Analysis – Chain Mapping

Learning Outcomes

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

- Role of mapping in value chain research
- Different mapping dimensions

Objectives of value chain mapping

1. Guide sample design
2. Guide collection of data
3. Guide value chain analysis
4. Communicate the analysis and findings to different audiences

Which dimensions should be mapped?

Depends on:

- research scope and objectives
- data collected
- Analysis presented

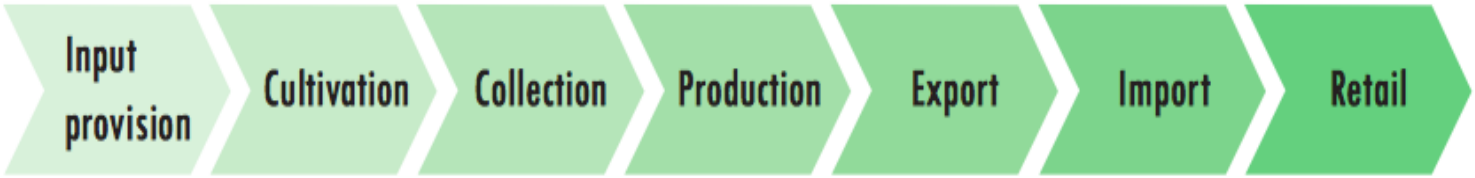
Possible mapping dimensions

- Core processes in the chain
- Actors involved in these processes and activities performed
- Number of actors and jobs
- Flows of product, information and knowledge in the chain
- Type of relationships and linkages
- Spatial flows
- Volume of products, number of actors and jobs
- Value along the chain
- (…)

Step 1 – Mapping core processes

Box 2: Example of mapping core processes

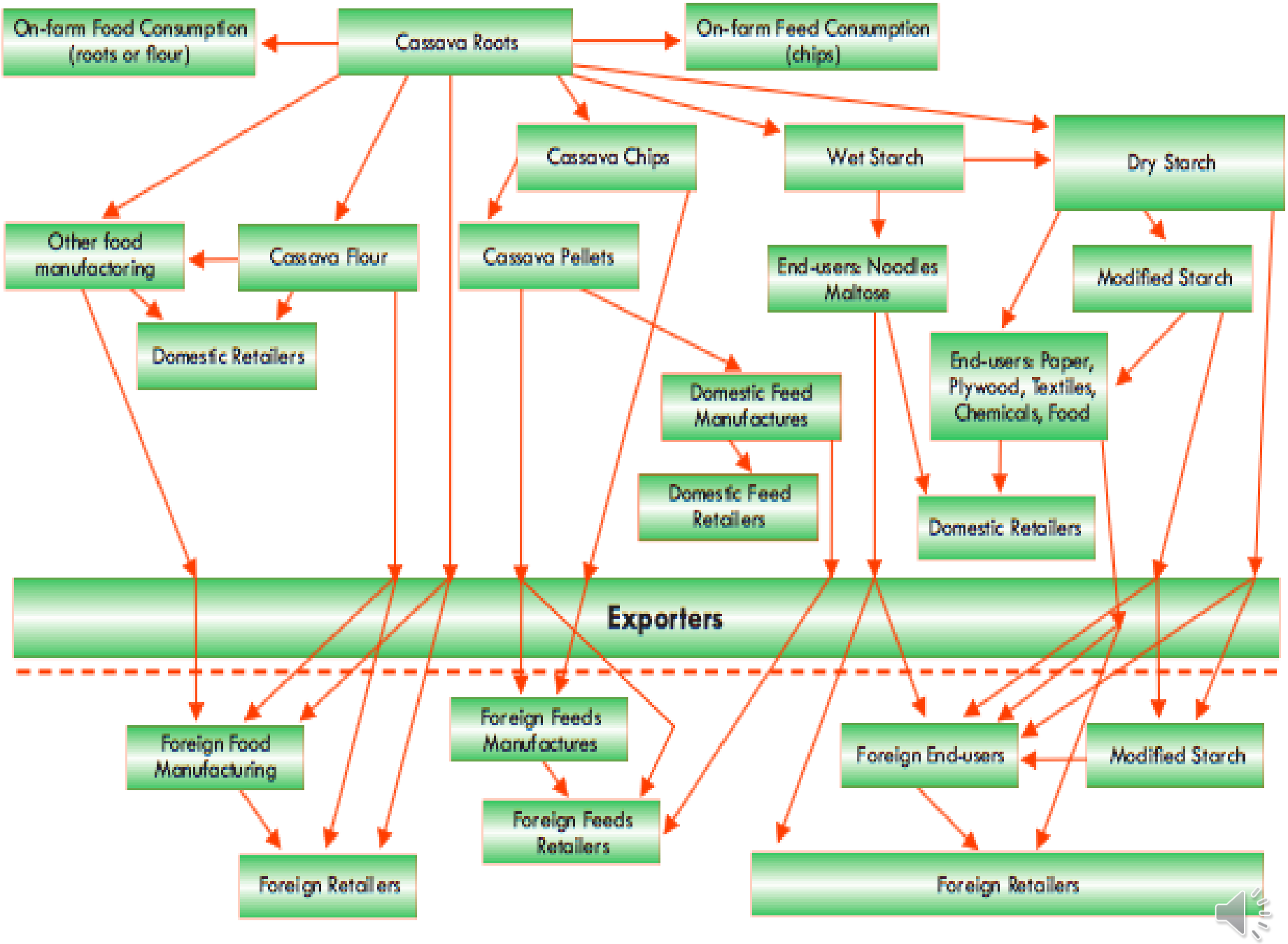
One of the main products in Ninh Binh province, Vietnam is handicrafts made of sedge or sea grass. Typically, boxes or baskets are produced for export markets. As an example, the core processes in the basket export chain are as follows.



Source: Sedge handicrafts in Ninh Binh, SNV 2005.

Warning

In many value chains, especially in small or weaker markets, there is often no pure specialisation. One actor will take on several different roles. For example, a rice miller will also collect rice and act as input provider. Try to find out what the main occupation of this actor is and categorise accordingly.

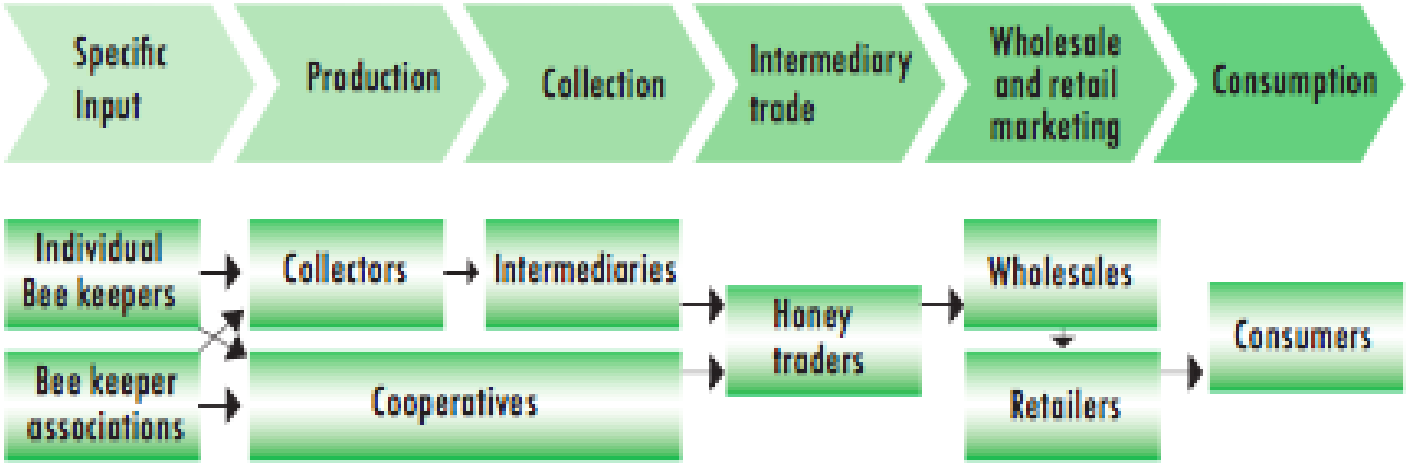

On-farm Food Consumption (roots or flour)
Cassava Roots
On-farm Feed Consumption (chips)
Cassava Chips
Wet Starch
Dry Starch
Other food manufactoring
Cassava Flour
Cassava Pellets
End-users: Noodles Maltose
Modified Starch
Domestic Retailers
Domestic Feed Manufactures
End-users: Paper, Plywood, Textiles, Chemicals, Food
Domestic Feed Retailers
Domestic Retailers
Exporters
Foreign Food Manufacturing
Foreign Feeds Manufactures
Foreign End-users
Modified Starch
Foreign Feeds Retailers
Foreign Retailers
Foreign Retailers

Step 2 – Identifying and mapping chain participants

- Location (district, province, region, country)
- Legal status (state-owned enterprise; farmer group / association / cooperative; registered enterprise; informal trader)
- Size or scale (small / Medium / large)
- Technology (e.g. traditional / modern)

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.



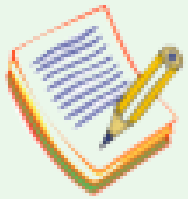
Source: A. Springer-Heinze, GTZ, 2005.

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

Take Note



Breaking down core processes into specific activities is useful when we turn to analysing costs, revenues and margins (see Tool 6 - Analysing Costs and Margins). The activities can be seen as the cost or profit centres of actors.

Step 3 – Mapping product flows / transformation

Box 5: Example of product flows in the pig value chain, Ben Tre Vietnam.

Process	Inputs to sow-piglet production	Sow-piglet production	Fattening	Procurement	Processing	Consumption
Input Form		Feed, medicine, replacement sows	Weaners	Fattened pigs	Fattened pigs	Pork, offal
Output Form	Feed, veterinary medicine, replacement sows	Weaners	Fattened pigs	Fattened pigs	Pork, offal	

Step 4 – Mapping knowledge and information flows

Box 6: Example of mapping knowledge

One of the cash crops cultivated in Northern Laos is soybean. These soybeans are mainly exported to China to be processed into animal feed or cooking oil. A crucial issue, mentioned by all actors throughout the value chain, was the inconsistent quality of the soybeans.

Mapping the knowledge proved to be a useful tool in this case. After interviewing farmers, collectors and intermediary traders (all based in Laos), it became clear that the actors had different views on what quality requirements there were and what quality really meant. A related issue was that the buyers (Chinese processing companies) had never met any of the actors on the Lao side of the border. The map looked as follows:

What are the quality requirements for 'good' soybeans?

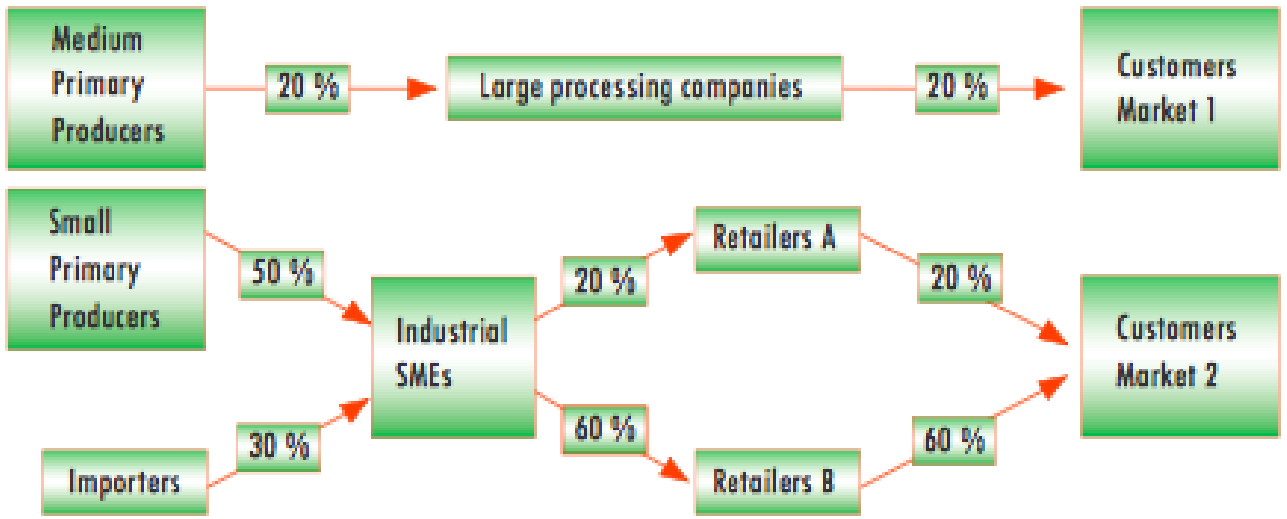
Source: RDMA 2005

Figure 6: An example of the type of information flows

Actor	Farmer		Collector		Exporter
		◄- - - - - - - -		◄- - - - - - - -	
Type of information flow		Prices for various grades, timing of demand		International standards for product quality, demand for different grades of product	

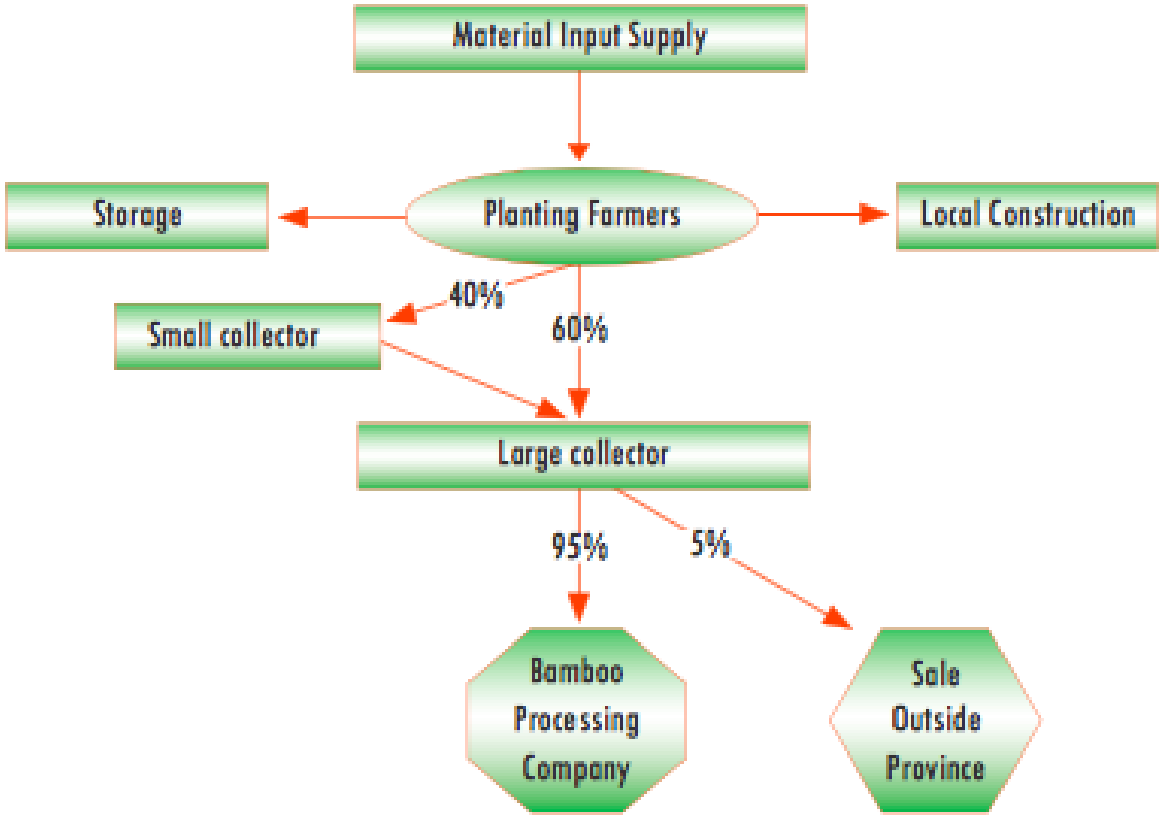
Step 5 – Mapping product volumes, number of actors, and jobs

Box 7: Example of mapping volumes.



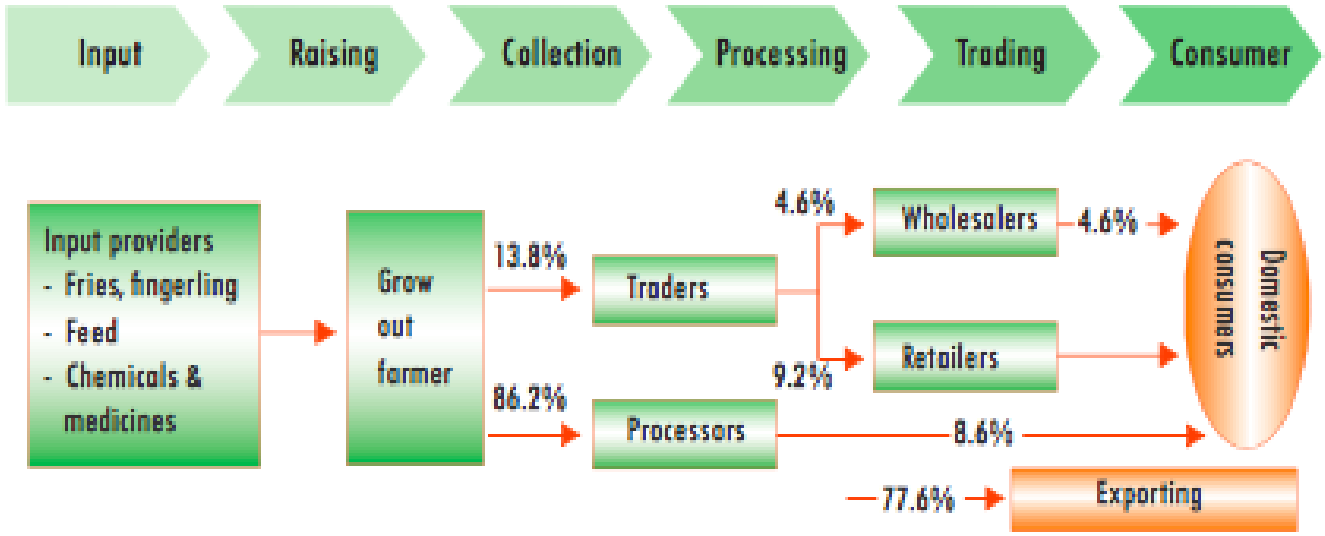
Box 8: Example of mapping volumes in a bamboo value chain.

By adding the proportional volumes of the product passing through different parts of the value chain it is possible to get an overview of the size of different parts of the chain.



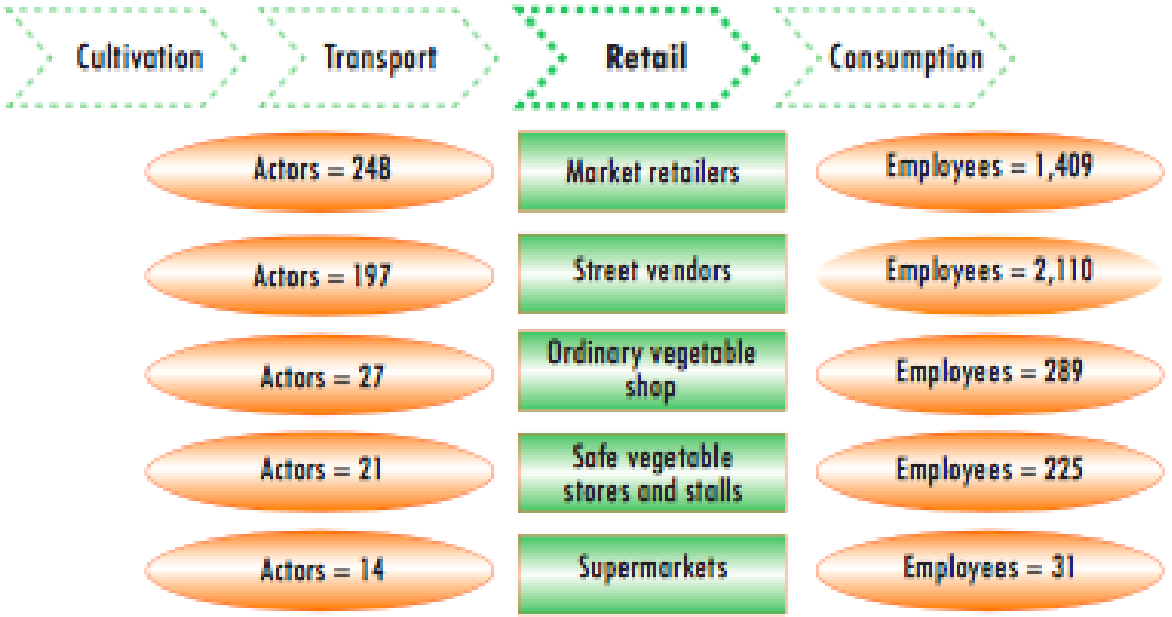
Source: (IFAD, M4P et al. 2007)

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



Box 10: Example of mapping the number of actors and employees involved in vegetable retail in Hanoi, Vietnam

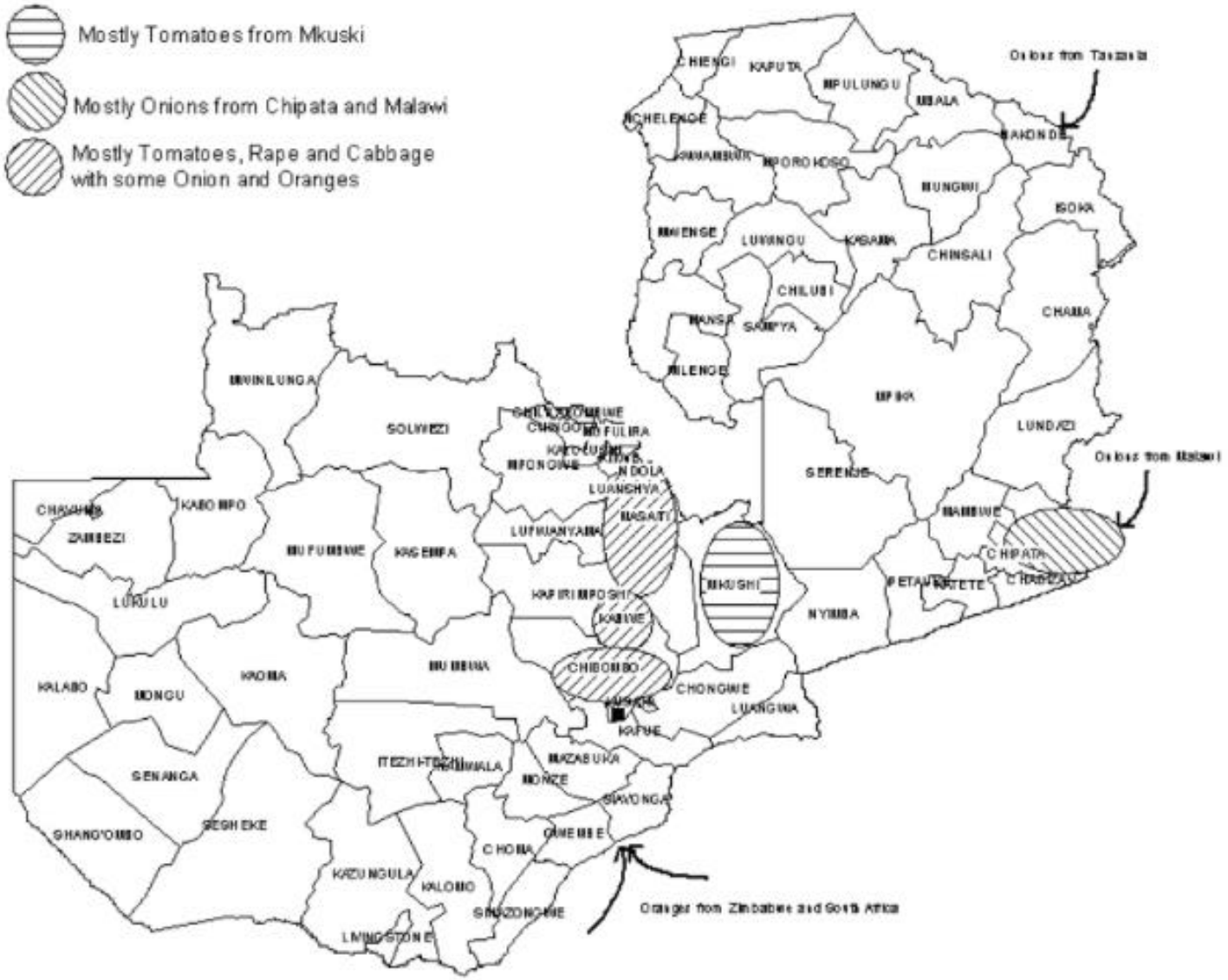
Vegetable retail in Hanoi takes place through many channels. The following example shows that these different outlets differ in number, but also in number of employees.



Adapted from: (Moustier, Anh et al. 2006, pg 200)

Step 6 – Mapping spatial flows

Figure 8: Example of geographical mapping of fresh produce supply in Zambia

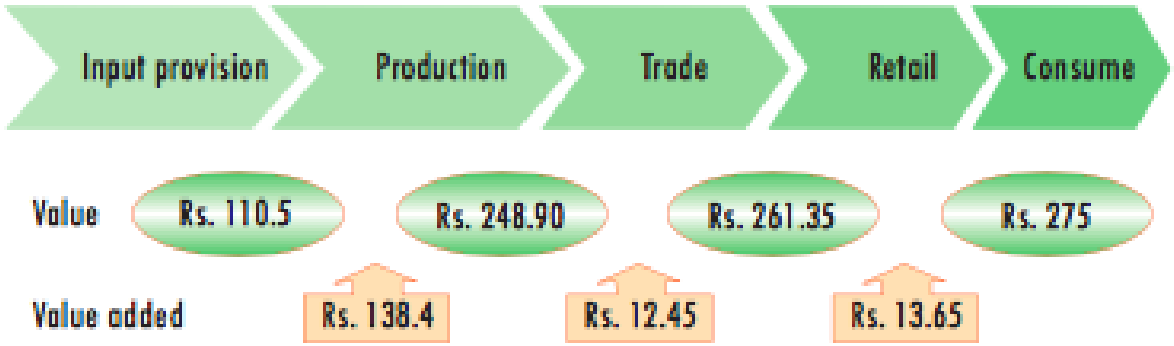


Source: (Hichaambwa and Tschirley 2006)

Step 7 – Mapping value

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).

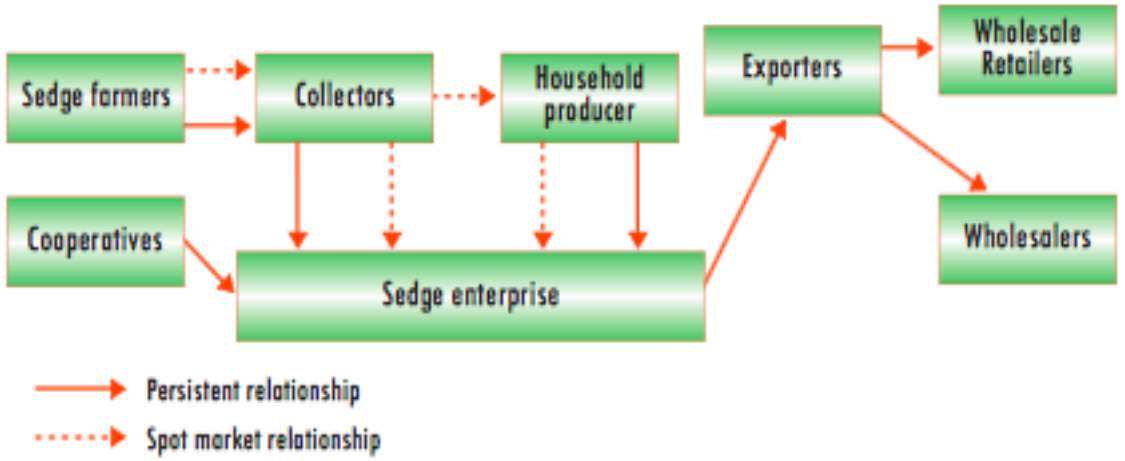
Source: (Padmanand and Patel 2004)

Step 8 – Mapping relationships and linkages

- Spot market relations
- Persistent relationship

Box 12: Example of mapping relationships and linkages.

The following example is based on the sedge handicraft sub-sector in Vietnam. Most linkages are persistent. This example is representative for sectors in which high quality requirements and differentiation (design of handicrafts) are crucial.



Source: (SNV 2005)