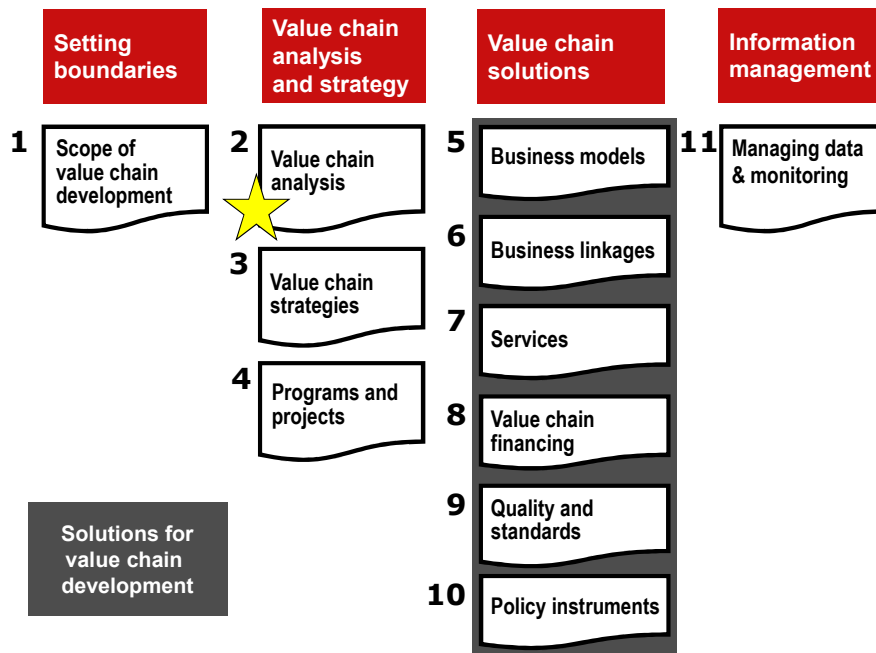


ValueLinks Module 2

Value chain analysis

Structure of ValueLinks 2.0





The Toolbox for Chain Analysis

Contents

- 1** Structural analysis: value chain mapping
- 2** Economic analysis of value chains
- 3** Environmental analysis of value chains
- 4** Social analysis of value chains

Contents of value chain maps

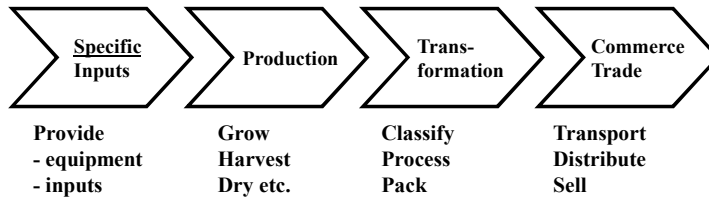
Basic value chain maps visualise...

- End markets for products
- The sequence of production and marketing functions performed
- The value chain operators taking these functions (micro level)
- Vertical business links between the operators
- The chain support service providers (meso level)
- The value chain enablers (macro level)



Basic concepts

Value chain functions



1

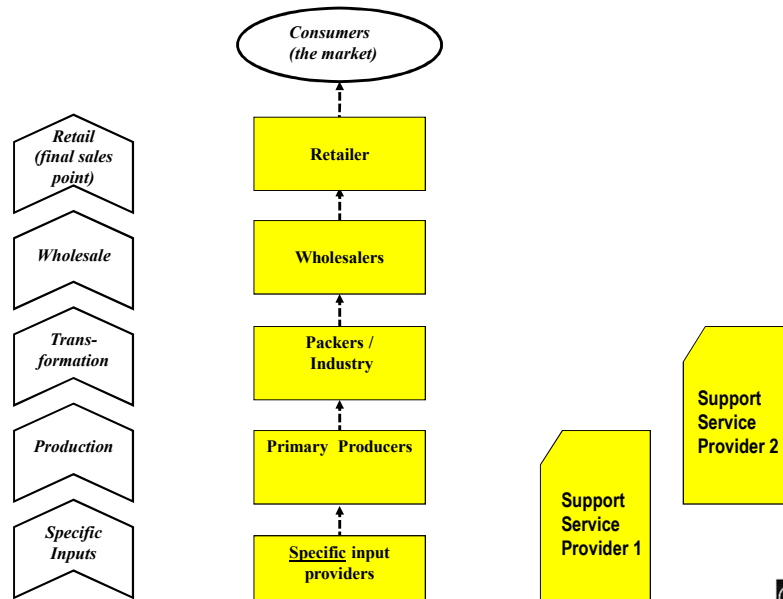
Categories of actors in value chains and their relations



5



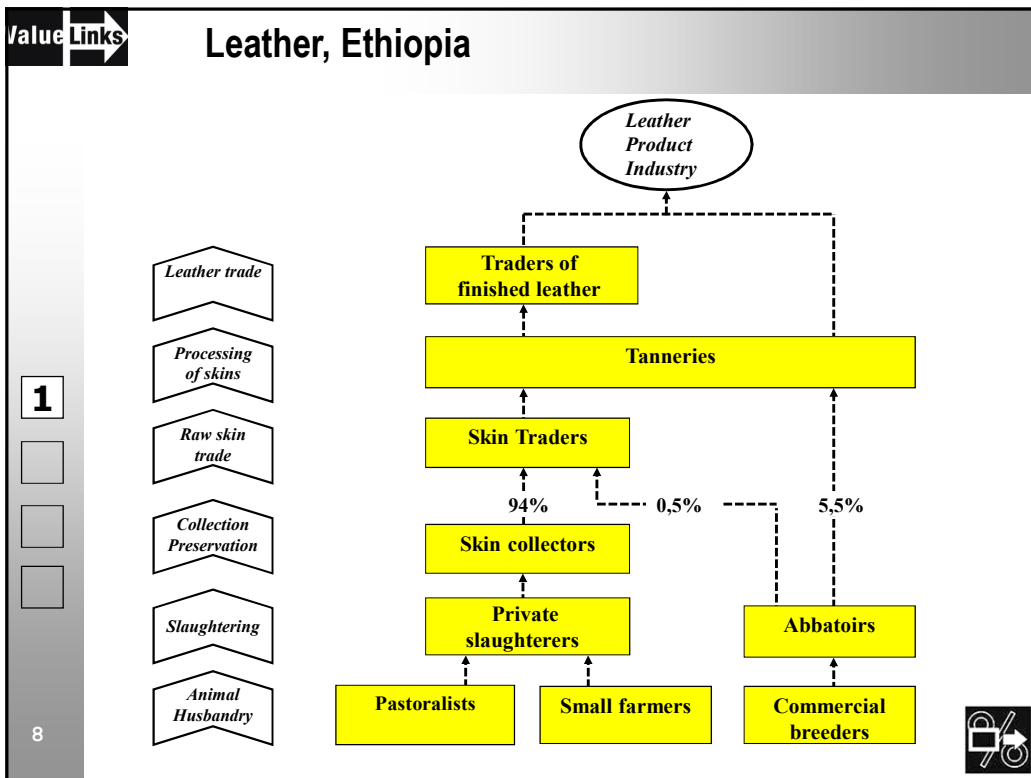
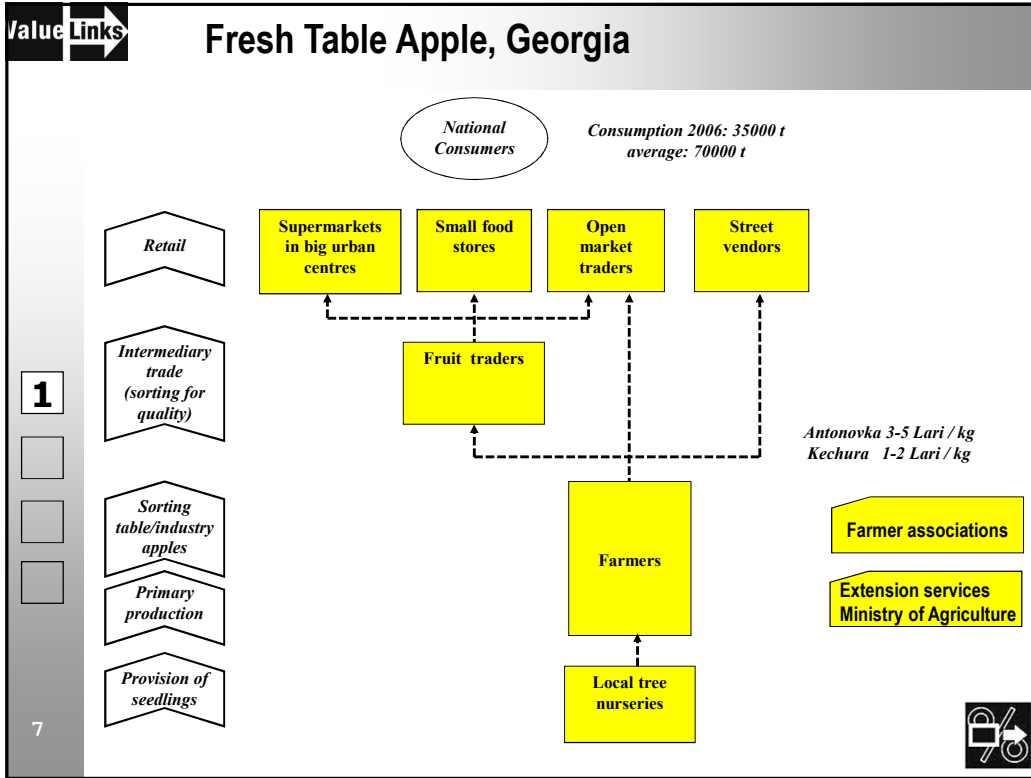
Value chain map



1

6





Some principles

Observe the “economics of information”!

- Be action-oriented and involve the chain actors in the analysis
- Decide on the appropriate amount of time and effort – according to the information needs for decision making and implementation (no „analysis paralysis“)
- The value chain map is a picture of the current situation
- Present at micro level all actors who become owner of the product

1



9



How to proceed in mapping

Steps

- Specify the final product and end market(s)
- Establish the stages of the chain (specifying the functions performed)
- Establish the main sequence of operators
- Differentiate the chain into channels if appropriate
- Map support service providers
- Prepare thematic detail maps if required

1



10



Segmenting VC channels

Criteria

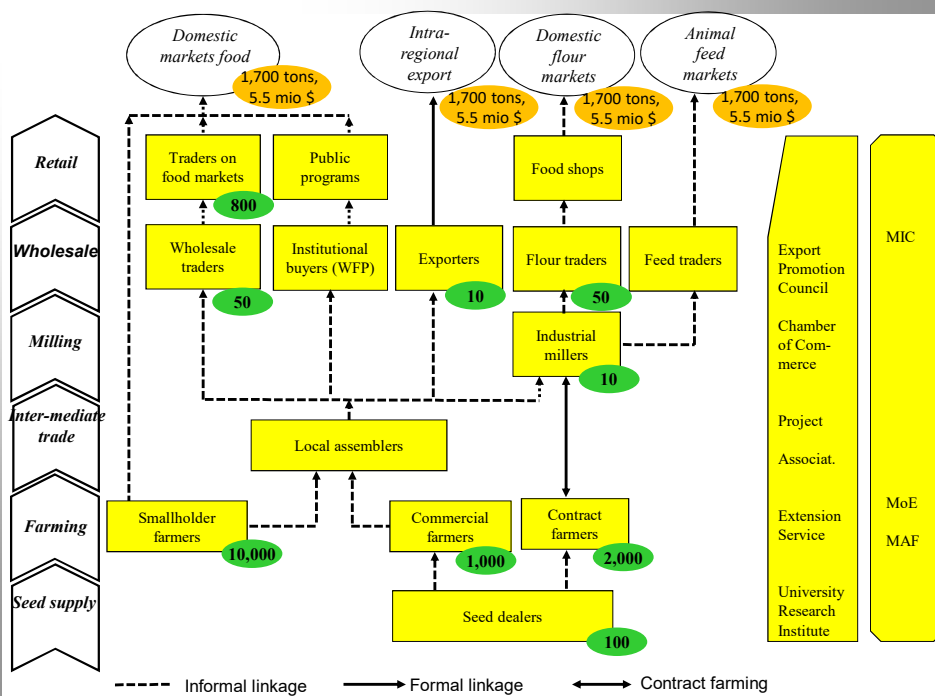
- **Type of product**
 - Low, medium or high quality product
 - Price
 - Intermediate or final product
- **End market**
 - Rural, urban or export market
 - Type of customers (price-sensitive or quality conscious)
- **Technology**
 - Stage (from low to high input / hand-made or mechanized)
 - Type and (minimum) scale of processing enterprises (from small artisanal to large-industrial)
- **Linkages**
 - Type of business linkages between suppliers and buyers

1

11



Maize



1

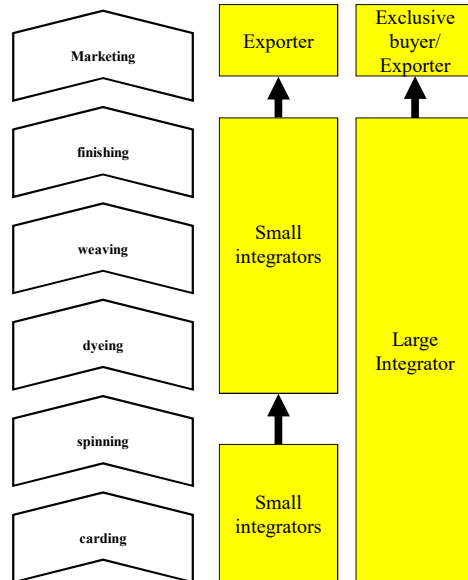
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Vertically integrated value chain

1



13

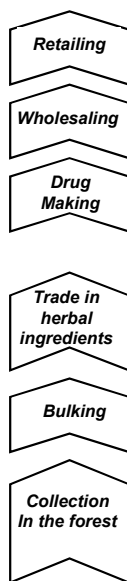


Herbal Drugs in India

1



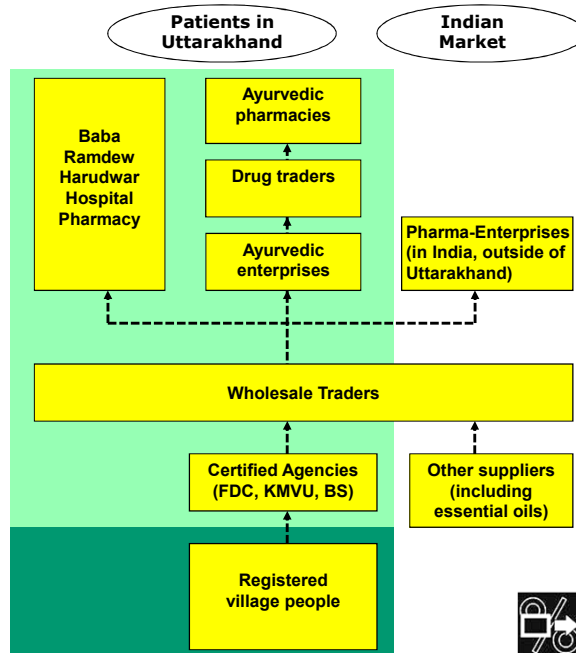
14



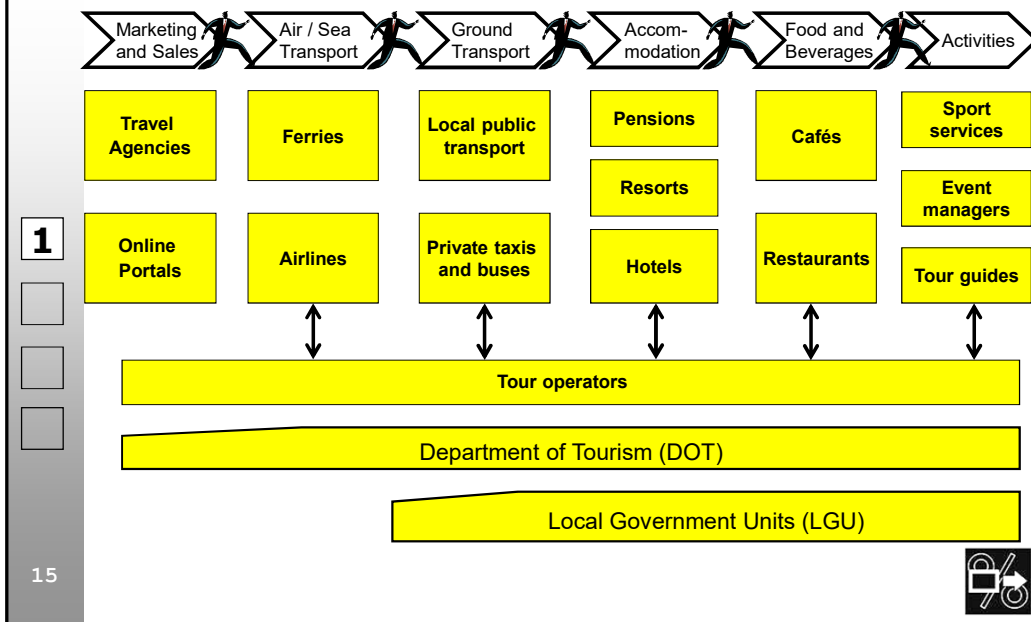
- Transport, store
- compile range of products

- Assemble
- Transport to market points

- Collect, cut
- Clean
- Dry
- Pack & number



Chain mapping tourism



What makes a good map

Criteria

- Make sure the map has a clear message
- Avoid overload of information, e.g. concentrate on 2 or 3 channels
- Separate micro, meso and macro analysis
- The map has to be understandable to people who have not participated in making it!

1

□

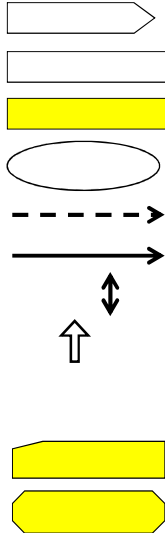
□

□



Value chain mapping symbols

Card shapes/color code



Micro level of the VC

- Value chain stage
- Specific business activity
- Value chain operator
- End market of value chain
- Informal business linkages
- Formal business linkages
- Subcontracting linkages
- Service linkages

Meso & Macro level

- Value chain supporter
- Value chain enabler

1

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Size and market share of VCs in global and domestic markets

- Production and consumption figures
- Export and import figures
- Share of the VC in the total export value

Value-added along the value chain

- Contribution of chain segments to total value

Benchmarking important VC parameters

- Benchmarking of unit cost of production
- Benchmarking of labor and other factor productivities



2




2



Amla calue chain in India



2

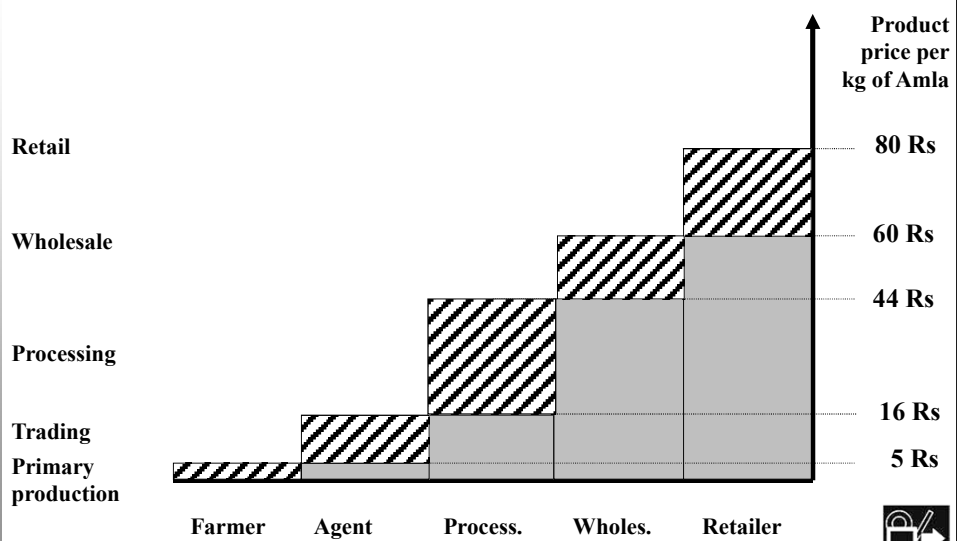


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Calculation of value-added – step 1

Amla Candy



22

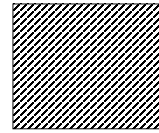


Calculation of value-added - Ketchup



Sales price
Ketchup: 2 €

Value added



Cost of intermediate
product: 0,3 €



Cost of other
inputs/services: 0.3 €

Value added at one level of the value chain =
Value generated
– Cost of intermediate products
– Cost of other inputs and services

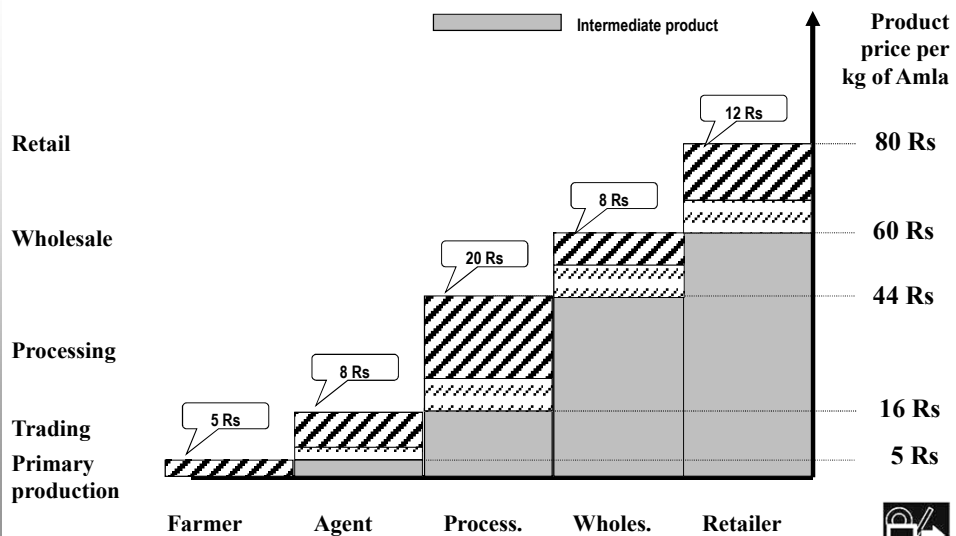
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Calculation of value-added – step 2

Amla Candy

Value addition by the VC
 Other inputs/services
 Intermediate product






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Calculation of value-added

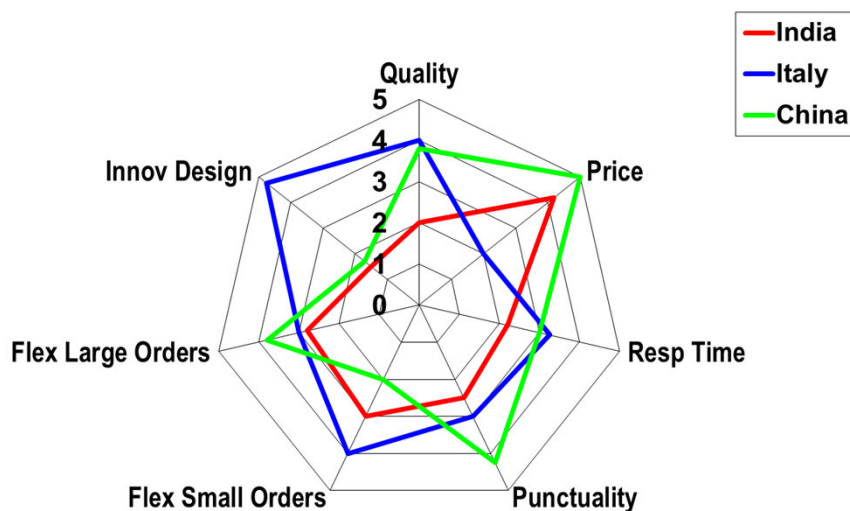
Value added at one level of the value chain =
Value generated
 – *Cost of intermediate products*
 – *Cost of other inputs and services*

VALUE GENERATED by the value chain or by stages of the VC = Price*volume of product sold	VALUE-ADDED captured in one stage of VC • Wages • Interests and rents • Depreciation • Direct taxes • Profit		Used to pay claims of the owners of factors of production (capital, labour, land) + taxes
	OTHER INPUTS & SERVICES • Inputs, equipment • Energy, water • Operational services		Transferred to external suppliers
	INTERMEDIATE PRODUCTS • Raw material, semi- finished or traded product (depending on VC stage)		Transferred to operators at the previous stage



Assessing competitive advantage

Comparing performance in footwear: India – Italy – China





The Toolbox for Chain Analysis

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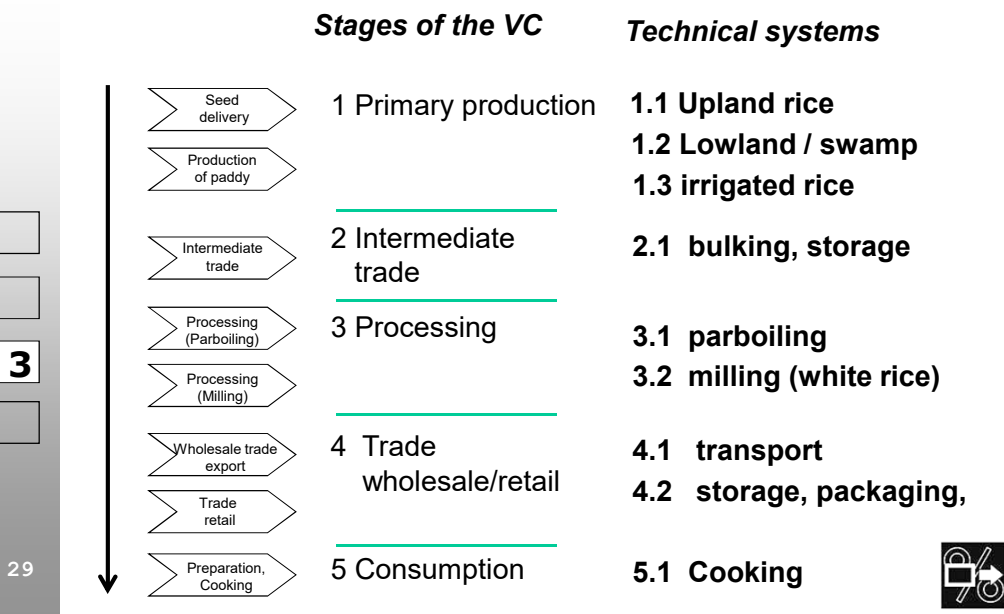
- 1 Structural analysis: value chain mapping
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- 4 Social analysis of value chains

Environmental analysis of value chains

The link between value chains and the environment

Value chains may...		
...cause negative impact on climate and the environment (1)	... be affected by climate change and environmental degradation (2)	...contribute to compensating emissions and/or contribute to creating a „green economy“ (3)
<ul style="list-style-type: none"> ▪ Production, marketing and consumption cause environmental cost ▪ High, yet uncompensated GHG emissions ▪ Wasteful utilization of scarce resources (especially water) 	<p><i>Directly:</i></p> <ul style="list-style-type: none"> ▪ Reduced productivity ▪ Increasing production cost ▪ Food insecurity <p><i>Indirectly:</i></p> <ul style="list-style-type: none"> ▪ Rising resource prices (water, energy, raw materials, waste disposal) 	<ul style="list-style-type: none"> ▪ CO2 sequestration and sale of carbon credits ▪ Products and services for the green economy (environmental technology, services and investment) ▪ Renewable energy



From VC functions to technical systems**Relevant resource categories and ecosystems****Water**

Issues: Pollution, excessive consumption, price hikes (pumping cost), water shortages due to drought/decreasing water table, late rains/extended dry season

Energy

Issues: Low energy efficiency, fuel price inflation, blackouts, access to fuel wood, charcoal

Soil

Issues: Soil fertility, erosion

Ecosystems

Issues: Swamp ecosystem services, biodiversity

Climate

Issues: Excessive heat, violent rains, flooding, strong winds



Environmental impact matrix

VC function	Technical processes	Water	Energy	Soil	Ecosystems	Climate
Primary production	Upland, rainfed rice production	↓		↑		↑
	Lowland/ swamp production	↓		↑	↓	↑
	Irrigated rice	↓				↓
Intermediate trade	Bulking / storage					
Processing	Parboiling	↑	↑		↓	
	Milling		↑			↓
Trade	Transport					↓
	Storage/ packaging					
Consumption	Cooking				↓	

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↓ Impact of the VC (type 1)

↑ Impact on the VC (type 2)



Table of environmental impacts

VC stage	Technical processes	Type 1 environmental impacts of the value chain	Type 2 environmental impacts on the value chain
Primary production	Upland, rain fed rice production	<ul style="list-style-type: none"> Water pollution Downstream silting 	<ul style="list-style-type: none"> Unreliable rainfall Erosion, loss of soil fertility
	Lowland/ swamp production	<ul style="list-style-type: none"> Lowering of water tables Loss of biodiversity 	<ul style="list-style-type: none"> Temporary flooding Loss of soil fertility
	Irrigated rice	<ul style="list-style-type: none"> Water scarcity aggravation Methane emissions Plastic waste 	./.
Intermediate trade	Bulking / storage	./.	<ul style="list-style-type: none"> Increased variability of climate conditions
Processing	Parboiling	<ul style="list-style-type: none"> Overexploitation of wood Air pollution 	<ul style="list-style-type: none"> Rising fuel wood prices Decreasing water availability
	Milling	<ul style="list-style-type: none"> Inefficient use of energy High carbon emissions 	<ul style="list-style-type: none"> High energy cost
Trade	Transport	<ul style="list-style-type: none"> High carbon emissions 	./.
	Storage/ packaging	<ul style="list-style-type: none"> Losses due to inefficient storage 	./.
Consumption	Cooking	<ul style="list-style-type: none"> Overexploitation of wood 	./.

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Assessment of severity/valuation

A short cut: "Hot-spots analysis" by making a qualitative judgement on type 1 environmental impact:

A) Intensity of the use of the resource	B) Availability of the resource	A x B
<ul style="list-style-type: none"> • High intensity of use (3) • Medium intensity of use (2) • Low intensity of use(1) 	<ul style="list-style-type: none"> • Resources almost depleted (3) • Resources become scarce (2) • Resources largely available (1) 	1-5: No hot-spot 6-9: Hot-spot

High intensity of use of firewood (3) x resources almost depleted (3)
= Hot-spot

3

A) Effect of the impact of the VC on the environment	B) Adaptation capacity of the environment	A x B
<ul style="list-style-type: none"> • Complete loss of the ecosystem (3) • Significant damage (2) • Interference with the ecosystem (1) 	<ul style="list-style-type: none"> • Unacceptable damage (3) • Damages can be compensated (2) • Damage within limits, fully reversible (1) 	1-5: No hot-spot 6-9: Hot-spot

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Assessment of severity/valuation

A short cut: "Hot-spots analysis" by making a qualitative judgement on type 2 environmental impact:

A) Assessing the impact on VC operations: Exposure and sensitivity of VC operations to the environmental impact	B) Assessing the adaptive capacity: Possibility of adapting to resource scarcity	A x B
<ul style="list-style-type: none"> • Severe shortages, high cost, high risk of production losses (3) • Significant shortages, cost and risks (2) • Minor impact, medium to long term (1) 	<ul style="list-style-type: none"> • Low adaptability (3) • Medium adaptability (2) • High adaptability (1) 	1-5: No hot-spot 6-9: Hot-spot

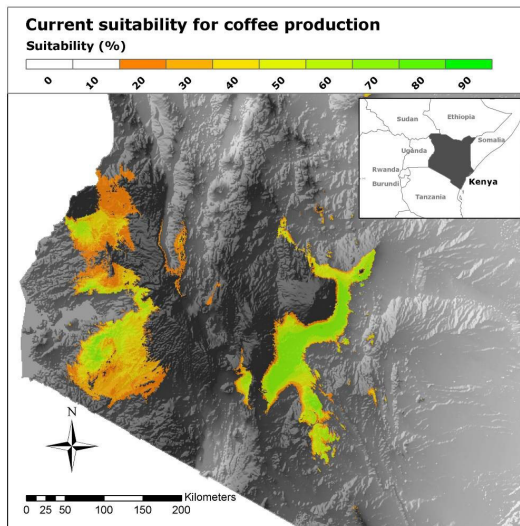
3

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Environmental impact on the VC

Example 2: Environmental impact on the VC



2010 Current Situation

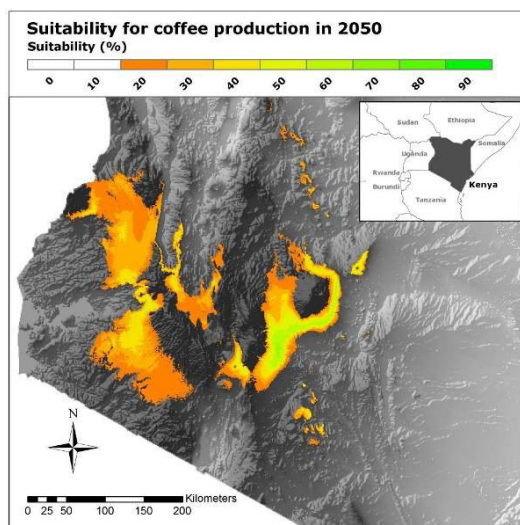


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Environmental impact on the VC

Example 2: Environmental impact on the VC



2050 Forecast

- - 2°C temp. increase
- Rainfall ≈ the same
- More extreme events

Impact on Coffee

- No or irregular flowering
- Higher evapo-transpiration
- higher water demand
- no or lower yields
- suitability of growing areas
- reduced by 40-60 %



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VC adaptation options

Adaptation options in Kenyan coffee growing

Level	Measures
Adaptation For phasing out coffee	Diversification <ul style="list-style-type: none"> ▪ Dairy cattle, dairy goats ▪ Passion fruit, banana
For keeping coffee (transitional zone)	Diversification within coffee <ul style="list-style-type: none"> ▪ Changing from Arabica to Robusta coffee Increasing resilience through agronomic measures <ul style="list-style-type: none"> ▪ Breeding more drought resistant and heat tolerant varieties ▪ Intensifying agro-forestry, especially shade tree cultivation ▪ Introducing water-efficient (drip) irrigation Increasing social resilience <ul style="list-style-type: none"> ▪ Strengthening awareness & capacities; cohesion of farmer groups & cooperatives ▪ Strengthening linkages between farmers, communities, regional and national disaster management units

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The Toolbox for Chain Analysis

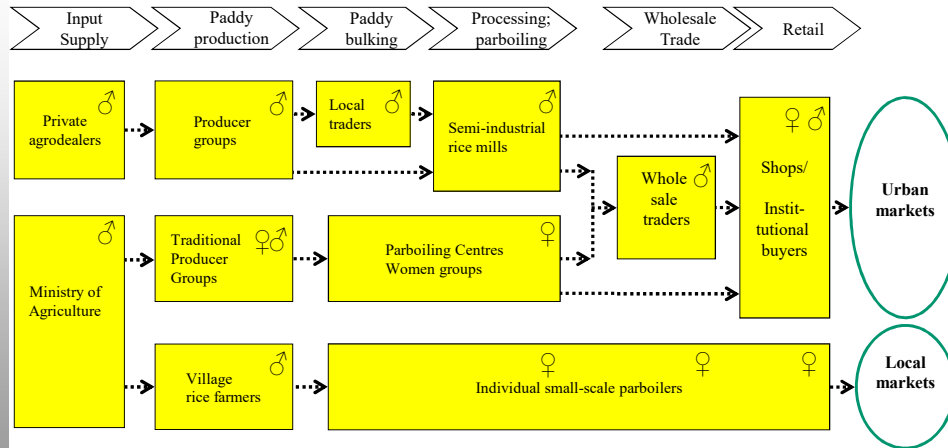
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Gender mapping

Gender mapping of the rice VC, West Africa



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Gender sensitive VC analysis

Actor	Access to resources	Control of resources	Perceptions and beliefs	Laws and regulations
Female farmer groups	How did you get your land? How to raise money when you need it? How to find a job? How to obtain reliable information on new agricultural practices?	Who takes the decisions about the farm business? Who takes decisions about which crops to produce? Who negotiates sales?	Description of daily activities on the farm Are there any aspects of production that are difficult for you because you are a woman/man? Are there any aspects of production that men/women are discouraged from doing?	Are there any laws or policies that prevent you from operating your farm as a business?
Male farmers				
Male traders				
Female processors				

4

40



W5 In Genderanalysen geht es prinzipielle um: Access& Control; Devision of Labour; Beliefs/production/Reproduction; und Social Institutions.

Wibke1; 27.06.2019

Youth employment

Some VC projects have a focus on youth employment, as job creation lags behind population growth in many countries. Poor quality of jobs with low productivity is a main challenge.

Assessment of:

- Number of youth entering the labor market
- Quality of the education and vocational training system (qualification of youth, skills mismatch)
- On-farm employment and off-farm employment of youth (agro-processing, trade and services)
- Awareness and skills of youth to spot opportunities
- Other factors hampering youth access to the labor market (like access to land)

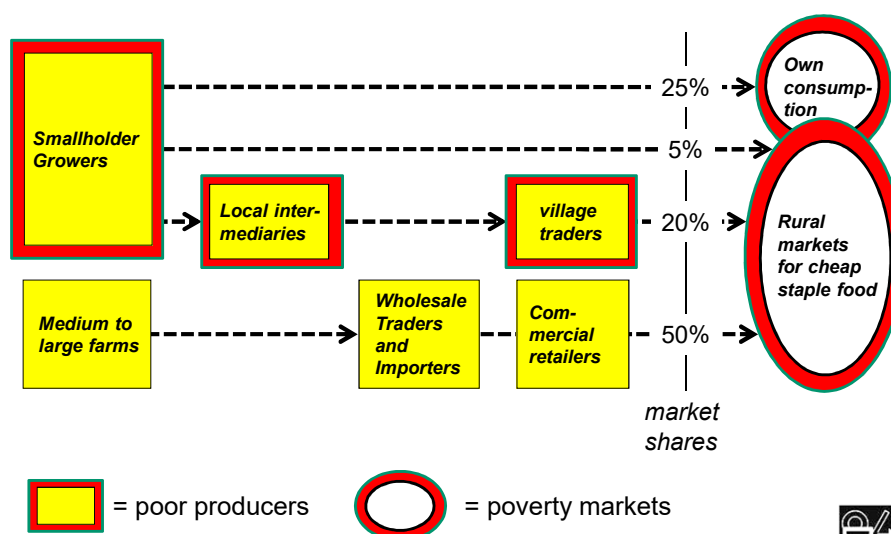


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Mapping poor producers

Poverty mapping of low-value staple foods

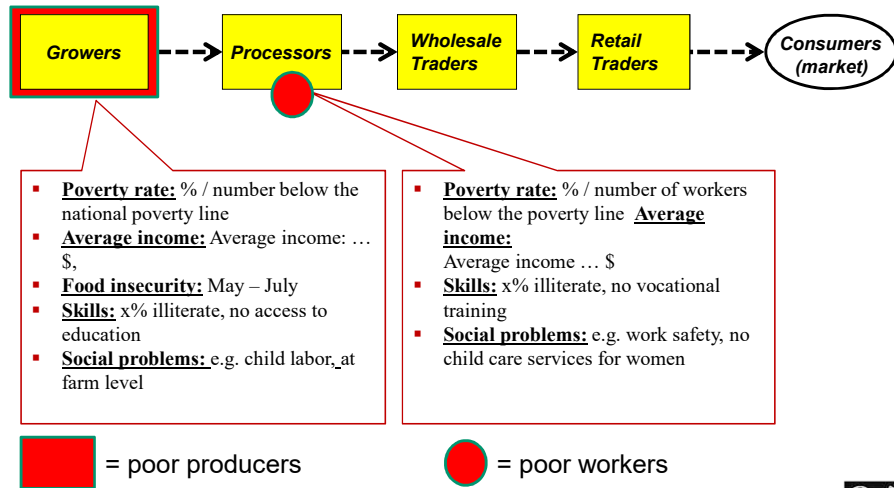


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Describing poverty groups

Poverty mapping of low-value staple foods

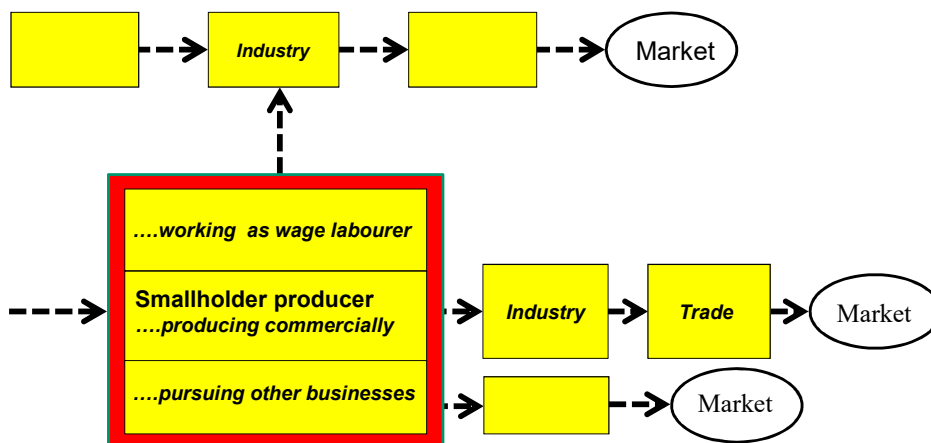


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Livelihood analysis

The „multi-chain perspective“ of poor people



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Particular constraints of poor producers***Lack of productive resources***

- Limited access to productive resources
- Lack of capital

Market failures affecting the poor

- Small scale, high cost of transaction, informality, unfavorable contracts
- Barriers to scaling up production
- Absence of services and products for poor producers
- Vulnerability: exclusion of small suppliers in demand crises
- Weak position of SMEs/excessive buyer power

4***Social sustainability***

- Conflicts over the use of natural resources and/or conflicts between commercial and subsistence production
- Lack of reserves, no savings
- Conditions of employment

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***Value chain development and nutrition?*****VC promotion can increase food security and improve nutrition**

- VC promotion can lead to greater availability of staple crops at lower cost and with better quality
- VC promotion can focus on particularly healthy food (e.g. moringa VC)

Malnutrition is still prevalent in global VCs:

- Increased monetary income does not necessarily lead to better nutrition.
- Smallholder farmers are often not able to generate a decent income.
- Trade offs of specialization: The specialized production of commercial crops can lead to reduced production of diverse staple foods for own consumption.

4**Consequences for VC analysis:**

- Assessment of health and nutrition status (height or weight for age of children, teeth, dietary status).
- Assessment of nutritional behavior, access to different types of food, general consumption preferences.

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