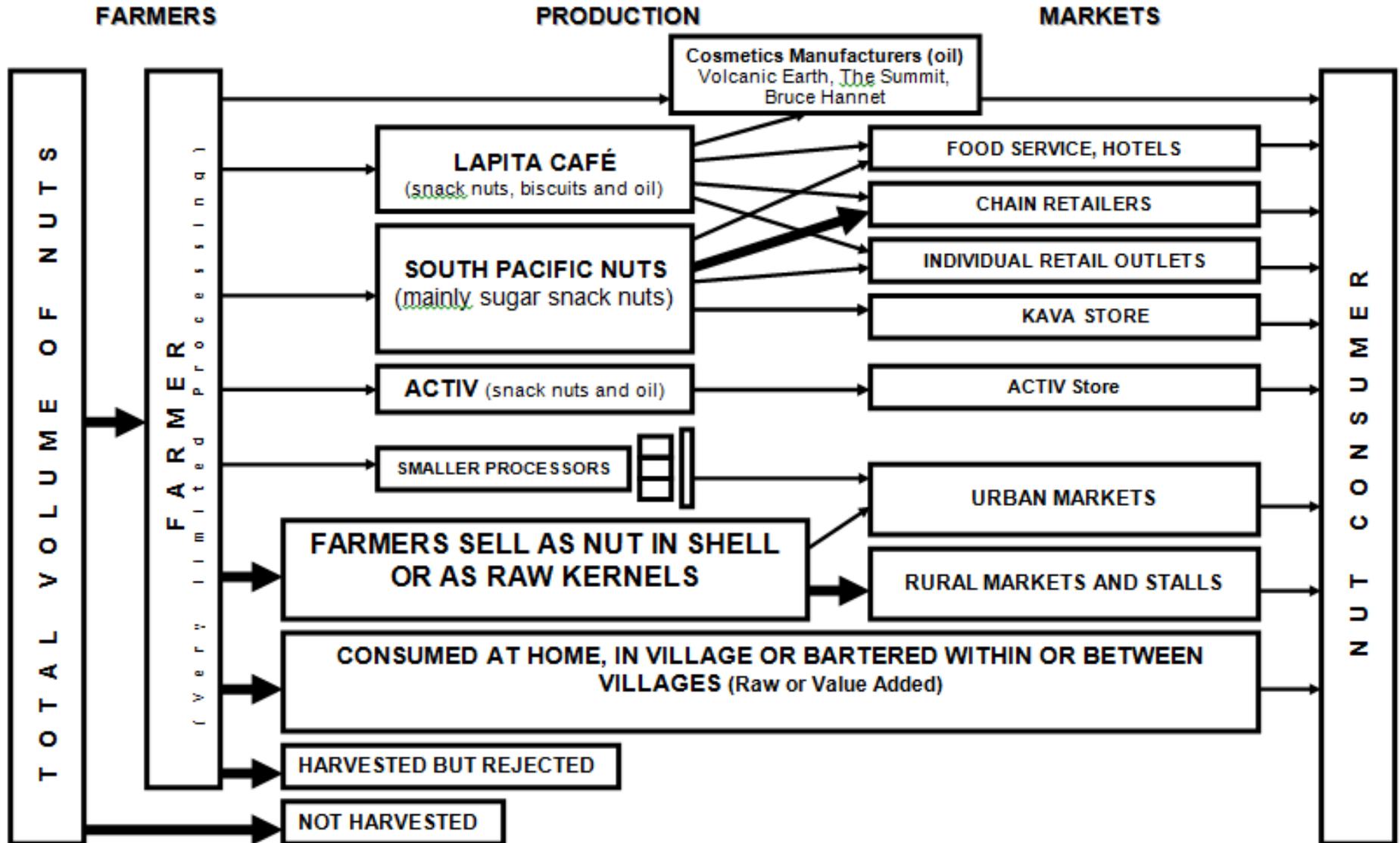
PRODUCTION

SECONDARY PROCESSING

MARKETS



# Vanuatu Canarium Nut Industry



# Canarium Nut PARDI Project

## Priority issues and opportunities

- Unfulfilled domestic demand
- Processing of the nut to stabilise it to ensure consistent quality
- Need to know more about consumer demand

## Target Markets identified

- Domestic Market; tourists in Vanuatu
- Domestic Market; food service and hotels in Solomon Islands
- Export Markets; to be explored more once domestic demand is fulfilled and product quality improves



# COCONUT INDUSTRY

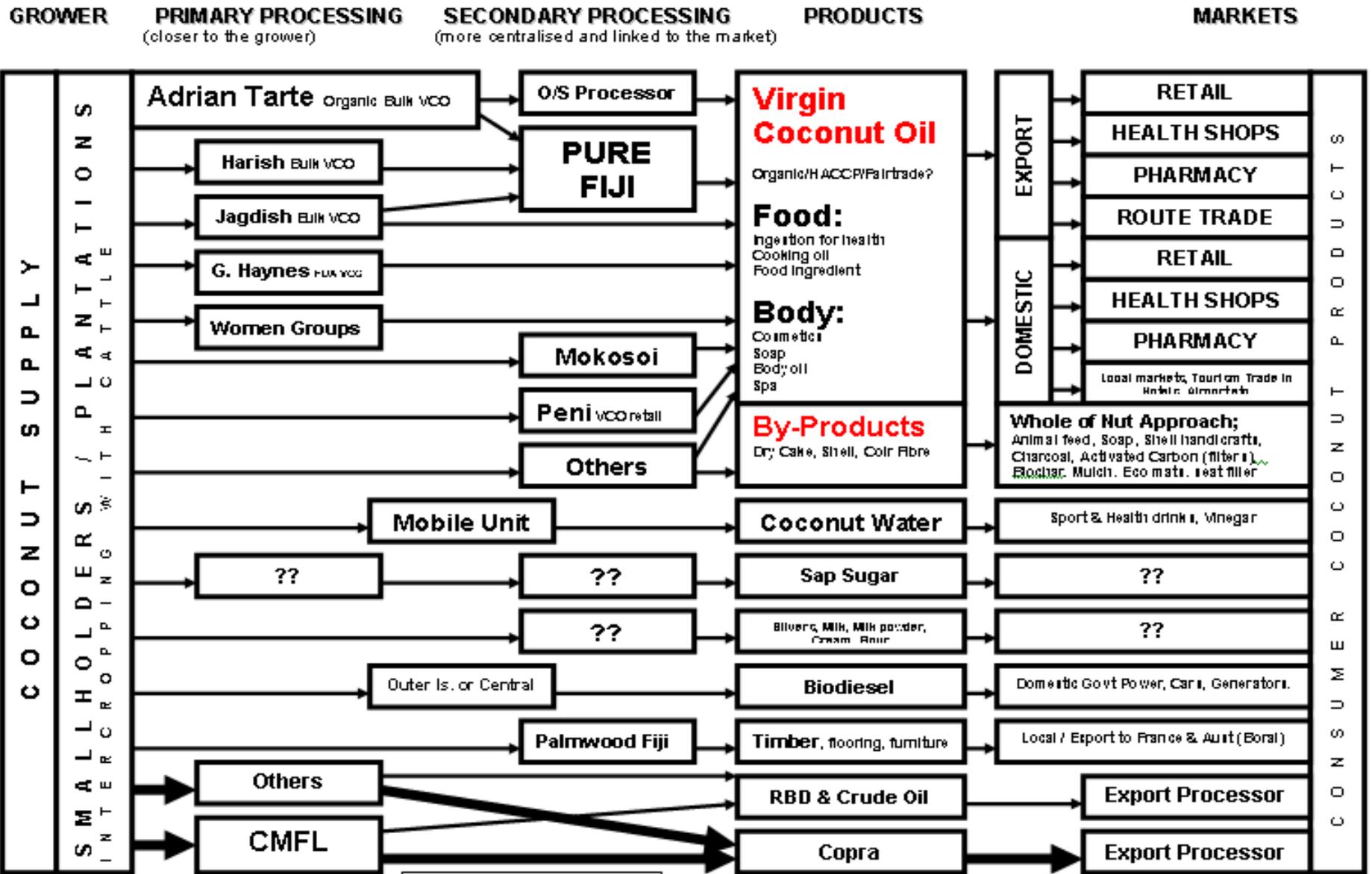
- Grows throughout the Pacific
  - All of the islands
  - Specifically looking at Fiji, Solomon Islands, Samoa and Vanuatu
- Traditional uses
- Various products made from the tree and the nut



# COCONUT PRODUCT LIST

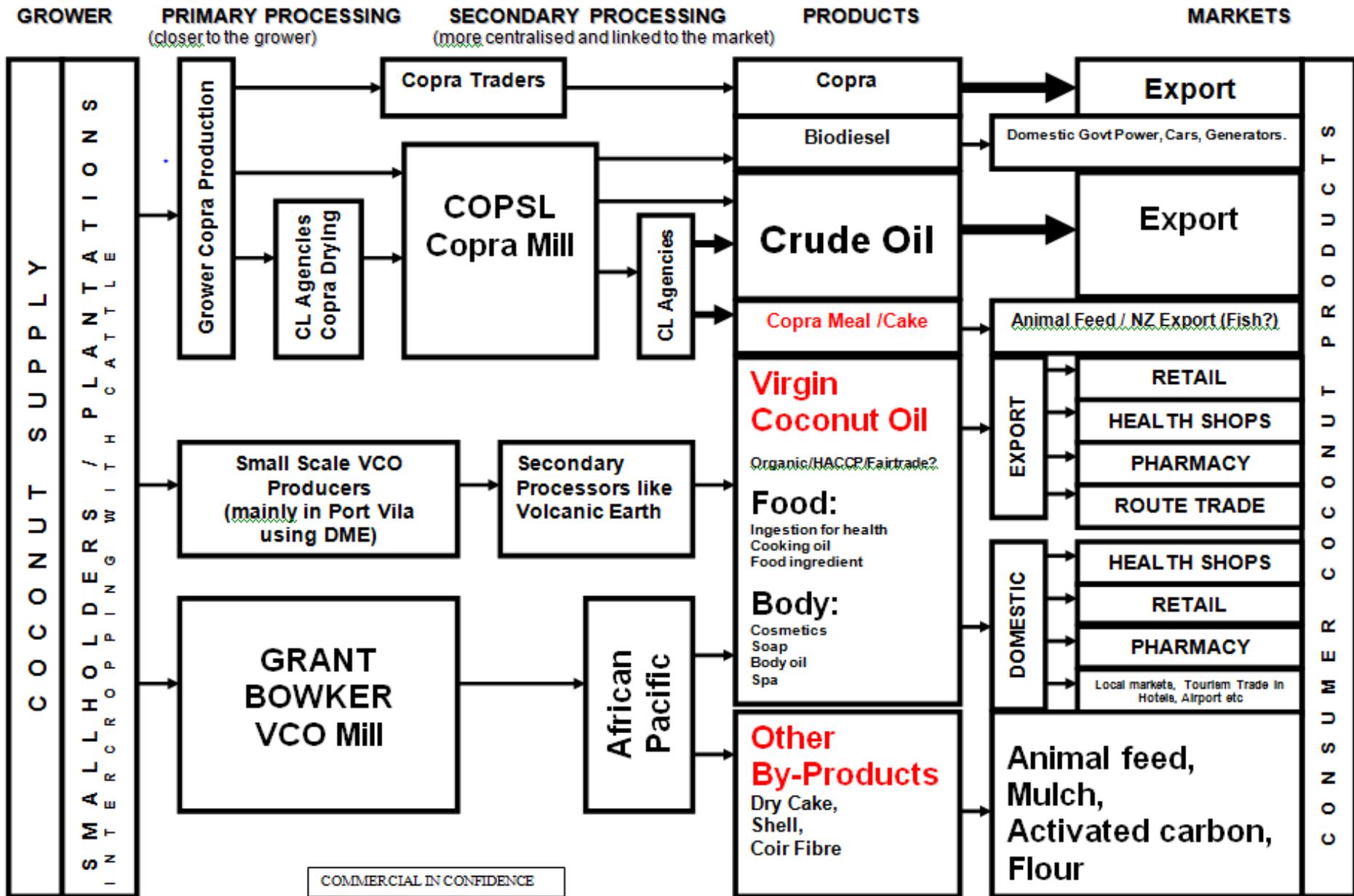
- Virgin Coconut Oil Edible
  - Nutraceutical, functional food, health supplement
  - Ingredient in salads, smoothies, ice cream, butter replacement, confectionary etc
  - Cooking oil; roasting, frying, baking cakes, popcorn, crackers, cookies etc
- Virgin Coconut oil Inedible
  - Soaps, cosmetics, spa products, body lotions etc
  - Treatment of skin conditions and to promote hair growth
- By products
  - Pressed dry cake for animal feed
  - Shells, handicrafts, charcoal, activated carbon, biochar, coir fibre
- Whole nuts, coconut water, milk, sugar, powder, cream, honey, flour, dried pieces, biofuels, timber

# FIJI COCONUT INDUSTRY



COMMERCIAL IN CONFIDENCE

# VANUATU COCONUT INDUSTRY



# COCONUT PARDI PROJECT

## Priority issues and opportunities

- Research on health benefits
- What is the point of difference to competitor countries
- Whole of coconut approach. Produce a mix of products depending on location, size and the business and social justification

## Target Markets identified

- Domestic Market; locals and tourists through health store, pharmacy, hotels etc.
- Niche Export: high value differentiated products
- VCO consumers who are informed, health conscious and supportive of fair trade, organic and the Pacific brand

# Summary

- Value Chain Mapping is part of Value Chain Analysis
- No single “right” way to map
- Useful tool for identifying
  - Actors
  - Product flows
  - Information Flows
  - Relationships
  - Issues in the chain
  - Opportunities for improvement
- Government, Industry Associations and Universities can play a role and all benefit from working together



**Terima kasih  
Questions?**

<http://www.adelaide.edu.au/global-food>  
<http://www.adelaide.edu.au/global-food/blog/wendy.umberger@adelaide.edu.au>

# References

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- Kaplinsky, R & Morris, M 2001, A handbook for value chain research, IDRC.
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