

ValueLinks 2.0

Manual on Sustainable Value Chain Development



Volume 2
Value Chain Solutions

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Andreas Springer-Heinze

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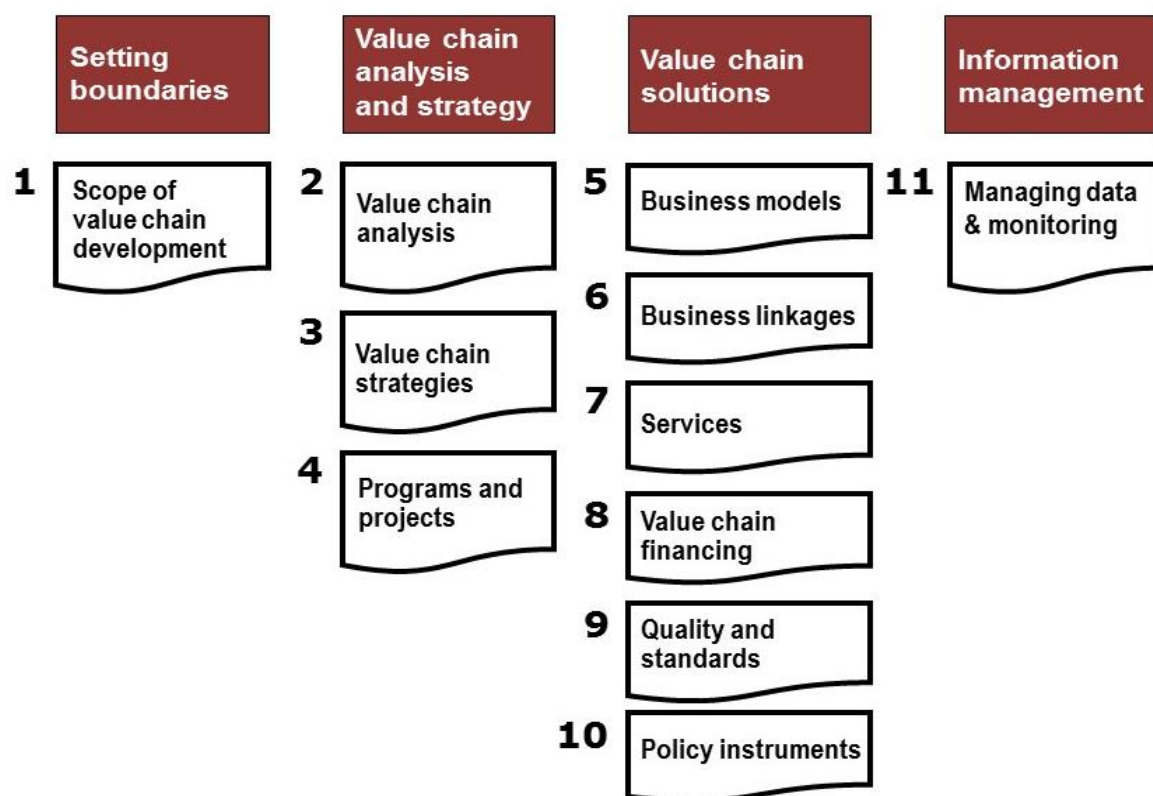
Without their generous collaboration, this manual could not have been completed.

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Overview

Content Structure of ValueLinks2.0



This volume 2 includes the modules 5-11.

Table of Contents

List of Boxes	vi
Glossary of business model and financial terms	10
Introduction into Volume 2	1
Value chain solutions	1
What can the value chain approach achieve?	5
Module 5 Business Models	10
5.1 Introduction: The business model concept	10
5.2 The business model canvas	18
5.3 Viability of business models	25
5.4 Tools to support business model improvement	51
Resources	59
Module 6 Business Linkages	63
6.1 Introduction into types of business linkages	63
6.2 Business contracts	70
6.3 Cooperation between small-scale enterprises	77
6.4 Cooperation at industry level	93
Resources	102
Module 7 Services	106
7.1 Introduction: Services for value chains	106
7.2 Assessing service needs and supply	113
7.3 Solutions for operational service provision	118
7.4 Solutions for support service provision	126
Resources	133
Module 8 Value Chain Finance	137
8.1 Introduction: Financing value chain development	137
8.2 Financing needs and gaps	141
8.3 Financing solutions	150
8.4 Risk management	164
8.5 Tools to facilitate financing solutions	168
Resources	178

Module 9	Quality and Standards	182
9.1	Introduction: Quality concepts	182
9.2	Quality management along the value chain	195
9.3	Sustainability governance of value chains	208
	Resources	225
Module 10	Policy instruments	229
10.1	Introduction: The need to regulate value chains	229
10.2	Economic policies	240
10.3	Environmental policies	251
10.4	Social policies	255
	Resources	261
Module 11	Data Management and Monitoring	267
11.1	Introduction: Value chain information	267
11.2	Data collection and management	270
11.3	Monitoring the development of value chains	281
	Resources	298

List of Boxes

Box 0.1.1: Concept: From constraints and needs to value chain solutions	2
Box 0.1.2: Concept: The place of solutions in the value chain system	3
Box 0.1.3: Concept: From vision to action in value chain development	4
Box 5.1.1: Case: Rice VC strategy and its implications for business models	12
Box 5.1.2: Concept – The inclusive business ecosystem	16
Box 5.2.1: Concept – The building blocks of the “business model canvas”	18
Box 5.2.2: Concept – Simplified visual structure of the business model canvas	19
Box 5.2.3: Concept – Links between two related business model canvasses	20
Box 5.2.4: Tool – The complete business model canvas template	21
Box 5.3.1: Tool – Variable cost, fixed cost, total cost, margin	29
Box 5.3.2: Tool – Gross margins per hectare and per unit	30
Box 5.3.3: Tool – Total cost, total revenue, profit	31
Box 5.3.4 Tool – Calculation of break-even point	34
Box 5.3.5 Tool – Minimum volume of production to justify investment	34
Box 5.3.6 Tool – Calculation of cash flow	35
Box 5.3.7 Tool – Share of the lead product in total income	39
Box 5.3.8 Tool – Resource efficiency in monetary terms	41
Box 5.3.9: Case – Value chain map of the cassava value chain in Burkina Faso	43
Box 5.3.10: Case – Characteristics of artisanal and mechanized attiéké making	44
Box 5.3.11: Case – Business model canvas of an artisanal attiéké processor	44
Box 5.3.12: Case – Business model canvas of a mechanized attiéké processor	45
Box 5.3.13: Case – Comparison of financial parameters: Labor and capital	46
Box 5.3.14: Case – Comparison of financial parameters: Cost, revenue, profit	47
Box 5.3.14: Case – Different types of attiéké makers in Burkina Faso	49
Box 5.4.1: Concept – Structure of a business plan	54
Box 5.4.2: Tool – The ‘Farmer Business School’ (FBS)	57
Box 6.1.1: Concept – Vertical and horizontal business linkages	63
Box 6.1.2: Concept – Range of business contracts	65
Box 6.1.2: Concept – Different forms of contracting along a value chain	66
Box 6.1.3: Concept – Types of horizontal collaboration	69
Box 6.2.2: Tool – Activities to avoid in supporting business linkages	76
Box 6.3.1: Tool – Three cooperative principles according to Dunn	77
Box 6.3.2: Concept – Conditions under in which cooperation is useful	78
Box 6.3.3: Concept – Overview of the benefits from cooperating	79
Box 6.3.4: Concept – Types of cooperative solutions in value chains	81
Box 6.3.5: Concept – Suitability of cooperative solutions	82
Box 6.3.7: Tool – Criteria to assess the viability of a cooperative	87
Box 6.3.8: Case – The Commercial Village Approach, Kenya	90
Box 6.3.9: Case – Key activities supporting formal producer cooperatives	91
Box 6.4.1: Concept – Federations of farmer organizations and cooperatives	93
Box 6.4.2: Concept – Business membership organizations	94
Box 6.4.3: Concept – Different types of business membership organizations	95
Box 6.4.4: Case – The Nucleus Approach in Sri Lanka	95
Box 6.4.5: Concept – Business membership organizations	96

Box 6.4.6: Case – Interprofessions in francophone Africa	97
Box 6.4.7: Tool – Instruments of business matchmaking	98
Box 6.4.8: Concept – The business wheel (rueda de negocios)	99
Box 6.4.9: Case – Nepalese paper products at the “Paperworld” Fair	100
Box 7.1.2: Concept – Examples of operational services	107
Box 7.1.3: Concept – Examples of support services	108
Box 7.1.4: Concept – Types of service providers	110
Box 7.1.5: Concept – Service arrangement 1: A service market	111
Box 7.2.1: Tool – Characterizing the demand for operational services	113
Box 7.2.2: Tool – Assessing the existing operational services	114
Box 7.2.3: Tool – Characterizing the demand for support services	115
Box 7.2.4: Tool – Assessing existing support services	115
Box 7.2.5: Tool – Chain upgrading and related service needs	117
Box 7.2.6: Cases: Service needs accompanying chain modernization	117
Box 7.3.1: Concept – Types of service arrangements for operational services	118
Box 7.3.2: Case – The mineral fertilizer value chain	120
Box 7.3.3: Concept – Types of embedded service arrangements	122
Box 7.3.4: Case – Embedded service arrangement	123
Box 7.3.5: Case – Pro-Planteurs in Cote d’Ivoire and Ghana	124
Box 7.3.6: Tool – Criteria justifying public subsidies on operational services	125
Box 7.4.1: Concept – Types of service arrangement for support services	126
Box 7.4.2: Case: The voucher system for agricultural extension	129
Box 7.4.3: Case: Mobilizing private funds for public service provision	129
Box 7.4.4: Case – Strengthening public support service agencies	131
Box 8.1.1: Concept: Financing issues in value chain development	139
Box 8.2.1: Concept – Types of financing needs	142
Box 8.2.2: Tool – Calculating working capital needs	143
Box 8.2.3: Concept – Typical financing needs along the value chain	144
Box 8.2.3: Concept – Financing needs and gaps along the value chain	146
Box 8.2.4: Concept – Risks and costs of financing the value chain	148
Box 8.3.1: Concept – Sources of financing for a value chain operator	151
Box 8.3.2: Concept – Hard and soft collateral	153
Box 8.3.3: Tool – Overview of financing instruments	154
Box 8.3.4: Tool – Standard financing instruments	155
Box 8.3.5: Tool – Internal value chain finance instruments	156
Box 8.3.6: Concept – External / triangular value chain finance	157
Box 8.3.7: Tool – Short-term external value chain finance instruments	157
Box 8.3.8: Concept – Setup of a warehouse receipt system	158
Box 8.3.9: Concept – Financing needs of value chain development	162
Box 8.4.1: Concept – Typical risks along agricultural value chains	164
Box 8.4.2: Case – Example of an integrated risk management strategy	166
Box 8.4.3: Concept – Overview of financial instruments	166
Box 8.5.1: Concept – The integrating role of the business model concept	169
Box 8.5.2: Concept – Cash flow from operating, investing and financing	173
Box 8.5.4: Concept – Projected cash flow over the entire investment period	174
Box 9.1.1: Concept – Quality attributes of products	183
Box 9.1.2: Concept – A basic classification of standards	185

Box 9.1.3: Case – Public and private organic standards	188
Box 9.1.4: Concept – Basic functions and roles in quality assurance	189
Box 9.1.5: Case/concept – Functions of standard systems	190
Box 9.1.6: Concept – National and international quality infrastructure	192
Box 9.1.7: Concept – A catalogue of standards along the value chain	193
Box 9.1.8: Case – ISO Standards	194
Box 9.2.1: Tool – Sources of information on standards in international trade	197
Box 9.2.2: Tool/case – Linking the chain map to standard requirements	200
Box 9.2.3: Tool – The CALIDENA methodology	201
Box 9.2.4: Tool – Determining gaps in compliance with quality requirements	202
Box 9.2.5: Tool – Quality management in enterprises and cooperatives	205
Box 9.3.1: Concept – Classification of sustainability standards	209
Box 9.3.2: Tool – List of selected ecolabels	210
Box 9.3.3: Tool – Sources of information about sustainability standards	211
Box 9.3.4: Case – The ISEAL Alliance	212
Box 9.3.5: Case – List of important chain-specific sustainability standards	213
Box 9.3.6: Tool – Lead questions to assess the significance of a standard	217
Box 9.3.7: Concept – The debate on the sustainable transformation of chains	221
Box 9.3.8: Concept – Arrangements for Co-regulation	222
Box 9.3.9: Case – Deforestation-free value chains	224
Box 10.1.1: Concept – Critical factors in the business environment of chains	230
Box 10.1.2: Concept – The eight principles of policy design	232
Box 10.1.3: Tool – Policy Instrument Matrix	236
Box 10.1.4: Concept – The policy cycle and entry points for the VC project cycle	238
Box 10.1.5: Tool – Guiding questions on policy issues in VC development	239
Box 10.2.2: Case – Extractive Industries Transparency Initiative (EITI)	241
Box 10.2.1: Concept – Different types of Infrastructure	242
Box 10.2.3: Tool – The EQuIP Toolbox	243
Box 10.2.4: Tool – Specific growth policy instruments	244
Box 10.2.5: Concept – Simplified Land Rights Continuum Approach	245
Box 10.2.6: Case – Land policy in Uganda	246
Box 10.2.7: Case – Land use planning guidelines in the Philippines	247
Box 10.2.8: Concept – Trade facilitation	249
Box 10.2.9: Case – Regional trade agreement of ECOWAS:	250
Box 10.2.10: Tool – Toolbox Trade	250
Box 10.3.1: Concept – Classification of environmental policy instruments	251
Box 10.3.2: Case – Compensation scheme to preserve agro-biodiversity	253
Box 10.3.3: Case –Payment for Forest Ecosystem Services Vietnam	253
Box 10.3.4: Case – “Gran Reserva Chachi” Project:	254
Box 10.4.1: Case – The Concept of Decent Work	256
Box 10.4.2: Case – Occupational safety in shipbuilding, Bangladesh	259
Box 10.4.3: Case – Promoting employment and job quality, Egypt	259
Box 10.4.4: Case – Employee wellbeing programs in Ghana	260
Box 11.2.1: Tool – Selected economic parameters	271
Box 11.2.2: Tool – Selected environmental parameters	272
Box 11.2.3: Tool – Selected social and gender-related parameters	273
Box 11.2.4: Tool – Table collecting VC statistics, parameters and prices	275

Box 11.2.5: Concept/tool – classifying types of data	277
Box 11.2.6: Case – Spreadsheet to check and calculate data for rice in Burkina	278
Box 11.2.7: Case – Quantified value chain map showing parameters	279
Box 11.3.1: Concept – Value chain development as self-enforcing process	283
Box 11.3.2: Concept – Generic results model for value chain development	287
Box 11.3.3: Case – A results model for business model improvement	288
Box 11.3.4: Tool/Concept – Generic logic model related to the value chain	289
Box 11.3.5: Concept – The logic model related to the value chain	290
Box 11.3.6: Tool – A stylized impact matrix with typical wording	291
Box 11.3.7: Concept – Hypotheses connecting steps in the impact pathway	293
Box 11.3.8: Case – Cost of monitoring in an SME promotion program, Vietnam	295

Glossary of business model and financial terms

ValueLinks uses the following terms to describe business models and financing, They complement the glossary in volume 1.

Accounts Payable

Accounts payable are amounts owed by an enterprise for goods and services that have been received but have not yet been paid for. Accounts payable usually involve the receipt of an invoice from the enterprise which provides the goods or services.

Accounts Receivable

Accounts receivable are the outstanding invoices an enterprise has for the goods or services it has delivered, i.e. the money that the enterprise is supposed to receive from its clients.

Asset:

Assets are the enterprise-owned resources employed in the production, marketing and sale of products.

Asset-Based Financing (ABF):

Asset-based financing relies on the asset values of the enterprise, such as accounts receivable, inventory, land, buildings and equipment. These are collaterals that could be used as a secondary source of repayment.

Business model

Every enterprise uses a business model, which is the specific combination of the product or service it makes and offers, the target customers and markets, internal business operations and technology, financial and human resources and the supply and marketing links that the enterprise uses to succeed and grow. A good tool to describe a business model is the business model canvas.

Business model canvas

The business model canvas is a table that visualizes the elements of a business model in nine boxes. The format is shown in box 5.2.4.

Capital

All sources of finance (both debt and equity) that an enterprise uses to fund/create the assets it uses to provide goods and/or services to its customers with the intention of generating a profit for the enterprise.

Cash flow

the balance of accounts receivable and payable, current assets minus current liabilities

Chain of custody:

Standard systems require that that a certified product can be traced back to the origin of production. A chain of custody standard regulates the methods documenting the flow of produce from one value chain stage to the next keeping certified and non-certified products.

Certification:

This is the written statement of an independent auditor that the product in question meets the criteria specified in a particular standard. Enterprises use certificates to prove and communicate their quality claims, e.g. by labelling.

Collateral

Assets legally owned by a borrowing enterprise that the enterprise has handed over to a financial institution in order to provide assurance in the event that it cannot fulfill its obligations. Third-party legal commitments can also act as collateral, e.g. guarantees by a strong business partner in the value chain. In this case, the third party becomes a source of cash repayment for a defaulted loan obligation.

Contract farming

Contract farming is agricultural production by farmers carried out based on an agreement with a buyer, often a processing company or a trader. Contracts often specify the quality required and the price, with the farmer agreeing to deliver at a future date.

Debt

Debt includes both short-term and long-term loans taken from individuals and financial institutions, supplier credits (i.e. accounts payable) as well as other liabilities such as tax payments due. For a financial institution to provide loans to an enterprise, the enterprise must demonstrate that it can generate sufficient revenues and profits over time so as to sustainably repay the financial obligation.

Equity

Equity includes the enterprise owner's own resources (i.e. savings in the form of cash and other assets) that they provide to their business for its start-up operation as well as growth. Obviously, enterprise owners would like to put as little of their own capital in their business as possible so as to maximize their return on equity invested and limit how much of their savings they could lose. Alternatively, financial institutions would like enterprise owners to have a larger-degree of equity invested in their enterprises so that the financial institution reduces its risk when providing financing to the enterprise.

Factoring

A factor buys an asset, usually accounts receivable, from an enterprise for cash. The purchase price is at a discount to the account receivable value. Factoring is not financing; it is the sale of an asset. Another term for factoring is bill discounting.

Investment

The additional assets an enterprise purchases with internal and/or external-provided financing enabling it to create further goods/services which it can sell to customers thereby growing its business.

Leasing

A long-term financing instrument that allows an enterprise the use of a capital good in return for a periodic payment. The payment can be in the form of rent where the enterprise must return the capital good after a period of time or as an installment whereby the enterprise eventually owns the capital good upon the payment of the final installment. Ownership of the capital good remains with the financial institution and it can repossess the asset in cases of borrower payment default without going through legal foreclosure and bankruptcy proceedings. Leasing is also referred to as hire purchase.

Liabilities

Funds either borrowed or waiting repayment used for the purchase or creation of enterprise assets.

Liquidity

Defined as a sufficiently large working capital position and in essence means the enterprise has enough access to cash-generating resources in order to run its business in an efficient manner as well as take advantage of growth opportunities. Liquidity can also be referred to as the speed and ease in which a particular asset can be changed into cash. liquid (i.e. easily converted into cash)

Loan Principal (and Interest)

The amount of an initial loan amount that remains to be paid. Loan principal can be split into equal amounts that are paid periodically (i.e. monthly, semi-annually, annually) over the life of the loan. This is referred to as “amortizing” or “bringing to death” a loan. Interest is calculated on the outstanding loan principal amount and added to the periodic principal amount.

Operational service / operational service provider

Operational services are those services that either directly perform *value chain operations* on behalf of the *value chain operators* or are closely connected to them. Many operational services are not specific to the value chain but generic in nature, such as transport, maintenance or accounting services. Operational service providers entertain business linkages with value chain operators but don't become owners of the product themselves. In the value chain map the service relation is distinguished from the vertical *business linkages* between operators by using a different type of arrow.

Real Property

Real property is property that includes land and buildings, and anything affixed to the land or immovable. For an enterprise, real property would include warehouses, factories, offices and other buildings owned by the enterprise. It does not include movable items such as equipment.

Return on assets

ROA is a calculation of the profitability of total assets owned. The ratio is net profit divided by total assets. Return on individual assets, such as loans, can also be calculated and is a common metric that financial institutions use to determine the attractiveness of existing and potential financial service products.

Standard

A standard is a set of rules describing product and process quality. Standards are “documents, established by consensus and approved by a recognized body, that provide, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context” (ISO)

Support service / support service provider

Contrary to *operational services*, support services do not directly support (or perform) basic functions in a *value chain*. Instead, they refer to general investment and preparatory activities benefitting all or at least several *value chain operators* simultaneously. Support services

therefore provide a collective good shared by the value chain actors. Typical examples are the setting of professional standards, provision of information, trade fairs and export marketing, research on generally applicable technical solutions, vocational training or political advocacy. Support services are often provided by business associations, chambers or by specialized public institutions. They belong to the *meso level* of the value chain.

Value Proposition

The value proposition is the product or service, an enterprise offers to its clients. The point is that the product should have value for the customer. It is a propositions because the customer finally decides.

Working Capital

Enterprise owner's equity position in short-term operational assets employed and not financed by short-term liabilities (i.e. short-term assets minus short-term liabilities). Financial institutions look for sufficient working capital to act as a first line-of-defense to take losses for sub-par business performance before their loans to an enterprise would be put at risk of loss. Incremental working capital needed for VC upgrading efforts will hence need to come from (i) additional owners' equity, (ii) external finance or more probably (iii) a combination of the two capital sources.

Introduction into Volume 2

Value chain solutions

The second volume of ValueLinks 2.0 deals with concrete fields of change in which the development of a value chain becomes manifest. ValueLinks distinguishes six major fields of change. Modules 5 to 10 introduce these topics and provide basic considerations and tools. It is clear that each topic opens up a universe of its own. ValueLinks does not pretend to cover them. The idea is to show the importance of subjects such as cooperative development or financial systems for value chain development. We look at these topics from a value chain perspective and try to make the connection between the value chain context and other fields of knowledge. There are links to different resources exploring the subjects in more detail.

All modules are fields of development action at the same time. In every case, we treat the technical questions on one side, and the promotional aspects on the other.

From strategy formation to value chain solutions

The following considerations pick up from modules 3 and 4 in the first volume of this manual. ValueLinks module 3 examines the strategic options and describes how value chain actors could arrive at a shared vision for chain development¹. The strategic vision is the basis for identifying constraints and needs as well as any new opportunities that arise in the process. The actors involved in strategy formation will come up with ideas to advance chain development, especially innovations in technology and business processes, the improvement of knowledge and skills, better product quality, storage and transport, market access and many other issues. From the value chain perspective, the decisive point is to translate these ideas into the corresponding change of value chain structure and performance.

Technical innovation is a case in point: Introducing a new technology into a value chain first has implications for the enterprises adopting the technology, because they have to review their business processes and change the business model. As a result, a new type of operator enters the scene. Most likely, this means including additional value chain functions. If the innovation calls for different kinds of inputs, there will also be consequences for the supply linkages and, possibly, the cooperation of small-scale enterprises. The technical innovation thus expresses itself in several changes of the value chain.

We can locate all innovations somewhere in the extended value chain map, at the micro level of operators, business linkages, operational service providers and markets reached, or further up at industry association or the policy level². In fact, only if an improvement or innovation leads to structural change and a subsequent change in the numbers, we can speak of value chain development.







The next two charts show how to make the move from the strategic vision and the related constraints, needs and opportunities to value chain solutions. The first one, in box 0.1.1, is a table presenting typical issues arising in the discussions about the value chain strategy in the left column. These issues are translated into one or several value chain solutions in the right column. The table shows selected issues and their relation to the value chain. The important

¹ see chapter 3.5.

² See the explanations on value chain mapping in module 2, in the first volume.

point is to translate the critical issues into different categories of chain solutions. We distinguish six types of solutions that are treated in modules 5 to 10. The place of value chain solutions becomes visible in the chart in box 0.1.2 which shows the elements of the value chain map where the change materializes.

Box 0.1.1: Concept: From constraints and needs to value chain solutions

Constraints/needs and opportunities translated into value chain solutions	See module
Production technology and processes, byproducts, losses Processing capacity	Improved business model(s) Investment plan(s)	 5
Lack of capital	Financial products/ VC finance	 8
Market access Coordination, (mis)trust, conflict Market power Stability of supplies, access to inputs	Vertical business linkages, Horizontal cooperation, Business membership organizations New supply linkages	 6
Access to operational services Information, skills	Service arrangements Needs oriented support services	 7
Product quality and safety Sustainability problems	Traceability & certification Adoption of a standard system	 9
Resources degradation, pollution Employment conditions, wages Infrastructure	Environmental policy Economic and social policies Private-public dialogue	 10

Source: own concept

It should be noted that the table above is illustrative in nature and only shows the principle connections. In fact, most constraints and needs will lead to more than one value chain solution. For example, if product quality is a constraint (and quality improvement an opportunity), we can look for a traceability system along the value chain (covered in module 9). Of equal importance will be to improve the business models of the operators concerned (module 5) and the business linkages to the markets for high quality products (module 6).

Overview of value chain solutions

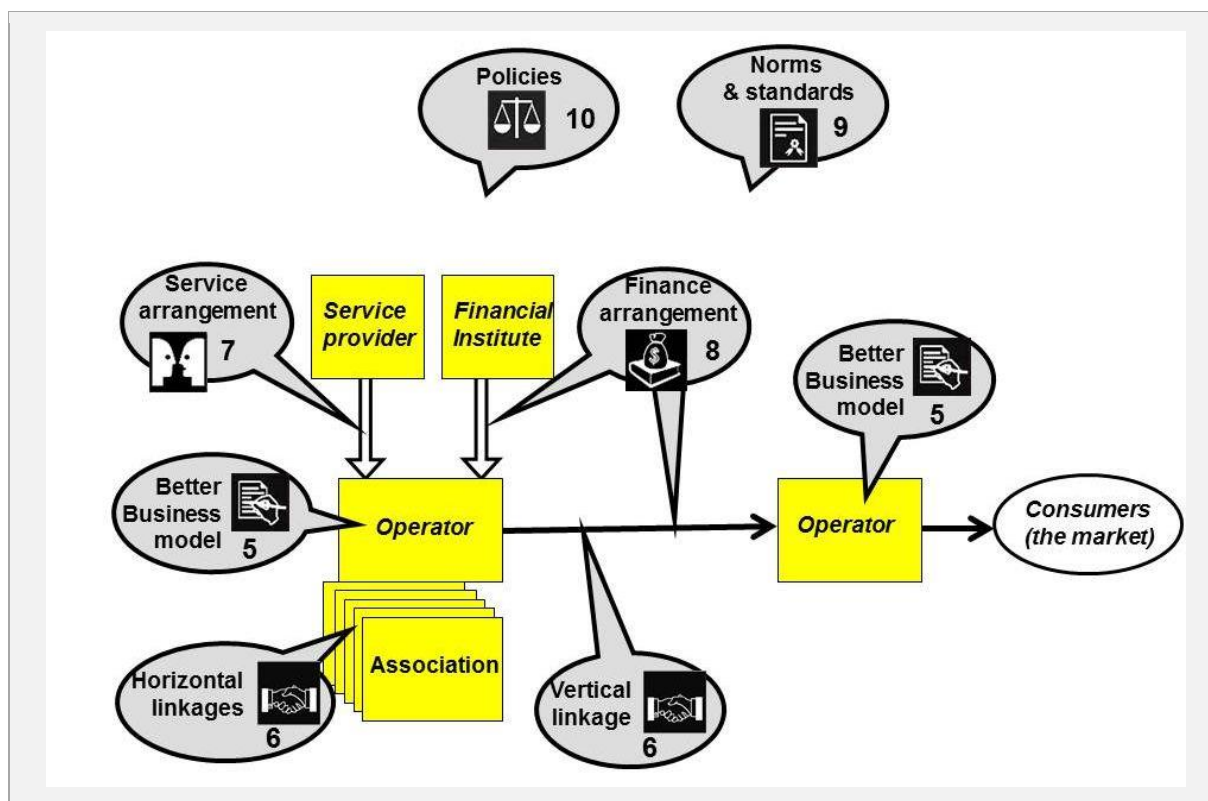
Box 0.1.2 shows the place of the six categories of solutions in relation to the elements of the value chain. We can classify them as follows:

Value chain solutions at the micro level refer to the operators and their linkages. This includes business model solutions (module 5) and linkage solutions (module 6) along the main sequence of the value chain map. The business model solutions also comprise the value chain functions.

Another type is service solutions. These include the arrangements for providing operational and support services (module 7) and the financing instruments and arrangements (module 8). In both cases, solutions also cover the capacity of service providers.

The third category is governance solutions, which concern all value chain actors alike. These include collaborative quality management systems along the value chain, and the standard systems regulating and certifying sustainability criteria in particular (module 9). Another field of governance solutions is public policy regulations of the industry (module 10). The policy level may not be visible in many chain maps, but is an important part of the system³.

Box 0.1.2: Concept: The place of solutions in the value chain system



Source: own concept

The classification does not mean that ValueLinks can offer any standard solutions for value chain development. Modules 5 to 10 rather provide tools and ways how to arrive at sensible solutions. While there are typical patterns of development, we have to design the solutions carefully for each case. This is all the more important since value chain strategies often go for combinations of upgrading and governance solutions.

ValueLinks 2.0 has two entirely new modules — Module 5 on business models and Module 8 on value chain finance solutions. Modules 9 and 10 on the governance solutions have been completely revised. The basic ideas of module 6 on business linkages and module 7 on service solutions remain the same. Nevertheless, these modules have undergone a complete revision as well, and now contain additional content⁴.

The key role of business model improvement

It is no coincidence that the first solution in the sequence concerns business models. Business models are the building blocks of value chains and the mainstay of value chain development. Every strategy necessarily includes one or several business model solutions.

³ See the definition of micro, meso and macro levels of the value chain in module 2, chapter 2.2.1

⁴ For the changes in Module 11, see the following section.

The main reason is that a change at any point in the system has implications for the enterprises concerned and, conversely, business model change goes hand in hand with upstream and downstream business linkages and the provision of operational and financial services. There is also a close connection with cooperative development, and with the effectiveness of policy regulations.

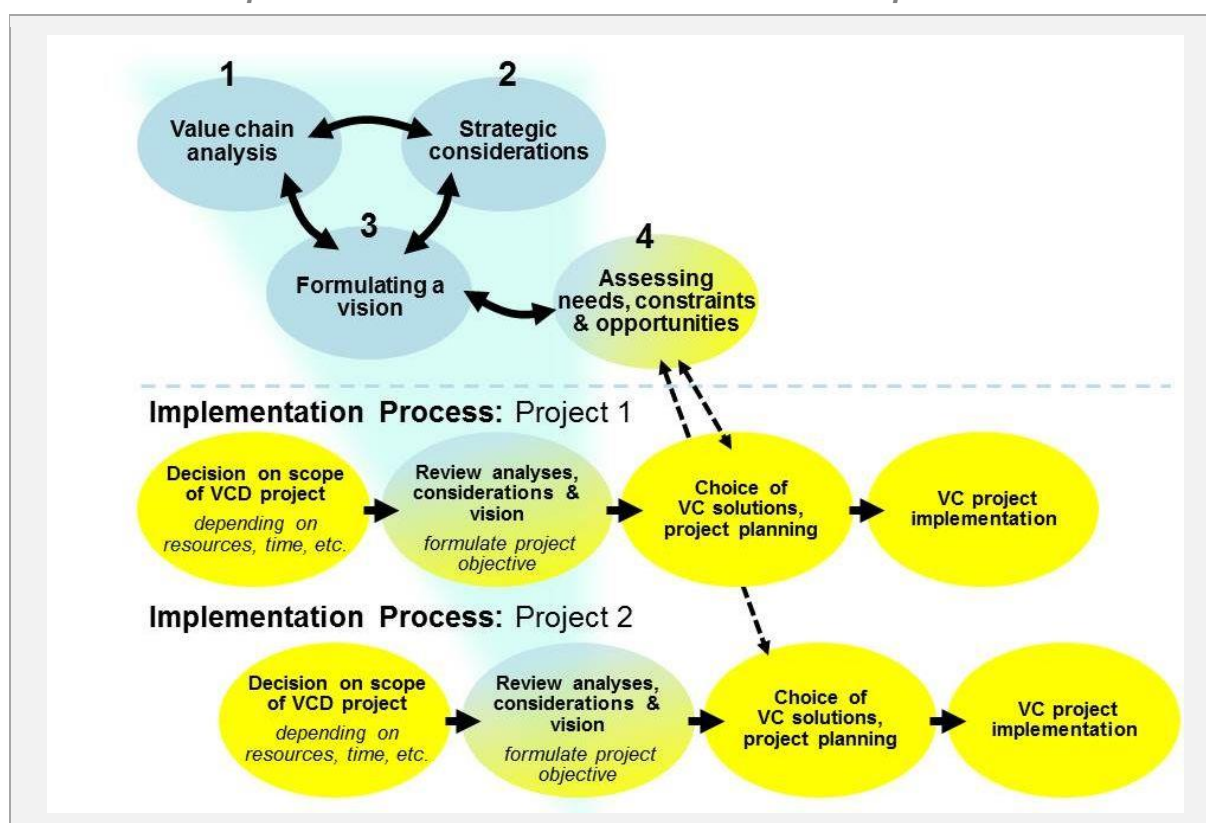
Second, financial viability is an indispensable prerequisite for success. Unless the innovations make financial sense for the operators, no enterprise will go ahead and invest. Business model assessment is the touchstone for the validity of a value chain strategy.

External support to value chain solutions

Apart from Module 3, the second volume of ValueLinks 2.0 also builds on the design of chain projects and the processes of strategy formation, planning and implementation covered in chapters 4.2 and 4.5 of Module 4⁵. Below is the reproduction of the chart describing the two-tier process of value chain development that we have discussed in Module 4. The scheme clearly indicates at which point the value chain solutions come into play.

The process chart in box 0.1.3 shows in the upper part, how the analysis and visioning process determines strategic directions. On this basis, project planners choose the value solutions to work out and promote in particular projects. Every project supports specific solutions.

Box 0.1.3: Concept: From vision to action in value chain development⁶



Source: own concept

⁵ in the first volume of ValueLinks 2.0

⁶ This is the same scheme as in box 4.5.1. in the first volume.

The second volume of ValueLinks starts with the assumption that the actors agree on the vision for value chain development. The modules about the different value chain solutions provide tools and ideas to master the pivotal point between strategy formation and project implementation.

In addition to the technical aspects, the modules also deal with the question what external projects can do to promote and facilitate the solutions in practice. This relates back to the issues of program and project implementation covered in Module 4

What can the value chain approach achieve?

ValueLinks module 11 completes the entire cycle from the chain analysis, strategy formation up to the implementation of value chain solutions. The question is what the value chain approach actually achieves for sustainable development. Which are the most effective solutions and interventions? How significant are external support activities for the development of markets and value chains anyway? We have to ask these questions in order to get a better understanding of what works and find the right points of leverage in the next round of investment and project support.

Assessing the impact and sustainability of the support programs is a key task in chain development. Completing this task faces the double challenge of gathering the necessary value chain data and tracing the process of chain development correctly. Both meet with serious information problems.

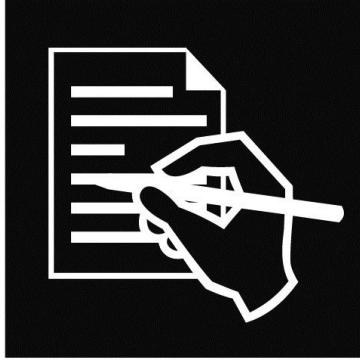
For one, decisions makers simply need reliable data on the value chain and its evolution. Although it is not difficult to find studies on many value chains, the available data are incomplete and often inconsistent. Module 11 provides some ideas and tools to improve the data basis. It is particularly difficult to generate information on the sustainability of value chains. Sustainability metrics pose difficult measurement and valuation problems and therefore tend to be contentious. In addition, data analysis is costly and the budget allocated cannot go beyond a narrow limit.

Despite the measurement problem, the first challenge can be still be handled more easily than the second – assessing the effects of external interventions into value chains. Program managers and evaluators have to understand the mechanisms of value chain development to find the most effective entry points and plan new projects. However, anticipating the results of chain development projects, as well as evaluating them ex-post is faced with difficult methodological questions.

One point is the dynamic character of markets and economic systems. It is the very nature of market processes that they evolve unplanned. Economic development is not so much a matter of political decision-making, but follows from the interplay of individual investment and production decisions. Public support is one factor only. Another difficulty is to establish the connection between results at the level of individual enterprises and the large-scale structural and regulatory improvements. While it is possible to attribute business model changes of particular operators to a development project supporting them, we have difficulties establishing the connection between external support activities and the wider process of sustainable chain development. A clear-cut attribution of change to external support activities is only possible for a manageable number of beneficiaries. Correlating structural change with previous support activities is much less evident. The fundamental question is how any one project can actively 'develop' a chain, given that economic development is an evolutionary process in which many factors are at play.

The ValueLinks philosophy has the following answers to this question: For one, we have to accept the fact that there are no definite cause-effect relationships. It is impossible to anticipate value chain development. Even ex-post, it may not always be clear which have been the decisive drivers of change. The 'attribution gap' remains.

A realistic view on transformation relies on recurrent patterns of economic change that only become visible when projects carefully monitor the change process. Programs need to close the learning cycle between planning, action and evaluation. Module 11 offers some tools to achieve this.



Module 5

Business Models

Contents

5.1 Introduction: The business model concept	10
5.1.1. The place of business models in ValueLinks	10
Business models in value chain mapping	10
Business model solutions in the chain development strategy	11
5.1.2. From chain strategies to improved business models	11
How to derive a business model solution	12
Checking the solidity of a business model idea	13
<i>Determining the internal consistency of a business model</i>	13
<i>Determining the financial viability of a business model</i>	14
5.1.3. Concepts of sustainable business models	14
Social business	14
Green business	15
Inclusive Business	15
5.2 The business model canvas	18
5.3.1 Concept of the business model canvas	18
“Interlocking” business models	19
5.2.2 Developing business model solutions	20
The business model canvas template	21
Constructing an improved business model	23
<i>Guiding questions</i>	23
<i>A quick check to assess the quality of a business model</i>	24
5.3 Viability of business models	25
5.4.1 Procedures to assess viability	25
Lead Questions	26
<i>Does the business make money with the products of the value chain?</i>	26
<i>Is the proposed investment or intensification of production useful?</i>	26
<i>Does it interfere with other branches in a multi-product enterprise or farm?</i>	26
<i>What are the social and ecological costs and benefits of the business model?</i>	26
Collecting and interpreting the data	27
<i>Using data to calculate financial parameters</i>	27
<i>Interpreting the financial parameters</i>	27
5.4.2 Key financial parameters	28
Cost of production	28
<i>Fixed and variable cost</i>	28
<i>Marginal cost</i>	29
Gross margin and labor productivity	29
Profit	31
The foundations of improved profitability	32
<i>Intensification of production</i>	32
<i>Investment in production capacity</i>	32
Minimum volume of production – break-even point	33
Cash flow	34
Need for additional long-term and short-term capital	35

Assessment of risk	36
Other parameters and criteria	36
5.4.3 Interaction with other activities in a diversified enterprise	37
Share of the lead product in total profit	38
Limits to expanding production of lead crops in a diversified farm model	39
5.4.4 Ecological and social performance criteria	40
Ecological sustainability	40
Compliance with social and gender considerations	41
5.4.5 Case: Small-scale cassava processing in Burkina Faso	42
Development of the attiéké value chain	42
Business models of artisanal and mechanized processing	43
<i>Description of the artisanal business model of attiéké making</i>	44
<i>Description of the mechanized attiéké business model</i>	45
Assessing the business models	45
<i>Financial assessment</i>	46
<i>Social assessment</i>	48
<i>Contribution to sustainable value chain development</i>	48
5.4 Tools to support business model improvement	51
5.4.1 Identifying business models for micro and small enterprises	51
Characteristics of innovative and improved small-scale business models	52
The business idea	52
<i>Diversified business models</i>	53
The business plan	53
5.4.2 Public support to develop small businesses	54
Eligibility of business plans for public support	55
Tools for entrepreneurship development	56
<i>Training and coaching instruments for small-scale entrepreneurs</i>	56
<i>Business incubation and financial incentives</i>	57
Resources	59

Module 5 Business Models

5.1 Introduction: The business model concept

The development of a value chain necessarily implies changes in the way operators perform their business. A value chain evolves as the enterprises make better products, adopt new technology, change business processes and engage with other partners – in short as they develop their business models. The first topic of chain development therefore is the improvement of the business models employed in the value chain.

We define a 'business model' as the specific combination of the product made and sold by the firm, the technology utilized and the scale of production, the backward and forward market linkages and financing arrangements. These elements have to fit together constituting a system that enables an enterprise to operate successfully. The principles of designing good business models apply throughout. The concept applies to any type of enterprises, from small farms and enterprises to large companies. All enterprises can be described in terms of their business model, even if the owner of the business has not spelled it out explicitly and may not even have it purposefully designed.

This module explains business model improvement as an important field of innovation in a value chain, the first and foremost 'VC solution'. An improved business model is more productive, has a smaller ecological footprint and enables owners and workers to make a decent living. Business model improvement therefore is a key field of VC development action. It is not by coincidence that this subject opens the series of modules on VC solutions.

Essentially, a sustainable value chain has to be composed of sustainable enterprises. The number of possible business model innovations is endless. In the following module, we are not looking into any particular technological or organizational improvements but into the main quality criteria of good business model solutions – their inherent logic and consistency captured by the business model canvas and their financial viability. Business models have to pay off to be successful.

5.1.1. The place of business models in ValueLinks

The business model concept occupies a key role in the ValueLinks methodology. Understanding business models is an essential element in VC analyses, in strategy formation, and in several fields of VC development action.

Business models in value chain mapping

Value chain operators are the building blocks of value chain maps. ValueLinks visualizes them by a yellow rectangular⁷. To define a specific type of operator in the value chain map analysts look for its business model. Often, farms and many processors and traders of standard products follow very similar ways of doing business. In the chain mapping exercise enterprises of similar size and with similar business models are grouped together. Enterprises that have a business model in common are classified as a particular category of operator. The business models of the operators constitute the backbone of the value chain map.

⁷ See volume 1, chapter 2.2 on value chain mapping

In fact, the position of an operator in a chain map tells us much about its business model: From the VC map it is clear which product an enterprise makes, and which business operations it performs. Arrows link the operator to its suppliers and to its buyers. Economic VC analysis provides information on the prices paid. The value chain works because operators follow business models that relate to each other. Thus, the business model is present in the chain analysis from the start.

Business model solutions in the chain development strategy

Value chain development translates into changes at the level of the operators constituting the chain. For example, chain development strategies aiming at economic growth or better resource efficiency have implications for the use of technology at firm level. Inclusive chain development seeks business models that are accessible to micro-entrepreneurs. New regulations force entrepreneurs to change their ways of doing business. Practically all chain development strategies thus imply changing the business model(s) of operators. Working to improve business models thus is the foundation of chain development. A viable business model can and will be replicated delivering products and services to more people and over a wider geographic area.

Business model solutions for one group of operators also have implications for solutions in other parts of the chain development strategy: One is business linkages: Business models only work if they are connected to those of suppliers and buyers. If one operator changes its business model, its partners most likely have to follow suit and agree on new business contracts. This can lead to 'interlocking' arrangements in which two (or sometimes more) business partners coordinate their business models⁸.

Another important aspect is financing. Improving the business model has financial implications: Even small technological changes often increase the working capital: Farmers have to pay for seed and fertilizer, small handicraft manufacturers for the material. Better capacity utilization implies additional financial needs because more raw material has to be purchased. To obtain the necessary financing, operators have to present a business plan and financial analysis. Developing an appropriate VC finance solution crucially depends on a previous investment calculation. Therefore, the present module 5 should be read in connection with module 8 on financing solutions.

Business model considerations are also relevant for improving the service delivery in the chain. Service providers can only be financially viable if they have a sufficiently large number of solvent clients. Unless small enterprises are able to pay, it does not make much sense to develop a service market for them.

5.1.2. From chain strategies to improved business models

Business model solutions are essential elements in the value chain strategy. Innovations along the chain lead to changes in the business models of operators. Conversely, operators changing their business model contribute to transforming the value chain at large.

The question is what constitutes a good business model solution and which improvements of the business model are necessary for the chain strategy.

⁸ See module 6 for contract linkages as part of business models.

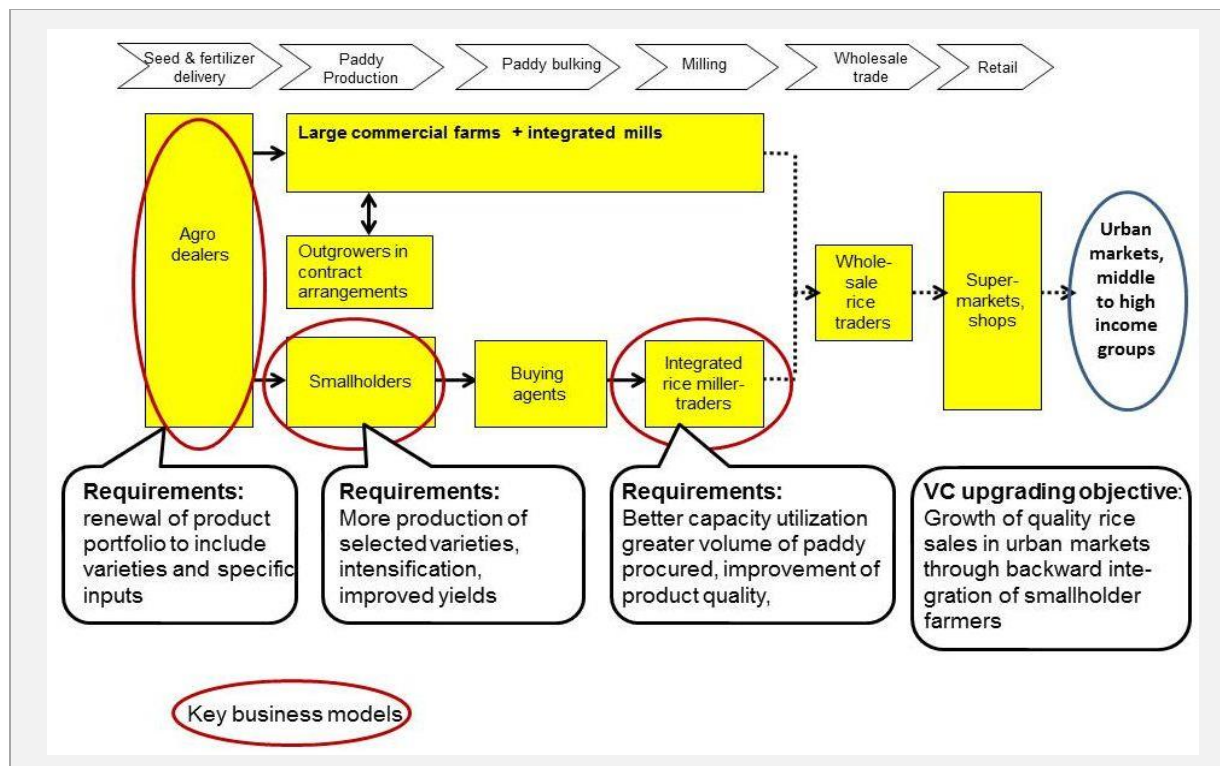
How to derive a business model solution

In order to grow out of poverty, the business models of poor entrepreneurs have to become more competitive. Strengthening the economic and financial viability of poor operators therefore is an important solution in any pro-poor VC development strategy. The improvement of business models is an ongoing process. Every entrepreneur thinks about improving his or her business constantly.

For ValueLinks the starting point is the strategic options⁹ for chain development. The value chain strategy involves changing the business models utilized by one or several operators. Some of the strategic options can directly be translated into modified or new business models, others have indirect implications. For example, strategic option 1 (value chain upgrading and innovation) implies more productive technology, contracting with more buyers and new linkages with suppliers of inputs. In order to conquer new markets, operators have to make quality products and seek new marketing channels. Strategic option 4 (Improving resource efficiency) means using resource-saving technology and processes and requires additional services and different inputs. Likewise, strategic option 6 (business models benefitting the poor) and 9 (economic empowerment of women and the young) have a direct bearing on the ways business should be done.

The value chain map is a tool to visualize the implications of the chain strategy for the operators concerned. Box 5.1 shows the example of the rice value chain in West Africa and how the value chain strategy translates into changes in the business models of different types of operators.

Box 5.1: Case: Rice VC strategy and its implications for business models



Source: own concept

⁹ The content of strategy formation are covered in module 3, the process issues in chapter 4.5

To arrive at business model solutions, the lead actors in value chain development have to carry forward the strategic considerations discussed in module 3. The line of thinking moves from the formulation of a strategic option to the necessary innovations of products, technologies, business processes and linkages. These innovations always relate to the operators in the value chain. Each time, the question is what the strategic option means for the different groups of operators.

By placing the likely implications of the chain strategy for the operators directly into the map, the connection becomes visible. For example, if a chain upgrading strategy seeks higher quality products by introducing new food processing technology, the processors will have to invest into equipment and likely expand their scale of operations. This means that they not only have to improve the product itself but also the production processes and the use of resources. To sell the additional volume of production, the traders in the sales channels will have to expand their business as well. At the same time, the farmers supplying the raw material to processors probably have to think about the varieties to use and the quality of products.

Another example is the improvement of resource efficiency. To reduce the water footprint of food production, farmers may use water-saving technology. This implies changes in the production process and possibly the investment into new equipment which entails the need to work with new partners providing the required services and financing. The insights derived from the chain strategy thus lead to new business model ideas at several stages of the value chain. The chain map shows how they are interlinked.

Using the value chain map to work on business ideas has its limits, though: There simply is not enough space to accommodate all relevant points within the map.

Once it is clear which operators need to adapt their business models, both enterprises and analysts can focus on the right solutions. To systematically assess the consequences of value chain development for the enterprises concerned ValueLinks suggests two instruments:

- *The business model canvas*
- *Tools for the financial analysis of enterprises*

The first serves to check how far the changes go and to make sure that the demands made on enterprises can be fulfilled. In most cases, the necessary change will go beyond small modifications. The second instrument is the financial reality check.

Checking the solidity of a business model idea

The change in the business model varies from case to case and it is not possible to make a general statement on the right business solutions. Therefore, this module presents tools for the *assessment* of business model solutions, not the business models itself.

Determining the internal consistency of a business model

A good business model solution is a combination of product, customers, technology and business partners that responds to the demands of both customers and society. It is important that the different elements go together smoothly. The best tool to achieve consistency is the 'business model canvas' – a qualitative description of a business idea that allows visualizing the connection between the different elements ("building blocks") that constitute a business model. Whichever ideas for business improvements are derived from the chain strategy, they have fit together and lead to a realistic concept that is free of

contradictions. A good business model also needs innovative elements. Simply reproducing existing models involves risks.

Determining the financial viability of a business model

The most important incentive for developing a new business model is the ability to earn money with it. There can be no doubt that operators have to be financially viable. Unless the enterprises earn money, there is no incentive and no prospects for sustainable chain development either. The criterion for the economic sustainability of a business model is straightforward – it is its profitability. Every business model first has to generate enough income to sustain the operations. Second in line is the compliance with laws and standards.

Before a business model idea can be supported as a solution for chain development it has to undergo a financial reality check. The financial analysis of the business model is the second instrument that delivers the hard facts about the financial implications. Analysts have to show whether the proposed new or revised business model is profitable or not, whether the capital requirements are reasonable, and whether it is attractive enough for investors.

Value chain improvement has to make business sense for the operators concerned. Ultimately, it is the operators investing into their business models who are behind the evolution of the value chain at large. Without financial benefits for operators there is no incentive for value chain improvement.

The financial analysis brings out requirements that have to be fed back into the business model canvas: Typically, the investment into production capacity will only pay off, if the number of units produced exceeds a certain critical level. This means that the business model canvas has to include a statement on how to secure raw material supply, on how to store the additional production and on which new clients to sell to. It may also turn out that the conditions of doing business have to change as well – conditions of infrastructure, taxation or financial incentives. It takes several iterative steps combining the work on the business model canvas with the respective financial calculations to arrive at valid business model solutions for the operators. This the proof that the development strategy actually makes economic sense.

5.1.3. Concepts of sustainable business models

For more than the last decade, proponents of pro-poor growth and the transformation towards a green economy have been looking for ways to harmonize private business interest with social objectives. The development debate has led to the idea of socially and environmentally responsible business models. Key terms include social business, green business and inclusive business.

Social business

Social entrepreneurs, just as green or inclusive entrepreneurs, are motivated by values and ethical considerations. The ethical dimension is a major issue to take into account in green and social business alike (Linnanen, 2002, p.76pp). Mohammed Yunus introduced social business as the model of a company that has “a social mission at its core. (It is) set up to solve a specific problem to the benefit of poor or disadvantaged members of society”¹⁰. Social businesses generate profits like normal companies but reinvest them into serving a so-

¹⁰ See <http://www.yunussb.com/about/>

cial cause such as employment, education, healthcare, clean water and clean energy. Social business is driven by a social cause (Muhammad Yunus, 2011).

A similar business concept is 'Creating Shared Value' that aims at a *social* value proposition and develops the competitiveness of an enterprise while simultaneously driving the economic and social development of the communities in which it operates (Porter and Kramer, 2011)¹¹.

Green business

The ecological dimension of sustainability calls for business models that use ecologically efficient technology and offer products that do not harm the environment. Environmentally sustainable enterprises follow two main approaches to greening¹²:

- *Green products or services*: The enterprise offers products with a smaller ecological footprint (e.g. reducing greenhouse gas emissions) or products and services that help other businesses or consumers reduce their own footprint (e.g. green business development services or green technology).
- *Greening of business processes*: Here, the enterprise uses cleaner production and marketing processes. This can refer to the internal processes (such as avoiding hazardous substances, use of energy and water efficient technology¹³) and/or to the processes in the supplying enterprises (green procurement and recycling systems).

As it stands, these approaches correspond to essential elements of the business model canvas. The first approach to greening translates into changes regarding the value proposition, the product of an enterprise. The second approach concerns key activities and marketing channels. Green businesses introduce ecological considerations into the business model canvas making it a "green business model canvas" (see chapter 5.2, below). It should be clear that greening a business model does not make the other sustainability dimensions redundant. A wider definition equates "green" with "sustainable". Truly green business models consider the social benefits to society as well¹⁴.

Inclusive Business

The term "inclusive business" refers to medium and large companies that do business with and for the poor including them in their core business operations. Inclusive companies generate social benefits by providing new business opportunities to collaborating smallholder farmers and micro-enterprises, by hiring staff or by supplying poor customers products and services they would otherwise not have access to. They create a stable market outlet for their small-scale partners and help them access technology. Two factors drive the inclusive business model concept. One is the commercial benefit of serving markets catering to poor customers; the other is the ethical and cultural commitment of entrepreneurs to working with the poor.

Inclusive business models seek collaboration with poor partners upstream as well as downstream in the value chain. They collaborate with poor people on a commercially viable basis integrating them as suppliers, distributors or retailers, or working for them as customers¹⁵.

¹¹ See <http://sharedvalue.org/>

¹² Henriksen et al., 2012, p.8

¹³ See the criteria in GIZ 2016, p.38

¹⁴ GIZ, 2016, p.18

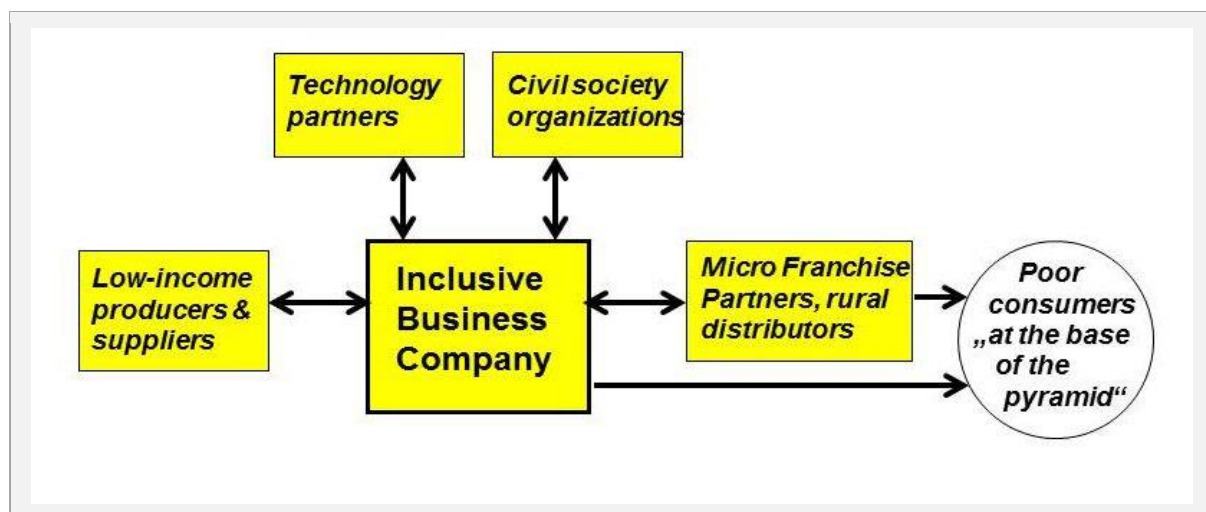
¹⁵ G20 Inclusive Business Framework, p.3

Upstream, inclusive business models integrate poor suppliers of raw material, intermediate products or services. A typical example is cosmetics or food companies procuring biodiversity-based raw material from poor communities that collect the material in natural forests following sustainable practices. A case in point is traders and food processors sourcing from smallholder farmers via production contracts¹⁶.

Downstream, inclusive business models include micro entrepreneurs as partners in the sales channel – as distributors, retailers or micro franchisers. Often, the sales products are destined to poor communities which need frequent and small deliveries in line with their sporadic cash flow. Examples are pay-per-use services and small-scale sanitary or food articles. To develop solutions for energy and water supply to poor customers, inclusive business models engage in partnerships with local enterprises. Another option is the supply of tailor-made inputs for poor micro-entrepreneurs. An example is packages of construction material that allow completing small building tasks at a manageable cost.¹⁷

In all these cases, inclusive business models create a network of enterprises around them.

Box 5.2: Concept – The inclusive business ecosystem



Source: Own concept

The box above visualizes the idea of an inclusive “business ecosystem”¹⁸ as part of value chains serving poor customers at the “base of the economic pyramid”, or short BOP. The BOP concept goes back to Prahalad and Hart¹⁹ who refer to the great potential in doing business with and for the four billion world’s poorest. The base of the economic pyramid is the lowest income segment in society and commonly considered to include people earning up to \$8/day. Inclusive business models address poor people also as customers. This includes providing consumer goods that are affordable for poor consumers and reduce their cost of living, e.g. in small packages, via accessible marketing channels or in combination with services.

¹⁶ Strengthening the business linkages between poor producers and their commercial partners is a separate value chain solution that is treated in module 6, chapter 6.2.3.

¹⁷ See GIZ, 2014 for more examples

¹⁸ The term inclusive business ecosystem is explained by Gradl, 2011

¹⁹ Prahalad and Hart, 2002, and Prahalad, 2006

The inclusive business concept has emerged as a development approach that starts with individual companies but has the potential to transform entire value chains. The concepts of social, green and inclusive business provide general principles and give directions. However, they do not present any standard business model solutions. The range of sustainable business models is wide; and the search for new ideas needs to continue. Any business model that can be easily copied seems to be a solution at some point.

That's why the following chapters are not structured according to types of business models but according to the generic instruments for developing and testing business model solutions. The issues differ from one value chain to the next. Any improvement of business models is welcome if it contributes to sustainable development. ValueLinks can only offer criteria and considerations; the business ideas as such have to come from the enterprises.

We first discuss the application of the business model canvas in chapter 5.2 followed by tools for financial assessment in chapter 5.3. The viability and competitiveness of the business model is particularly important for small marginal entrepreneurs. This is the subject of chapter 05.4.

5.2 The business model canvas

The business model of an enterprise “describes the rationale of how an organization creates, delivers, and captures value”. This is the short and crispy definition given by Osterwalder and Pigneur²⁰. The creation and delivery of value depends on the type and quality of the product or service offered, on the target customers, the production technology and processes, the types and sources of raw material, inputs and services used and the delivery channels. These elements need to be specified so that, taken together, they constitute a viable system enabling an operator to serve its market with a product according to demand and at a price that covers costs. The concept applies to all types of enterprises, big and small alike.

5.3.1 Concept of the business model canvas

The most widespread concept for systematizing business models is the “business model canvas”, developed by Osterwalder and Pigneur (2010). The “business model canvas” describes an enterprise as a system of nine interrelated elements – the “building blocks” that explain the business idea. Box 5.2.1 presents the building blocks of the canvas in the left column. The right column tells the story of the enterprise.

Box 0.1: Concept – The building blocks of the “business model canvas”

Building blocks	... and the story they tell
Customer Segments	The enterprise serves one or several customer segments.
Value propositions	It seeks to solve customer problems and to satisfy customer needs with value propositions.
Channels	Value propositions are delivered to customers through communication, and distribution and sales channels.
Customer Relationships	Customer relationships are established and maintained with each customer segment.
Revenue Streams	The revenue streams result from value propositions successfully offered to customers.
Key Resources	Key resources are the assets required to offer and deliver the products and services according to the value proposition
Key Activities	Key activities are the necessary business processes. They utilize a defined technology.
Key Partnerships	Some activities are outsourced and some resources are acquired outside the enterprise.
Cost Structure	The resources acquired, and the key activities result in the cost structure.

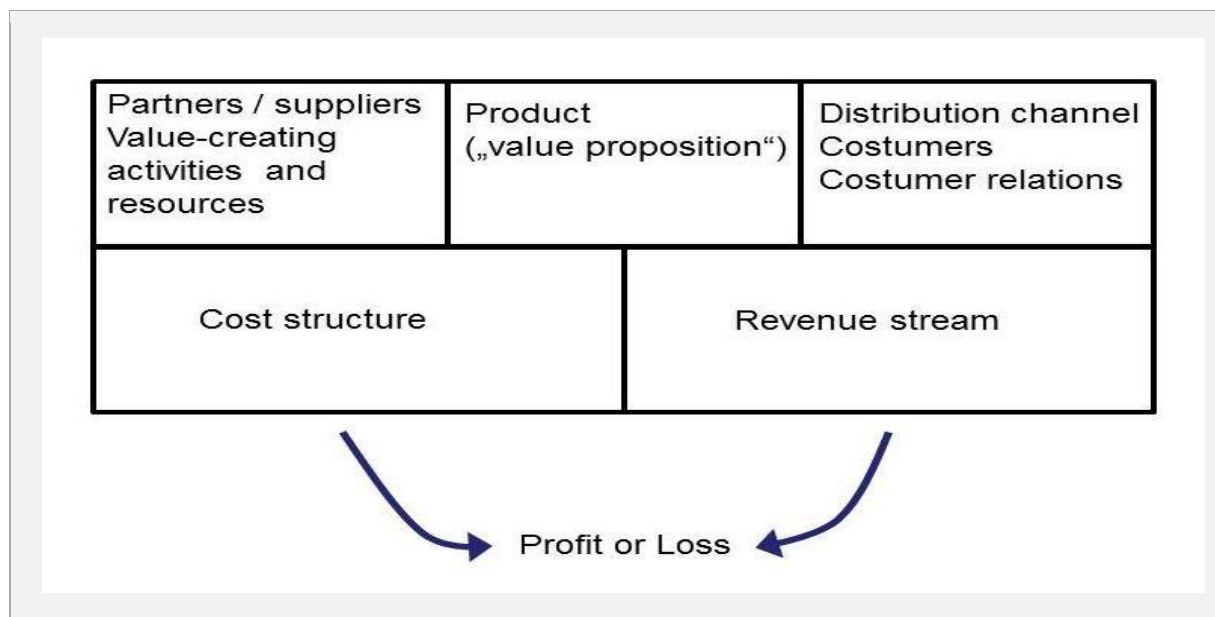
Source: Osterwalder and Pigneur, 2010, p.16-17

²⁰ Osterwalder and Pigneur, 2010, p.14

If these elements fit together, the business model is likely to work and generate revenue for the enterprise. The business model canvas has the form of a table as shown in the boxes 5.2.2 and 5.2.4. The first scheme shows the business model canvas in simplified form. Put very simply, the basic structure relates the product of the enterprise (the “value proposition”) in the middle to the value creating (production) activities on the left side and the value capturing (marketing) activities on the right. The left part translates into costs, the right into revenues. Together, they explain how the enterprise makes a profit.

The complete format of the business model canvas is shown in box 5.2.4 further below including a number of questions that help filling it in.

Box 0.2: Concept – Simplified visual structure of the business model canvas



Source: own concept, based on Osterwalder and Pigneur, 2010

The concept is generally applicable, to the most advanced companies as well as to small enterprises in marginal locations.

“Interlocking” business models

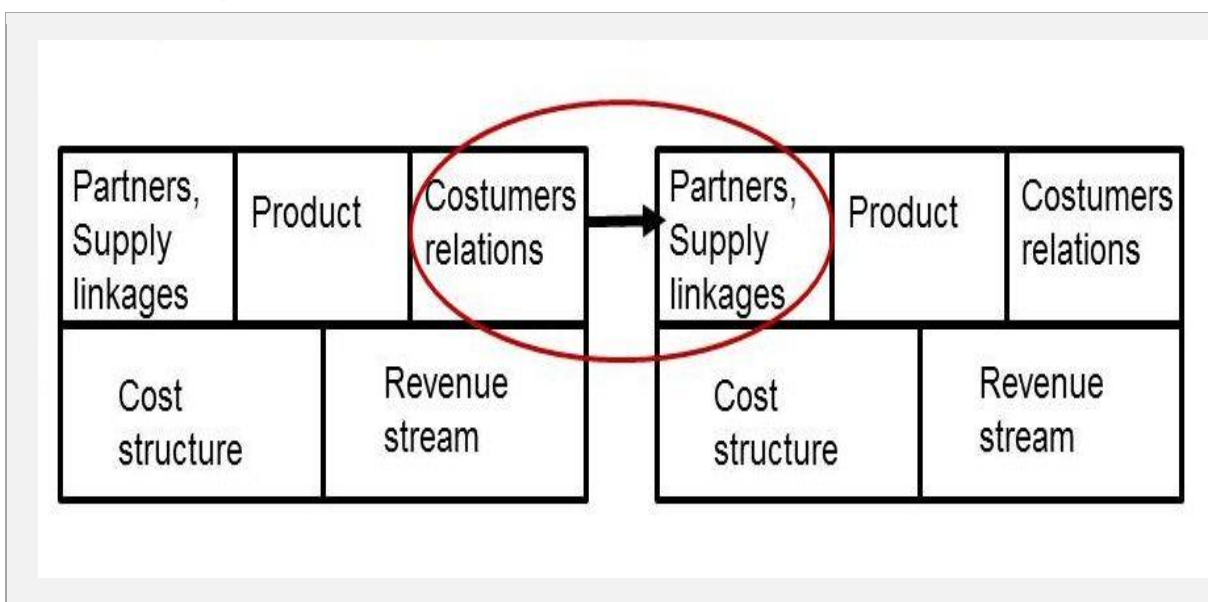
In a chain context, the relationship between the business models of different types of operators is of particularly interest. The business models of two enterprises are “interlocked” if they build on a contractual arrangement between both parties.

The scheme in box 5.2.3 shows the relationship and mutual influence between the business models of two enterprises who relate to each other in the value chain. This idea is further elaborated in the LINK methodology²¹.

Of particular interest are partnerships linking big companies with small-scale suppliers. The classic example is contract farming where the business model of the supplying farms is directly related to the business model of the buyer. The conditions of the contract form an important element of the business models on either side.

²¹ Lundy et al., 2012

Box 0.3: Concept – Links between two related business model canvasses



Source: own concept, based on Osterwalder and Pigneur, 2010

The business contract between the enterprises determines the ‘customer relations’ of the supplying enterprise and, at the same time, the ‘supply linkages’ of the buyer. The business models of both enterprises are interlocked. Apart from the delivery and/or sourcing activities additional elements in the business models of participating enterprises may be affected, e.g. the production technology (key activities) and the resources used – depending on the degree of collaboration. This has direct implications for the cost structure and the revenue streams. Entering an interlocking arrangement with buyers offers small enterprises the possibility of developing their own business model more quickly and more thoroughly. Contract farming is a business linkage solution in the first place (see module 6, section 6.2) but it can be interpreted as an “interlocked business model” at the same time comprising the individual business models of both partners.

5.2.2 Developing business model solutions

Every enterprise has to find a solution for each element of its business model. Ideally, that solution should have been consciously chosen but it may also have emerged from tradition.

The choice of an improved business model solution follows from the strategies for VC development. The strategic options defined by ValueLinks have a direct bearing on business model solutions²²: Value chain upgrading and improving natural resource efficiency necessarily lead to different value propositions of operators and translate into changes in their key activities and key resources. Business models benefitting the poor have consequences for the choice of key partners and customer segments. In any case, sooner or later any chain development impinges on the business models.

The connection between chain development and business model improvement has been stated repeatedly. An important publication that connects the business model canvas with development approaches linking farmers to markets is the “LINK Methodology”²³ that explicitly connects the value chain map with the business model canvas. A second set of tools is the

²² See ValueLinks module 3, chapter 3.5.1.

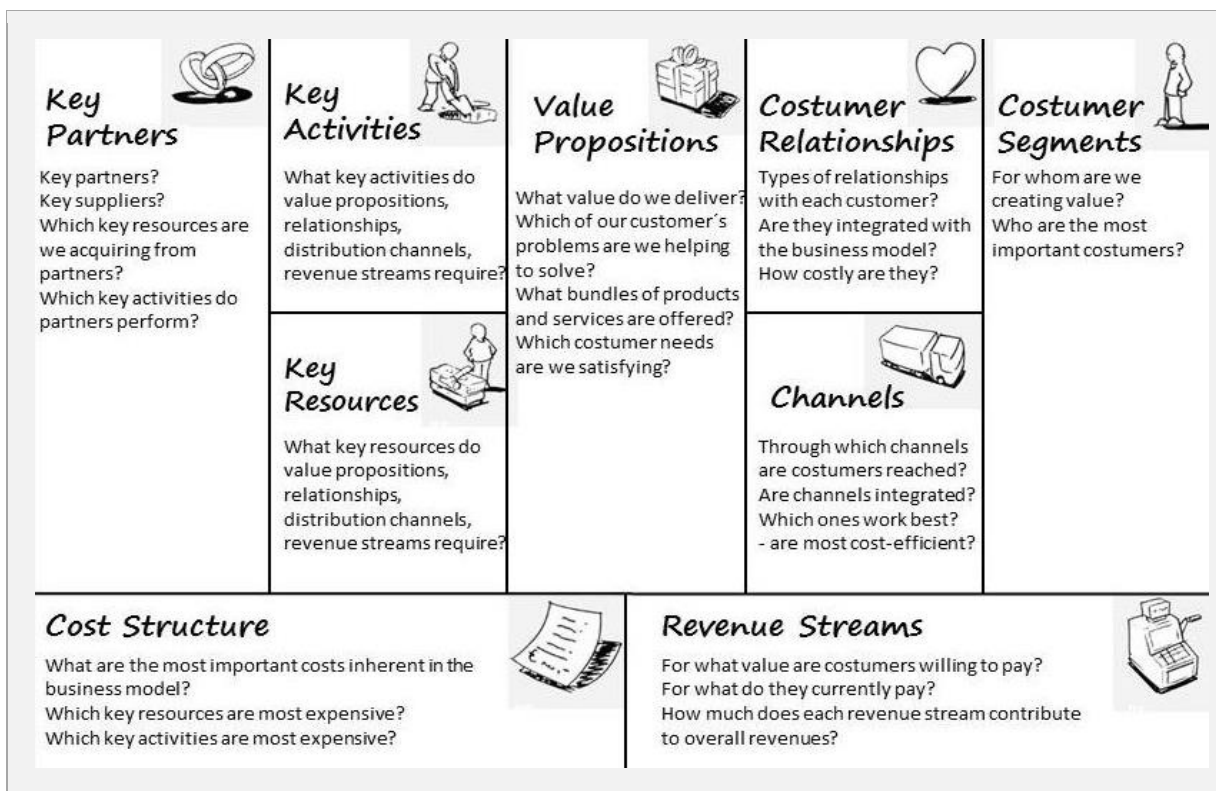
²³ Lundy et al., 2012

Green Business Model Navigator which is an internet-based “interactive knowledge sharing product”²⁴. It starts from the UN sustainable development agenda and provides an overview of tools used for making business models greener. The Navigator presents different types of innovative green business models categorizing them according to their core focus either on green products or on green processes, and according to the stages of the product life cycle. This classification delivers different types of business models that are described in terms of the business model canvas. Apart from these guidelines that are the most relevant to our subject, a large number of tools supporting the development and implementation of business models exists, not least the books by the authors of the original business model canvas themselves²⁵. The “Green Business Model Navigator” includes a database and provides links, especially to sources on sustainable and ecological business models.

The business model canvas template

The canvas is a template that can be used by entrepreneurs and advisors likewise to systematically collect the relevant information about the building blocks of a business model. The template below (Box 0.) is taken from the original book. The list of questions for each of the nine building blocks has been slightly adapted from the original.

Box 0.4: Tool – The complete business model canvas template



Source: Osterwalder and Pigneur, 2010 (slightly adapted)

The template and the questions help to understand and organize the business model of an operator and develop a new or improved one. The template is also a visualization technique with which to guide discussions.

²⁴ www.greengrowthknowledge.org/learning/green-business-model-navigator and GTZ, 2016

²⁵ <https://strategyzer.com/>

The table is filled in step by step starting with the building block “customer segments”. For example, a producer of fresh vegetables first has to define the market for which he is producing, e.g. the EU as an export market. The second step is the “value proposition” to the customers, e.g. a fresh product that fulfills EU norms. Next in line is the marketing “channels” such as the description of linkages with pack houses and exporters. The “customer relationships” with traders and consumers will have to be on a long-term basis to generate a predictable “revenue stream”. To make the product the producer uses a technology that leaves no toxic residues (“key activities”). To be cost-efficient, the business model needs a minimum set of “key resources” (land and equipment such as greenhouses) and secure the supply of seeds, inputs and services in a series of stable “key partnerships”. Whether or not that business model works out is to be shown in the “cost structure” and “revenue stream” that it generates. An example of a real case template is shown in box 5.2.6, further below.

To apply the business model canvas in a specific sector, the questions have to be more specific than in the template in box 5.2.4. The next box presents possible criteria to be used to fill in the business model canvas of a farm enterprise.

Box 0.5: Concept – Criteria to describe the business model of a farmer

Value proposition	Type and quality of the product: Food product quality ranges from low to medium and high; possibly with certification and label to fetch a premium price.
Customer segments	Target markets and buyers: Answers distinguish market segments ranging from rural, urban to “luxury” markets.
Customer relationships	Types of contracts: no contracts, regular contracting or contract farming
Channels	Sales to traders or to end consumers: The marketing linkages range from “arms-length” sales on open markets to regular delivery to selected buyers.
Key Activities	Production system / technology: In agriculture, low input intensity farming can be distinguished from high input intensity. Farm technology can be mainly manual or fully mechanized. Processing activities range from artisanal to semi-industrial.
Key Resources	Key resources in agriculture: Farm size, land, plantations, equipment and infrastructure
Key Partners	Sources of input supply: Inputs may be obtained from private agro-dealers and service providers or from public agencies.

Source: own compilation using the categories of the business model canvas

Describing an existing business model is one thing. In the VC context improved business models are solutions with which to put the VC development strategy in practice.

Constructing an improved business model

The following remarks cannot replace the wealth of know-how on business model development in the pertinent literature. There are too many considerations to take into account. However, the following steps and principles may be useful for structuring the task.

Guiding questions

Developing or improving business models always starts with the status quo. To build a new or improved business model it makes sense to start from the issues in the VC development strategy and determine which groups of operators are concerned. They should work out their business model, possibly with the help of external advisors.

The first step is to look for the relevant building blocks of the business model that should change. In most cases, this will be the “value proposition” or the “key activities”. For example: Wherever the VC strategy goes for higher quality products in different terminal markets, food processors and traders will have to reformulate their value proposition to specify the product quality precisely. This could imply compliance with environmental and social standards. If the value proposition changes, the next question is which are the target markets and the new customer segments? Do we have information on the volumes that could be sold? How, that is via which channels would the product arrive in the market? From there, we may turn to the production capacity. What are the implications for the key resources and the key activities? If the enterprise delivered a higher quality product, which new or different production technology does it have to use? Does it also have to utilize different kinds of raw material? This would have consequences for the key partners to buy from. The questions are just indicative and should be complemented by case-specific concrete questions.

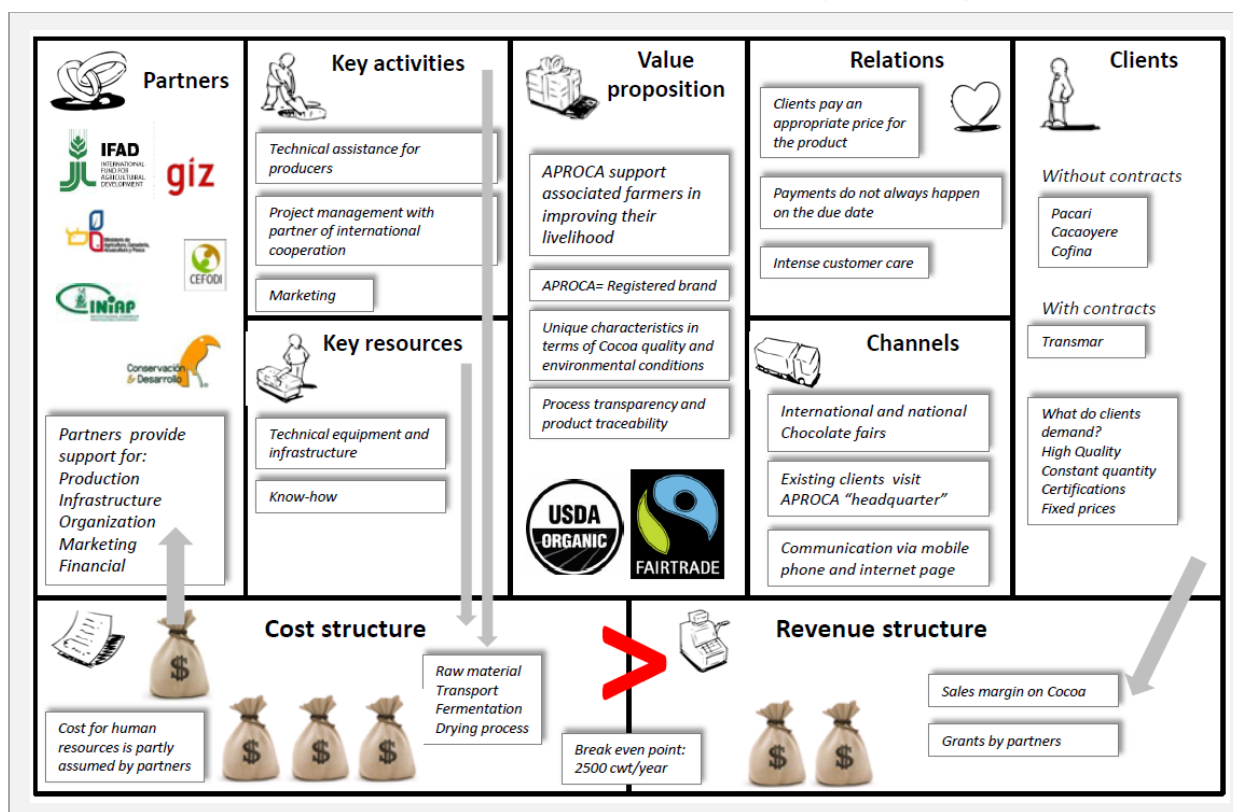
Observers can answer many of these points by looking at the position of an operator in the value chain map. The map contains information that is directly useful for filling in the business model template. For example, if the map shows alternative suppliers or buyers, the business model could switch from one supplier to another. The search for a better business model thus moves on from one box in the canvas to the next in a series of ‘what if’ questions. The point is that the building blocks of the canvas constitute a system – none is independent from the others.

The Green Business Model Navigator suggests specific criteria to address environmental sustainability, for example the use of recycled, renewable and sustainable materials as key resources – or long-term customer relations based on environmental and societal values. Another example is the use of local products and services for the key activities.

In most cases developing a new business model for one operator at a specific point in the value chain has consequences for the partners upstream and downstream. If the value proposition of the food processors claims higher product quality, the quality of the raw material provided by farmers will also have to improve. The business model of the supplying farmers therefore is bound to change as well. The canvas can thus become a guide accompanying value chain development all along.

Box 5.2.6 presents a real case. It shows the business model canvas of the cocoa cooperative Aproca in Ecuador.

Box 0.6: Case – Business model canvas of the cocoa cooperative Aproca



Source: Lundy et al., 2012, p.77

A quick check to assess the quality of a business model

Once the entrepreneur has cast the business idea into the business model canvas, he or she should examine its quality. Here are a number of points to check:

- **Profitability:** A successful business model has to be profitable. A quick check should look for the production cost, for the expected turnover, and the amount of investment needed. The criteria of a detailed financial analysis are treated in the next chapter.
- **Internal consistency and completeness:** Are the connections between the building blocks conclusive? Is the information complete?
- **Feasibility in practice:** How big is the difference between the new business model with earlier versions? How much time and additional competences are required?
- **Availability of chain partners:** What are the implications for key partners and service providers? Are they able to deliver the required resources?

The best business model becomes obsolete if similar enterprises copy it too often. The canvas is an instrument to distinguish an enterprise from its competitors and position it in the market. In principle, every enterprise has to look for its own business model. Following exactly the same model as anyone else will end up in growing competition, ever-smaller margins and the loss of financial attractiveness.

It is the opportunities for the poor and the natural resources saved and the reputation gained in social and cultural communities that justify the public promotion of private business models.

5.3 Viability of business models

The financial analysis verifies whether existing business models and the improved business models suggested by the chain strategy are viable and financially sound. This is a crucial task: Unless operators have the chance of increasing their profits, they have no reason to develop their business. Banks will not finance any enterprise, service providers not invest into chain improvement as long as enterprises cannot show that they are profitable.

Revenues and cost, the main determinants of financial viability, are elements of the business model canvas as well. It is the financial analysis that determines revenues and costs completing the canvas.

The following chapter first gives some general hints on how to approach the task. The second section presents the key parameters to determine financial viability of a business idea, complemented by additional parameters to capture the conditions of diversified business models spanning two or more value chains. Criteria on the ecological and social conditions follow. The last section applies the tools to a concrete case.

5.4.1 Procedures to assess viability

Financial analysis always starts with the business model canvas. Before engaging in any financial calculations, analysts have to be clear about the general business idea. This means filling in the canvas for the *current* business model of the operators concerned, as well as the canvas of the suggested *improved* business model. Working on both models is necessary to be able to compare a possible business model solution with the present status. The same is true for the financial analysis, which refers both to current and improved business models as well.

In contrast to filling in a business model canvas, financial analyses use quantitative data. The challenge is that most numbers are uncertain and some are not even available. Generally, the projection of cost, revenues, profits and income is based on assumptions. This has to do with the weak data basis of farms and small enterprises on one side, and with the innovative character of improved business models on the other. Calculating the likely profitability of a business idea seldom leads to a clear-cut positive result, as analysts have to make assumptions and consider the risks. There is more confidence in finding out the critical factors that definitely prevent a business model from working. Therefore, ValueLinks suggests doing the financial assessment of business models in steps:

The first step is to detect and exclude business model proposals that will not add up financially. What may seem a brilliant technical or product idea at first sight, often turns out to be useless in business practice. This leaves us with business model solutions that have a realistic chance of success.

The second step is to identify the critical parameters of the proposed business model that have the greatest influence on the success. Operators and value chain developers have to manage them carefully. The variety of such factors is wide ranging from the availability of raw material to variations in sales prices and from the assumed running time of equipment to scrap rates and storage losses.

If reliable data are available, analysts can go on elaborating a system of calculation spreadsheets that allows forecasting the financial results of a business model in detail. However, the use of such tools needs skills and experience. As a rule, this requires hired accountants

or specialized business analysts. Here, we limit ourselves to asking the pertinent questions and provide hints on how to find answers.

Lead Questions

The following lead questions guide the assessment of an existing business model and help estimating the likely success of a proposed improved one.

Does the business make money with the products of the value chain?

Essentially, a business model is financially viable if revenues exceed cost and the surplus covers profits and the formation of capital to expand the business and stay competitive. Analysts have to respond to these questions:

- Cost of production: *What is the cost of production per unit of product?*
- Revenues from the product: *How many units of the product are sold and at what price?*
- Income from the product: *How big is the margin? Is it large enough to provide a decent remuneration for the labor invested by a small entrepreneur or farmer? What total profit does the enterprise obtain from selling the product?*

Is the proposed investment or intensification of production useful?

To improve the profitability of the business model, operators have to reduce the unit cost and/or increase revenues by increasing the volume sold or the sales price obtained. These criteria are the same as in the strategic considerations for achieving economic growth²⁶. The considerations and questions are more detailed:

- Changes in cost of production: *Does the unit cost of production go down because of technical improvements? What is the difference per unit of product?*
- Change in the volume of production: *How many more units will the enterprise produce?*
- Additional short-term capital: *What is the value of the raw materials and inputs in each production cycle?*
- Additional long-term capital: *What is the likely value of new assets needed?*
- *Taking short-term and long-term capital together: How much money is required to realize the business model improvement?*
- Additional labor input:
- Other changes: Cash flow

Does it interfere with other branches in a multi-product enterprise or farm?

Most family farms produce several products on their land and therefore are part of several value chains. Analysts should assess the consequences of investment into a specific production branch for the business model at large.

- Competition with other products of the same enterprise: *Does the proposed investment or intensification of production reduce the turnover of in other branches? Does it enhance fixed costs?*
- Total income of a diversified enterprise: *Which other sources of revenue and income does the enterprise have? What is the share of the product in the portfolio of the farm / enterprise?*

What are the social and ecological costs and benefits of the business model?

Apart from realizing own profits and losses, the business model is likely to also generate external benefits and costs. Analysts have to complement the financial analysis by an as-

²⁶ See the strategic option 1 for value chain development in module 3, chapter 3.2

assessment of the social and ecological implications of the business model. Sustainability calls for the green accounting of the farm or firm.

- Ecological costs and benefits: *Does the proposed investment or intensification have an impact on the consumption of fossil fuels, deforestation and loss of biodiversity or on soil fertility?*
- Social costs and benefits: *Does it have an impact on labor intensity, availability of basic foods or the working conditions?*

To answer these questions, analysts have to determine a series of financial parameters. The formula to calculate these parameters follow in the next section 5.3.2.

Collecting and interpreting the data

In general, the financial parameters of the business models will not be readily available because small enterprises seldom keep books. Other enterprises would not share their data unless they have a clear interest, e.g. applying for a loan. Thus, analysts looking for business model solutions have to use the available information on prices and technology to estimate the financial parameters.

Using data to calculate financial parameters

The collection of data starts with the current situation of the operators under study or comparable enterprises in the chain. The survey looks for data to fill in the formula for the financial parameters presented in the next section. Often, this means breaking the factors down into data that are more detailed. For example, revenue is the number of units sold multiplied by the sales price obtained. If the number of marketable units is unknown, analysts can go back to data on production capacity and productivity to make an estimate. Thus, it is possible to derive the amount of marketable agricultural products from the available land and the yields. Marketable output of a food processing enterprise is the function of the capacity of processing machines per day, the time of utilization in percent, and the loss rates. Estimates of the technical parameters are often more easily accessible. The underlying factors are also useful for checking the plausibility of the numbers.

By disaggregating the financial parameters, we create a more detailed picture of the business. The ecological costs and benefits and social criteria, especially employment should be added as well. Connecting the financial and other parameters in a comprehensive, computer-based model can help to see the connections but also comes at a cost. The rising number of factors to consider means that the business model gets ever more complex and prone to error. Analysts have to decide how far to go specifying the business model in detail. Despite the effort, many numbers will remain uncertain anyway.

Interpreting the financial parameters

The first step is to check whether the business model is viable at all. Value chain developers should dismiss business models where the numbers clearly indicate that there is no chance of making profits.

Wherever the results leave the possibility that a business model can be successful, we have to go back to the factors that determine parameter values. The point is to clarify the conditions under which the business model is likely to work: Weak points may be a high cost of production, low gross margins, small revenues, a (short-term) negative cash flow or an insufficient volume of production to cover the fixed cost. Analysts should try to discover hidden problems behind a weak parameter, such as technology, the availability of inputs and raw material, access to loans or, simply, the scale of the enterprise. Details on how to arrive at a

judgement follow in sections 5.3.2 to 5.3.4, below. A detailed examination of the parameters produces ideas on how to support business model innovation and control the risks.

The principles apply generally, from small farms to companies, but they have to be adapted to the types of enterprises concerned. Once financial estimates are complete, analysts come back to the business canvas verifying whether the original assumptions in the different building blocks still hold true. For example, if the business model canvas foresees a value proposition or key resources that require additional capital, it should also include a key financial partner. The calculation of the break-even point determines the minimum volume of raw materials. To mobilize that volume in time, the business model needs to include information on partners for sourcing and on the necessary transport and storage activities. In fact, the canvas is only complete and consistent, if it is in line with the financial assessment. Consequently, the analysis switches between the qualitative business model canvas and the financial calculations.

Both the business model canvas and the assessment of financial viability serve as decision and planning aids only. Calculations done by external specialists have their limits as well. Ultimately, the owners of an enterprise are responsible for taking the final decision to change their business model and invest. Public supporters and chain development programs can use the results to justify expenditures to support particular business models.

5.4.2 Key financial parameters

In order to know whether a proposed new business model can count as improved, analysts need a basis for comparison. This means that we have to ascertain the profitability of the existing business models in the value chain first, calculating their unit cost of production and average profit at the given level of technology. These numbers provide the baseline against which to measure the profitability of any new business models.

Cost of production

Fixed and variable cost

Fixed costs are independent of the production plan. They remain constant no matter how many units the enterprise produces and sells. Whether a food company processes small or large volumes, it always has to pay its permanent staff, the regular maintenance of buildings, equipment and vehicles, the interest on loans taken and the rates on rented space.

Conversely, the variable costs vary with the amount of raw material passing through the installations and the volume of products sold. This includes the cost of the raw material itself, other inputs, the energy and water used, and the cost of marketing.

Total cost is the sum of fixed and variable costs. Divided by the number of units, we arrive at the total cost per unit of product (unit cost). It is intuitive that the unit cost decreases when the scale of production goes up, because the fixed cost is spread across a larger number of units. However, the *total* cost still increases since scaling up often involves investment in long-term assets such as buildings and machinery as well as rising variable costs, e.g. for additional labor and inputs.

Fehler! Verweisquelle konnte nicht gefunden werden. presents the concept and components of fixed and variable cost. It only shows the main categories. In order to arrive at figures in a real case, the calculation has to further differentiate and refine the cost categories.

Box 0.1: Tool – Variable cost, fixed cost, total cost, margin**Cost structure**

- Costs that change with the change of output are variable.
- Costs that remain unchanged with level of output are fixed.

Variable cost (VC)

- Raw material used
- Inputs
- Fuel / electricity
- Temporary workers
- ...

Fixed cost (FC)

- Rent
- Permanent staff
- Repair and maintenance
- Depreciation

$$\text{Total Cost} = \text{FC} + \text{VC}$$

$$\text{Unit Cost} = \text{Total Cost} / \text{number of units}$$

$$\text{Margin} = \text{Sales price} - \text{unit cost}$$

Source: own compilation

The cost of depreciation does not imply cash expenditure, but is a cost all the same. The same is true for unpaid family labor. Farm and microenterprise accountancy often overlooks the opportunity cost of the family labor. There are two possibilities: One is to include the family labor in the cost calculation assuming a comparable wage, even if there is no cash payment. The other possibility is to measure the productivity of permanent farm laborers. This point is covered in the section of gross margins, below.

Marginal cost

The term “marginal cost” refers to the *incremental* change in cost for each additional unit produced. Marginal costs usually behave in a specific manner: When the production amount is small, the unit cost is high. It makes sense to produce more as the marginal cost of producing a higher volume is lower. Unit cost gradually goes down as the volume of production increases. However, beyond a certain threshold the marginal cost becomes zero or may even go up again. This is observed in agricultural production in particular, where intensification reaches its limits at some point. An entrepreneur makes profit as long as the marginal cost remains below the sales price of its products.

Gross margin and labor productivity

Gross margin is the first parameter measuring the financial performance of the enterprise. It is the difference of revenue and variable cost.

Revenue is the price obtained for the products multiplied by the number of units. An improved business model results in increased revenue – by producing more, and/or by obtaining better prices or a certification premium for the products. An increase in sales volume means higher revenue even if the sales prices are lower, provided the number of units sold more than compensates the lower price per unit.

To arrive at the gross margin, we deduct the variable cost of a production activity from the revenue, as shown in the following box. The calculation refers to a unit of production first, either a hectare of land in the case of farms or the unit of product.

Box 0.2: Tool – Gross margins per hectare and per unit

Gross margin per hectare

- Gross margin is the difference between revenues and variable cost.
- In farms, the relation refers to 1 hectare of land.
- The gross margin of a farm activity is gross margin /ha x number of hectares.

Revenue / ha

Yield x Sales price

Gross margin = Revenue – variable cost

Variable cost / ha

Seed

Herbicides

Insecticides

Day laborers (during harvest) / ha

Cost of hired machine services / ha

Use of family labor & permanent staff / ha

- Number of working hours / ha

Gross margin per unit

- Gross margin is the difference between revenues and variable cost.
- In processing enterprises and trade, the relation refers to 1 unit of product.
- The gross margin of a business activity is gross margin /ha x number of units.

Revenue

Sales price / unit

Gross margin = Revenue – variable cost

Variable cost / unit

Raw material

Inputs

Fuel / electricity

Packaging

Use of permanent staff

- Number of working hours / unit

Use of equipment

- Number of hours running time / unit

Source: own compilation

Gross margins are particularly relevant for diversified enterprises and especially for family farms because the measure allows comparing the different activities in the same enterprise. The product delivering the highest gross margin is the lead product²⁷.

Gross margins do not include the cost of permanent staff and working family members. Normally, permanent laborers work for several crops and products of the enterprise. To assign

²⁷ More on the role of gross margins for assessing diversified enterprises following section 5.3.3.

their contribution to a particular activity, analysts have to complement the gross margin by the volume of labor in total working days or working hours per hectare or unit. This is independent of the question whether the family labor is actually paid or not.

The decisive question is the *labor productivity*. Every improvement of the business model should lead to a higher gross margin per working day. Otherwise, even a higher gross margin does not make financial sense. Apart from comparing gross margins, analysts should also compare the labor productivity of different activities. It may turn out that an extensive production technology and low labor input provides an interesting return per working day, even though the gross margin per hectare is small.

The fixed costs of depreciation, rents and interests are also not part of the gross margin. Again, it is advisable to complement gross margins by a measure for the use of long-term equipment. Here, the issue is to compare the different production activities in terms of their capital productivity.

Profit

Once costs and revenue are known, profit calculation is relatively straightforward. Box 5.3.2 presents profit simply as the difference between total revenue and total cost. However, these are the “Earnings Before Interest and Tax” only. It is not the income of the entrepreneur, who still has to pay the interests and taxes²⁸.

Box 0.3: Tool – Total cost, total revenue, profit

Profit

- Profit is the difference between revenues and cost.

Cost

Product 1
Variable cost (VC1)

Product 2
Variable cost (VC2)

Fixed cost (FC)

Revenue

Revenue of product 1
• Volume of units sold * sales price /unit

Revenue of product 2
• Volume of units sold * sales price /unit

$$\text{Total Cost (TC)} = \text{FC} + \text{VC1} + \text{VC2} \quad \text{Total Revenue} = \text{Revenue 1} + \text{2}$$

$$\text{Profit} = \text{Total Revenue} - \text{Total Cost}$$

Source: own compilation

²⁸ In fact, the entrepreneur also has to set aside money to cover depreciation and amortization of capital goods. The formula in the box is EBITDA (“earnings before interest, tax, depreciation and amortization), see Siciliano, 2003, p. 61)

The calculation in the box includes the possibility of two products being produced and sold using the same land, installations and equipment. In such case, the total revenue is composed of the revenue generated by the sales of each product. The fixed cost remains the same and is shared between both products.

The Word Cocoa Foundation offers an online tool and model that allows combining some of these metrics to assess the profitability of a cocoa farm²⁹.

The question is how to obtain the necessary information to complete the calculation. If data from the accountancy of VC enterprises are available, it should not be a big problem to calculate cost, revenues and profits of the current business models, based on real data. However, complete and reliable data are hard to obtain. Generally, it is advisable to “reconstruct” a set of data representing the financial side of the business model. This also has the advantage that the calculation of current and improved business models follows the same method so that there is a better basis for comparison.

The foundations of improved profitability

Some business model changes only involve minor changes in the production organization, such as the exchange of one input for another. In the vast majority of cases, however, improving the business model requires introducing a new technology, using higher-value inputs, or expanding the production capacity and scale. This means investing additional money. Two possibilities stand out, notably the

- intensification of production (using better inputs or components per unit of product)
- expansion of production capacity (ability to produce more units of product per year)

Both intensification and investment in better equipment cost money first, but allow producing more, reducing the unit cost of production, and, often, improving the quality. The result is higher efficiency – using less labor, energy or water for the same amount of output.

Intensification of production

By using new and improved raw material and inputs and by organizing the production processes better enterprises increase efficiency and produce more while keeping their fixed cost stable. This brings down the production cost per unit. Intensifying production needs a greater amount of short-term capital to pay for the additional variable cost but it has the advantage that the enterprise does not have to take loans for long-term investment.

Investment in production capacity

To increase volume of production beyond short-term efficiency gains, enterprises have to expand the scale of production. A new technology enables them to produce a larger number of units. This implies investing into the production equipment and setting up additional supply and marketing channels.

A greater scale of production has the advantage that the share of fixed cost per unit goes down, and input prices can be reduced, e.g. by bulk purchase of inputs. Investment in production equipment often is connected with quality improvement of the product, which helps obtaining higher market prices. The particular solutions differ according to the product (the value proposition) and have implications for most, if not all elements of the business model canvas, not only for the key activities. The improved business model also requires other key

²⁹ <http://www.worldcocoafoundation.org/about-wcf/cocoaaction/farmer-economic-model/>

resources and calls for new partners and new sales channels. Both investment possibilities noted above have financial implications. Production capacity needs long-term investment, and both require a higher amount of short-term capital.

It is important to note that technical improvements are seldom gradual. The increase in production capacity is a major step moving from the current level to an improved status. Several parameters change when the enterprise invests. A significantly greater production capacity means higher fixed cost of depreciation, repair and maintenance. The amount of raw material used goes up. Most likely, the enterprise needs new service and skilled workers. Marketing operations have to be adjusted. Thus, the cash flow pattern changes. There may also be more and new types of risks.

Unless the entrepreneur manages all of these factors, the new or improved business model may appear attractive initially, but pose severe problems for successful implementation. It is important to look at the entire picture. The questions at hand are: How much more does the enterprise have to produce? What is the cost of the new equipment and other long-term assets needed? How much short-term capital (cash) is needed to get going? Will the business model allow repaying the credit – and how long will that take? Can we be sure to meet the different technical and organizational requirements? Which additional risks arise?

These questions need answers before the investment into a new or improved business model starts. In the following, we discuss four critical financial parameters:

- Break-even point (minimum volume of production)
- Cash flow (financial stability)
- Long-term and short-term capital needs
- Additional business risks

To make sure that the investment actually pays off, these and other critical parameters have to be under control *simultaneously*. Acquiring a new machine not only requires investment funds, it also implies that enough raw material and inputs are available, and that these can be paid for. Entrepreneurs have to make sure that the investment is technically efficient and that the additional production is sold in time so that the revenues are sufficient to pay back the loan and still make money.

Minimum volume of production – break-even point

An important question is how many units an enterprise should sell to start making profit. The break-even analysis studies the relationship between volume, cost, prices and profit.

Box 0.4 Tool – Calculation of break-even point**Break-even point**

- The break-even point (BEP) is the volume of production and sales at which total revenue is equal to total cost. It is measured in number of units of product
- At this point the enterprise makes neither a profit, nor a loss

$$\text{Number of units of product} = \frac{\text{Total fixed cost}}{\text{Sales price} - \text{variable cost per unit}}$$

Source: own compilation

The break-even point is the number of production units at which the profit is zero. Box 5.3.4 presents the calculation formula. At the break-even point, the enterprise does not yet make a profit. It has to produce more volume. The criterion is the number of production units at which the improved business model reaches the same profit as the current one – see box 5.3.4.

Box 0.5 Tool – Minimum volume of production to justify investment**Minimum volume of production**

- To justify investment into a fixed assets, the enterprise has to expand the production volume beyond the point where the profit after investment equals the profit before.
- The number of additional units of product required in addition to the break-even point depends on the profitability of the activity after investing.

$$\text{Number of units} = \text{BEP} + \frac{\text{Total profit before investing}}{\text{Sales price} - \text{variable cost per unit}}$$

*Source: own compilation***Cash flow**

Improving a business model usually implies that the volume of production grows and thus the amounts of raw material and inputs needed. It often also requires hiring additional people to handle the increased volume of production. This is even true if productivity goes up and workers produce more goods in less time with the new equipment. This involves additional cash expenses that may not be immediately covered by cash receipts. The cash flow is the “net amount of cash and cash equivalents moving into and out of a business”³⁰ – the balance between cash inflow and cash outflow in a given period of time, one year or less

³⁰ www.investopedia.com/terms/c/cashflow.aspstream

Box 0.6 Tool – Calculation of cash flow**Cash flow**

- Cash flow is the balance between cash disbursements (expenditures) and cash receipts.
- The balance refers to particular time periods, either the entire year or production period, or month by month.

$$\text{Cash flow} = \text{Cash receipts} - \text{cash disbursements}$$

Source: own compilation

The operational cash flow is the balance of short-term receipts and disbursements that result from productive operations. To calculate the operational cash flow of an improved business model, we first multiply the volume of products sold in one period with the sales price. This provides the cash *inflow*.

Determining the cash *outflow* is more complicated, because it is here that all cash expenditures are to be included – payments for inputs, wages, transport of produce to the market, fees, and any other current costs. The list of items is long and varies from case to case. The outflow deducted from the inflow gives the net cash flow.

Operational cash flow varies during the year. The inflow of money from sales varies often is delayed while the enterprise has to pay for inputs and wages immediately. Still, the enterprise needs enough liquid funds to continue operating. To check whether the business model works in practice, analysts have to produce a table showing the operational cash flow month by month. The enterprise has to make sure that it can balance temporary deficits either by keeping sufficient cash reserves or by short-term borrowing from others by. To balance the *operational* cash flow analysts have to include the cash flows from financing activities – the inflow from borrowing money versus outflow of interests and repayment. A balanced net cash flow means that the business model is stable³¹.

Small family enterprises or farmers often do not differentiate clearly between business and household. In this case, analysts should also include the private expenditures in the cash flow analysis such as school fees.

Please note that a positive cash flow in one year does not yet indicate profits because it does not include depreciation and the future repayment of loans if the assets are financed externally.

Need for additional long-term and short-term capital

Intensifying production and expanding capacity almost always requires additional capital. This applies first to the short-term (working) capital: To bring production and sales up, the enterprise has to purchase more inputs and hire additional workers. It needs money to finance the variable cost – raw material, inputs, wages and other costs needed to run the

³¹ More on cash flows, investment calculations and financing avenues follows in module 8 on value chain finance, chapter 8.2.1.

business on a day-to-day basis. In the balance sheet, working capital is denoted as “current assets”.

Second, improving the business model often requires Investment to expand the production capacity. This can be additional machinery, better production infrastructure (buildings or warehouses) or transport vehicles. Such goods are a long-term investment (“fixed assets”), which means that they have an economic life of several years. The exact amount of long-term capital required depends on the jump in scale of production. The investment not only includes the equipment as such but also the one-time cost of installing and finishing constructions. This is a matter of the technical solution envisaged.

The actual short-term capital needs derive from the production plan of the business model and the capacity utilization of the equipment and installations. If the equipment is not fully used, the working capital is lower. Therefore, profits will be lower as well.

Assessment of risk

Every financial calculation of an improved business model is based on assumptions of its technical performance, the actual volume of sales, the sales prices, and the development of the input prices and wages, and other parameters. These assumptions involve inherent risks that may have a negative impact on the viability of the business model.

Extrinsic risks are related to price changes, weather or political interference on which the business model has no direct influence. The ways to mitigate these risks are discussed at length in module 8 on value chain finance.

Intrinsic risks arise from the assumptions on which the business model is based. If these are too optimistic, it may not work. For example, in rural areas the availability of skilled labor and the reliability of utilities (such as power, water and telecommunication) pose significant risks to the sustenance of the business. Although these are external factors, the risk actually arises from either overlooking a salient factor or wrong assumptions about it. Constraints such as these have to be taken into account in the business plan.

Risks can be reduced by building a reserve or savings before calculating profits. For example, a potato grower operates on a business model characterized by irregular input suppliers and hence irregular and uncertain input prices. To compound the situation, she sells at an uncertain market, such that produce often cannot be sold and is wasted. An alternate business model establishes contract farming with a potato crisp manufacturer. Here, the grower gets inputs at fixed market rates and sells the potatoes at predetermined fixed rates too. Her income apparently does not increase substantially, but her risk goes down drastically. For an easy estimation of the benefit, one should try to estimate the premium she is ready to pay for an insurance that insures fixed price of inputs as well as the produce. The insurance cost saved equals an increase in income. Additionally, part of the revenue should be set aside as reserve in order to cover unexpected cost and emergencies.

In case the investment builds on subsidies or public service provision, it has to be sure that these are available in the longer term, and least during the period in which the enterprises has to pay back loans for initial investments.

Other parameters and criteria

Further to the critical factors mentioned above, there are other common ratios and measures to consider. They shall only be mentioned by name:

- The “current ratio” is a measure of financial liquidity (Siciliano, p.101) (*current ratio = current assets/ current liabilities*);
- The “inventory turnover” measures how quickly produce is sold to the market (*inventory turnover = annual cost of goods sold / average inventory*) (Siciliano, p.104);
- The “debt to equity ratio” measures the financial health of an enterprise (Siciliano, p. 109);
- Finally, a number of productivity ratios are relevant to judge the efficiency and performance of the business model such as the profit per unit of energy or per cubic meter of water used.

5.4.3 Interaction with other activities in a diversified enterprise

One of the challenges in finding improved business models for the value chain is the fact that some operators are multi-product enterprises. This is particularly true for family farms that generally cultivate a variety of crops. Many food processors and traders also have several product lines. The business model of diversified enterprises spans different value chains: For example, cocoa farmers in Africa also produce maize and other crops and often pursue off-farm opportunities in addition. Vegetable growers usually have a range of products. Most family farms are naturally diverse, because they practice crop rotations and have to spread the workload during the year. The situation of small-scale processors and manufacturers is slightly different: For sure, a single business strategy involves higher market risk. On the other hand, sticking to one product makes it easier to manage technology and market linkages; and it also requires less capital.

The issue leads us back to the system boundary of the value chain³², which is defined by a specific product or a limited range of products. As long as the range of product variants in the business model roughly corresponds to the boundary of the value chain, the diversification of the business model does not pose a problem for the analyst. Even if a farmer practices crop rotation it makes sense to base the assessment of the farm model on the lead crop providing the lion’s share of the income.

However, if an operator follows a business model with two or more distinct value propositions, reducing the financial parameters only to one specific product may be misleading. Analysts have to assess the interaction of the lead product with the other production branches. Innovations in the production for the value chain can change

- the availability of key resources for the other products, especially labor and land;
- the utilization of fixed capital, if investment serves the lead product exclusively

This would have an impact on the revenues obtained from the other enterprises and thus for total income. It can also mean that food production for household consumption decreases. Wherever the focus is on a particular value chain product, the financial analysis has to capture the impact on the entire diversified business model making sure that the intended improvements generate overall benefits.

³² See module 1 in the first volume of this manual

Share of the lead product in total profit

Agricultural economics provides methods to produce a complete picture of a diversified farm. Starting from the analysis of gross margins, different methods of planning and optimizing the production program of a farm are available³³. Comprehensive farm planning could provide precise details on the significance of a specific value chain activity for the business model. However, the calculations are time-consuming and need many data. Here, a few additional measures must suffice to check a business model solution for value chain development.

To determine whether improving one production activity also is a solution for the enterprise as a whole, we have to compare it with the other activities. We start with the assumption that the activity for the value chain is in fact the lead product or lead crop of the enterprise. This means that it delivers the biggest share of total income and the highest gross margin³⁴.

To judge the importance of the lead product, analysts have to calculate the gross margins of the other farm activities as well. Supposed the lead product actually has the highest gross margin per unit or per hectare, producers would expand production until another factor in the business model reaches a critical limit. In the case of farms, this may be the area of suitable land, the available labor and capital, the distribution of the workload, the land needed for food crops and other limiting factors. In processing enterprises, the limiting factor is the production capacity.

To calculate the part of the lead product, we add the gross margins of all products and determine the percentage share of the lead product. This figure provides an idea of the degree of specialization of the enterprise and the importance of value chain integration for its success. To obtain the profit generated by the lead product, we have to deduct the fixed cost. If the fixed costs are attributable to all products in equal proportions, we can neglect them in calculating the percentage share of the lead product.

The calculation is different, if the enterprise buys specific equipment to innovate its lead product, because the respective fixed cost of depreciation and interest clearly accrue to the lead product alone. In this event, analysts have to deduct the additional fixed costs. The following box shows the formula for both cases.

Calculating the share of the lead product also has to take account of changes in the production program. Investing into the lead product may mean that it occupies more land and utilizes the more of the existing production capacity. The increase in production thus comes at the expense of the other products. Analysts have to measure the reduction in production volume of the other products and subtract the difference in the sum of their gross margins from the gross margin of the lead product.

³³ A valuable source is Ströbel, 1987 (in German), the material of the Farmer Business School (FBS), and ...

³⁴ If the share of the lead product exceeds 80%, the enterprise is no longer regarded as diversified.

Box 0.7 Tool – Share of the lead product in total income***Share of the lead product in total gross margin***

- Gross margin = Gross margin/unit x number of units made and sold
- The total gross margin is the sum of the gross margins contributed by the different products in a diversified enterprise

$$\text{Share of the lead product} = \frac{\text{Gross margin of the lead product}}{\text{Total gross margin of the enterprise}}$$

Profits obtained from the lead product

$$\begin{aligned} \text{Profits of the lead product} = & \text{Gross margin of lead product} \\ & - (\text{fixed cost}) \times (\text{share of lead product}) \\ & - \text{additional fixed cost attributed to lead product} \end{aligned}$$

Source: own

The calculation gets even more complicated if the different activities are mutually connected. This is the case where several production branches utilize the same equipment, such as a general-purpose tractor on a farm, or where one product becomes an input for another, for example maize used as chicken feed.

The more integrated the different production branches are, the more difficult becomes the assessment of the activity related to the value chain at stake.

Limits to expanding production of lead crops in a diversified farm model

Intensifying and expanding the lead product is bound to a series of limiting factors. The number of constraints is bigger, the more vulnerable a poor operator is. Especially subsistence-oriented smallholders and occasional micro-entrepreneurs tend to spread the risk in a highly diversified portfolio of products and occupations. Their scale often is too small to justify investment. Circumstances may force them to take opportunities that provide benefits in the short term but are not very profitable. Under such conditions, the scope for developing a commercial business model is very limited. However, the product may still have a place in the livelihood strategy of marginal operators, but mainly as a means to balance risk and earn some extra cash, not as a major source of income. Therefore, public value chain programs should not exclude the marginal operators from their services.

To address the needs of smallholder farmers, public development programs should take local farming systems and livelihood strategies as their first reference. The integration into value chains and markets would come in as a second component. This type of program design is more flexible in promoting business opportunities that respond to the constraints of particular poverty groups.

5.4.4 Ecological and social performance criteria

Financial analysis remains incomplete without due consideration of the social and ecological costs and benefits of a business model. Accounting systems treat these costs as external because they have no market price. However, by limiting the analysis to market-based transactions, conventional accounting systematically distorts the picture of the economic reality³⁵.

ValueLinks seeks the sustainability of value chains. Thus, innovating technology and business processes not only has to make financial sense, there have to be ecological and social benefits at the same time. The economic, social and environmental aspects have to go together. It can be sufficient if certain groups of operators and enterprises along the value chain generate a positive social and/or environmental impact. Not all business models along the value chain have to be explicitly green and inclusive.

Three of the nine strategic options presented in module 3 explicitly go for sustainable business models³⁶: Strategic option 4 (Improving resource efficiency), 6 (Business models benefitting the poor), and 9 (Economic empowerment of women and the young) call for green, more socially inclusive and gender-sensitive business models in the value chain.

The first volume of ValueLinks 2.0 discusses many criteria for sustainable value chain development. Here, the question is how to apply them to particular business models. The challenge is that financial analysis is exclusively in monetary terms, while the concern for sustainability necessarily mostly uses qualitative criteria. It is practically impossible to monetize all environmental and social issues to calculate true costs and incomes. This leaves room for interpretation. In the following, we use a mix of monetary and non-monetary indicators.

Ecological sustainability

Chapter 2.4.5 in ValueLinks module 2 is entirely devoted to the tools for environmental valuation³⁷. The tools refer to different valuation objects – consumer products, value chains and regions. Some of the methods also apply to individual business models: This includes the hot spot analysis, indicator sets to assess the sustainability of enterprises³⁸ and the measurement of resource efficiency. For assessing the ecological performance of a business model, we suggest combining qualitative and quantitative criteria.

The qualitative indicators should show that the business model responds to the environmental hot spots identified in the value chain analysis, particularly the type 1 impacts of enterprises on the environment³⁹. The respective indicators have to be specific to the problem at stake. For example, in response to the overexploitation of fuel wood by small-scale rice parboiling enterprises in Bénin⁴⁰, analysts could apply the restriction that any improved business models should not use wood as energy source. Similarly, we can introduce constraints in any business model, such as shrimp farms not operating on land converted from mangroves, carpet manufacturers not discharging untreated wastewater, or horticultural producers not pumping more groundwater than is replaced during the rainy season and not using carcino-

³⁵ See, for example, Gleeson-White, 2015

³⁶ See the first volume of this manual, p.162pp

³⁷ See chapter 2.4 in the first volume of this manual, p.118pp

³⁸ such as the Sustainability Assessment of Food and Agriculture Systems (SAFA) used for farms

³⁹ See chapter 2.4, p.113

⁴⁰ See chapter 2.4, p.129

genic pesticides. Imposing a restriction on the business model allows circumventing the tedious task of monetizing an environmental problem.

However, it still makes sense to internalize the variable consumption of natural resource in the financial analysis. Analysts should measure the water, energy, wood or other material inputs into the business model and determine the resource efficiency⁴¹ of an enterprise – the quantity of resources in tons or cubic meter per unit of product. By either valuing the resources with their market price or with an adjusted value, the resource efficiency is expressed as a monetary relation. The respective formula is shown in the box below.

Box 0.8 Tool – Resource efficiency in monetary terms

Resource efficiency

- Resource efficiency is productivity measure, the relation of output to a specific input, such as energy or water.
- Resource input is measures in physical units such as cubic meters of fuel wood or water, or tons of diesel.

$$\text{Resource efficiency} = \frac{\text{Volume of production}}{\text{Unit of resource input}}$$

$$\text{Resource efficiency in monetary terms} = \frac{\text{Value of production}}{\text{Value of one unit of resource input}}$$

Source: xyz

Using a monetary scale has the advantage that it indicates a win-win condition in an improved business model. By reducing its resource intensity, the enterprise saves money and natural resources at the same time. A business model improvement is sustainable if it achieves higher profits while reducing resource consumption or, at least, keeping the consumption of resources stable.

Compliance with social and gender considerations

The first question is to whom the income from a business activity goes. A business model that is accessible to micro-enterprises already fulfills a major criterion of social inclusiveness. The business model is socially beneficial if it works out financially and the income goes to poor farmers and self-employed small-scale operators⁴².

A second point concerns the conditions of employment. Obviously, the business model has to comply with labor norms. Social criteria for evaluating a business model include the number of jobs created, especially for low-skilled workers, decent wages, payment of overtime and social benefits, such as flexible working schedules and childcare facilities for working

⁴¹ See chapter 2.4, p.120-123

⁴² See the social analysis of value chains in chapter 2.4

mothers. The chapter on social strategies in module 3 discusses these criteria and considerations in more detail⁴³. Social issues appear at many points in the value chain and the compliance with social criteria is essential for every enterprise, small and large alike. This also includes the treatment of workers and family members in small enterprises whose owners are poor themselves.

Fairness and inclusiveness are criteria to apply to *any* business model, even if the enterprise does not explicitly state them. Wherever companies have a positive role generating social benefits, value chain development should support them irrespective of whether the companies intended the social benefits or not. The income or employment effect counts.

The treatment of social questions is different in the concept of ‘inclusive business models’ where social considerations are directly included in the value proposition, the key partners, customer segments and other building blocks of the business model canvas⁴⁴.

5.4.5 Case: Small-scale cassava processing in Burkina Faso

The following case illustrates the use of the business model analysis in practice – small-scale cassava processing in Burkina Faso. Cassava (manioc) is a minor staple food in Burkina, the main staples being millet, sorghum, maize and rice. Traditionally, people buy cassava roots and prepare them at home. In the past years, processed cassava has been gaining market share constantly. It has become increasingly fashionable, even in urban households. Attiéké originates from Côte d’Ivoire. Migrants returning from Côte d’Ivoire have brought the habit of consuming attiéké to Burkina.

The main processed product in Burkina Faso is “attiéké”, a type of semolina that resembles couscous. To make attiéké, processors grind cassava roots to make cassava paste, ferment the paste and dry it. The final product is packed and sold in shops. Consumers can also buy the product fresh, but dried attiéké can be better stored and transported.

Since 2006, the Burkinabe government and GIZ have promoted the attiéké value chain. The agricultural development program has produced a number of studies providing information on the case⁴⁵. For the purpose of this manual, the author has recalculated the data.

Development of the attiéké value chain

We start the analysis by mapping the attiéké value chain. The overview map below shows the main features of the attiéké business in Burkina Faso as part of the wider cassava industry that also includes fresh cassava roots and other processed products.

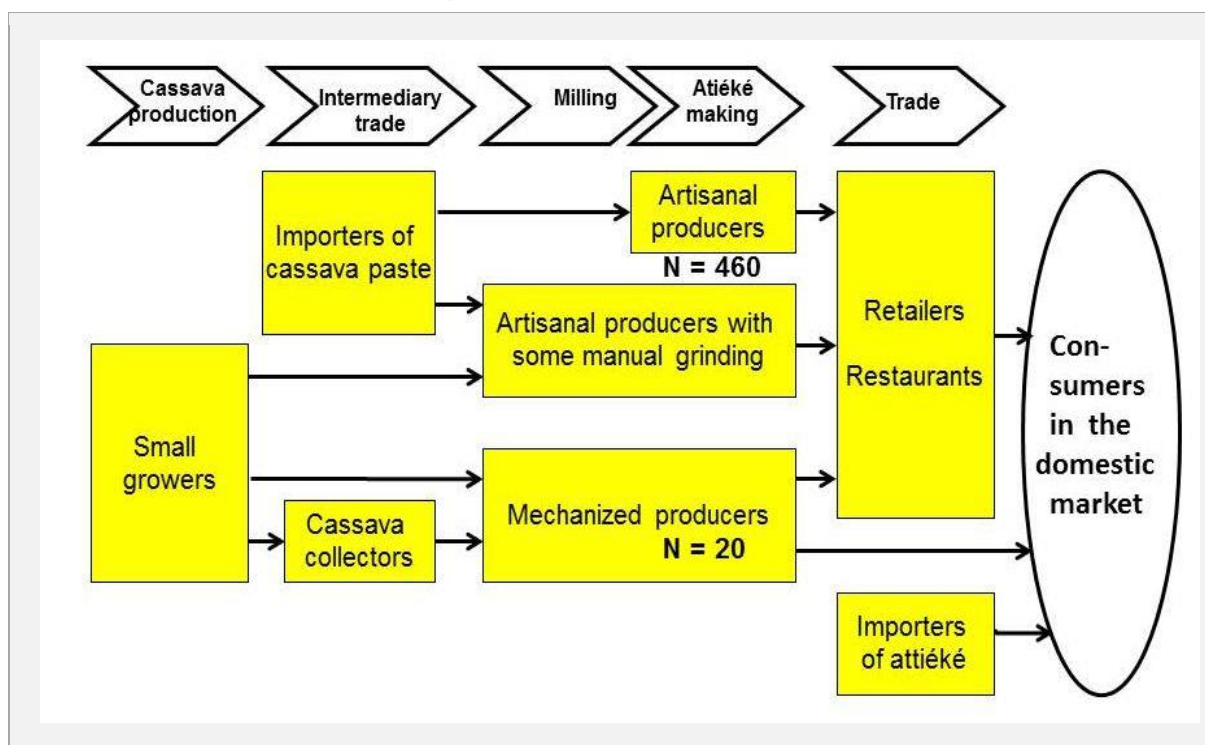
The total production of cassava roots in Burkina has been going up continuously, from around 30.000 tons in 2006 to well over 100.000 tons 8 years later. However, the exact figures are difficult to obtain and the production volume varies considerably from year to year. The great majority of the cassava farmers are located in the south of the country. The number of farmers should be in the order of 7.000.

⁴³ See chapter 3.3 in the first volume of this manual, p.

⁴⁴ The concept of ‘inclusive business models’ is treated in section 5.1.3 of this module and also is a subject in module 6.

⁴⁵ Diancoumba and Gantoli, 2008; Mushinzimana and Koné, 2016, and information provided by GIZ Burkina Faso

Box 0.9: Case – Value chain map of the cassava value chain in Burkina Faso



Source: own design, based on Diancumba and Gantoli

Many small agricultural producers and local collectors characterize the primary production stage of the value chain. Trade in the raw product is highly fragmented.

In the processing stage, we find exclusively small processors, of which 410 were operating manually, and 20 semi-mechanized in 2008. Their combined capacity has never been enough to satisfy demand. The total production of attiéké in Burkina in 2008 has been around 2200 tons, far below national consumption of 3700 tons and unmet needs. Therefore, Burkina imports attiéké as well as the intermediate product, cassava paste, from Côte d'Ivoire. Since 2008, the number of processing units has gone up reaching almost 500 now. The total value of the attiéké market is in the order of 7 million €.

In 2008, the government of Burkina and German development cooperation formulated a vision for developing the attiéké chain focusing on the growth of national production and the improvement of product quality. An important field of action concerned the national production capacity. To increase production, operators have to invest into more productive business models. The promotion builds on the assumption that only by expanding mechanized models of attiéké processing Burkina could achieve economic growth of the attiéké industry.

Business models of artisanal and mechanized processing

We can distinguish three types of small cassava processing enterprises. All of them produce attiéké but use different processes. One is limited to making attiéké from imported cassava paste exclusively. The other two also buy cassava roots and go through the full processing sequence. They differ in the technology. The traditional, artisanal model uses manual labor, the semi-mechanized model operators with an electrical mill to grind the roots. The following description focuses on the two latter models. The following table provides a short description of the main distinguishing characteristics.

Box 0.10: Case – Characteristics of artisanal and mechanized attiéké making

Characteristics	Artisanal business model	Mechanized business model
Product	Fresh (and dried) attiéké	Fresh (and dried) attiéké, grinding services
Raw material	Cassava paste as well as cassava roots	Cassava roots
Technology and equipment	Manual processing with simple implements	Mechanized milling process with grinding and pressing machine
Production capacity	Processing capacity depends on labor input	Grinding capacity of up to 20 tons of roots per month

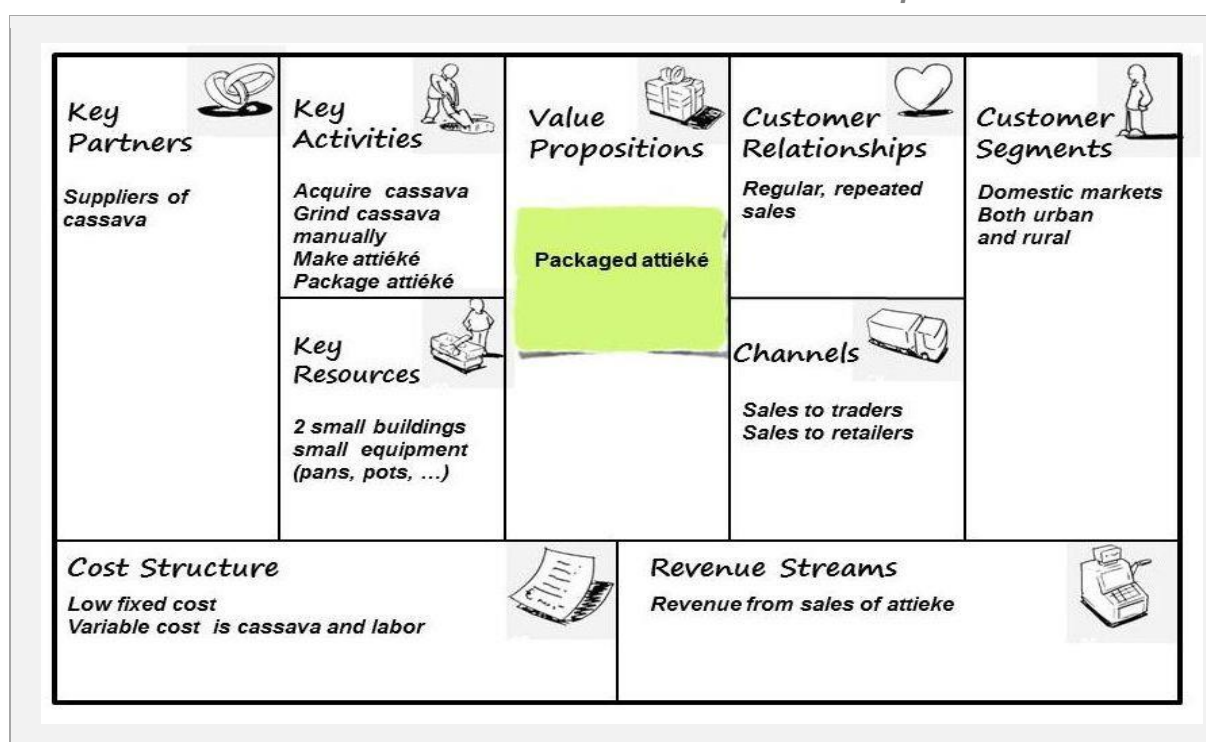
Source: own compilation

Description of the artisanal business model of attiéké making

The traditional business model of attiéké making is an artisanal microenterprise exclusively run by women. As manual grinding is tedious, the lion's share of attiéké is made from cassava paste that has been imported traditionally. Depending on the available labor, the business model also includes manual grinding of the cassava tubers. The shares are variable.

Starting from the main characteristics presented above, we can fill in the business model canvas. This delivers the picture shown in the following box.

Box 0.11: Case – Business model canvas of an artisanal attiéké processor



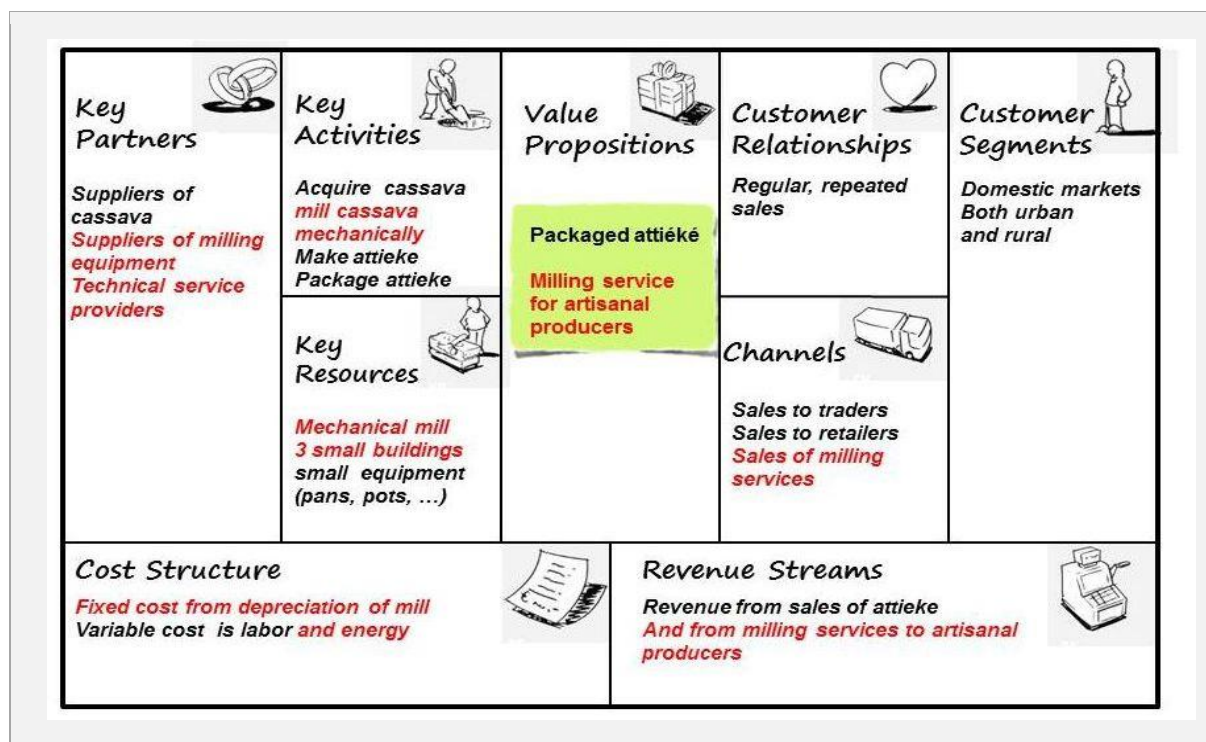
Source: own concept

The business model canvas looks simple. Certainly, not every observer would see the need to systematize the business in this way. However, the women engaging in artisanal attiéké making are entrepreneurs and have to think through all aspects of their business model. The canvas helps to visualize the system.

Description of the mechanized attiéké business model

The next box presents the canvas of the mechanized business model for attiéké making.

Box 0.12: Case – Business model canvas of a mechanized attiéké processor



Source: own concept

The mechanized type of enterprise is more advanced compared to the artisanal model, but it is still small-scale. Nevertheless, the differences are significant spanning all elements of the canvas. The main points are noted in red color.

Please note that the mechanized business model has a second value proposition. This has to do with financial considerations. To utilize the capacity of the mill fully, the entrepreneur would have to process quantities of cassava roots that she cannot achieve easily. She needs to offer milling services as well. This is the reason why the key partners and the channels also differ from the traditional model.

Both business models are simplified. It would be possible to add more information and include details, especially on the financial side.

Assessing the business models

To increase production volume the processing capacity has to go up. The question is under what conditions the improved, semi-mechanized business model works out financially, whether it delivers social benefits, and what the business model solution contributes to the development of the value chain at large. To assess the business model solution we utilize

the criteria and parameters explained in the preceding sections starting with the financial assessment.

Financial assessment

The financial assessment uses the formula presented in the preceding sections. The calculation is based on a set of spreadsheets connecting the parameters of the business models. The following two tables compile numbers taken from the model calculations. It is important to note that these numbers are the result of specific assumptions. They change according to the number of people employed and the capacity utilization achieved.

Cost of production: In the mechanized model, the unit cost of attiéké production is lower, particularly in comparison with manual grinding that involves payment of (small) wages and the opportunity cost of family labor. Producers who make their own cassava paste save money on the imported material. The losses are smaller, as the entrepreneur can plan the volumes and quality of the cassava paste and does no longer depend on suppliers. Labor productivity is much higher compared with manual grinding.

Break-even point: The most important advantage of the mechanized model is the production capacity, which allows increasing the turnover and thus profits. At the same time, a higher volume of production is required to cover the fixed cost. To justify the investment and break even, the enterprise has to mill and process a minimum of 39 tons of attiéké. This has financial consequences because the enterprise has to finance the necessary raw material and make sure to sell the final product quickly.

This may not be easy. The main constraint is the availability of short-term capital but there may also be limitations in raw material supply. In any case, capacity utilization has to go beyond the break-even point.

Box 0.13: Case – Comparison of financial parameters: Labor and capital

Parameter	Artisanal model	Mechanized model
Type of milling	Manual grinding	Electric mill
Daily milling capacity, cassava (t)	0,1 ton/ day / worker	1 ton / day (max 250 days)
Labor input for milling	5 workers @ 144 days	1 worker @ 144 days
Labor input for attiéké making	3 workers @ 120 days	4 workers @ 120 days
Annual attiéké production in tons	36	48
Service milling in tons		96
Long-term capital (€) 1 hut for storage @ 5 m ² Cassava grinder, 3 huts @ 5 m ²	1.500	7.500
Average short-term capital	min. 300	min. 1.000
Total capital	1.800	8.500

Source: own calculation based on data of GIZ Burkina

A low-cost alternative to fill the capacity is service milling. Instead of using the equipment only for herself, the miller offers to grind cassava roots for her neighbors. A milling fee of 15 € per ton covers the proportionate fixed costs and thus allows some flexibility.

Profit: In the artisanal model, the availability of workers to grind the cassava roots is the limiting factor as is the availability of imported cassava paste. The profit varies with the achievable scale of operation. Here, we assume a high labor input and mechanical grinding.

The mechanized model uses much more capital. To cover the fixed cost, the mechanized miller first has to reach the break-even point. With each additional ton beyond that point, the profit will be higher. The enterprise has two joint products — the physical food product and the milling service. The gross margin of attiéké production per operating day of the grinder is considerably higher than the gross margin of service milling per day. For the mechanized mill, it makes sense to expand attiéké production as far as possible. Assuming a relatively low level of capacity utilization of 57%, of which two thirds are service milling, the enterprise would make a profit of 1.818 € per year. This compares to a profit of 960 € in the case of the artisanal mill.

Long-term capital needs: The artisanal attiéké producer can do without much long-term capital. The mechanized mill needs capital to finance the investment. The value of the cassava grinder plus small equipment is 2000 €. To house the equipment, the enterprise needs a small building fitted with electrical installations (2500 €). To this adds storage space for the raw material and semi-finished products depending on the capacity utilization and the turnover of final products. We assume the storage space to cost a minimum of around 3000 €.

Box 0.14: Case – Comparison of financial parameters: Cost, revenue, profit

Parameter	Artisanal model	Mechanized model
<i>Fixed cost per year (€)</i> (Repair, depreciation (20%), renewal of implements, interest (8%))	480,00	2350,00
<i>Variable cost per ton of attiéké (€)</i> (Cassava roots, labor, energy, water, packaging, other inputs)	510,00	490,00
<i>Sales price of attiéké per ton (€)</i>	550,00	550,00
<i>Service fee per ton of cassava</i>	/	15,00
<i>Gross margin per ton of attiéké</i>	40,00	60,00
<i>Gross margin of service milling</i>		13,00
<i>Break-even point (in tons of attiéké)</i>	12	39
<i>Percentage of milling capacity used to break even</i>	/	15.6% (39 tons of 250 tons)
<i>Total cost per year</i>	18.840,00	26.062,00
<i>Total revenue per year</i>	19.800,00	27.880,00
<i>Profits per year</i>	960,00	1.818,00

Source: own calculation based on data of GIZ Burkina

Short-term capital needs and cash flow:

It is much more difficult to project the short-term capital needs as they depend on several variables. One is the annual capacity utilization and the share of service milling. Another is the duration of production cycles, the time lapse between purchasing the raw material and the sales of attiéké. The bigger the stock of unsold final products, the more capital is tied up. Thus, the entrepreneur has to conduct a monthly cash-flow analysis and take her management decisions accordingly, including a decision on the amount of short-term capital to stabilize (or expand) operations.

Social assessment

The fact that the owner is a self-employed female entrepreneur already proves the positive social impact of the business model. Adopting the semi-mechanized model, the owner should at least be able to double her income. The other social benefit is the creation of low-skill jobs for part-time female workers peeling the cassava roots, preparing the attiéké and packaging the final product. As cassava paste becomes better available, more village women gain an additional source of livelihood. These jobs earn small cash incomes only, but permit flexible working hours.

Poor consumers benefit as well. One aspect is that the household saves time and tedious work preparing fresh cassava roots. Attiéké provides a quick meal that also saves energy for cooking. Another benefit is the availability of good quality attiéké as such.

Obviously, the energy intensity increases with mechanization. However, the environmental assessment shows that energy cost is negligible. In any case, the additional greenhouse gas emissions certainly do *not* constitute an environmental hot spot.

Contribution to sustainable value chain development

The financial assessment shows that it makes financial sense to adopt the mechanized attiéké business model even if the entrepreneur would not be able to utilize the capacity fully. The concluding question is whether the business model is a solution for the development of the attiéké value chain at large.

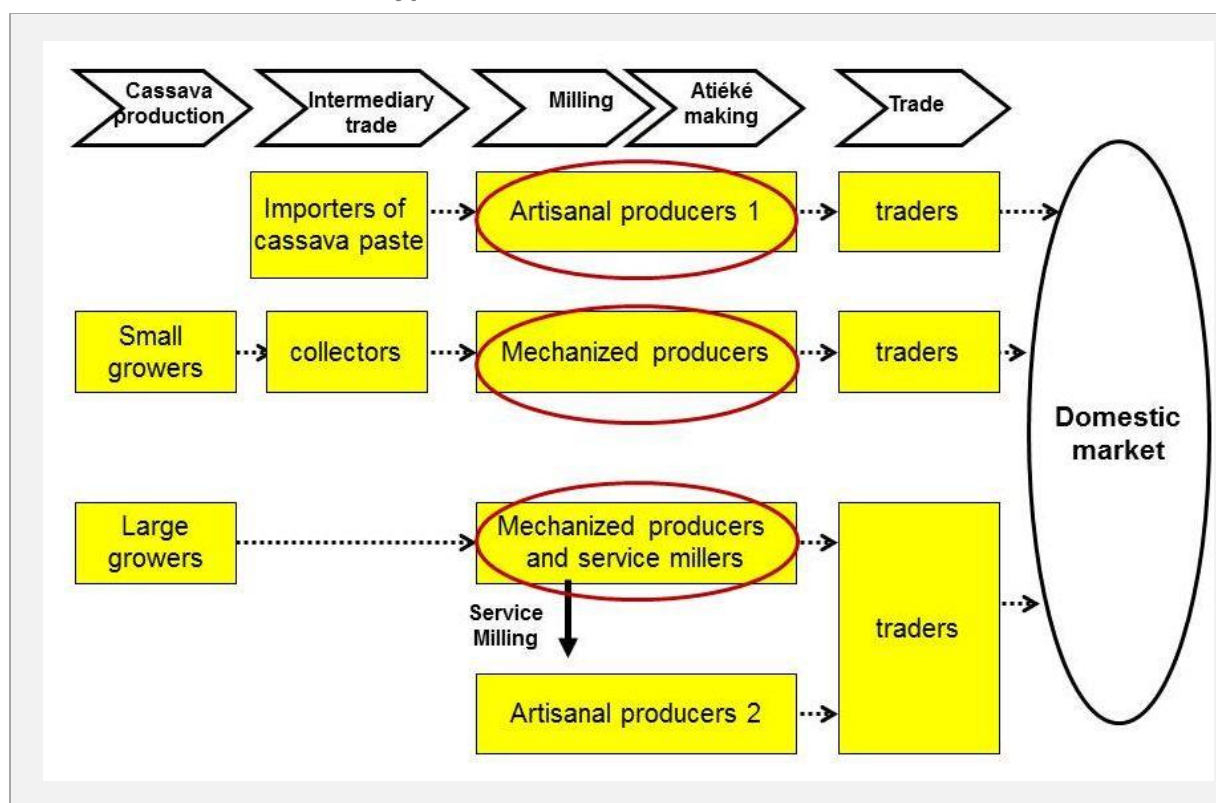
There are two issues: One is the implications for the other operators in the chain. Which follow-up innovations become necessary and which opportunities emerge once attiéké producers use mechanize the milling process? The other issue is the possibility of scaling up. How many small-scale operators could adopt the business model?

There are interesting observations concerning the first issue. The significance of the business model for the development of the value chain rests in the following impacts:

- As attiéké production capacity goes up, so does the growing demand for cassava roots. This is a strong incentive for cassava farmers and traders.
- The availability of milling services allows artisanal attiéké producers to save cost on cassava paste and improve the security of supplies. Artisanal producers can give up manual grinding activities completely.
- The investment into new equipment entails opportunities for the respective traders, for maintenance service providers and for the workmen constructing workshops and storehouses.
- Incomes in rural areas improve. This creates a certain growth momentum in the rural economy.

The changes also show in the evolution of the chain map. The first business model (artisanal producers 1) is the “traditional producer with some manual grinding” who appears in the VC map shown above. It develops into a mechanized producer and further into a mechanized producer plus service miller. The last stage of development helps the traditional artisanal producer to move from imported cassava paste to buying raw cassava and have it milled locally.

Box 0.15: Case – Different types of attiéké makers in Burkina Faso



Source: own concept

The business model of the ‘artisanal producers 2’ at the bottom of the map includes a contractual arrangement with the mechanized service miller. If a mechanized producer becomes active in the neighborhood, local artisanal producers have the chance to develop their own business model.

The last but still highly important question concerns the possibility of scaling up. In 2008, the number of operators was 410 artisanal and 20 mechanized. To estimate the number of potential business model replications we can should consider these factors:

- *Volume of remaining imports of cassava paste and attiéké:* National producers could effectively replace this volume.
- *Unmet domestic demand:* In addition, both types of operators combined could achieve a continuing growth of production.
- *Present location of active mechanized operators:* In most cases, the business model requires to engage in milling services. This means that investing into an electric mill is more promising at places where there is no established competitor.

Only a minority of the existing artisanal processors should make the move to the improved business model at the present stage. Still, we can assume there are at least 50 small artisanal enterprises for whom the solution should be attractive. Assuming an estimated size of

investment of 7.500 €, the total volume of investment would be in the order of around 400.000 €. Such numbers only provide an approximate order of magnitude. Nevertheless, they are a starting point to estimate the volume of financing required. In any case, the business model solution is closely connected to the financing solutions for the value chain⁴⁶.

⁴⁶ Value chain financing solutions are the subject of module 8.

5.4 Tools to support business model improvement

Value chain development needs to support competitive business model solutions for small-holder farmers and other micro-operators that belong to poverty groups. Inclusive business models help poor suppliers or contractors to overcome poverty. The generic principles of business planning are the same for every enterprise. A sound business plan is the basis for commercial success and financial sustainability, independent of size.

This last chapter discusses some of the tools to promote business models for small-scale enterprises. The focus is on enterprises run by self-employed people, employing poor people or providing poor communities with goods and services. These include, for example, (male and female) smallholders in agriculture, artisans, small processors, traders or service providers with a low capitalization. They are close to poverty groups and therefore worth supporting. Business planning constitutes a particular challenge for these enterprises as they are faced with a large number of constraints. We will refer to them as “small-scale enterprises” in the following distinguishing them from companies who manage a commercial business more easily.

5.4.1 Identifying business models for micro and small enterprises

The identification of business models is part of value chain mapping⁴⁷. The initial mapping of a value chain categorizes operators according to the types of business model they are using. To identify promising small-scale enterprises it is useful to differentiate the categories of operators further. Instead of generic ‘smallholder farmers’ or ‘artisanal processors’, a more detailed characterization is required. Here are some useful criteria:

- Size (according to long-term assets and/or turn-over)
- Degree of development (from sporadic seller of a surplus to commercial (micro-) enterprise (see comments below))
- Linkages to buyers (specifying buyers and type of commercial relationship)
- Linkages to suppliers, if applicable
- Classification of operators according to the social assessment of the value chain (poverty mapping, gender mapping)

The result of this exercise delivers a more detailed chain map, indicating the position of the specific types of small-scale operators sharing the same business model. A specific aspect of interest is the classification of operators according to their degree of development. A distinction can be made between “subsistence entrepreneurs” who perform income-generating activities in an extended household context and actual entrepreneurs conducting activities for profit and (re)investing part of their proceeds (see Geminder, 2003, p.10-11 for guiding questions).

The differentiation should be detailed enough to produce a generic profile of each type of operator in terms of the business model used. The operators/business models are characterized in an overview table providing details. Preferably, this description should follow the categories of the business model canvas. In addition, the description needs to include

- names of enterprises (in the case of major lead companies);
- number of enterprises and farmers connected to the business model;
- current volume and value of produce / market share.

⁴⁷ see module 2, chapter 2.2

Characteristics of innovative and improved small-scale business models

Following the identification of business models, two questions are posed: First, does an innovative business model exist, that could be readily implemented or replicated? Second, what are the possibilities for *improving an existing* or *creating a new* business model for small-scale enterprises?

The questions can be answered by screening the existing business models in the value chain and identifying the most promising ones. The task is to select business models that have the potential to contribute to the development of the industry at large. First of all, such business models have to be financially viable – a basic condition for which some tools are listed in section **Fehler! Verweisquelle konnte nicht gefunden werden.**, below. Second, a promising business model should be innovative and offer the possibility of growth increasing production, reducing the unit cost of production or creating a higher value product.

The screening may deliver some promising business models that could be readily copied by others and at other locations. However, in most cases small-scale enterprises will have to improve their present business model or even create a new one. Working on the business model is a key task of every entrepreneur and particularly challenging for small-scale enterprises.

Improving and innovating the business model is a creative process. It needs entrepreneurial spirit, the intimate knowledge of the social setting and a sense for opportunities, for which there are no specific recipes. Nevertheless, there are tools aiding the process. They can broadly be classified into tools for generating new business ideas and tools for business planning.

The business idea

The literature on business model generation provides generic tools that help identifying business opportunities and inventing new or improved business models for all kinds of enterprises. The process always starts by understanding the position of the enterprise in the chain – its markets and customers, suppliers, competitors and the business environment. Much of this information is already contained in the value chain analysis. The following design of an improved business model uses creative techniques for generating business ideas such as brainstorming, visualizing and storytelling, scenario writing and context analyses (Osterwalder and Pigneur, 2010).

The creation of business models for small enterprises has to reflect their constraints and possibilities. The scope for new ventures is limited by the small scale and low degree of capitalization of micro-enterprises. Specific business solutions have to be in line with the conditions small enterprises typically face. The can be related to the elements of the canvas:

- *Customer relations*: proximity to local markets means that local customers are within reach, reaching customers outside the local community is only achievable via market intermediation and contracting
- *Key resources*: opportunities lie in the use of easily accessible local resources. Little capital and small scale of operations means that technological upgrading has to go in small steps. The steps of technological upgrading are known and can, in principle, be copied from other places
- *Key partners*: high dependence on partners for access to resources and technology
- *Cost structure*: individual micro enterprises have less access and face higher prices for inputs and services. Small-scale operations typically involve higher unit cost of production and suggest horizontal cooperation.

Typical issues of innovation include a better coordination of producers and processors (e.g. purchase agreements), financial solutions for acquiring technology, inputs and raw material and arrangements for service provision. The improvement of a business model often addresses several elements of the canvas simultaneously. However, even small adjustments and seemingly simplistic business models count as long as they include answers for the elements of the business canvas (see examples, below). The decisive point is that they offer the potential of a sustainable economic success and are viable without external transfers.

Diversified business models

Enterprises normally do not only produce a single product. Farms often have a broad range of products. The integration of an operator into a value chain does not mean that the enterprise should specialize on that product. The business model should include the complete set of value propositions and not just refer to a single product. It is important to keep in mind that the specific value chain product has to fit into the enterprise business model⁴⁸. Depending on the case, an enterprise may in fact follow several, connected business models.

The business plan

Innovating a business model is a creative process and cannot be cast in rules. However, analysts can check it once the idea has been formulated in terms of a business model canvas and financial assessment. The business plan helps the entrepreneur understand the financials of his/her business idea and decide whether it makes sense to pursue the idea further. It is a feasibility study of the business's chances for success and growth. The second step would be to develop the business plan further and either finance it through equity (not everyone needs or takes a credit) or present it externally to raise funds for its execution. The business plan then serves to communicate the idea to financiers and partners, to raise funds and generate support.

Publications about the principles of entrepreneurship and business planning abound⁴⁹. Apart from the business model canvas, business planning usually draws on a wide range of knowledge from different business disciplines: finance, human resource management, supply chain management, operations management, and marketing, among others. Eventually, the business plan is a collection of sub-plans, one for each of the main business disciplines. An example of a sub-plan is the production plan. It includes plans such as procurement of inputs, sourcing of labor, production technique, power and utilities requirement, management and others.

A business plan usually is supported by a market study. A market study lays out the sales plan determining where, when, how much and how to sell. This plan is crucial to the sustainability of the business. Entrepreneurs should seek expert opinion and use surveys and not simply rely on assumptions. Therefore, it is essential to do some legwork before making marketing plans, no matter how small the business is. The information one should scout for are:

- *Market volume*: the amount of goods or services that the markets in the target area deals with
- *Market trend*: the amount it dealt before and is projected to deal in the future, is there an increasing, decreasing or constant trend.

⁴⁸ See section 5.3.3.

⁴⁹ literature on SME development, criteria for business start-ups

- *Business cycles*: when does the market want more and when does it want less of a good? Is there a cycle or is it random? Are there associated price fluctuations? Is there a way to capitalize on the cycle by storing the good and selling it when supply is less?
- *Transaction costs*: what does it take to enter this market? Is there a fee or membership at an association required? Or any other monetary, quantity or quality related issues that might hinder the market entry.
- *Competition*: who are the competitors? One should consider how many players are there in the market, their strengths and weaknesses, and most importantly the challenges and opportunities they present.
- *Hindrances*: all sorts of forces that can stop linkage or smooth operation in the market should be considered, be it roads or transport linkages, political situation and policy framework, social barriers etc.

Box 0.1 depicts the structure of a business plan. It is important to note that the elements of business planning constitute a whole. Every single step is important, and if anyone of them is missing, the entire business plan falls apart.

Box 0.1: Concept – Structure of a business plan

- (1) Executive Summary
- (2) Problem – What is the problem?
- (3) Solution – What are you doing to solve it?
- (4) Business Model – How are you going to make money?
- (5) 'Underlying Magic' = technology – Competitive advantage
- (6) Marketing and sales – How are you reaching your customers?
- (7) Competition – Who is your competition?
- (8) Management team – Describe your team
- (9) Financial projections and key metrics – BS, P&L and cash flow
- (10) Current status, accomplishments to date, timeline and use of funds

Source: Kawasaki, 2004

5.4.2 Public support to develop small businesses

First and foremost, every enterprise has to take care for its own business model. The know-how of business planning is well established and tools such as the canvas are easily available. Yet, these concepts are relevant in the framework of chain development as well, and public agencies can make use of them. Business models are important for three strategic tasks of (public) development:

- (1) Supporting the replication of an already successful business model extending its geographical coverage
- (2) Helping small-scale enterprises to change and improve their business models and find new and profitable ventures
- (3) Co-financing private investment into business models of a bigger scale that are of strategic significance for VC development

The first strategy presupposes that viable and promising business solutions are already available and that private companies are present and willing to invest into them. The public objective is to foster replication and/or expand the geographical coverage of the business model enabling more enterprises to take the model over. While the actual investment (e.g. into production and storage capacity) is left to the private enterprises, public (co-)investment covers the necessary public infrastructure and the provision of advisory services. Where justified, the public side can also provide financial incentives and help solving technical and organizational problems. It is highly important to keep in mind, however, that there are limits

to the replication of the same business model at one location. The remaining growth potential of the market may be too small to accommodate additional enterprises picking up an already existing business idea.

The second strategy therefore is the creation of *new* business models using the VC analysis as a source of information about the opportunities. It is all about business innovation – creating products, introducing new technology and linkages. The role of the public sector is to strengthen the entrepreneurship and the innovative capacity of the private sector and of small businesses in particular.

Third, governments can also co-finance the investment of (bigger) private companies that are of strategic significance for VC development. These include, for example, (agro-) industrial firms working with small enterprises, companies taking a key function in processing or trade and providers of key equipment, technology and services. Here, the issue is the enabling of a desirable investment that might not go ahead without the public side contributing.

Eligibility of business plans for public support

Independent of the size of the enterprise, public agencies have to take a decision whether they should actually support a particular business plan or not.

In order to take that decision, the quality of the proposed business improvement has to be assessed. This applies to small-scale business models as well as to the proposed investment of larger enterprises, which governments may want to support by fiscal incentives and public co-investment. Three major considerations determine the significance of a business model for VC development

- Viability of the business plan
- Significance for value chain development
- Environmental and social benefits

Economic viability obviously is a basic condition. The profitability of a business model is a basic condition of interest to both the private investor and the public support agency. This means that the financial analysis has to show promising results.

Significance of a business model for VC development: The specific investment projects of private enterprises at the micro level have to go together with industry-wide upgrading. Often, VC development starts with individual companies and cooperative enterprises that invest into their business models opening the door to farmers and micro-enterprises. The question is whether a new or improved business model is significant for the development of the value chain at large. For small-scale business models, obvious points include the potential for replicating – the question whether the model is scalable and how many microenterprises could potentially utilize the business idea.

To understand the significance of both big and small business models, it is further important to look at the position of the business model in the value chain. In general, the importance of a specific model is greater, the bigger its market share in the VC. Other criteria concern the potential impact on other enterprises. The following questions guide the considerations:

- Does the business model strengthen upstream and downstream linkages?
- Does it provide a market for others, especially for small enterprises?
- Does it offer new services or products that can become a basis for developing the business models of suppliers, buyers, service providers or other business partners?

Environmental and social benefits: To justify public support, a private business model has to satisfy social and environmental criteria. The question is whether the business model creates

benefits for poor people directly or at least generates any public benefits in their favor. The criteria and tools for the social assessment of value chains and business models have been presented at other places in the manual and shall not be repeated here⁵⁰.

Tools for entrepreneurship development

Government and public agencies have a number of instruments to support business model design and implementation at their disposal. These include training and coaching services for business start-ups and financial incentives. The generic instruments are mostly used by Ministries of Trade and Industry. Some are also employed by organizations of the private sector. The following instruments are generally applicable, but are mostly used to advise small and medium enterprises that follow similar business ideas.

Training and coaching instruments for small-scale entrepreneurs

Generic training and coaching instruments for small-scale entrepreneurs serve to enhance their business skills and help them developing a business mindset.

The business model canvas is a generic tool and a good basis for advising and training aspiring entrepreneurs. It can be used as an instrument to stimulate reflection on an existing business model and to facilitate the development of a new or improved one. The table format lends itself to using pin boards and participatory methods reviewing business models that are shared by several micro entrepreneurs and smallholder farmers. The approach is described in the “LINK methodology” of CIAT (Lundy et al., 2012, p.58-61). LINK suggests several exercises using the business model canvas. One is a “group discussion focused on the current state of the business model”, another “brainstorm(ing) in small groups about the strengths and weaknesses” and the consistency between different building blocks in the canvas. The review of a current business model leads on to the formation of new models that are used to guide supportive action and investment.

Beyond the review and development of business models, entrepreneurship training programs offer a range of analytical and planning instruments and different teaching methods. The most widespread training programs enabling aspiring entrepreneurs to develop their own business ideas are:

- “Start and Improve your business” (SIYB) of ILO
- “Competency Based Economies & Formation of Enterprise” (CEFE)
- “Empretec Program” by UNCTAD
- “SME – Business Loop” by GIZ

Sector-specific instruments for the agriculture and food sector

- “Farmer Business School” (FBS) by GIZ
- “Bauern-Unternehmerschulung” (BUS) by the Andreas Hermes Akademie
- “Swisscontact”

The start-up of a company is one thing, staying in business and growing in a formal economy another. Being able to react to threats and new opportunities presupposes business experience and confidence that has to be supported by accompanying and coaching young entrepreneurs.

⁵⁰ One set of tools is the social analysis of chains and particularly poverty mapping in module 2, chapter 2.3; another is the strategic considerations on promoting social benefits in module 3, chapter 3.4. The social and environmental assessment of business models is the subject of section 5.3.4.

Box 5.4.2: Tool – The ‘Farmer Business School’ (FBS)

Point of departure

Historical spikes in food prices, recent increase in demand for agricultural products and the communications revolution are opportunities for African farmers. Thus, producers who are able to supply domestic and export markets competitively stand to gain in a big way. The problem is that the vast majority of African farmers are smallholders – most of which are women – with little capability to deliver competitive produce to the market. Their lack of competitiveness lies in the typically low yields which are the result of low capital investment, weak technical and business skills. The information and material support smallholders usually receive are insufficient to help them make business-driven decisions.

The Farmer Business School approach

In cooperation with 20 local partners, the regional Sustainable Cocoa Business Program (GIZ/SCB) has developed an entrepreneurial training in 2010, designed first for cocoa production systems and large scale delivery in Ghana, Nigeria, Côte d'Ivoire and Cameroon.

The 12 modules of the so-called Farmer Business School (FBS) approach cover investment strategies and practical management skills to use production factors and viable Good Agricultural Practice (GAP). The modules tackle planning, cost-profit calculations for cocoa and food crops (maize and cassava), farm management for food security and balanced diet, professional organization and access to financial services. FBS training takes place during 5 subsequent mornings in the village or at cooperatives at venues organized by the community. All farmers receive a training notebook with key lessons and tools, a work book for practical application of business tools (mainly planning and profit-loss calculation) to realize business after training and a training certificate with serial number. FBS trainings are only carried out by qualified professionals (higher diploma graduates) working for local partners, comprising extension services (public or private), sector bodies, microfinance providers or dioceses.

FBS are designed in a customized process which includes determining the outreach (at least 10,000 smallholders), selecting the production system including a lead and two other (food) crops, an economic analysis and the adaptation of the training curriculum. Adapted curricula are piloted with smallholders and partners. Only after successful pilot trainings with adapted material Trainings of Trainers are organized for selected partner staff. This class room training is followed by a supervised 2 to 3 months practical learning phase for trainer teams. FBS trainers receive an official certification as FBS trainer after the implementation of at least 20 trainings for 600 smallholders including proper follow-up and proven impacts.

Follow-up interventions to satisfy the demand of farmers for technical training quality inputs and related finance are key to fully tap the potential for income increases and diversification. Available services and access points such as providers of farm inputs, financial institutions, technical training programs should thus be involved as partners (if not yet effective)

Source: Dr. A. Matthes, GIZ

Business incubation and financial incentives

Building on the entrepreneurial know-how, the second set of instruments aims at actually improving or creating new enterprises. Business services help starting up new enterprises pursuing a particular opportunity. Existing enterprises benefit from the support to “firm-level upgrading”. Relevant instruments include:

- Business incubators
- Business plan competitions

- SME counseling and mentorship, networking of entrepreneurs
- Technical assistance services

Financial incentives:

- “Catalytic funds” – grants and seed money
- Mobilization of venture capital
- Fiscal incentives
- Public investment support

All these instruments are generic in the sense that economic developers apply them to all types of enterprises. Business incubation and financial incentives often are not related to specific economic sectors. Nevertheless, they can be of use in value chain development policies and programs as well.

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For further information on how GIZ projects have advanced inclusive business, refer to [Inclusive Business Toolbox](#)



Module 6

Business Linkages

Contents

Module 6 Business Linkages	63
6.1 Introduction into types of business linkages	63
6.1.1. Vertical linkages – Business contracts	64
Types of business contracts along the value chain	64
Service linkages and subcontracting	66
The concept of chain governance	67
6.1.2. Horizontal linkages – Business cooperation	68
Cooperative ventures	68
Business associations	68
6.2 Business contracts	70
6.2.1. The right type of contracting	70
6.2.2. Contract production	72
Contract farming	72
Risks and success factors in contract production	74
6.2.3. Public support of contract arrangements	75
6.3 Cooperation between small-scale enterprises	77
6.3.1. Preconditions for successful cooperation	77
Benefits of cooperating	78
Cost of cooperating	79
6.3.2. Types of cooperative business models	80
Informal farmer and microenterprise groups	82
Producer groups guided by non-governmental organizations	83
Producer groups in contract farming arrangements	84
Formal cooperatives with own enterprises	85
6.3.3. Support to cooperative development	88
Promotion at different stages of cooperative development	89
<i>Supporting cooperation initiatives and start-ups</i>	89
<i>Cooperative development and capacity building</i>	90
Success factors and risks of cooperative ventures	91
6.4 Cooperation at industry level	93
6.4.1. Business associations	93
Farmer organizations and federations of cooperatives	93
Business membership organizations in subsectors outside agriculture	94
Industry-wide organizations and networks	96
6.4.2. Platforms for business matchmaking	98
Overview of platforms and services	98
Trade fairs and export promotion	99
Resources	102

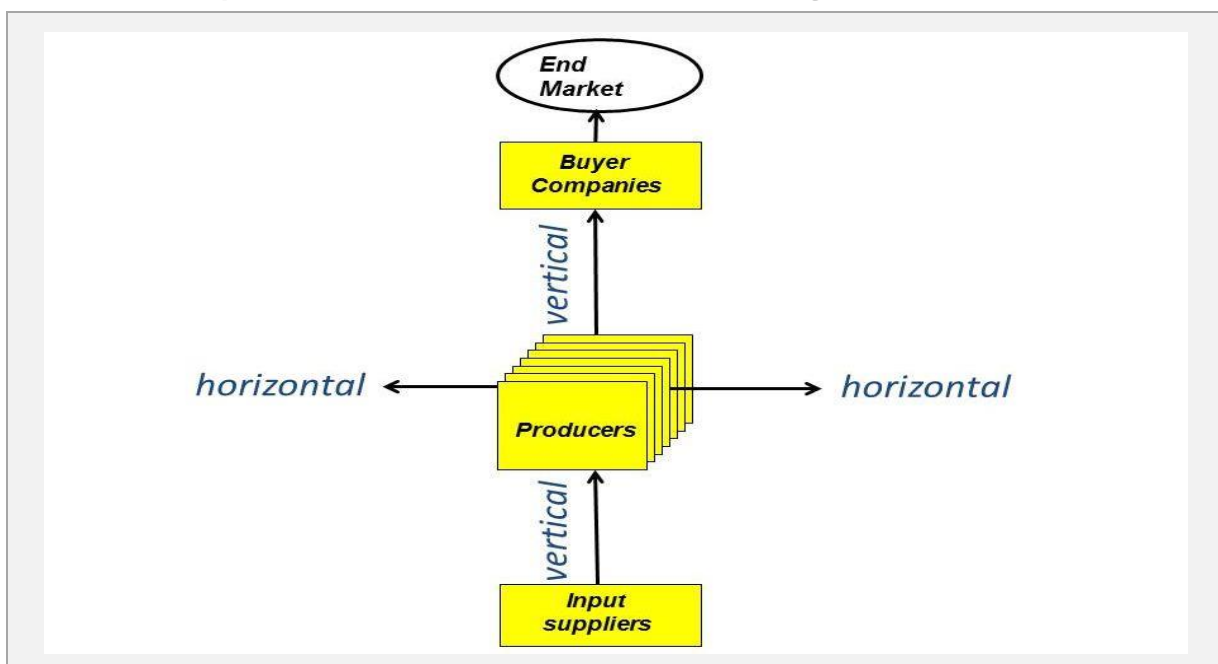
Module 6 Business Linkages

6.1 Introduction into types of business linkages

Business linkages are the transactions between value chain operators. Linkages are vertical when the transaction takes place between operators at different stages of the value chain. Essentially, vertical business linkages are contracts between sellers and buyers of intermediate and final products. Another type of vertical business linkage is the delivery of services such as transport or maintenance and repair services. The value chain map visualizes business linkages by arrows connecting the operators with each other and with the service providers.⁵¹

By contrast, horizontal business linkages refer to the transactions between enterprises operating in the same chain link – the collaboration between enterprises pursuing the same or similar business models. Cooperation linkages comprise, for example, joint purchase and production activities or joint marketing. Producer groups or cooperatives regulate their internal cooperation in a business contract as well, in this case binding the members of the cooperative venture.

Box 0.1: Concept – Vertical and horizontal business linkages



Source: own concept

The usual terminology of “horizontal and vertical” does not necessarily coincide with the directions used when visualizing the linkages. Many diagrams in this manual show the value chain turned through 90 degrees, so that vertical linkages in fact appear as horizontal. This has pragmatic reasons because presentations normally use the landscape format. However, the format does not have any significance for the definitions introduced above.

⁵¹ See the value chain mapping symbols in box 2.2.4 in the first volume, module 2.

It is important to note that every business model includes statements on linkages in the business model canvas. In fact, business linkages always belong into the business models of both contract partners, 'customer relations' on one side and 'supply linkages' and partners on the other⁵². Seeking chain development via the improvement of business models always has implications for business linkages as well. The choice of supply and marketing channels is part of the business model design.

The connection also works the other way: Improving the business linkages helps the coordination of operators along the chain. Apart from the delivery of products and/or services, business linkages also include other important functions, especially the communication of market information, exchange of technology, and the organization of financial flows. Business model solutions and linkage solutions thus are closely connected.

6.1.1. Vertical linkages – Business contracts

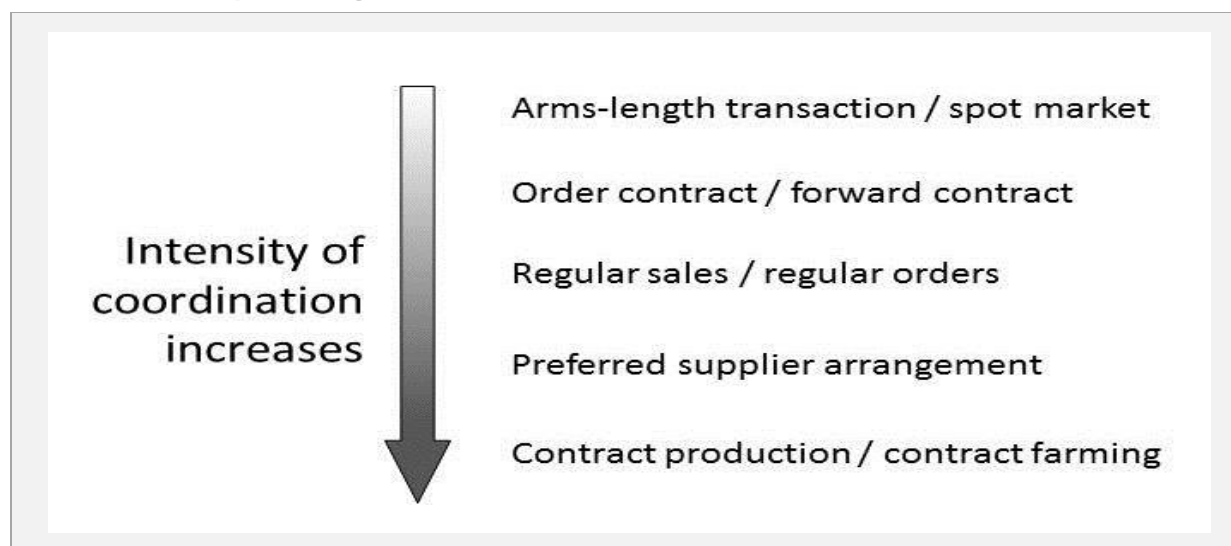
Vertical business linkages are sales contracts relating the operators at different stages of the value chain. Linkages are the arrows between operators. Value chain maps show the channels through which the product passes in the first place. There is a wide range of different types of business contracts. Chain maps cannot depict all of them. Many service linkages and subcontracting arrangements will only become visible in detailed maps.

Types of business contracts along the value chain

Fehler! Verweisquelle konnte nicht gefunden werden. lists different forms of vertical business linkages. The list organizes the types of contracts in order of an increasing degree of intensity of the relationship. From top to down, contract partners specify their relation in detail and take on more obligations. Starting from short-term and opportunity-based exchange on one end, partners enter into more and more diversified relations including mutual information exchange, logistical arrangements, embedded services and coordinated quality control. At the other extreme, there are fixed and often hierarchical organizational arrangements. The contract relations imply that both partners adjust and coordinate their individual business models.

⁵² Compare the scheme in box 5.2.3, in module 5.

Box 0.2: Concept – Range of business contracts



Source: own concept

Observers should note that the intensity of the relation does not necessarily relate to the product value. Some high-value products and investment goods change hands in spot markets, while relatively low-value agricultural products may be traded within the limited scope of contract production.

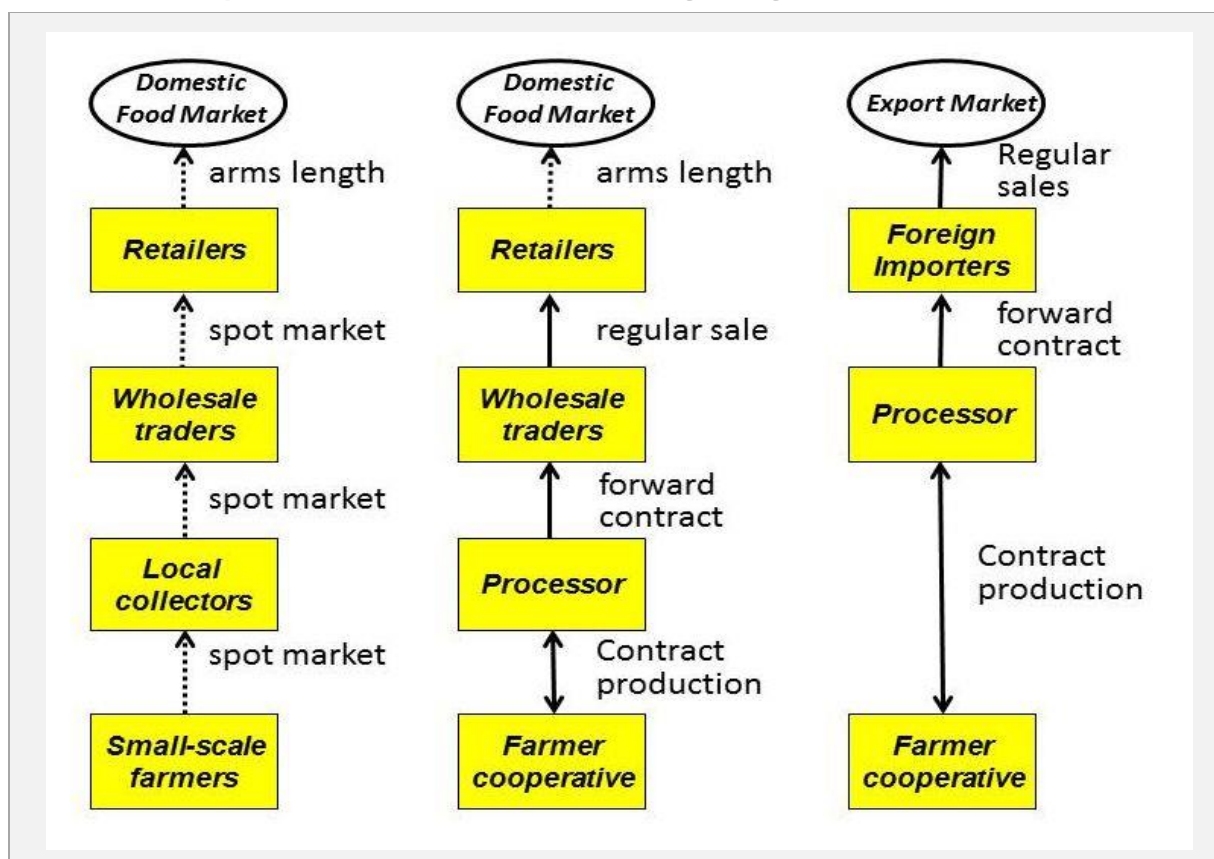
The transactions on *spot markets* (also called “wet markets”) are informal and short-term (at “arms-length”), and sometimes anonymous. Both suppliers and buyers can easily switch between trading partners as the standard quality can be met by many producers.

Auctions and *commodity exchanges* mainly offer spot market transactions, but also enable trade in “commodity futures”, i.e. contracts on the delivery of a particular amount of a commodity at a particular price at a future date.

Forward contracting may use verbal arrangements but most of the time includes written documents specifying the goods and the transaction details, such as prices and time of delivery. Repeating contracts lead to *regular contracting* in a long-term relationship. This provides security and reduces the search cost for both sides.

Contract production is an arrangement in which a buying company establishes a long-term relationship with producers. The company clearly specifies the product and the technology to use. An *outgrower scheme* is the contract of a large estate with neighboring farmers. We indicate contract production by a double arrow.

Box 0.3: Concept – Different forms of contracting along a value chain



Source under box

Often, different forms of contracting co-exist within the same value chain. The schematic map in **Fehler! Verweisquelle konnte nicht gefunden werden.** shows different forms of organizing vertical linkages: The chain map on the left shows a typical food value chain, in which all stages are linked by spot markets. The chain maps in the center is partially and the one on the right fully integrated by contracts.

The arrows follow the flow of the product, from its origin “upstream” to the “downstream” markets. Accordingly, we can distinguish between “forward” and “backward” linkages. The linkages between small producers (farmers, handicraft makers) and larger buyers (retail companies, exporters or industrial processors) are of particular interest.

Service linkages and subcontracting

Another type of business contract connects value chain operators with enterprises outside the main sequence of the value chain. Such suppliers and service providers feed into the value chain but do not become owners of the product. Therefore, the direction of the arrows connecting them with chain operators is turned by 90 degrees. Again, the types of linkages range from short-term to long-term contracts. Short-term business linkages for construction works co-exist with long-term contracts, e.g. for the maintenance of equipment or the supply of water.

Subcontracting is of particular interest in value chain development. In a subcontracting arrangement, core manufacturers delegate production processes to smaller suppliers. Subcontracted enterprises deliver components or take over labor-intensive activities. Examples are garment firms subcontracting small enterprises for the embroidery of gowns and shirts or for

sewing works. Furniture companies delegate production of components or decorative appliances to subcontractors. ValueLinks symbolizes this type of linkage with a double arrow.

In contrast to contract producers, subcontractors have a more marginal position. In contract farming, both parties continue to be core chain operators. A subcontractor depends entirely on the leading manufacturer who owns the order. This is particularly problematic wherever subcontracting is organized in several tiers, a situation that is typical in the garment industry. The subcontracting chain extends from brand companies ordering products from a leading manufacturer in a country like Bangladesh (first tier). The manufacturer subcontracts smaller enterprises (second tier) to do parts of the job who, in turn, delegate work to homeworkers (third tier). The further down the line, the weaker the position of the subcontractor who only has a job as long as the lead firm needs the service⁵³.

The concept of chain governance

The concept of 'chain governance' classifies value chains according to the *dominant* types of vertical business linkages in a chain. It has gained importance because of two trends: One is the increasing demands made by end consumers and imposed by governments. Producers and retailers are obliged to meet increasingly stringent quality, safety and environmental standards. The other trend is economic globalization. Today, consumers have the choice to buy products from many different places. In the context of globalization, companies from different countries compete for the same global market.

Both trends drive private companies to organize the chain linkages reducing supply risks and cost of logistics, managing quality and tracing the origin of a product. To fulfill market requirements, the operators along the value chain have to agree on rules and collaborate. 'Chain governance' is the manner in which they coordinate the production and marketing processes. In a more narrow sense, chain governance means the parameters according to which operators have to work – from product specifications and production technology to the IT-solutions. Gary Gereffi and others have classified the patterns of chain governance⁵⁴ for the use in academic studies primarily, but the concept is also of relevance for development practice⁵⁵. Here is a quick overview of the major types of chain governance:

Market governance: Traditionally, chain coordination is achieved through free market exchange. If spot market relations prevail, the chain governance is market-based.

Networks: Under the conditions of global competition, more integrated forms of governance become important and dominant companies start imposing rules on their suppliers. The institutional set-up of value chains thus shifts from *markets* towards *networks* in which operators interact more frequently and bigger companies take over coordinating tasks. Lead firms specify the product quality and terms of delivery to their upstream or downstream partners, which become more or less dependent on them.

Hierarchy: At the extreme, governance takes the form of a hierarchy in which lead firms either integrate their supplier vertically or establish *quasi-hierarchical governance* structures in which the lead firm imposes terms of contract on their subordinated suppliers. Hierarchical governance can also extend to enterprises further upstream in the value chain.

⁵³ See examples in the documents provided by <https://cleanclothes.org/resources/national-cccs>

⁵⁴ Gereffi, Humphrey and Sturgeon, 2005; Frederick and Gereffi, 2009

⁵⁵ see the USAID briefing paper on value chain governance,

The types of governance resemble the range of contracts in box 6.1.1, but chain governance is more than the individual contracts. It refers to the entire value chain or channel.

6.1.2. Horizontal linkages – Business cooperation

The second large category of business linkages is the cooperation between similar enterprises in the same chain link. Enterprises cooperate for two reasons. One is the business advantages that come with joint purchasing, production and marketing activities. They lead to commercial cooperative ventures. The other is shared economic and political interests.

Cooperative ventures

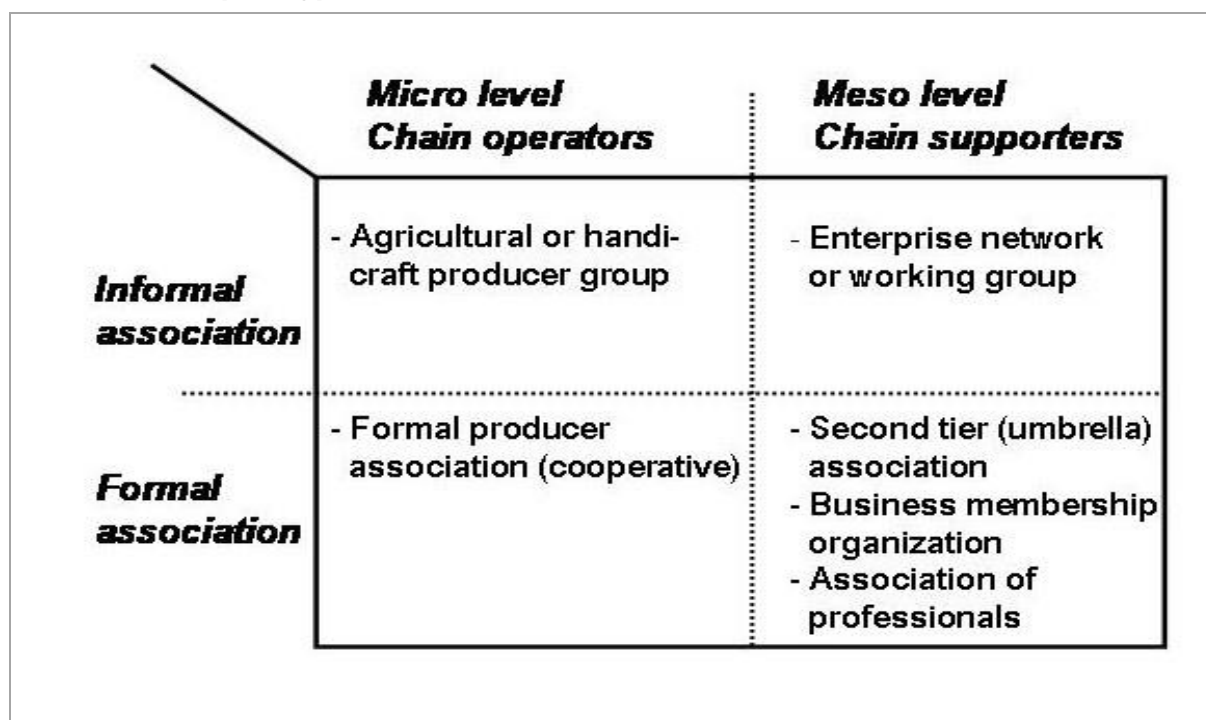
The left column in box 6.1.3 refers to the business motive behind cooperation. Small and medium enterprises cooperate to overcome the limits set by their small size. By pursuing business activities jointly and by sharing resources they achieve economies of scale. Often cooperation is necessary to increase the bargaining power vis-à-vis business partners and get access to markets. Horizontal cooperation for business purposes takes place at the micro level. It can be informal or formal. A farmer group is an informal type of cooperation in which members work together, e.g. at village level. A formal cooperative, in contrast, has a legal statute and runs a separate cooperative enterprise that is owned by the members and managed by hired professionals.

Business associations

The right column in box 6.1.3 presents the basic forms of cooperation for political and advocacy purposes. Enterprises benefit from pursuing common problems together. To promote their collective interests and get access to public support services, enterprises form associations at a scale that goes beyond the local level. The “meso” level refers to the chain-wide agenda shared by all enterprises that have a similar size and business model. Again, this purpose can be achieved informally in rather loose networks or short-lived enterprise working groups (top right box) or by formal associations. Formal associations include second-tier federations of cooperatives and business membership organizations (BMO) of larger firms. Apart from advocating political interests, associations provide services to member organizations.

Box 0.4 summarizes main categories of horizontal cooperation, organized according to the distinction between formal and informal organizations and the level of cooperation.

Box 0.4: Concept – Types of horizontal collaboration



Source: own concept

Solutions around the cooperation for business purposes are treated in further detail in section 6.3, below. Section 6.4 covers the topic of association building in value chains.

6.2 Business contracts

Value chain development requires business linkage solutions. Private operators have to adjust their business relations or determine new forms of contracting fitting their business models. The business community needs to coordinate input supply, production and marketing along the value chain to become more competitive collectively. Technical innovations make it necessary to get access to additional inputs and services.

From the public point of view, the market integration of small enterprises receives the greatest interest. Which forms of contracting facilitate the market integration of microenterprises and farmers?

It is clear that commercial contracting is the exclusive task of private enterprises. Government and public agencies may assist and provide advice but cannot bring about the contract solution.

6.2.1. The right type of contracting

The terms of contract serve to secure the delivery and payment of the product. For every transaction, partners have to choose the most efficient contract corresponding to the business needs and risks. The main point is to reduce the cost of information and contract supervision, and to avoid the risk of opportunistic behavior or outright default on the agreement. In order to work, the contract has to satisfy both sides.

However, the contract cannot regulate everything. Mutual trust between business partners is a prerequisite. Where business partners know each other well a handshake may suffice, while traders in new territory will not be satisfied even with an elaborate contract if they cannot trust their partners.

The adequate type of business linkage depends on a number of conditions. Variables determining the choice of contracts include:

- Characteristics of the traded product , such as specific quality and perishability
- Complexity and specificity of the production process
- Fixed investment and production capacity delivering high volumes of product
- Financial stability of business partner
- Incitement to breach of contract, such as failure to deliver or failure to pay

As requirements and problems differ, operators have to find specific contract solutions in each case. Generally, un-coordinated transactions (spot markets) are efficient in retail sales and in local markets for products with few quality traits. Products with specific quality features and high perishability call for more integrated linkages and detailed contract specifications. The same is true for production systems involving fixed long-term investment such plantations and agro-industrial plants. Enterprises depend on suppliers to use the installed production capacity fully. Hence, perishable and high value food products, special manufacturing products and highly seasonal fashion articles are amenable to binding contracting arrangements. Wherever final consumers ask for high and consistent quality, the control of supplies becomes a factor of competitiveness. Therefore, buyers seek reliable and close coordination with suppliers, and vice-versa. They tend to formalize their relation in long-term contracts.

The conditions differ from value chain to value chain. In every subsector typical business linkage solutions exist, that provide a benchmark for newcomers who simply follow conventional practices. The following table can serve as a guideline.

Box 0.1: Tool – Choosing a type of contract

Type of contracting	Description	Use for...
Spot market transaction	One-off transaction that is informal and short-term.	Bulking standard commodities such as maize, paddy, timber or green coffee, also used for processed foods e.g. concentrated fruit juice. Outside agriculture, “plain white t-shirts” is another example.
Auction and sale in commodity exchanges	One-off transaction within the formal framework of a commodity exchange	Trade in grains and other commodities, e.g. tobacco in Zimbabwe or coffee in Kenya. Auctions also exist in perishables, e.g. the flower auctions in Aalsmeer, Netherlands
Order contract	Transaction in which buyer and seller agree on delivery of a specified quality and quantity of goods, at a specified date	Products of a specific quality ordered in particular numbers, such as garments, handicraft products or furniture; particularly relevant for seasonal items, such as Christmas decoration and fashion articles
Regular order contract / Preferred supplier arrangement	Orders are regularly repeated. The buyer has a preferred producer. The commercial relation extends over several cycles.	The same type of products as above; contracts are more stable if production capacity is fixed. Examples in agriculture are production contracts of dairy plants with milk producers, or canners with vegetable growers
Outgrower scheme	A big farm buys from neighboring farmers to complement the own production.	Export horticulture or industrial commodities if the own production of a nucleus farm is not sufficient for the demand of buyers or the capacity of a central plant, e.g. in sugarcane
Contract production / contract farming ⁵⁶	The supplier works for one buyer exclusively who specifies the product and technology clearly. The relation is hierarchical with services embedded.	Agricultural products purchased by processors or large traders; outside agriculture, a comparable arrangement is the regular subcontracting of home workers in the garment industry.

Source: own compilation

Although the table presents typical patterns of business practice, this does not mean that these are the only solutions. Analysts still have to consider the specific case and refrain from simply assigning particular linkage solutions to a value chain. On the contrary, successful development strategies often have to embrace new and innovative marketing modalities to foster competitiveness.

⁵⁶ see the next section for a detailed treatment

We observe a general trend towards greater integration of value chains and more elaborate forms of contracting. The concentration of food chains, customer demands and the increasing role of logistics, standards and traceability lead to more intensive and more comprehensive business linkages. Perishable products are a case in point. To assure food safety and control food waste they require well-organized supply chain logistics.

Business partnerships integrate more and more functions beyond mere buying and selling. Linkages also comprise exchange and flow of technical data and provide the basis for embedding services. Business partners improving their business model have to make sure that the marketing channel of the supplier fits the supply channel of the buyer. Elaborating the details of a contract solution can benefit a lot from examining the business models concerned. Operators and business advisors should use the business model canvas⁵⁷ to make sure that the contract solution works for both sides.

6.2.2. Contract production

In development policy, the integration of smallholders into markets is of particular importance. Solutions for inclusive business models have been in the focus of the debate on value chain development. The range of available publications is wide⁵⁸. The arguments start from the observation that the requirements in food markets are constantly increasing as value chains globalize and quality standards go up. The modernization of food chains imposes demands to which small producers can only respond with difficulty. The fragmentation of supply, a weak market position of smallholders and widespread mistrust often prevent sales. Given the market requirements and their limited capacity, small suppliers can no longer rely on spot markets but need to enter more integrated types of contract arrangements.

Contract production and contract farming in particular, stand out as a key linkage solution for inclusive development. By cooperating closely with a strong buyer, small farmers gain access to markets. In return, the larger partner secures supplies and has more control over the raw material. Lead firms in non-agricultural sectors benefit from greater flexibility. They can reduce the time for responding to orders and their costs by keeping lower inventories and adjusting to different scales of production. In turn, microenterprises in textiles and handicrafts receive regular orders and support.

Contract farming

Contract farming is a system, in which agricultural processing or trading companies procure raw material from farmers. These can be private firms, farmer cooperatives as well as public agencies. The contract is a written agreement between an 'off-taker' who buys produce from groups of farmers who produce a specified quantity of a crop in a particular quality and at previously agreed prices. A case in point is vegetable producers supplying the frozen foods industry. The solution benefits both sides. In many cases, the off-taker provides inputs, technical advice and credit while the farmer sells exclusively to the buyer. Contract farming can be of great benefit for small farmers who would not be able to invest in high-value production on their own. It provides them a secure market, access to technology and even short-term

⁵⁷ Section 5.2.1

⁵⁸ Key concepts include "linking farmers to markets" (e.g. FAO, IFAD, CIAT) and "inclusive business" (SNV, WBCSD); see the references at the end of this module. Another key publication is Vermeulen and Cotula (2010).

finance. In turn, the off-taker company determines the production methods and thus secures control over a consistent supply in quantity and quality.

As both partners cooperate closely, the contract farming arrangement goes beyond the contract as such. By concluding the contract, both the off-taker and the small suppliers adapt their respective business models. The connected business models lead to an overarching, interlinked system⁵⁹. The cooperation between the two partners poses the challenge to (co-) manage the interface. While that may be true, we still have to keep the internal business logic of both partners separate so that the differences of interest and the sources of conflict remain visible.

There are different variants of contract farming. Technoserve and IFAD⁶⁰ distinguish five types of contract farming models ranging from “informal” models with relatively little investment on the buyer side to the “multipartite”, “centralized”, “nucleus-estate” and “intermediate” models that vary in terms of provision of inputs, technical advice and support services, the degree to which production methods are specified, and the definition of the terms of contract.

Contract farming solutions and the methodology of promoting them in development cooperation is the subject of the “Contract Farming Handbook” by Margret Will⁶¹, who describes the different solutions in detail and discusses the pros and cons. The box below presents four criteria to assess the prospects of success.

Box 0.2: Tool – Success criteria for contract farming schemes

Criteria to guide the design of contract farming schemes

- creation of mutual benefits / incentives, e.g. through increased productivity, reduced postharvest losses, reduced transaction costs and improved market access respectively;
- negotiation of fair and equitable contract terms relevant for successful contract fulfilment (e.g. prices, supply quotas, embedded services, rejection modalities, payment terms);
- design of an efficient management system enabling the buyer to establish close working relations with farmers;
- provision of room for ‘learning by doing’ to adapt the contract farming model as need arises during the course of implementation.

Source: Margret Will, 2013, p.45

The Contract Farming Handbook presents a structure for developing contract farming schemes that serves as a guideline for contract partners and for the supporting public development agencies likewise. The process comprises six major steps⁶²:

- Decision to develop a contract farming (CF) scheme
- Development of a CF capacity development plan
- Development of a CF business plan
- Negotiation and acceptance of CF contract
- Start-up of CF field operations
- Monitoring, feedback and learning

⁵⁹ See the graph in box 5.2.3

⁶⁰ Technoserve and IFAD, 2011, based on Eaton and Shepherd (2001), p.46;

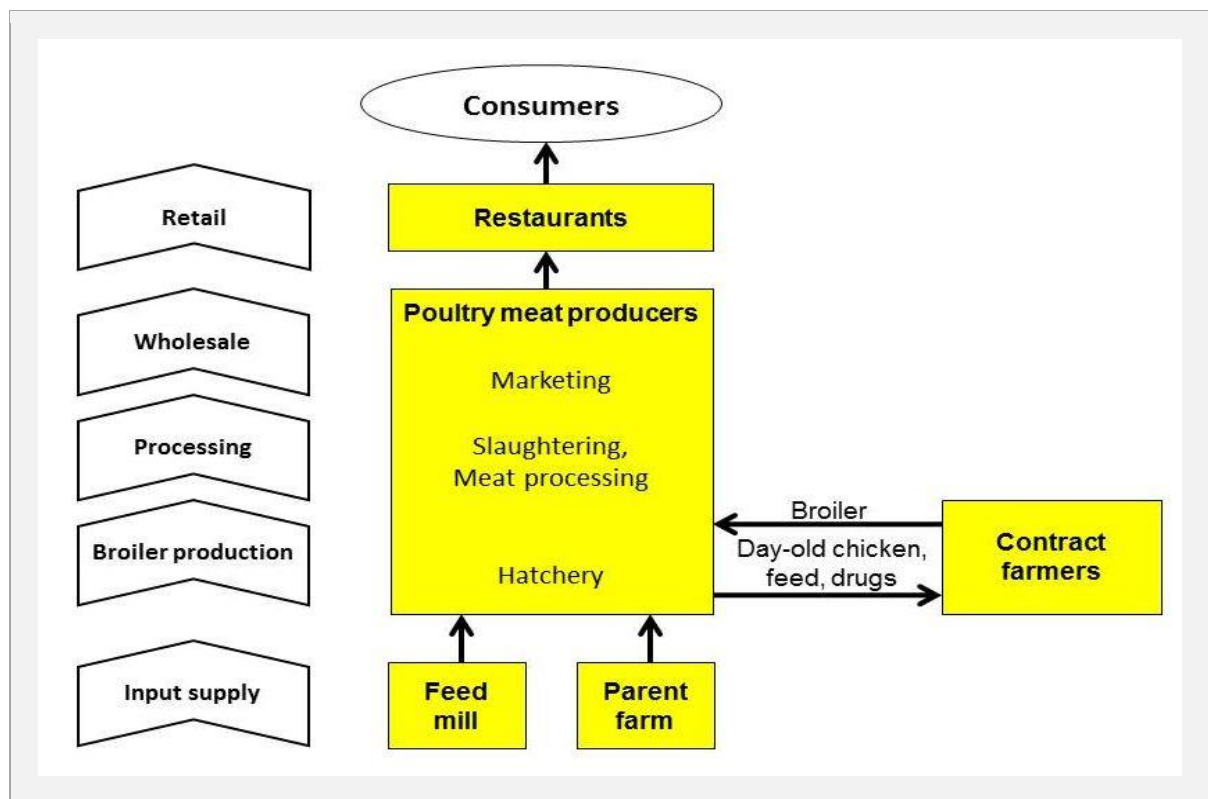
⁶¹ Will, M., 2013,

⁶² Will, M., 2013, p.49

The process continues with further steps to sustain the arrangement and scale it up.

The next box presents the example of...

Box 0.3: Case – Contract farming arrangement in poultry production, India



Source:

A general feature of contract farming arrangements is the fact that the vertical contracting also implies the cooperation of the supplying farmers. Without cooperation, small enterprises face difficulties improving their position in a business contract. Strong vertical linkages pre-suppose strong horizontal cooperation at the same time.

Risks and success factors in contract production

To check whether and which form of contract farming actually constitutes a viable solution for chain development, the business partners and their supporters have to master the critical points in their relation.

Side selling: A common problem putting contract production at risk is contract default. Defaulting farmers take to side selling produce to buyers other than their contract partner. The risk of side selling is high, when the market price diverges from the agreed price in the contract. Poor producers with urgent cash needs who find alternative buyers have an incentive to breach the contract, even if this behavior is very shortsighted and leads to losses in the medium term. To avoid side selling, the terms of contract should link the contract price to the development of market prices and/or include timely cash transfers. Contract default also happens on the other side of the arrangement when off-takers don't pay in time. However, if they have made prior investments or delivered services in advance, they have more to lose.

Viability of the business plan: The other key problem is a deficiency in the business model as such. The reasoning behind changing a business model and engaging in a production con-

tract has to be robust. The incentive for sound business planning can be undermined by public agencies “promoting contract farming for development objectives without looking at the viability of the business” (Will, 2013, p.31). Contract production may appear as an attractive solution for public development projects, but essentially it is the private partners who have to make a conscious business decision before concluding any contracts.

Analysts should also take into account the following three fundamental success factors for successful contracting.

Trust: One key to success is trust. The literature on contract production agrees on the importance of trustful relations between the partners, a precondition that basically applies to all commercial linkages.

Fairness: Contracts can only be sustainable if *both* sides realize an appropriate benefit for themselves. The incentives have to be set right to avoid non-compliance.

Transparency: The opportunities, costs and benefits have to be transparent. Companies should be aware that upfront investment into the production and organizational capacity of the weaker partner may be necessary and be prepared to provide embedded services.

The literature mentions more success factors. Eaton and Shepherd⁶³ present a systematic inventory of preconditions. The “Review of smallholder linkages for inclusive agribusiness development” of the FAO Investment Centre⁶⁴ lists a series of “factors which promote successful agribusiness linkages”.

6.2.3. Public support of contract arrangements

Moving from spot market relations to long-term contracting requires skills, money and gradual building of trust. The “Contract Farming Handbook” and other publications⁶⁵ deal with the public support to private business contracting.

The basic principle facilitating business linkages is to respect the creativity and autonomy of private enterprises. While external facilitators can be useful, they always have to keep in mind that negotiating commercial contracts is an exclusively private affair and responsibility. No outsider can anticipate the solution that fits a business community best. From the discussion of the roles in chain promotion⁶⁶, it is clear that external facilitators are not supposed to interfere in contract negotiations. However, under certain conditions support is useful. Public facilitators should go ahead

- If the development of business linkages is hampered by a market failure that the business partners cannot resolve on their own. This may be a prohibitively high cost of identifying partners, collecting information and assessing the risk – and other problems such as lacking business skills.
- If pilot linkage solutions can serve as a model for others and be copied and scaled up easily.

Accordingly, facilitators can take a brokerage role between small-scale suppliers and buyers.

⁶³ Eaton and Shepherd, 2001, p.41-42

⁶⁴ Paglietti and Sabrie, 2013

⁶⁵ See, for example, Norell and Brand, 2012

⁶⁶ See module 4, chapter 4.2, in the first volume

Government and public agencies can foster the culture of cooperation by supporting enterprises working with partners by making sure that both sides understand the conditions and mutual obligations. The focus is on building the capacity of small-scale suppliers.

External facilitation helps to keep risk manageable and covers part of the information cost. Brokering business linkages includes providing market information in order to enhance market transparency and actively identifying contacts with firms. External facilitators can also be useful by contributing know-how on business practices elsewhere and advise on model contracts and terms.

Interventions in favor of improved business linkages can be combined with advice on the possibilities of “embedding” services provision in the business relation (see module 7). Otherwise, governments can make sure that enterprises get access to public services required for the arrangement. The support goes to either side of the business relations. As an “honest broker”, public agents help to overcome the initial lack of trust and take a (limited) role mediating conflicts.

At the meso and macro levels, public interventions can help to improve the legal framework conditions⁶⁷ and cooperation in the industry at large, e.g. organizing business meetings and trade fairs (section 6.4, below).

To relieve the private sponsor of part of the initial investment into a contract production scheme and help it get going, facilitators can focus their support on the weaker business partners: This means qualifying and empowering small farmers to enter into a contract farming arrangement. It can imply skills training and advice to smallholders on organizational issues and on negotiating business contracts. After all, a public intervention has to provide a social return measured in the income and economic inclusion of poor people.

Facilitators also have to make sure they remain neutral and treat all farms and enterprises in a certain category of operators equally in order to avoid market distortions, Wherever possible these means working through second-tier associations representing the business as a whole.

Finally, it is very important to retain that an external facilitator should never become a party in the contract arrangement himself. Box 0.5 presents a basic rule in that respect.

Box 0.5: Tool – Activities to avoid in supporting business linkages

In the interest of an efficient use of public funds and a sustainable impact of support measures, facilitators should not...

- take over any marketing or other commercial functions themselves
- become a party in any commercial contracts, e.g. providing guarantees
- give any preferential treatment to individual operators

Source: own concept

⁶⁷ See Module 10

6.3 Cooperation between small-scale enterprises

Horizontal cooperation in the same chain link is a solution for small farmers and micro-enterprises, which have difficulties getting access to the markets for inputs, equipment, services and for their own products. Vertical and horizontal cooperation in the value chain are interlinked. Large buyers prefer to negotiate with few suppliers. Small-scale enterprises often cannot obtain a sales contract without cooperating amongst each other first.

Cooperation provides many benefits because it helps to overcome the limitations of scale, reduce production and marketing cost, and achieve the necessary minimum quantity of produce. Cooperatives can realize business models that are out of reach for individual enterprises. Cooperation is also necessary to address common problems. In some agricultural markets, smallholders do not even have a chance of surviving without working together. Together, producers can compensate information asymmetry, their lacking market power and the problem to voice their needs for public services effectively.

However, cooperating also involves costs and risks. Even where the benefits of cooperation are obvious, small-scale enterprises still have to take the initiative and invest into a cooperative venture. Collective action is a game of give and take. It that can easily go wrong if the partners don't comply with the rules or take advantage. Before adopting cooperative solutions, the parties have to be clear about the conditions under which their cooperation actually makes sense. The main point is a net benefit from cooperating: The benefits have to exceed the cost of investing and cooperating.

Cooperation works, if partners follow the principles summarized in box 6.3.1.

Box 0.6: Tool – Three cooperative principles according to Dunn

Three key principles of horizontal cooperation

- (1) User-Owner Principle: Those who own and finance the cooperative are those who use the cooperative
- (2) User-Control Principle: Those who control the cooperative are those who use the cooperative
- (3) User-Benefits Principle: The cooperative's sole purpose is to provide and distribute benefits to its users on the basis of their use

Source: Dunn, 1988, p.85 (quoted in Bijman, 2012, p.9)

To determine whether and which type of cooperation could be a solution, we first need to look at the market requirements and the value chain structure determining the likely benefit from horizontal cooperation. This provides the economic foundation and helps specifying the possible cooperative business model(s), the type and intensity of cooperation and the necessary investment. Second is the question whether the potential cooperation partners have the capacity, willingness and resources to set up a cooperative venture. Even if the cooperation promises a good return, the people concerned may in fact not be in the position to go for it, because of their own weaknesses or because of institutional and cultural barriers.

6.3.1. Preconditions for successful cooperation

The following criteria help clarifying both the external and the internal conditions for successful horizontal cooperation. Obviously, benefits should exceed costs of cooperation.

Benefits of cooperating

The incentives for cooperation derive from gains in efficiency. By cooperating, enterprises can negotiate better prices, save cost and expand the scale of operations. The possibility to benefit from cooperation depends on the product, the value chain stage and the business processes concerned. The box below presents criteria to determine whether small-scale enterprises have an incentive for cooperation.

Box 0.7: Concept – Conditions under in which cooperation is useful

Criteria related to demand and supply

- Buyers demanding minimum volumes of produce in a specific and uniform quality that individual small enterprises cannot satisfy individually
- Service providers and suppliers of inputs operating at a scale that is too large for buyers of small volumes

Criteria related to scale and transaction costs

- Production, processing and storage technology that is only efficient at a minimum scale beyond the size of small enterprises
- Marketing cost, e.g. cost of information, storage, transport and flexibility in managing rejects beyond the possibilities of small producers

Source: own compilation

The conditions apply to certain value chains, particularly those with small-scale, labor-intensive production. Following is a list of value chains and business processes with good conditions for cooperative solutions.

Purchasing of inputs and raw material

The business process that is most amenable to cooperation is the acquisition of inputs, raw material and small equipment. Certain inputs simply are not available in small quantities. It makes sense to share the acquisition among several users. This type of cooperation is easy to organize. Purchasing inputs jointly is a short-term business process and does not imply much commitment. Therefore, it is a good starting point for building cooperation in agriculture and handicrafts.

Bulking and marketing of products

Second in line are cooperative solutions in volume markets, such as staple foods, where bulking and storage operations exceed the capacity of small producers. By sharing the marketing activities, the cooperative partners can make sufficiently large volumes of produce available to buyers and save money. Examples are cereals and oilseeds. Joint marketing activities are also frequent in perishable products, such as fresh vegetables, fruits and flowers.

Production / processing

Joint production and processing includes several business processes and is much more demanding. The type of value chains that most amenable to cooperation are perishable products that have to be harvested, processed and marketed quickly. Again, scale matters. For example, milk producers have to evacuate and process raw milk quickly and thus have an incentive to set up dairy cooperatives. In the dairy business, cooperatives typically have a relatively high market share. Other value chains with cooperative ventures in production and processing include, among others, dried cocoa, coffee and tea, wine and smoked, dried or

salted sea fish. The members of production cooperatives jointly own and share the equipment, the storage and marketing capacity.

Service provision

There are two ways of organizing cooperation in service provision. The benefits of shared use and payment for operational services are comparable to the purchase of inputs. A classic case is hiring transport. Some services only become available if cooperatives create their own capacity for service provision, such as mechanization or spraying services in crop production. The benefits depend on the business model for service provision and on the business models of service users. This is much more demanding.

Horizontal cooperation is a precondition for enabling small producers to participate in formal markets and especially in markets with significant quality requirements. It allows small enterprises and farmers to overcome the individual scale problem. Cooperation also provides social benefits outside the business world for their members. Box 0.8 is an overview of the financial benefits and other advantages.

Box 0.8: Concept – Overview of the benefits from cooperating

Economies of scale and lower costs

- Economies of scale in production, processing, marketing
- Sharing resources and equipment
- Better prices for supplies and improved sales prices
- Easier access to supplies, information and services

Improved business models

- Access to buyers and ability to comply with buyer requirements
- Possibility to specialize in particular activities, division of tasks with business partners
- Balancing different capacities and competences within the cooperative

Countervailing market power

- Better bargaining power negotiating terms with buyers and suppliers

Social benefits

- Social exchange and learning
- Reducing uncertainty and reassuring decision-making

Source: own compilation

Cost of cooperating

People have to perceive the benefits from cooperation first. Unless they are aware of the advantages, there is no incentive to come together. However, realizing the benefits of cooperation comes at a cost. Farmers and small-sale enterprises have to cooperate effectively and efficiently to actually benefit. The chances of success depend on the cost of cooperating, the necessary investment into the cooperative venture and on the cultural and legal framework conditions. Following are the main points to consider.

Culture of cooperation

A crucial point is trust and, generally, the willingness to cooperate. The greater the cooperative spirit in the community, the lower will be the effort to invest into joint action. Mutual trust, experience with solving conflicts, and, generally, a culture of cooperation save time. Leader-

ship is another factor. Past negative experience with cooperatives and an unsupportive cultural environment raise the barriers for cooperative action.

Internal organization:

The organization, the procedures and the coordination between members is an important cost driver. Cooperatives have to organize collective decision-making efficiently limiting the number and duration of meetings, and organizing a fair and efficient division of tasks⁶⁸.

Capital investment:

The next factor to consider is the necessary investment into the cooperative business enterprise. To achieve a bigger scale, the cooperating microenterprises have to mobilize the funds. Do they have the capacity to build capital? The investment is easier if the number of partners with a similar resource endowment is large enough. However, establishing the cooperative business model may necessarily involve a minimum size of investment to work – in line with the conditions of markets and the competition situation. Certain business models simply are too big a step and out of reach for poor producers.

Influence of the institutional and legal framework:

The institutional environment of cooperative ventures is another important factor. Critical success factors are an appropriate cooperative law and the existence of second-tier cooperative federations and federated support structures. The German cooperative system shows that services and mutual control mitigate the risk of failure. In the case of problems, the institutional embedding and support of the cooperative movement is crucial.

In summary, the cost of cooperating is an important dimension to consider in the search for cooperative solutions. A viable cooperative model has to respond to both the benefits *and* the cost and seek arrangements in which the incentive for cooperation outweighs the cost and risks.

Cooperative development has more influence on the cost of cooperation than on the economic conditions that determine the potential benefits. Promoting cooperation thus has to make sure to create efficient and viable forms of organization.

6.3.2. Types of cooperative business models

The choice of solutions presented in the following focuses exclusively on cooperative *business* ventures of small enterprises⁶⁹. We treat four types of cooperative solutions for chain development, from informal, low-intensity cooperation to formal cooperative enterprises:

- Informal groups,
- Producer groups linked to NGOs
- Producer groups in contract production arrangements
- Formal cooperatives

Box 0.9 shows the options classifying them according to the following three criteria:

- Legal status: formal vs. informal organization,
- Organization: self-organized vs. promoted by a third party
- Partnership: autonomous cooperative vs. part of contract production arrangement

⁶⁸ Stockbridge et al., 2003, p.21

⁶⁹ Formats for horizontal cooperation to pursue political and advocacy objectives follow in chapter 6.4.

Box 0.9: Concept – Types of cooperative solutions in value chains

Cooperative solution	Legal status	Organization	Partnerships
(1) Informal farmer and micro-enterprise groups	Informal	self-organized	Short-term business linkages
(2) Producer groups guided by business-oriented non-governmental organizations (NGO)	Informal	organized and guided by the NGO partner	Integrated into a social enterprise
(3) Producer groups in contract farming / contract production arrangements	informal groups or formal co-operatives	self-organized, often with support from the off-taker	Integrated into a private, commercial contract arrangement
(4) Formal cooperatives with own collective enterprises	Formal cooperatives	self-organized	Depends on the business model of the co-operative enterprise

Source: own concept

Which of these cooperative solutions is most appropriate for small-scale operators depends on the state of cooperative development and the criteria discussed in the previous section. The table presents a sequence starting with the simplest system, informal groups, and ends with developed cooperative enterprises of which some are big business. We do not present a selection list from which operators could choose. Rather, it shows an evolutionary pathway.

The development has to balance two dimensions: One is the evolution of the cooperative business model. The cooperation on simple business tasks such as joint purchasing of inputs generates limited benefits. Much greater economies of scale are possible by cooperating in production and marketing. To stay up with competition, cooperatives have to grow. However, the bigger the cooperative venture gets, the more complex becomes its management. The second dimension thus becomes increasingly important – the need to keep the cost of cooperation under control. Experience shows that only some members are willing and capable to assume management functions. Advanced business models require that leaders take the management of the cooperative-owned enterprise over. As they need to be remunerated, they become professional staff.

The transition to advanced solutions for cooperation is a challenge. An alternative are the options 2 and 3 in the box, in which business NGOs or private off-takers relieve cooperative members from (some of) the difficulties and risks of collective action. The philosophy of co-operative action is strongest in the informal groups who are the basis of any cooperative system. But in most cases these groups need partners to survive and advance.

The next box discusses the differences between the four solutions.

Box 0.10: Concept – Suitability of cooperative solutions

Cooperative solution	Type and scale of co-operative business models	Coverage of investment and cooperation cost
(1) Informal farmer and micro-enterprise groups	Shared buying and selling operations, limited to a small scale in line with the economic status of members, often based on local traditions	Self-organized collective action at community level with no or very limited capital investment
(2) Producer groups guided by business-oriented non-governmental organizations	Small-scale joint production and processing activities guided by a development organization that initiates the business model and operates as business partner	Groups organized and animated by a partner NGO that covers a large part of the investment into the necessary equipment and inputs
(3) Producer groups in contract farming / contract production arrangements	Small to medium scale collective business ventures driven by a private company as part of a contract production arrangement	Either self-organized cooperative or group formation supported by the off-taker; the contract may include financial and service arrangements
(4) Formal cooperatives with own collective enterprises	Business models of medium to large scale comparable to those of private companies in the same value chain	Self-organized governance according to legal provisions; the cooperative enterprise builds up the capital itself in a long-term process

Source: own concept

Informal farmer and microenterprise groups

These are unregistered productive primary groups without a legal status, variously termed as producer groups, income-generating or self-help groups. Very often, they are gender-based. Typical group sizes range between 10 and 20 members at one location. They cooperate to pursue business activities at the local level. Members can perform certain business activities themselves as a collective self-help activity. The motivation may simply be the need to bulk produce in the village in order to find a buyer. The scale of operations is limited by the assets of the members and by the entrepreneurial skills and time that they can bring in. Therefore, volumes are small. The group manages the operations itself or leaves decisions to natural leaders and small committees. The groups are community-based. Unlike groups guided by NGOs or private companies, informal groups operate autonomously – often rooted in traditional institutions⁷⁰.

Because the volumes of produce are limited, this format is mainly appropriate for value chains serving spot markets that take small quantities. Typical examples include, for example, staple food value chains, aquaculture and processed products such as shea butter, parboiled rice or food items, e.g. cookies. Most markets will be local, but for niche products and specialty items small producer groups can target national and even international markets. Informal cooperation has its limits where buyers request product volumes and quality

⁷⁰ Salifu et al., 2012

that can only be provided via business models that need capital investment, professional management and legal registration.

Informal cooperation is the starting point for any cooperative venture. All formal cooperatives have started out as local groups at some point. In principle, informal groupings have the potential of professionalizing and transforming into a registered cooperative – or seek the collaboration with neighboring primary groups with similar interests to create a joint cooperative enterprise. However, the move from an informal group to a formal cooperative with a professional cooperative business is a highly critical juncture in the development process and a very big step. A group of poor people only has a chance of gradually developing into a formal cooperative if the creation of a commercial business model is actually feasible. One weak point is the ability of informal groups to build enough capital and resolve the institutional issues, especially the creation of a formal governance structure (a board of directors and executive committee) and the registration as such. Another problem is that the move to the next bigger scale of processing and trading may be constrained by competing private enterprises already occupying the market space.

Hence, one should not mistake the evolution of informal groups into cooperative as the pre-determined development path. Informal groups remain a valid though narrowly limited solution for the horizontal cooperation of poor producers at the local level. To advance, they may as well seek partnerships with NGOs or companies.

Producer groups guided by non-governmental organizations

In many cases, informal groups only have a chance of economic success if they form part of a social enterprise that supports them. Beyond a self-organized informal group, the next option for cooperation is the producer group connected to a (business-oriented) development organization, mostly NGOs. As in the first case these are small community-based producer groups that jointly pursue income-generating production activities (such as agriculture, poultry production, fish ponds, silk or any kind of handicrafts). Typically, groups are gender-specific.

The difference with the first category of informal groups described above is their embedding in a social enterprise led by a development organization, and NGOs in particular. The cooperative business model of the small producer group is part of a bigger setting that is determined and managed by the development organization. To enable group production, the NGO takes over marketing functions and provides microfinance, technical and other services. At the same time, it promotes group formation and thus relieves group members of part of their cost of cooperating. The horizontal cooperation is combined with a vertical business linkage between the groups and the development organization. To promote this type of cooperative groups, the NGO has to be business-minded.

For this model it is very important to decide whether it implies a perspective for “weaning off” the producer groups at a later stage or not. The cooperation can be time-bound, expecting that the groups will continue the business on their own and eventually build a formal cooperative. If this is the (mutually agreed) objective, then it should be clear for both sides from the start. The groups can prepare and work towards the later a separation right away.

However, this does not necessarily have to be the outcome. The question is whether the producer groups formed under the auspices of an NGO are actually able to leave the arrangement and become autonomous at some point. Even if the leading NGO can address the challenges of group organization and entrepreneurship, its client groups still have to mobilize own resources. Instead of promoting the formation of new and separate coopera-

tives, the social business can as well become a long-term solution. Combining smallholder group production with the business capacity of an NGO has scale advantages for both sides. The NGO has financial benefits if the groups stay, as this helps raising more charity funds. In addition, the NGO can make money from its business with producer groups. The producer groups, in turn, the groups have no interest in mobilizing their own scarce resources. They may rather prefer utilizing the investment made by the NGO, even if this means remaining dependent. After all, they are released of the effort of collective action and investment.

As a consequence, the leading NGO takes over key business functions in the long term and de facto transforms into a business itself. The NGO becomes a “business NGO”. Leading examples of social enterprise business models based on producer groups are BRAC and Grameen.

Producer groups in contract farming arrangements

The social enterprise model comes close to another option – the horizontal cooperation of small producers under the guidance of private companies. Here, the starting point for cooperation is an existing vertical business relation of a company with its suppliers. Rather than buying from individual suppliers, companies use producer groups to expand their business model and increase profitability. The collaboration with a farmer business organization (FBO) enables private entities to deal more effectively and efficiently with smallholder farmers⁷¹. This allows both sides to achieve a much bigger scale⁷².

In this model, the off-taker drives the horizontal cooperation of small enterprises. Traders and off-takers have an interest investing into supplier cooperation. The advantage for companies is that they can exercise control, communicate more easily with microenterprises and home workers, and rationalize the logistics. The company provides incentives for small producer cooperation by offering a long-term purchase agreement. Whether it is also willing to engage and invest into the cooperation of its suppliers depends on the savings it can make later on. Unless there is a cost advantage, companies will prefer to rely on already existing groups and save the additional cost of promoting supplier organization. The producer groups then have to mobilize own resources and build capacity before they qualify as suppliers.

Wherever the conditions are met, the off-taker company would invest into group formation and help identifying and qualifying group leaders who serve as contacts. They may also take over organizational functions to make sure the conditions of contract are respected. The arrangement relieves the producer groups of part of their cooperation cost. Without it, their cooperation would not evolve, just as in the social business model of business NGOs.

Nevertheless, by purchasing from cooperatives off-takers still contribute to their development implicitly. The key point is that the contract itself is a powerful incentive for cooperation and helps defining the cooperative business model. The contract with the company not only provides access to markets, credit and technology, it also includes duties with respect to financial monitoring. Cooperative leaders are not only accountable to the members but also to the contract partner. A contract production arrangement thus encourages the development of the cooperative.

⁷¹ Salifu et al., 2012, p.1

⁷² See chapter 6.2 for the principles of contract production

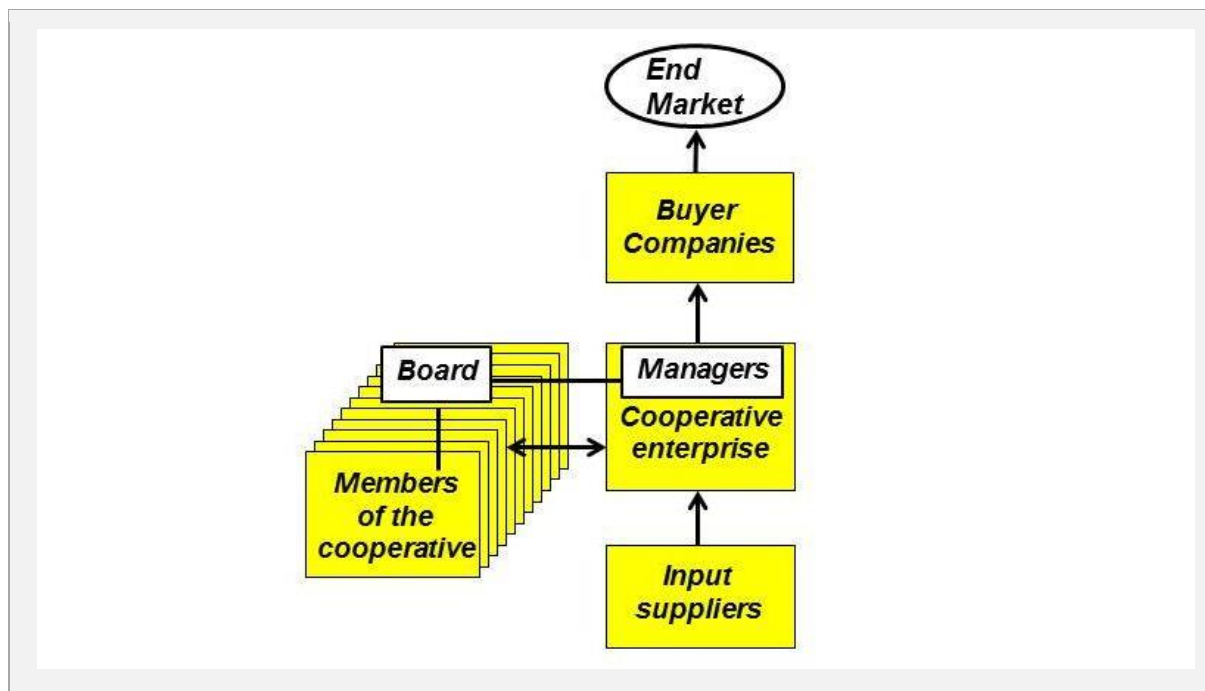
Formal cooperatives with own enterprises

Informal producer groups conduct business operations jointly in a small scale. As producer groups grow, the volume of produce and turnover go up, and so do the management challenges. At the same time, new marketing and value-adding opportunities get into reach. If a primary producer group (or several of them) combines enough production capacity, they can engage in business ventures that otherwise would have to be left to upstream or downstream partners. Primary groups can only capture these opportunities if they found a legal entity performing the business activities on behalf of members. In contrast to informal groups, co-operatives can thus engage in business models of a much bigger scale. From performing particular activities jointly, they move to entirely new operations.

In a formal cooperative, the members no longer perform activities collectively but transfer major purchase and marketing operations to a cooperative enterprise. Members' enterprises and the cooperative enterprise are separate entities. The cooperative enterprise is a "user-owned and controlled business from which benefits are derived and distributed (to the members) on the basis of use"⁷³. A hired manager runs the enterprise. The cooperative enterprise serves as a buyer from its members and transforms into a company with (theoretically) unlimited growth possibilities. Typical large cooperative firms in the food sector are dairy plants, handling and distribution centers for fresh products and coffee cooperatives.

Typical services for members include the purchase of inputs, raw material and equipment, transport and storage and processing and marketing. To this adds hiring of farm machinery, information and other services.

Box 0.6: Concept – Position of a cooperative enterprise in the value chain



Source: own concept

By moving into processing, packaging and marketing at a larger scale, farmers and handi-craft producers start competing with accustomed companies. Market requirements have to

⁷³ Dunn, 1988, p.85; quoted in Bijman, 2012, p.9

be satisfied and new buyers found. The transformation entails considerable challenges: The emerging cooperative has to define and implement a business strategy of its own, determined by market demand and competitors. While ownership remains with the members, they delegate the business operations to professional managers. The cooperative business model has to be competitive, requires substantial investment and involves new risks. The collective enterprise thus has to become professional: Entrepreneurial decisions require careful planning, while day-to-day management has to be fast and highly responsive.

Collective action of this kind is beyond the means of an informal group. The cooperative business has to be formalized. This implies legal registration, a business plan, the necessary funds and a professional management, possibly hiring managers. The management of the cooperative enterprise acts as economic intermediary between the members and the business partners in the chain.

At the same time, the cooperative has to resolve the internal governance issues arising from professionalization – organizing continued participation of members, joint decision-making, and assuring that leaders and managers are held accountable for results. In most countries, cooperative laws regulate the internal governance structure. Conventionally, it comprises the General Assembly, Board of Directors, Executive Committee, and an Executive Manager. The creation of a cooperative business entails considerable investment, both into the cooperative enterprise as well as into the governance of the cooperative itself. The members have to provide the major part of the resources.

A deficiency in governance and leadership enhances the risk of wrong decisions, too little investment or of outright failure if executive staff commits fraud or, literally, runs off with the cash box. Another critical point is the formation of a “pseudo-cooperative” that would not survive without external support. Such organizations can be the result of development projects creating financial and technical dependency, possibly with good intentions. Nevertheless, if the cooperative does not achieve autonomy it will likely break down once the support is withdrawn. Both parties, the patronizing development agency and its cooperative client, get trapped in the relationship. Such conditions should not be confounded with a consciously planned social business, in which the group production is a regular part of the business model.

Another type of pseudo-cooperative emerges where governments hijack the cooperative movement and start controlling and dominating cooperative ventures. Political domination has in fact discredited the cooperative idea, especially in former socialist countries⁷⁴.

The criteria in the two following boxes help to assess an existing or emerging formal cooperative and determine whether it is likely to master its own development. The methodology is adapted from an assessment tool developed by the German federation of cooperatives (DGRV) that uses it to measure the performance of a cooperative⁷⁵.

The tool has two stages. First is a series of three knockout criteria. These are the minimum requirements without which an organization cannot be considered a cooperative.

Even if the cooperation is not yet legally registered, a cooperative venture should have created the requisite bodies. To be financially successful, the cooperation has to have a business history as a producer group and be able to produce the numbers. Evaluators or support

⁷⁴ FAO, 1996

⁷⁵ DGRV, 2010

service providers may simply ask for the statute and bylaws, the minutes of last the General Assembly or the books of account to check on the criteria quickly.

Box 0.7: Tool – Checklist of minimum requirements for cooperatives

Cooperatives should...

- have a governance structure in line with the cooperative legislation
- present financial statements providing up-to-date financial information
- have a positive net worth / equity (assets – liabilities being positive)

Source: translated and adapted from DGRV, 2010, p.7

If cooperative leaders are unable to make the respective documents available in convincing quality, it will be immediately clear that the cooperative is not eligible for any development support. The criteria have to be fulfilled by the cooperative itself and cannot be delegated to third parties.

If the minimum requirements are established, the next step is to rate the performance and viability of the cooperative in detail. The criteria listed in the box below indicate the issues to include. A full-scale assessment can include many more business parameters.

Box 0.11: Tool – Criteria to assess the viability of a cooperative

Business and financial criteria

- Realization of a complete business model and plan, based on regular linkages or long-term contracts with buyers or suppliers
- Satisfying cash flow and financial stability
- Financial independence

Functional business operations

- Operational processes well defined
- Professional management
- Accounting service and internal financial control mechanisms in place

Governance

- Governance bodies are functional, regular meetings are held
- Responsible and stable leadership
- Statutes and by-laws applied correctly
- Members attend meetings and participate

Source: own concept, based on DGRV, 2010

The criteria are given weights. The degree to which they are met is measured in percentage points. The assessment of the criteria multiplied by the weight for their importance allows classifying cooperatives into those that already are viable (80-100%), cooperatives that can become viable with (limited) external support (50-80%), and those which do not fulfill the minimum requirements for a stable development (below 50%). The idea is that those cooperatives, which do not yet stand the test completely but have the chance of improving, qualify for temporary external support. Public agencies or the proper support services of the cooperative system can and should help to overcome the internal shortcomings.

It should be clear that the evolution of viable cooperatives takes time. *Formal* cooperatives will only be a solution if they can build on an institutional foundation.

The cooperation described above mainly applies to small enterprises. Medium and large enterprises have a wider choice of institutional solutions for cooperating. These are not only cooperatives but also joint ventures serving a specific purpose for the companies involved such as joint research and export marketing.

6.3.3. Support to cooperative development

There are no definite rules to decide on a particular cooperative solution. The main argument in favor of promoting small producer associations is the social objective of chain development. Strengthening the cooperation of farmers and small enterprises is a means to ensure that chain development delivers pro-poor effects. Public agencies invest in the organization of poor producers to enable their entry into the market and help them realize additional economic benefits. This includes strengthening the contractual position of small producers vis-à-vis large businesses.

Even non-members may benefit from the existence of cooperatives. In agriculture, a large market share of cooperatives in a particular sector can increase the price level and reduce price volatility. The “competitive yardstick theory” explains that private companies need to pay higher prices to compete with social businesses and cooperatives – to the benefit of all farmers.

More generally, there is a public interest in building social capital. Cooperation among small producers helps speeding up production intensification. Studies show that members of agricultural cooperatives use more inputs and achieve higher productivity than non-members⁷⁶.

Horizontal cooperation is important in agricultural value chains as well as in the handicraft business where farmers and small enterprises have the greatest potential of realizing economies of scale. Hence, cooperative development activities focus on agricultural and handicraft sectors in the first place.

Supporting informal groups is necessary in large and dispersed agricultural value chains where producers are not yet organized. To achieve impact on market development and poverty, the development effort has to cover as many small producers as possible. This is an issue of scale. From a development policy point of view there is little use in supporting only a few producer groups when there is a large number of poor producers in the value chain. However, supporting small informal groups individually, village by village, is costly, takes a long time and is not very efficient in the use of development funds. Public policy should get the legal framework right and rather interfere at the meso level strengthening second-tier cooperative organizations and public extension services. Nevertheless, the cooperative movement has to grow from the local level, on its own.

Supporting the other cooperative models allows focusing the effort on a limited number of NGOs, private companies and formal cooperatives. Development programs assist these entities with their business models so that they can take over cooperative development functions in turn. The cooperative models led by business NGOs and private companies represent an advanced stage in the evolution of cooperation. Once they are established, the public side can achieve a much greater outreach.

⁷⁶ Verhofstad and Maertens, 2013

Promotion at different stages of cooperative development

Promoting horizontal cooperation is an investment into the social capital. Guidelines on cooperative development abound. The organizations belonging to the cooperative movement have the greatest competences for cooperative development. Virtually all cooperative federations offer know-how on their websites serving the community. Relevant federations include the International Co-operative Alliance⁷⁷ and the *Cooperativas de las Américas*⁷⁸ for Latin America. The US American and German cooperative associations have departments for international cooperation and offer services overseas. Go to the websites of the US Agricultural Cooperative Development⁷⁹ and the German *Genossenschafts- und Raiffeisenverband*⁸⁰ that present a broad range of publications. The FAO website also has guidelines on different aspects of building and managing cooperatives.

Government should give priority to cooperative federations for cooperative development activities. Nevertheless, development agencies and public services can contribute to cooperative solutions wherever federations don't have the resources and capacity. It should be clear that this excludes creating new producer groups and cooperative ventures. Governments and development agencies should not and cannot create cooperatives because they are outsiders. To succeed, cooperation has to grow organically from within. In that respect, public agencies are in a different position than the "business NGO" in a social enterprise model. A "business NGO" is a long-term commercial partner of its groups and has a role animating them.

The following principles of cooperative development apply to public agencies as well as to federations of cooperatives:

- Build on existing groups and cooperatives and start from their interest and objectives
- Support the dynamics of collective action and facilitate self-determined decisions by the members
- Design promotion activities so as to correspond to the stage of cooperative development

Support activities relate (a) to the foundation of a cooperative and (b) to its development and appropriate management once it is operational.

Supporting cooperation initiatives and start-ups

The first step is to determine whether the conditions for successful cooperation are met. Support implies determining market opportunities, raising awareness of markets and value chains, and training people in group organization, the establishment of business plans, record keeping and other fundamental skills. The intervention does not push for creating groups but empowers producers to do that for themselves. The actual formation of a group is the task of the producers themselves. External advisors have to leave the initiative entirely to the future members.

⁷⁷ International Co-operative Alliance: <http://ica.coop/>

⁷⁸ Cooperativas de las Américas: <http://www.aciamericas.coop/>

⁷⁹ US Agricultural Cooperative Development ACDI/VOCA: <http://acdiovoca.org/our-approach/cross-cutting-approaches/cooperative-and-association-development>

⁸⁰ Deutscher Genossenschafts- und Raiffeisenverband (DGRV) (German Cooperative Association): <http://www.dgrv.de/en/services/internationalrelations.html>
Other sources are Coop Zone of Canada <http://www.coopzone.coop/> and Coop de France <http://www.coopdefrance.coop/fr/index.html>

The early stage of a cooperative is critical. Developing collective action always starts with an investment phase during which members have to take over voluntary functions and advance money to finance the collective activities. To avoid that the initiative runs out of steam, members have to see a benefit for themselves early on. The initial activities should have a short cycle, such as the joint purchase of inputs. The money saved on supplies motivates people to keep on contributing. In any case, groups need the leadership of active members to weather the inevitable setbacks.

In collective marketing, the buyer has a central role. Controlling market access and setting the terms of delivery, he provides orientation and the incentive for group coherence. Hence, fostering horizontal collaboration entails activities supporting vertical market linkages at the same time. An example is the “Commercial Village Approach” (CVA) used by Farm Concern International in Kenya (see Box 0.12).

Box 0.12: Case – The Commercial Village Approach, Kenya

The Commercial Village Approach (CVA) – an arrangement linking farmers to markets

This approach is being used by the NGO Farm Concern International (FCI) in Kenya to facilitate the market access of farmers. The starting point is the observation that farmers cannot overcome the bulking and quality problem on their own. By brokering the link with buyers and helping to organize joint production and marketing, villages can acquire (semi-) formal sales agreements. Major steps include

- Conducting market research to determine the crops for which target villages have a competitive advantage, and identifying buyers and suitable distribution channels.
- Farmer training on market-oriented production and on self-organization.
- Initiating (but not conducting) a buyer – seller forum between representatives of the village and one (!) buyer at a time
- Establishing a “commercial village” as a cluster of various farmer groups, producing for one (or several) buyer, agreeing on production schedules, bulking points and marketing plans, so as to comply with market requirements
- Close follow up and monitoring of the performance

There are several producer groups and subcommittees per village. In addition to brokering the sales contract, facilitators link public commercial villages to the extension service. Once the production and marketing system is established, it tends to be copied by others in the community – and thus spreads by itself.

*Source: Farm Concern International*⁸¹

Cooperative development and capacity building

The second field of support is the development of the capabilities of existing groups and cooperatives. The necessary capacity has many dimensions. Certainly, the entrepreneurial capacity is key and an important field of training. Many other aspects deserve attention as well, from basic literacy to social skills.

A report on South African cooperatives has found that skills are the “key constraints to small-holder cooperatives. ... Cooperatives have not been able to strengthen their business operations mainly owing to inadequate training support. The lack of professional and qualified managers is a challenge facing cooperatives”⁸².

⁸¹ Farm Concern International: <http://www.farmconcern.org/>

⁸² Department of Agriculture, Forestry and Fisheries, Republic of South Africa, 2012, p.10

The creation of a collectively owned cooperative enterprise probably is the major challenge in the history of any cooperative. It requires decisions on the business model and contracts, investment to build up business operations and the organizational development of the entire association and its governance structure. Cooperatives need advice in developing rules of ownership and collective decision-making. Accordingly, the activities building the capacity of producer associations can be divided into three areas of support, as shown in Box 0.13.

Box 0.13: Case – Key activities supporting formal producer cooperatives

Activities in support of market orientation	Activities in support of technical and business performance	Activities in support of organizational development and social coherence
<ul style="list-style-type: none"> Facilitation of links with buyers Assistance with obtaining market information Development of negotiation skills Assistance with obtaining certification of own products 	<ul style="list-style-type: none"> Professional training in technical and managerial skills Facilitating the access to service providers, and to financial services Assistance in the development of input procurement, logistics (sorting, grading and bulking) and value-adding activities 	<ul style="list-style-type: none"> Legal advice on the formalization of association enterprises Organizational advice Assistance with internal rules for membership, communication and decision making Development of services for members

Source: own concept

In any case, associations have to acquire the capacity quickly – any dependence on external support is detrimental to their long-term viability.

Success factors and risks of cooperative ventures

It is the decision of the entrepreneurs whether to engage in collective action. They have to agree on the objectives of cooperation and develop their own rules for the business linkages amongst each other. Cooperative development has an important place in value chain promotion, but government or development agencies can only accompany the initiatives. The energy has to come from the members. Organizations that are promoted politically from the top down don't qualify as cooperatives. They remain dependent on external support. Members tend to perceive these pseudo-cooperatives as "quasi-government agencies that provide useful services but (do) not belong to them"⁸³. This risk also applies to development agencies pushing too strongly.

Experience shows a number of success factors in cooperative development. The following lessons are a summary of different sources⁸⁴:

- *Homogenous groups*: Common interests and shared experience are the basis for group consensus and solidarity.
- *Clear purpose*: The objective of cooperation has to be understandable and limited to what the group can achieve.
- *Coherence with pre-existing social structures*: The cooperative is embedded in the local culture and its hierarchies.
- *Tangible benefits*: Cooperation should help members in their day-to-day business activities. Cooperation should generate economies of scale.

⁸³ Birchall, 2004, p.15

⁸⁴ See, among others, the websites of ICA, DGRV and ACDI/VOCA, Schwettmann, 2014

- *Benefits exceeding cost of cooperation:* Obligations and norms have to be in balance with the desire for individual autonomy.
- *Leadership and management skills:* These success factors grow in importance the bigger the venture becomes.
- *Good cooperative governance* means ownership, clear rules, legitimate representation and participation of members. It also includes escalating sanctions for misconduct.

Success also depends on the integration into a network of cooperative organizations that provides links to improved technology, market information and funding opportunities outside the immediate community. Groups get stronger when they are embedded in a cooperative movement with federations from the district level up to the national level.

On the other hand, they have to avoid losing their business orientation operations and getting sidetracked by political activities. People drop out from cooperative action if they do not see their personal benefit.

6.4 Cooperation at industry level

In the preceding chapter, the focus has been on cooperative action to pursue joint business activities at the *micro* level, between operators at the same stage of the value chain. Yet, value chain operators share also share constraints and interests at higher levels of the value chain. The purpose of collaboration at the *meso* level is political advocacy and the organization of support services for the business community at large, such as public research, vocational training and collaborative export marketing. Cooperation takes place informally, in associations and on platforms for business matchmaking such as trade fairs.

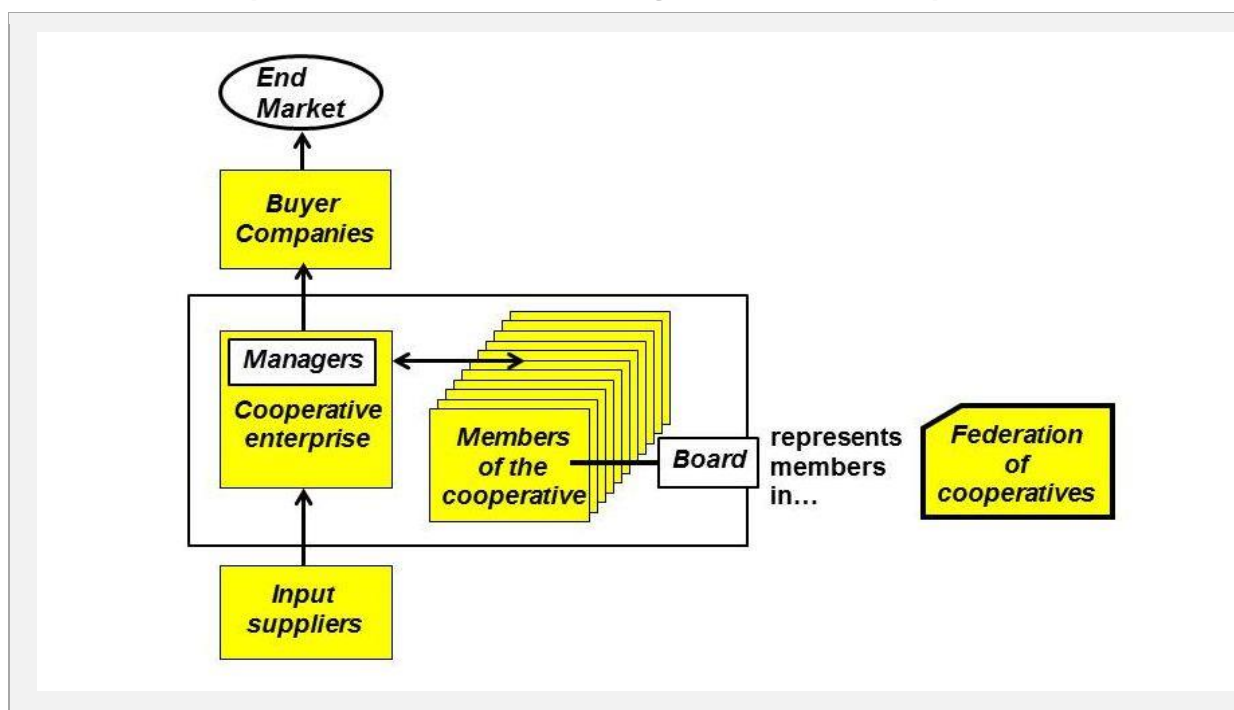
6.4.1. Business associations

Business associations serve the common interest of private enterprises beyond their immediate business needs. One type of business association organizes and represents the interests of a particular group of operators at regional and national level. The most obvious case is farmer unions, organized by subsectors of agriculture or covering all farmers in a country. Industry apex organizations have an even larger scope. They serve the common interests of the whole business community integrating chain operators and specialized service providers across the entire chain.

Farmer organizations and federations of cooperatives

The following two boxes visualize two types of farmer organizations. The first is a federation of farmer cooperatives. Box 0.14 shows that the board of a cooperative represents members in the federation of cooperatives, not the management of the cooperative enterprise.

Box 0.14: Concept – Federations of farmer organizations and cooperatives

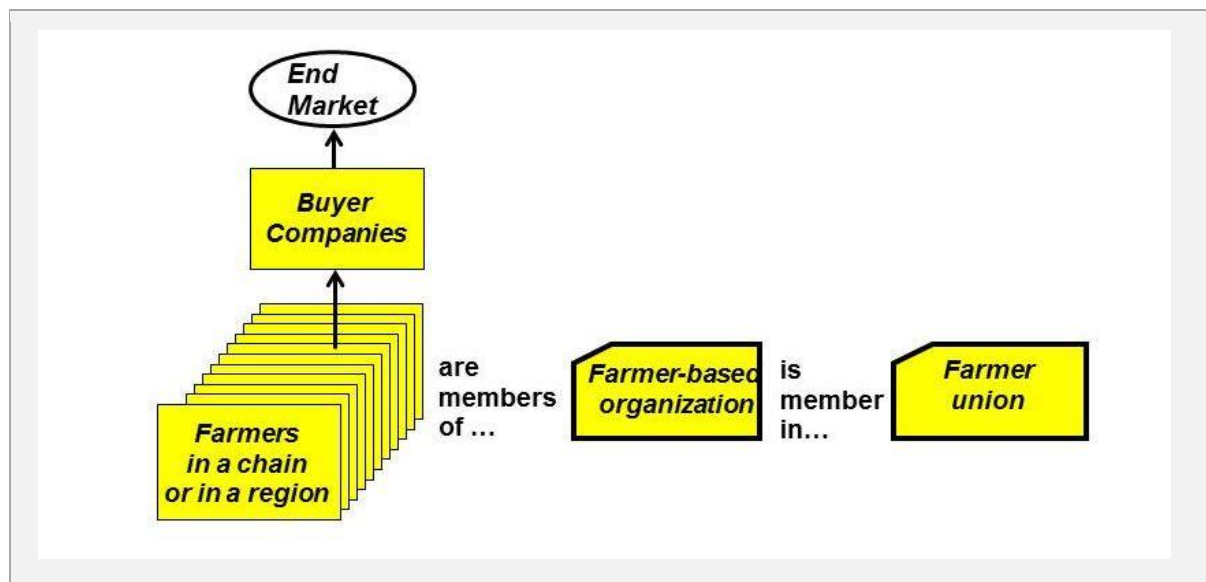


Source: own concept

Cooperative federations exist at different levels. A district level federation is member of a regional federation, which in turn belongs to a national federation.

The principle of a multi-level system of producer organizations is different, as can be seen in box 6.4.2, below. The farmers in a particular value chain or region are individual members of a local and/or market-based farmer association that is part of a second-tier and even third-tier farmer union. The terminology of associations and unions varies between countries.

Box 0.15: Concept – Business membership organizations



Source: own concept

Examples of sector specific grower associations include the national associations of sugarcane producers⁸⁵ or citrus growers⁸⁶ in Colombia and the national association of cotton and food crop growers (SYCOV) in Mali. They have in common, that local farmer associations and companies in the respective subsector have built them from the bottom up. Value chain development can include assistance to the founding of new associations where they don't exist. One example is the creation of the "Ethiopian Honey and Beeswax Exporters Association (EHBPEA)" and the "Ethiopian Beekeeping Association (EBA)" by the SNV-funded program "Support to Business Organisations and their Access to Markets (BOAM)" in Ethiopia⁸⁷.

Farmer organizations play an important role in the development of their value chains, because they provide support services for the farming community at large. Developing the capacity of associations to take over this function is a solution for service provision⁸⁸.

Business membership organizations in subsectors outside agriculture

The scheme in Box 6.4.2, above, is applicable to value chains outside agriculture as well as the institutional structures are similar. The range of motives and criteria for building private business membership organizations (BMO) is wide. Following is a broad classification. The first two types in the list are chain-specific associations.

⁸⁵ www.procana.org

⁸⁶ www.asocitricos.org.co

⁸⁷ www.business-ethiopia.com/index.html

⁸⁸ Support services are the subject of chapter 7.3 in module 7.

Box 0.16: Concept – Different types of business membership organizations**Terminology of different types of business membership organizations**

- Trade / sector / industry association (referring to one industry or sector)
- (Industrial estate) manufacturers' association
- Small-scale enterprises' association (of small and medium enterprises)
- Business Women's organization (convening women-led enterprises)
- Employers' association

Source: adapted from World Bank, 2005, p.12pp

Similar to the farmer organizations business membership organizations outside agriculture have two functions: For one, they act as support service providers to their members, so that they are part of any solution for support service provision to value chains. Secondly, they are bodies representing the member enterprises politically.

In contrast to private associations, chambers of commerce and/or industry are “organizations under public or private law representing the business interests of a certain geographic region. Potentially, all enterprises in a respective region will be members of the chamber irrespective of the sector they belong to.”⁸⁹ A chamber has a heterogeneous membership.

Box 0.17: Case – The Nucleus Approach in Sri Lanka**Implementing the nucleus approach in Sri Lanka***Background*

Medium and small enterprises (SME) need support services. Many are isolated and not aware of the market potential and requirements. They do not have the means to pay for services. At the same time, they lack a culture of cooperation. This analysis has led to the idea of initiating networks of SME with similar conditions and problems, so that small entrepreneurs could identify common problems, gradually build trust and start activities to address their service needs jointly.

The concept of “nucleus”

A “nucleus” (plural = “nuclei”) is a working group of entrepreneurs “within a chamber or association which is moderated, organized and accompanied by a counselor employed by the chamber” (Mueller-Glodde and Lehmann, 2006). They are composed of entrepreneurs in the same value chain stage. The approach originated in Brazil in 1991; and has been spreading quickly in the whole country. In 2014, there were more than 4.500 nuclei with 50.000 SME in Brazil alone.

Promoting the Nucleus Approach in Sri Lanka

In Sri Lanka, the Economic Strategy Support Program (ESSP) promoted the nucleus approach in the Central region with support from GIZ. Nuclei exist in 27 different subsectors, for example in “cut foliage”, “beauty culture”, “protected agriculture” and “carpentry”. On average, each nucleus has 17 member enterprises. The different nuclei exchange experience, voice demands and organize support. This includes activities such as joint marketing and training.

*Source: Sequa, 2014 and Nucleus Website*⁹⁰

⁸⁹ World Bank, 2005, p.15

⁹⁰ Nucleus approach: http://www.nucleus-international.net/Nuc_English/E01_Nuc-Approach/E01-02_Introduction/E1_Introduction.htm, Sequa, 2014

Nevertheless, chambers provide a good platform for sector-specific business networking. A case in point is the “nucleus approach” presented in **Fehler! Verweisquelle konnte nicht gefunden werden..4**.

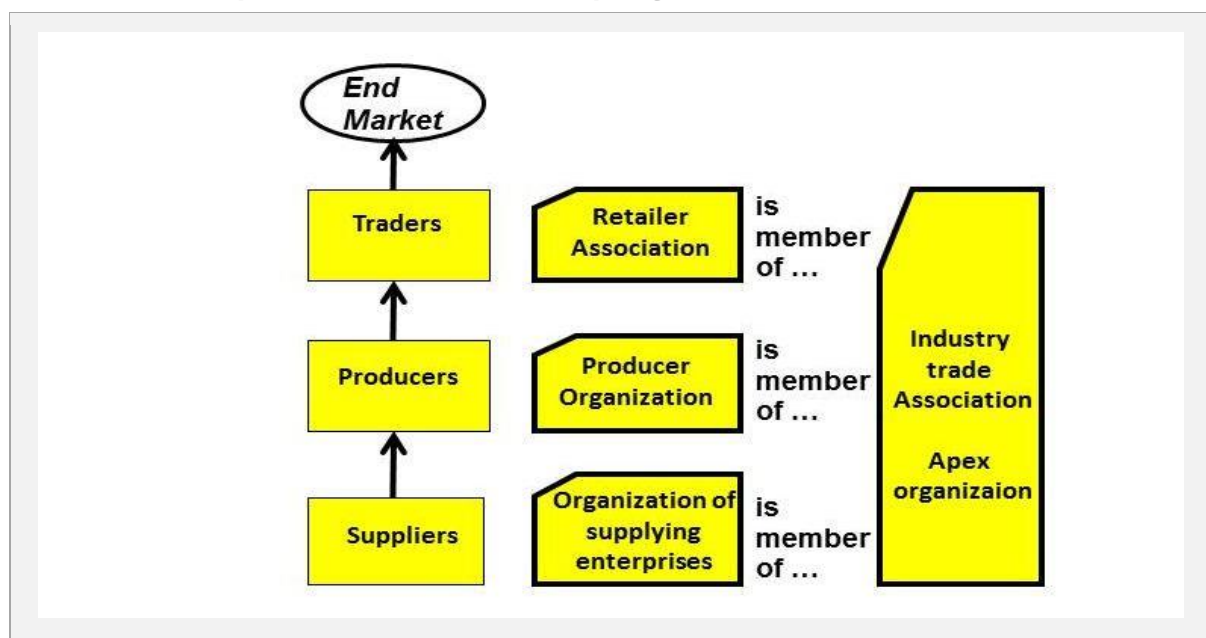
Private associations, both farmer organizations and BMO in general, have an important role in promoting the particular groups of operators they are representing. They can prepare the ground for business model solutions by providing information and by contributing to better social and economic regulations. They also have a defensive role “fighting off predatory officials, bureaucratic procedures, and poor policies in general”⁹¹. Thus, they are important partners in value chain development.

Industry-wide organizations and networks

Associations that organize an entire subsector or value chain have the widest scope of co-operation. Conventional terms are trade associations or industry apex bodies. These are umbrella organizations organizing the interests of the wider business community in a particular industry at national level. They span operators at all stages and locations of a subsector or value chain in one country and also important support service providers, such as research institutes. Representing the private sector vis-à-vis government, they exercise great political influence. Subsector-specific apex organizations exist in all developed value chains.

The box below shows a possible institutional set-up: The industry-wide organization of a value chain includes all private and specialized public stakeholders who belong to it. It is an apex body in the sense that it comprises the business membership organizations and federations of cooperatives at lower administrative levels.

Box 0.18: Concept – Business membership organizations



Source: own concept

Apex bodies have an important role for value chain development as their activities benefit the industry at large. This includes support services to coordinate member associations, organize workshops and conferences, conduct professional training, commission and publish stud-

⁹¹ World Bank, 2005, p.18

ies, statistics and newsletters. At the same time, apex organizations engage in high-level advocacy preparing decisions in economic policy and regulation, financing research and even coordinating public and private investment. Depending on their capacity, resource and outreach they can become important leaders in value chain development⁹².

The difficulty is that such institutions only emerge in a long-term process. Value chain programs cannot simply introduce an institutional solution. A functioning private industry association is a result rather than a means of value chain development. Experience has shown that successful value chain conferences can indeed create enthusiasm among participants to organize the subsector. However, the initiative quickly runs out of steam in the absence of decisive leadership and the willingness to provide the required funding. The initial success of the promoting development agency may give false impressions. Stable *private* apex bodies can only exist in mature industries.

There are two lessons: One is that collective action builds up gradually from below. The principles and conditions for collaboration apply at each level anew⁹³. A higher level of cooperation presupposes that the partners at lower levels need and actively seek the collaboration with their peers.

The second lesson is the decisive role of government. Organizing the subsectors of the economy is a policy instrument. For example, the government of India not only provides the legal framework for registering business associations, it also actively supports the creation of industry associations. Big associations are membership-driven, associations in poor regions with many small producers often government-driven. The handicraft sector illustrates the diversification of the institutional landscape⁹⁴.

An interesting model of government intervention into the organization of subsectors is the mixed public-private “*interprofession*” in Africa (a French term as the concept originates in France). Interprofessions are value-chain specific platforms and associations organizing all enterprises and business associations in the chain. The idea is that every stage – the profession – is represented on equal terms.

Interprofessional associations have the function to establish rules and standards for the business, create market transparency, promote the product on domestic and export markets, and collectively address problems affecting the value chain as a whole.

Box 0.19: Case – Interprofessions in francophone Africa

Interprofessions and value chain development in Senegal

In Senegal, Mali and other African countries interprofessions are officially recognized by law and formally part of the institutional set-up of national value chain policies. Only one private interprofession per value chain is allowed. It takes the lead in regulating the market and suggests development measures. In the case of Senegal, the legal framework provides that the agreements reached by the interprofession are compulsory for all chain operators as long as the decisions are taken unanimously. Hence, the interprofession constitutes a sort of “value chain parliament”. Today, there are seven interprofessions and interprofessional organizations in Senegal covering fish, cereals, industrial tomatoes, rice, milk, groundnuts and horticulture⁹⁵.

⁹² See module 4, chapter 4.2, on the leaders and formats of value chain development

⁹³ See section 6.3.3, above

⁹⁴ Compare the list of associations: www.craftcentral.com/trade-associations/associations-india.html

⁹⁵ Duteurtre G. et Dieye P.N., 2008

Source: A. Robast / Peche, D. 2005, also see the website www.inter-reseaux.org

The model is particularly relevant for export-oriented commodity chains. So far, the capacity of the interprofessions to perform their role in value chain governance is still limited. However, they are highly valuable as a framework for discussing sector-wide issues and initiating value chain projects.

A mixed public–private set-up is probably the best approach to formulating the common interest and mobilizing the political will to engage in value chain development. The political and advocacy function of industry associations is indispensable for the design of policies⁹⁶. The cooperation at industry level is also required establish the format for steering value chain development⁹⁷.

6.4.2. Platforms for business matchmaking

Besides the political and strategic interests, enterprises also have a plain commercial interest in common, particularly in export-oriented industries. Private enterprises simply have to find new business partners. Strengthening platforms for business contacts is another value chain solution. It can mean two things: One is the creation of platforms in a particular industry, the other is the promotion of enterprises to make better use of the existing platforms, particularly to participate in international trade fairs.

Overview of platforms and services

Trade fairs and other matchmaking platforms have the function to assist in making contacts and concluding contracts. They are market-specific institutions organized around particular industries and value chains. The box below presents main instruments for business match-making.

Box 0.20: Tool – Instruments of business matchmaking

The main formats for business matchmaking

- *Trade fairs and exhibitions*
Trade fairs and exhibitions are regular events assembling operators and service providers active in a particular market.
- *Business directories (yellow pages)*
Business directories such as yellow pages open up a search path for both potential buyers and sellers
- *Electronic B2B platforms*
Internet-based tools offer detailed information. Users fill in a concrete search request and partners are listed according to specific criteria such as country, sector or type of partner.
- *Business delegations to importing countries*
Delegations include major exporters of a country that visit importing countries together.
- *Buyer/seller meetings*
Meetings between buyers and sellers are workshops to exchange information and show offers to previously identified buyers

Source: own concept

The first three formats are classical platforms that are open to everyone in an industry. Buyer/seller meetings are scheduled side events in trade fairs but can also be organized by

⁹⁶ See ValueLinks module 10

⁹⁷ See ValueLinks module 4, chapter 4.4 on the formats for steering value chain development

business associations. Associations and chambers of commerce organize business delegations as a service. All platforms are run by specialized agencies – sector-specific marketing agencies, trade fair operators and chambers of commerce. It is important to note, that these are usually commercial services, not public support services. Users have to pay for the matchmaking services through fees and contributions. Under certain conditions, governments may subsidize business delegations and provide start-up assistance to newly established trade fairs.

A less well-known format is the “business wheel” (*rueda de negocios*) – a mechanism serving market transparency and business development in general. Widely used in Latin America, it serves the business world in general. Nevertheless, participating enterprises organize themselves according to the markets they are active in. Hence, the business wheels have chapters that are specific to agriculture and food, construction, or handicrafts.

Box 0.21: Concept – The business wheel (*rueda de negocios*)

Functioning of a business wheel

The *rueda de negocios* or business wheel is a platform for business matchmaking that helps entrepreneurs to make contacts, share information and technology and find business partners. The model has been running successfully in Peru, Colombia, Central America and other countries. It has a personal and a virtual component.

Personal component:

Similar to a trade fair, business wheel organizes meetings of business people. Before the meeting, an agenda is drafted based on the objectives and wishes of the participating enterprises. The objective is to find complementary business interests that can translate into new contracts. To generate the right matches, a special method systematizes the search process guided by a self-explanatory manual. In addition, software is made available that allows generating agendas for business meetings. The system is accessible in the internet to allow updating and modifications from all over the world.

Virtual component:

This component consists of a website (<http://ruedadenegocios.info/>) that operates like a virtual market place for supply and demand. The website offers the services of an online chatroom before, during and after meetings that can be used to find new contacts and to stay in touch.

Source: nn

Trade fairs and export promotion

A different type of value chain solution is the capacity of small-scale enterprises to use existing platforms for business matchmaking. Helping small-scale enterprises to take part in trade fairs is a classic instrument of export promotion.

Entering an export market is costly. Small enterprises and start-ups cannot shoulder the investment into export marketing on their own, they have to cooperate. The export capability of the value chain rests in the collaboration of producers, traders and business associations to present a quality product and establish a common brand. The value chain solution is in the capacity to make that collective effort. After opening a new export channel traders have to sustain the business linkages themselves, but they will still need the backing of their partners at home.

Promoting such solutions is the realm of the Ministry of trade and the national trade promotion agency in the exporting country. International support service providers include the International Trade Centre (ITC), the Dutch Centre for the Promotion of Imports from develop-

ing countries (CBI) of the Netherlands Ministry of Foreign Affairs, and a number of bilateral development agencies, such as Switzerland⁹⁸ and Germany⁹⁹. ITC and CBI have published guidelines on the principles and best practices of support. The main points are to strengthen the capacity of the competent trade organizations in the exporting countries, to improve the export skills of operators, to accompany and encourage the collaborative efforts of new exporters. Export promotion agencies work with development agencies to assist aspiring enterprises to prepare exhibitions; they organize national booths comprising several exhibitors and help them close a deal.

The box below presents the example of a successful intervention to strengthen the institutional capacity for exporting handmade paper products from Nepal.

Box 0.22: Case – Nepalese paper products at the “Paperworld” Fair

The vision and strategy for upgrading handmade paper products from Nepal

Nepal exports handmade paper products made of Lokta, the bark of a natural shrub growing in the Himalaya. In order to boost exports, the Nepalese paper product makers (exclusively small and medium enterprises) cooperate to develop new designs and products, establish a common brand (Nepalokta), present products internationally and thus create new business links. An important element of the strategy is international marketing. In January 2007, Nepalese paper products were shown for the first time at a joint presentation of Nepalese products at the international paper trade fair “Paperworld” in Frankfurt, Germany.

Concept and preparation of the presentation at the Paperworld Fair

The objective of the trade fair participation was to launch the new Nepalese trademark for design products in the special innovation section at the fair. Therefore, thorough preparation was necessary including a design contest, the production of prototypes and promotional materials, training of entrepreneurs on product pricing, and a marketing concept.

Organization and funding of the exhibition

The organizer of the activity was HANDPASS, the Nepalese handpaper maker association with active support by GTZ. Most of the funding came from the EU Asia Invest project. The cost of fair space, advertising, construction of the booth, transport of products, website and communication was around 63.000 €. The travel cost of 24.000 € had to be paid for by enterprises. Other cost included the design competition, the production of prototypes, training, and a market study by an international consultant. The total cost of the matchmaking initiative was around 140.000 €.

In total, 27 enterprises applied for participation of which 14 were selected by a committee comprising HANDPASS and GTZ. Criteria for participation included the number of years in operation, current export value, export potential, number of employees, formal registration as a company, the capacity to innovate and the contribution to HANDPASS activities in the past. Enterprises also had to sign the code of conduct of the industry and agree to observe rules, such as not discouraging competitor’s products, and linking to others.

Source: GTZ PSP-RUFIN program, Nepal, 2008

Following are some of the lessons learnt:

⁹⁸ Swiss Import Promotion Program SIPPO

⁹⁹ <http://importpromotiondesk.com/en/>

- *Transparent criteria for participation:* Before starting the activities, the procedure and criteria for supporting enterprises to participate in trade fairs have to be communicated clearly. Other enterprises should be able to see opportunities for themselves.
- *Agreed objectives:* The common objective of a joint exhibition is to present a uniform picture of the exporting country and value chain. The enterprises formulate their objectives for participating in the fair individually.
- *Defined export marketing concept:* The first step in preparing trade fair participation is to develop a marketing concept defining the products, quality, pricing and branding.
- *Collective action:* The enterprises exhibiting together should share the workload and subscribe to the common marketing strategy despite the competition between them. The collaboration of enterprises is strengthened by travelling and working together.
- *Cost sharing:* The support agency and the exhibitors share the costs. Policies differ between value chains in line with their economic strength. Enterprises should take over between 33% and 50%, shared equally between them.
- *Pre-fair and post-fair promotion activities:* Export promotion agencies and development agencies continue the support after the trade fair, prepare reports to the wider business community of the value chain and share the contacts and market information obtained.

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ICA (International Co-operative Alliance):

<http://ica.coop>

Cooperativas de las Américas:

www.aciamericas.coop

ACDI/VOCA (US Agricultural Cooperative Development International):

www.acdivocacoopex.org

DGRV (Deutscher Genossenschafts- und Raiffeisenverband, Germany):

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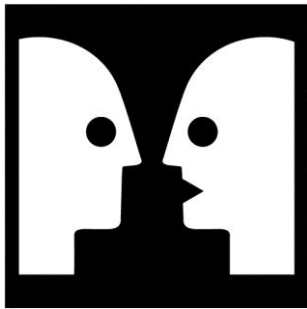
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National association of citrus growers (Colombia):

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Module 7

Services

Contents

Module 7	Services	106
7.1	Introduction: Services for value chains	106
7.1.1.	Types of services	106
	Operational services	106
	Support services	107
	Advisory and knowledge services – an intermediate category	108
7.1.2.	The systemic concept of service provision	109
	Service clients and service providers	110
	Service arrangements	111
7.2	Assessing service needs and supply	113
7.2.1.	Needs and gaps in operational services	113
	Identifying service needs	113
	Analyzing the gaps in service availability	114
7.2.2.	Support service needs and gaps	114
	Identifying support service needs	114
	Analyzing incentive problems in support service provision	115
7.2.3.	The effect of modernization and globalization	116
7.3	Solutions for operational service provision	118
7.3.1.	Private service markets	119
	Potential and limits of service market solutions	119
	Development of service markets	120
7.3.2.	Service provision as part of business linkages	121
	Services embedded in business contracts	121
	Services of cooperatives to their members	123
7.3.3.	Subsidized operational services	124
7.4	Solutions for support service provision	126
7.4.1.	Effective articulation of demand	127
7.4.2.	Demand-driven public support services	128
	<i>Fees and co-funding for public support services</i>	128
	<i>Indirect financing through vouchers</i>	128
	<i>Competitive funds</i>	129
7.4.3.	Private delivery of support services	129
	<i>Support services of private business associations</i>	129
	<i>Mixed funding and outsourcing arrangements</i>	129
	Improved service quality and capacity	130
7.4.4.	Support services by development agencies	131
Resources		133

Module 7 Services

7.1 Introduction: Services for value chains

The competitiveness of value chains depends on the availability of services. Services are the key to providing access to inputs, to knowledge and information and to the skills necessary for value chain upgrading. As economic development advances, business models differentiate more and more adding new and sometimes demanding business processes. Intensifying production or investing into new machinery regularly requires additional information, improved technology, better skills, better logistics, and many other process and product innovations. To have access to these improvements operators depend on specialized technicians. On their own, they will rarely be able to improve their business models. The same is true at the industry level when it comes to penetrating new markets or enhancing the number of qualified people.

However, often enterprises have no access to the requisite services. There are two types of problems: For one, offers of essential services such as input delivery, maintenance or transport often are simply insufficient. If the service market is not developed, operators have difficulties finding the right services in terms of quantity, quality and price. Service market failure means that services costs are too high limiting economic and technical efficiency.

Secondly, the existing public service agencies and institutes often lack the incentive and the understanding for the service needs of the business community. We often find public providers still pursuing a supply-driven approach.

This module gives an overview of different types of service provision and service arrangements. It provides options for facilitating or improving service provision and service arrangements, taking into account the viability of the option chosen. Developing solutions for service provision is closely linked to the business model and financing solutions for the value chain.

7.1.1.Types of services

We distinguish two types of services: *operational services* and *support services*. Operational services directly support or perform outsourced business operations of enterprises. They are part of the business models of chain operators. Support services, in turn, provide services that benefit groups of operators or the value chain as a whole.

Operational services

Operational service providers perform certain business operations on behalf of enterprises. These services are 'operational' because they correspond to the functional sequence of the chain. Transport is a classic example: If farmers take their produce to the market, they can either transport the load themselves, or hire a transport service if they don't have their own means of transportation. Similarly, they will need maintenance and repair services if they cannot perform these tasks themselves. Box 0.1 provides an overview of the categories of operational services.

Box 0.1: Concept – Examples of operational services

Value chain specific operational services (specialized service functions only relevant for the value chain in question):

- Technical services (installation of equipment, maintenance and repair, equipment lending, packaging, lab testing of safety parameters etc.)
- Technical operations against payment, such as mechanized field preparation, loan milling or drying of raw material,
- Provision of returnable packaging material (in fresh produce chains)
- Product and process certification to fulfill market requirements
- Input procurement
- Individual technical, market and business advice

Generic business services (independent of the value chain, used by a broad range of clients operating in different final markets):

- Transport, shipment and handling
- IT Services (telecommunication, information services)
- Insurance
- Management consultancy (business development, accounting and legal advice)
- Advertising and marketing
- Financial services¹⁰⁰ (see Module 8 for further details)

Source: own compilation

Ideally, operational services should be provided on a private basis, as this enables a direct accountability of the service provider vis-à-vis its clients. The only exception is the ‘fees for service’ arrangement – less common in developing countries – with private paying clients and a public agency as provider (e.g. for public lab analysis services, veterinary inspections etc.). In many cases operational services are however also provided by public agents or agencies, often with donor (co-)financing.

Support services

The second category of services is support services delivered by providers at the meso level. Support services refer to general investment and preparatory activities benefiting all chain operators collectively who together share the interest in a thriving industry. Contrary to operational services, support services do not directly perform or contribute to performing basic functions in a value chain and therefore are not contracted individually. Box 0.2 enumerates typical support services. Most of the support services listed in the box are highly relevant for chain upgrading. In fact, they are efforts to enhance the competitiveness of the value chain they seek to support and can be seen as services to facilitate upgrading.

Support services are provided by private business associations or by public agencies. Especially in the latter case, arrangements mainly differ in terms of funding mechanisms – from conventional budget to mixed funding. The clients of support services are groups of operators or the chain “community” as a whole. Accordingly, most of these services are ‘public goods’ providing advantages from which no participant in the value chain can be excluded: trained staff can be hired by anyone, every operator benefits from the establishment of a regional trademark and advocacy efforts imply the value chain as a whole. Nevertheless, in the ideal case a given value chain should be able to cover the costs of its support services, either directly or indirectly through tax payments.

¹⁰⁰ Financial services are treated separately in module 8

Box 0.2: Concept – Examples of support services*Support services include:*

- Sector-specific vocational training and education
- Applied research and technology development
- Publication of market and price data and other sector-specific general information
- Services of shared technical facilities, e.g. reference laboratories
- Export promotion, trade fairs, exhibitions and business delegations
- Public relations and joint marketing of products
- Advocacy for common interests of the value chain business community

Source: own compilation

The regulatory interventions of government, such as the setting of grades and standards or fixing market prices are not included here. However, technical inspection of food companies in the interest of consumer protection, e.g. meat inspection, is a support service for government, and indirectly for the industry as well. Public reference laboratories are supporters of value chains as they provide the basis of a functioning quality management for all entrepreneurs.

Advisory and knowledge services – an intermediate category

Agricultural extension and advisory services to micro-entrepreneurs are a special case. It is difficult to classify them clearly in either category of services. Giving advice to individual entrepreneurs and farmers and mentoring them in their business development is an operational service because it assists individual entrepreneurial decisions. At the same time, advisory services for small enterprises address large numbers of people. As soon as the service imparts knowledge of general interest as in vocational training and education, it rather has the character of a support service. Awareness and extension campaigns are support services as well.

In fact, most services include some form of information and knowledge transfer. Providing advice is a universal feature of service provision. Therefore, the content and modalities of advisory services are highly diversified. This shows in the debate on “extension pluralism” in agriculture¹⁰¹. The organization of agricultural extension has become increasingly pluralistic. In former times, the farming community regarded agricultural extension clearly as a support service performed by a specialized public agency. Today, many organizations provide farm advice, in different forms and arrangements. Extension service providers range from non-governmental organizations, cooperatives and associations, to private companies. Contract farming arrangements often include business advisors. Therefore, we should not equate agricultural extension with a distinct institution, and less so with the linear transfer of knowledge or technologies to farmers. Rather, knowledge exchange and learning take place in the socio-economic fabric of business and professional communities. A wide range of businesses, private and public organizations contribute to innovation, learning and technology transfer, at the same time.

The diversity and complexity of knowledge transfer has given rise to the concept of ‘innovation systems’ in agriculture¹⁰², and in economic development in general. The value chain is a

¹⁰¹ Heemskerk and Davis, 2012

¹⁰² <http://www.g-fras.org/en/good-practice-notes/agricultural-innovation-systems.html>;
also see: World Bank, 2012

particular kind of innovation system¹⁰³: Business linkages are not only flows of products and money. They also embrace the flow of knowledge along the value chain. Knowledge exchange in value chains often organizes around particular innovation topics, in a combination of operational and support services.

An example is improved pest management practices, which takes information and knowledge from public as well as private sources. Research institutes and the extension service of the Ministry of Agriculture provide the foundation, while private suppliers explain the use of pesticides and equipment. The buyers of farm produce contribute by asking for the compliance with good agricultural practices. The weather service has yet another role.

Because of the interaction between these services, we cover advisory work and agricultural extension under both service categories in the following. The service arrangements can follow an operational as well as support service mode.

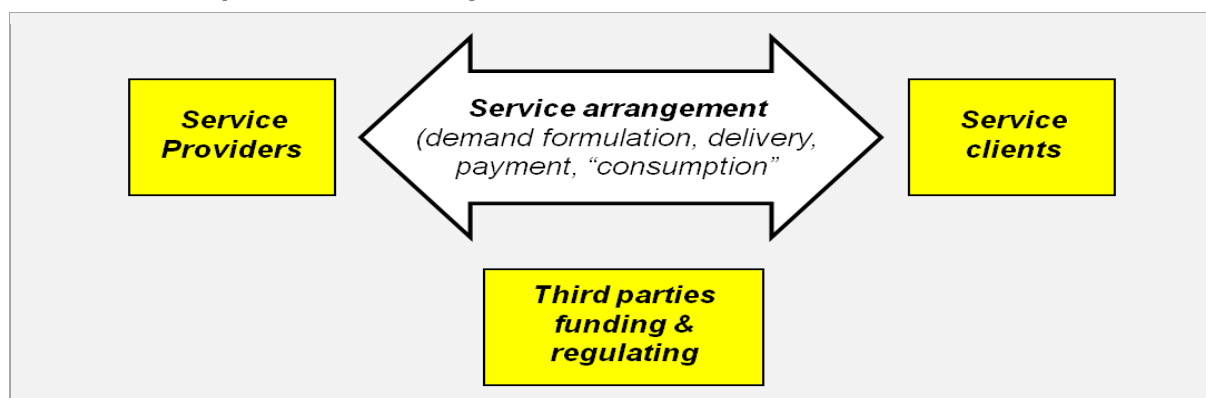
7.1.2. The systemic concept of service provision

To understand the difficulties, we have to conceive service delivery as a *system* of at least three elements¹⁰⁴. Any service relationship is the interrelation of

- *Service clients* demanding, paying and receiving services;
- *Service providers* delivering the service products;
- *Service arrangements* defining the form of organizing service delivery.

The elements in this triangle are closely interlinked. For example, private service providers will not expand their offer until and unless potential service clients express their demand effectively. Conversely, weak chain operators will not pay for private services unless service providers respond to operators' needs and adjust the offers to their purchasing power. Similar considerations apply to public services: often, there is no satisfying relationship between supply and demand of public services, because public service agencies do not adequately recognize or consider the demands of clients. On the other hand, clients may have no influence on the allocation of budgets and thus on the availability of public service provision. Box 0. presents the idea of a service system in graphic form.

Box 0.2: Concept – The service system



Source: own design

¹⁰³ Quote Lundvall

¹⁰⁴ See Albert, 2000, on the concept of service systems in agriculture

There are cases where third parties fund and/or regulate a service, as is the case of a development project funding a specific agricultural extension program.

Service solutions have to address all three elements of a service system. In each case, the most adequate service arrangement has to be selected according to the type of services and the market situation¹⁰⁵. Interventions may refer to the demand or supply side or to the arrangement as such. Improving service provision requires information about the current systems of service provision in the value chain – the clients, providers and the existing institutional arrangements. In the following, we go briefly through each of the elements.

Service clients and service providers

In our context, the service clients are the operators and other value chain actors who need services to perform their tasks. We can distinguish individual service clients on one side and collective clients on the other. The first group ranges from self-employed micro-entrepreneurs and cooperatives to large companies. The latter are large groups of operators, such as the farmers in a particular region, groups of enterprises at particular chain stages or even the entire business community of an industry. The demand for operational services is always individual, although small enterprises often cooperate to get access. The demand for support services comes from groups of enterprises or from business associations that share the benefits from support services.

The service providers are classified into private and public providers. Most private service providers deliver operational services against payment. These are mostly individual service enterprises. In the agricultural and handicraft sectors cooperatives engage in operational services as well. Private associations also operate as support service providers.

Public service providers, government and public agencies, mainly provide support services in the interest of the business community as a whole as well as the general public.

Box 0.3: Concept – Types of service providers

	Private providers	Public providers
Operational services	<ul style="list-style-type: none"> ▪ Business advisors ▪ Transporters ▪ Technical service providers ▪ Certifiers ▪ Cooperatives & producer groups 	<ul style="list-style-type: none"> ▪ Agric. extension service to individual farmers
Support services	<ul style="list-style-type: none"> ▪ Business membership organizations (BMO) ▪ Chambers ▪ Commodity Boards 	<ul style="list-style-type: none"> ▪ Agric. extension service ▪ Research institutes ▪ Vocational training institutes ▪ Government agencies for business promotion

Source: own compilation

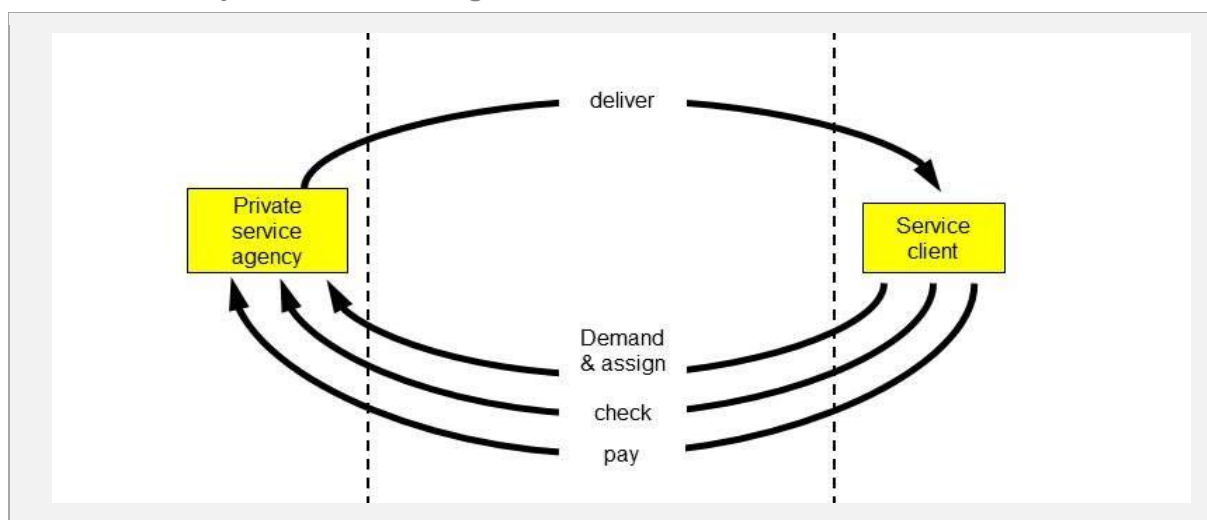
¹⁰⁵ We will treat the particular problems of service systems in chapters 7.3 and 7.4.

Service arrangements

Service arrangements constitute the rules governing the relationship between service demand and supply. There are two basic types of service arrangements. One is private service markets including contracted services and services embedded in business contracts. The other is public support services delivered to the business community in the public interest.

Box 0.4 shows the private delivery of operational services. This arrangement is a conventional service market, as we know it from any other market system.

Box 0.4: Concept – Service arrangement 1: A service market

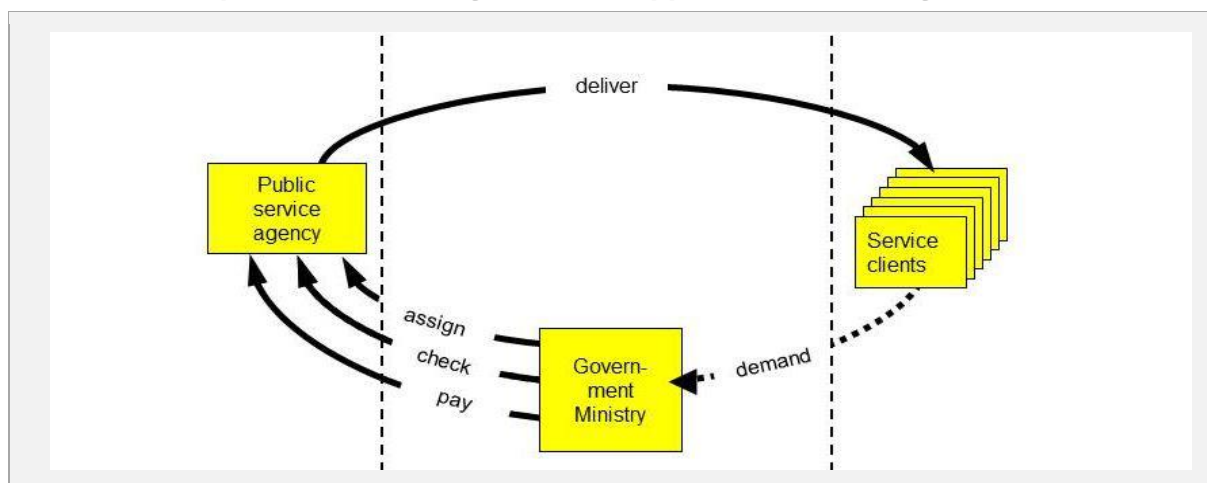


Source: own concept

Essentially, the market interaction has two parties, the service provider and the customer. The verbs placed into the arrows denote the main functions taken by either side. The relationship is a closed cycle in which service providers get clear incentives and clients have control over the service process. The problem is that market arrangements only come about if both sides take their roles, including the service clients.

The next arrangement in box 7.1.6 is typical for support services.

Box 0.6: Concept – Service arrangement 2: Support service arrangement



Source: own concept

In the second arrangement, the roles are split between three parties. In contrast to the service market, the service user is not identical with the funder of the service. Instead, there is a third party, in this case a government ministry, which commissions the service to a public agency, which works for the service customers in turn¹⁰⁶. The scheme is similar if the support service is private. Although a private principal may exercise more control, industry associations or chambers are in the same position as government if they contract specialized service providers to serve their members or the business community at large.

In any case, the second type of arrangement is a much more complex form of organizing service delivery. The final recipients of the service have little influence on the service provided and their expectations might differ from those of the organizations commissioning and financing the service. There is a gap in the service system¹⁰⁷, because the incentives are impaired.

As in every market, governance rules and public regulations apply to service markets as well. Therefore, both arrangements can include further parties regulating or supervising service provision.

Value chain solutions improving service delivery should focus on the improvement of the entire service arrangement. Any solution for service provision has to include a functioning service arrangement that closes the service gap, provides incentives to providers and assures the sustainable financing of supply.

The following chapters start with the identification of service needs and then move on to the solutions for organizing the provision of services, covering first the markets for operational services followed by the arrangements for support service delivery.

¹⁰⁶ see Huppert and Urban, 1998

¹⁰⁷ Huppert and Urban, 1998

7.2 Assessing service needs and supply

7.2.1. Needs and gaps in operational services

Improving and developing services means identifying options for organizing service provision. This requires information about the current status of service provision and the need for new or improved operational services in the value chain. The question is whether operators have access to the required operational services at affordable prices and in the right quality. Often times, service markets fail to supply services, especially to small enterprises.

A service market analysis helps to identify bottlenecks in the provision of services as well as problems regarding the demand for services and the functioning of existing service arrangements. This module presents a couple of analytical questions guiding the process of identifying bottlenecks and options for organizing service provision. They build on the initial structural analysis of the value chain¹⁰⁸. This is a quick analysis only¹⁰⁹.

Identifying service needs

In a first step, we go through the value chain to specify the service needs of the operators at different stages. Further, we check whether any service providers already cover the need. This analysis shows to what extent demand is satisfied and indicates the (in)compatibility of service demand and supply. The table in Box 0.1 summarizes the information.

Box 0.1: Tool – Characterizing the demand for operational services

<i>Groups of chain operators at different stages</i>	<i>Service needs¹¹⁰ of the different groups of operators</i>	<i>Characterization of the services needed</i>	<i>Do the current service offers match the need?</i>
<ul style="list-style-type: none"> • Different types of operators and business models • ... 	Specify types of service needs, and whether they are covered	Specify in terms of volume, frequency of demand etc.	YES (continue with Fehler! Ungültiger Eigenverweis auf Textmarke.. Box 0.2) or NO (analyze market failure problems)

Source: own concept

Wherever we can identify an existing service offer, we continue by assessing the existing services in more detail. A possible tool is the table in Fehler! Ungültiger Eigenverweis auf Textmarke..

¹⁰⁸ Essentially value chain mapping; see chapter 2.2 in the first volume

¹⁰⁹ For tools to conduct in-depth analyses see Huppert and Urban, 1998.

¹¹⁰ We only consider essential services that clients actually need and actively demand.

Box 0.2: Tool – Assessing the existing operational services

Service needs covered	Service providers	Assessment
(taken over from the second column in Box 0.1)	Specify the existing service providers and arrangements	Areas of analysis, e.g. <ul style="list-style-type: none"> • (In)adequacy of the service • Regular availability, etc.

Source: own concept

The third column in the box above assesses the adequacy of the operational service currently available to the operators. The question is whether they are available regularly, what quality they have and at which price they are offered in the service market. This analysis provides us with insight into potential market failure problems.

Analyzing the gaps in service availability

Deficiencies in service quality and pricing are one thing. In many cases, certain groups of operators in the value chain have no access to the service market at all. They simply cannot find any offers satisfying the service needs. We have already identified these fundamental service gaps in the last column of the table in box 7.2.1. The question is why an obvious demand is not met. To detect the reasons, we have to look at the three elements of the service system – clients, providers and service arrangements, and assess which of its components is deficient.

Going back to the scheme in box 7.1.5, we can find obstacles at several points. The most obvious reason for market failure is the inability of service clients to pay for the service. This has to do with the fact that the cash flow and profits of smallholder farmers and micro-enterprises often are too low to support a service market. These groups often face specific constraints but may have difficulties specifying their demand precisely. Generally, small enterprises lack the ability to commission and contract a service of interesting size, and check the quality of delivery. A commercial service arrangement may not be familiar.

On the other side, service providers have to pursue a pricing policy that covers the high cost and risk of service delivery, when the frequency of demand is low and clients live in remote regions. Only the informal, local service providers have a cost structure that allows them to suggest competitive prices. Yet, these providers necessarily have a limited range of offers. Weak infrastructure is another factor considering the distance between service providers and their would-be clients in rural areas.

Thus, the key problem is a service market failure. It becomes apparent as more operators move to improve their business models and invest.

7.2.2. Support service needs and gaps**Identifying support service needs**

Identifying the need for support services follows a similar procedure as the one used in the previous section, with some minor adaptations. The first step uses the following table to identify the demand.

Box 0.3: Tool – Characterizing the demand for support services

Groups of chain operators in the VC	Service needs of these groups	Characterization of the services needed	Any support services provided?
<ul style="list-style-type: none"> • Specific groups of operators • Value chain community as a whole • ... 	Specify types of support services	Specify in terms of, volume, frequency of demand etc.	YES (continue with Fehler! Ungültiger Eigenverweis auf Textmarke.. Box 0.2) or NO (analyze the incentive problems)

Source: own concept

We continue by assessing the support services that *actually are* available, whether they meet the original demand or not.

Box 0.4: Tool – Assessing existing support services

Service needs covered	Service arrangements	Assessment
(taken over from the second column in Box 0.13)	Specify existing support service providers and service arrangements	Areas of analysis: <ul style="list-style-type: none"> • Mechanism of demand formulation • Quality and adequacy of the service

Source: own concept

Again, this assessment leads on to a more detailed analysis of the reasons for any existing deficiencies and constraints. In contrast to the service markets, we are likely to find an entire range of mostly public support service providers. The issue is not so much the absence of support services but their quality. The problem analysis thus looks differently.

Analyzing incentive problems in support service provision

Although support services benefit all value chain operators, they are not necessarily able or willing to pay for them. Only advanced value chains that generate sufficient value have well-organized business communities that can pay for support services themselves. Small operators in weak chains mostly depend on public service provision by government administration and development agencies.

Therefore, we find that support services regularly are funded and provided by government. There are of course valid arguments for the public funding of support services. However, the public funding of support services may result in operators not having full control of service provision. In such a situation where the client of a service is not paying, the service arrangement includes at least three (if not more) parties – the service clients, service providers, and the (public) funders of the service. This arrangement may thus result in a service gap between the clients' needs and the services provided. This gap can be caused by a number of issues:

- *Little accountability towards operators:* Public providers of support services are primarily accountable to their public financiers and much less to their private clients. Public administrations or research institutes do not easily understand business needs and keep distance to private companies. The result is a marked supply-side orientation.

- *Inconsistent support policies:* Public agencies (as well as donor-funded programs) often apply inconsistent subsidy policies. Service offers and modes of delivery follow political conditions rather than needs.
- *Low image of government:* Justified or not, public service providers often suffer from an image of low efficiency.
- *Limited capacity of service providers:* There is a general undersupply of support services for small producers as public agencies find it difficult responding to weaker market partners. In weak subsectors and marginal locations hardly any public service agencies are active. Consequently, support service provision is rather dominated by international aid programs and NGOs which may involve a problem of sustainable funding.

Accordingly, the identification and understanding of the origins of such service gaps is a key element in the analysis of the support service provision.

Free riding aggravates the typical problems of support service provision: Often, individual enterprises have no interest to invest in collaboration and everyone is waiting for others to move ahead.

An important aspect to consider when analyzing both operational and support services is the political dimension of service provision. The understanding that is implicit in value chain upgrading is that markets should ideally be free and transparent, and public organisations and institutions should operate as bureaucracies providing services according to their official mandate. This is however not always the case. In some countries for instance public agricultural extension services are heavily politicized, being used by governments as a means to maintain influence in rural areas (e.g. through the free distribution of inputs to supporters) or to provide employment to political allies. Similarly, markets may be controlled for political reasons, e.g. in order to maintain low prices for staple foods in order to satisfy a predominantly urban voter base.

Approaches on how to address such political issues are very context-specific and go beyond the scope of ValueLinks. Nevertheless, it is important to be aware of the vested interests that may shape the activities of specific service providers, and to take them into consideration when designing a value chain upgrading strategy.

7.2.3. The effect of modernization and globalization

Most value chain solutions require the development of *new* operational and/or support services. Chain upgrading regularly means introducing new technologies, improving and managing product quality, and engaging in new business linkages and distribution channels. These changes can only be achieved if operators have access to the relevant services. Thus, an analysis of existing operational and support services indicates whether or not these services can be adjusted to match the new service demands. Some of the services can be adjustable, but in many cases new service content (e.g. skills and information) and even entirely new types of services (e.g. quality certification) may be required.

Box 0.5: Tool – Chain upgrading and related service needs

Upgrading strategy	Services required
Identification of new markets	<ul style="list-style-type: none"> • Market intelligence, business matchmaking • Management consultancy • Information and communication (ICT services)
Product innovation	<ul style="list-style-type: none"> • Research and technology development • Supply of technical inputs and equipment • Technical advice and training • Technical services
Process innovation to reduce cost and/or improve quality	
Quality management and assurance	<ul style="list-style-type: none"> • Advice on quality management systems • Product and process certification
Expansion of productive capacity	<ul style="list-style-type: none"> • Financial services: New credit lines
Organization of producers	<ul style="list-style-type: none"> • Organizational development advice

Source: own compilation

The question is which set of coordinated operational and/or support services is needed in order to upgrade business processes and diversify into higher value products. Box 0.5 shows which service requirements follow from the objectives of value chain upgrading.

The box below presents a number of practical examples how globalization and modernization translate into service needs that frequently are very new for the operators concerned.

Box 7.2.6: Cases: Service needs accompanying chain modernization**Additional service needs***Logistic services*

The supply of fresh pineapples from Ghana to supermarkets in the Netherlands and France relies on well timed and consistent series of packaging, labelling, transport and storage services, at the farm level and at the port facilities in Tema, Ghana.

ICT services

Information and Communication Technologies (ICT) have provoked the most radical change in trading agricultural commodities. Traders in remote African regions now engage in sales negotiations using mobile phones. Internet services of specialist companies tracing consignments from the farm to retail outlet, are the basis for the future development of commodity markets.

Quality management services

After experiencing an EU import ban for two years, the fishermen cooperatives at Lake Victoria had to apply the HACCP concept. Through endless direct contacts with importers they became aware of them being suppliers into a sophisticated value chain applying ever rising quality standards.

Source:

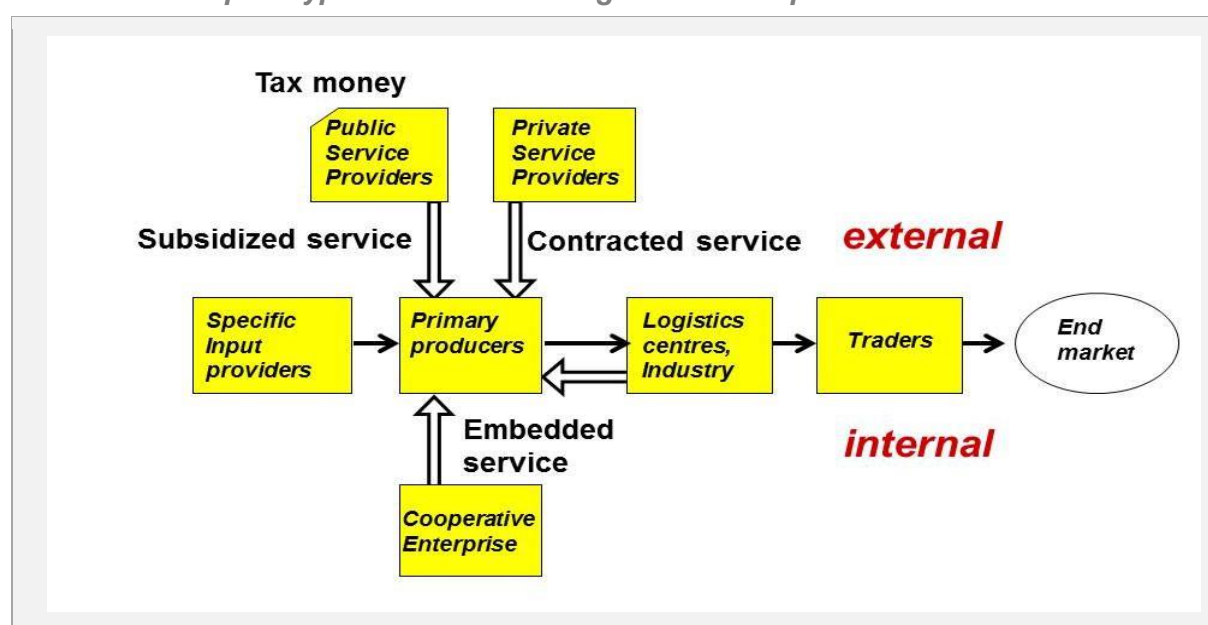
7.3 Solutions for operational service provision

The search for solutions to operational service provision has to find answers to the gaps in service availability detected earlier. Two possibilities exist. One is market-based solutions in which operators pay the operational services. There are three types of market-based solutions:

- *Service markets* where clients purchase (contract) operational services from private firms or agencies;
- *Embedded service arrangements* that are part of vertical business linkages; and
- *Services provided by cooperatives and associations to their members*, where the provision is part of the cooperative venture.

The following box illustrates the options.

Box 0.1: Concept – Types of service arrangements for operational services



Source: own concept

The basic principle in all arrangements is that clients pay for the service either directly or indirectly. Private payment implies that market-based solutions have their limits. For one, the total value of operational services in the value chain is limited by the chain revenue. The private market for operational services can only grow to the extent that the revenue, from which service costs are paid, grows as well. Secondly, smallholders and microenterprises may not be able to use market-based services, simply for lack of money.

The remaining possibility thus is public subsidies on operational services. In fact, the public provision of free operational services is a second-best solution, because it goes against the idea of value chain development as market development. Nevertheless subsidized provision to farmers has been and is still common practice in many countries. In the following, we focus first on the principles for the development of market-based arrangements. The last section provides some criteria for the conditions under which subsidy policies can be justified.

7.3.1. Private service markets

In a market economy, the private delivery of operational services is the default solution and the most common form of service provision. Every enterprise buys services at some point. The service market involves a closed relationship between just two parties — the client and the service provider¹¹¹. The operators demand, consume and pay the service. The coordination is through the market mechanism. In functioning service markets, there is no need to care about the access to services as long as clients are able to pay. Depending on market incentives, services will become available as economic development advances.

Potential and limits of service market solutions

When enterprises contract services directly, this is a good indicator that the service meets demand. Market-based solutions have a significantly better impact than services funded by a third party. The willingness to pay assures the viability of the business model for service provision. Private providers have to respond to the demands of their clients to survive in the market. This is the most effective way to avoid a service gap.

However, the market mechanism often fails to serve weak operators with small profits and little cash flow. In the absence of paying demand, the range of services on offer remains very narrow. This is particularly true for the services that accompany innovation. Unless operators upgrade their equipment regularly, there is not enough demand for sales, repair and maintenance services. Farm mechanization is an example: The first farmers moving into mechanization in a region simply won't find appropriate offers of mechanics and spare parts. Normally, such services are only available from private sources.

Several factors are responsible for the failure or small size of service markets, namely:

- *Weakness and fragmentation of demand:* The delivery of services for scattered rural producers and processors is expensive. Unless there is a critical mass of clients, services have to be offered at prohibitively high commercial rates. Generally, poor producers do not have enough cash income to pay for services.
- *Low market transparency:* Often, operators are not aware that the required service exists in their environment.
- *Market distorting practices of public agencies:* As public agencies or donor-funded programs subsidize services or offer them free, many poor producers are not used to the idea of paying for services. Rural areas often lack a commercial service culture.
- *High start-up cost of services:* Some services e.g. quality certification, need to be internationally recognized. This involves high start-up costs and high entry barriers for newcomers.

The development of a private service industry follows the evolution of the rural economy. The array of service offers goes up over time. There are a number of basic conditions for private service markets to work.

One condition is a minimum of entrepreneurial spirit. Market-oriented operators are clear about the fact that they need services for the growth of their business. As soon as operators start implementing an improved business model, they will have to seek services actively.

The second point is money. To pay for services, operators have to have sufficient purchasing power – a condition that is often missing in weak markets. Operators need some initial funding before they can generate enough own cash to contract services.

¹¹¹ Huppert and Urban, 1998, p.24

Another condition is the service economy itself. Service provision needs a minimum of infrastructure – access roads and means of communication. After all, the provision of services has to be profitable for the providers as well.

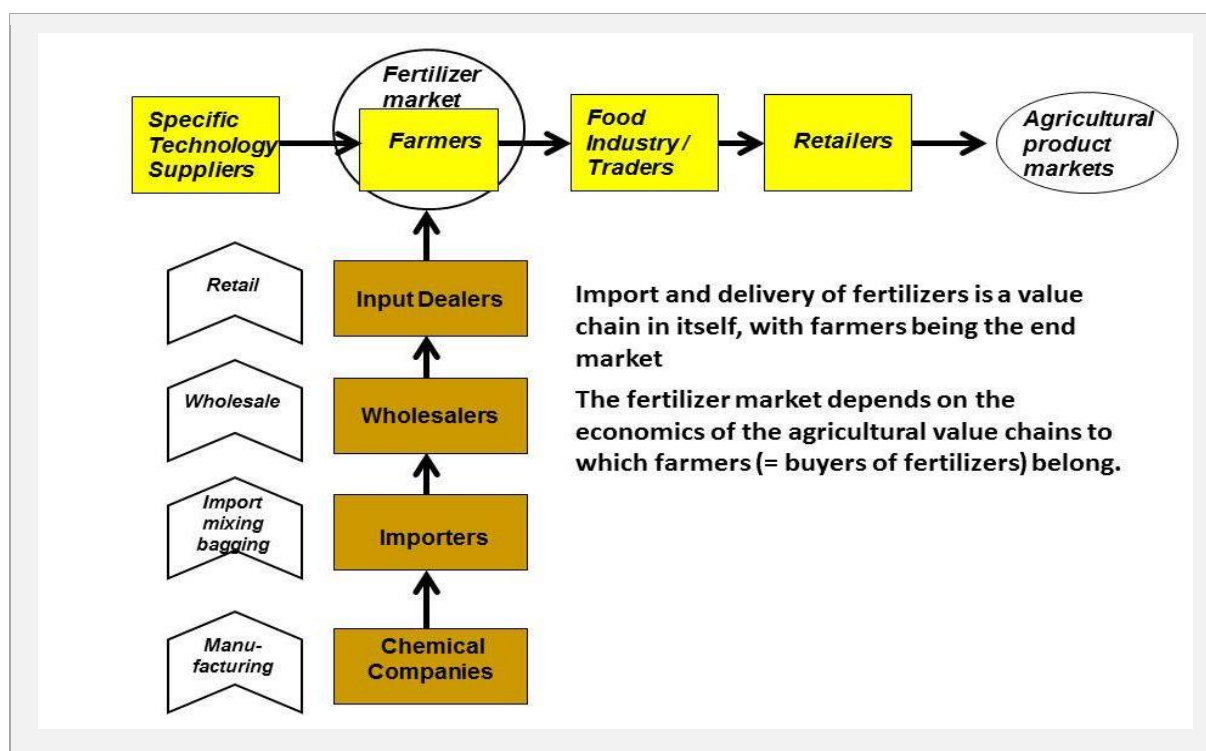
Development of service markets

One way of strengthening private service offers is the creation of new service enterprises and/or the support to existing ones in line with the evolving service market. This means developing viable business models for private service providers. External facilitators can identify innovative solutions and new business opportunities created within the chain.

There are two options for developing viable business models: One is to develop a new business idea to satisfy emerging service needs via so-called business development services (BDS). BDS are non-financial services critical to the market entry, survival, productivity and growth of SME¹¹². Typical generic BDS include business training and advice, marketing assistance and information. It can be very useful to combine value chain development with generic approaches to promote service markets. In fact, many BDS development projects switch to a value chain perspective in the course of implementation, since it provides a long-term perspective on the evolution of service demand, and, wherever relevant, an analytical framework for the design of embedded service arrangements. Facilitators actively involve interested service enterprises linking them to the growing market in the value chain.

The fertilizer value chain is an interesting case, because input dealers not only sell fertilizer but often provide technical assistance as well. This is a classical ‘crosscutting value chain’, where the end market is a group of operators (in this case farmers) within the VC of interest.

Box 0.2: Case – The mineral fertilizer value chain



Source: Own concept:

¹¹² See the “BDS primer” by Miehlebradt and McVay, 2003

Box 7.3.2 presents a stylized chart. Developing operational services related to fertilizer use can imply to work along the cross-cutting fertilizer chain which leads to an entirely new value chain project¹¹³. All principles of chain development apply: Since we aim at developing competitive markets, we should avoid any market distortions. Supporting fertilizer supply should not be limited to the one or few providers active in the first value chain but take a broader view on the fertilizer business.

The second possibility for strengthening market arrangements is the privatization of hitherto public services, handing over business responsibility to a newly created service enterprise, and supporting its start-up phase. Here, too, typical support measures include strengthening the service providers with business training courses, on the job training and the mentoring of start-up service enterprises. Involving private service providers in value chain development measures can enhance the confidence of value chain operators to contract these service providers for a fee in the future.

In addition to these two options for supporting service development, interventions may also aim to create new *service demand*. In the case of small producers, the formation of associations can lower the barriers to service access for the clients. As bulking of produce and joint marketing is a strategy to improve business linkages, forming groups is a way forward to foster private services.

Last but not least, creating an enabling business environment and investment climate is another private sector development approach (see ValueLinks module 10). Activities include the development of instruments for improving the regulatory and institutional framework creating better development opportunities for the private sector.

The challenge is to improve service quality and availability to poor producers while maintaining the financial viability of service provision, and not crowding out private service providers.

7.3.2. Service provision as part of business linkages

The experience with the development of a market for business services shows that despite all efforts the reach of service markets will always have its limits. Again, the value chain context offers another possibility to facilitate the access of small entrepreneurs to operational services. Essentially, the solution is to embed service provision into existing business linkages. This applies to (vertical) contract linkages as well as to the (horizontal) cooperation between operators¹¹⁴. “Embedded service arrangements” are the solution of choice to satisfy the needs that service markets cannot cover.

Services embedded in business contracts

The arrangement is to deliver operational services as part of a business transaction between two enterprises. The decisive point is that the embedded service does not imply cash payment for the service client. The cost of the service is included in the business contract instead. Essentially, the service client pays higher prices for inputs or receives lower prices for the products sold but at terms of payment that are better adjusted to the cash flow. Embedded service arrangements also have the advantage that they complement a business linkage solution.

¹¹³ The idea of crosscutting value chains has been explored in Module 2, section 2.2.4

¹¹⁴ The following ideas build on the principles and forms of business linkages covered in module 6.

Examples are input dealers provide information to their customers on the application of fertilizer, or processing industries provide technical advice coupled with the purchase of raw produce from their supplying producers.

Combining sales of equipment with maintenance services is a standard form of service embedding. Other forms of embedded arrangements for chain upgrading include complete service packages, e.g. supplier training, lab services or organizational support. These embedded arrangements are more complex, including three or even more parties and often involving professional service providers as additional partners. From the perspective of clients, services can be embedded into three types of business links as shown in Box 0.3.

Box 0.3: Concept – Types of embedded service arrangements

Embedded services according to the basic transaction / business link they are linked to:

(a) Sourcing of inputs and equipment (backward business link)

- Services provided by input dealers to farmers or small enterprises. The service is linked to the specific input or equipment marketed.

(b) Sales of products (forward business link)

- Services supplied by professional providers to farmers or small enterprises, and paid for by the buyers of products.
- Financial services (inventory credit) based on warehouse receipts.
- Services supplied by buyers as part of contract farming, contract production or outgrowing contracts.

(c) Loans

- Services supplied by professional providers and funded as part of a loan (interlinked financial arrangement)

Source:

Embedded services are closely tied up to important firms of the chain, especially input providers, banks, processors or traders who have the interest, capacity and funds to set up a service for their smaller business partners and suppliers in the chain. Unless such firms exist, there are little chances of using this arrangement. The main incentive for firms to become engaged is the need to secure their own supply or sales. For this to be the case, market integration has to be strong.

Facilitation of embedded service arrangements

As in the other private service arrangements, organizing service clients into associations often is an important aspect. Client organizations lower costs and enhance the possibilities to set up embedded services.

The main type of support action is the facilitation of the service arrangement, explaining or demonstrating advantages to partners, providing solutions and lowering the risk on both sides. For example in a forward business link type of embedded services, external facilitators can demonstrate to service providers how to train and mentor their clients. Frequently, third parties have to be brought in. It is advisable to keep the primary business relationship and the service provision aspect apart, so that the division of tasks and the funding mechanism are transparent. As embedded services are tied up with companies, an important external intervention is the cooperation with the lead firm, e.g. as part of a public-private development partnership.

Facilitation of service supply

The most important action is the training of the operators who take up a new service function. An example is training of input dealers so that they become able to provide advice on the use of the input they sell (e.g. knowledge about the application of agrochemicals or the use of seed varieties). In the case of industrial buyers providing services or paying for them, action involves delivering the service know-how. Facilitators can support service provision with information and advisory materials.

Box 0.4: Case – Embedded service arrangement

Case of an arrangement to provide services embedded in business linkages

To be complemented

Source:

Services of cooperatives to their members

Organizing the demand and supply of operational services within a producer cooperative is a classical arrangement in the agricultural, rural and handicrafts subsectors. In its simplest form, members of groups organize services in the form of mutual self-help – the service user receives a service against consideration in-kind or returned service.

In a formal cooperative enterprise, service provision means hiring specialized staff (internal service providers). Box 0.1 graphically illustrates this mode of service provision. Where individual producer cooperatives are too small, they delegate service provision to the second-tier federations of cooperatives. Services delivered by hired staff are either paid for by membership fees and/or the proceeds of own business operations of the association, such as joint marketing or processing. This kind of service arrangement is non-market based.

Certainly, service provision by private cooperatives and associations can also be realized by contracting a private service provider (see “private service markets”).

Depending on the degree of organization, the availability of resources and the demand by their members, the types of services typically provided by private associations include:

- Access to (market) information
- Joint procurement of inputs and/or joint marketing
- Joint management of resources (e.g. water) and/or machinery
- Training and advisory services
- Representation and advocacy

Association-based service arrangements can be an option to reach micro-enterprises and small chain operators who cannot afford to contract services on the market. An obvious condition is the existence of associations and business membership organizations within the chain in the first place, e.g. producer organizations or inter-trade organizations. Whether or not these associations are able to take over service functions depends on their size, their organizational culture, regulations and legislation regarding associations, the competence and trustworthiness of their management staff. While different types of service will require different preconditions and will imply different costs, several hundred paying members may nevertheless always be necessary to render any kind of service supply by associations economical.

Many cooperatives have been created for the very purpose of serving their members. Either service provision has already been the motive behind creating the association or the demand for services is latent and can be explicitly articulated. Supporting and facilitating the development of a service function for members implies the organizational development of the association to provide services, as well as clarifying financial and staff management issues. This also includes qualification and training of association staff.

This is a key intervention area because the capacity of many associations to actually render services to their members is trailing behind needs. Hence, facilitators need to approach the producer association as a service enterprise whose business has to be developed. This may require investments into the qualification and training of the association staff expected to provide the service. Where required, it may even require assistance in obtaining funds for investments in e.g. machinery and/or infrastructure needed for performing the service (e.g. storage halls, processing machinery, computerization).

Box 0.5: Case – Pro-Planteurs in Cote d’Ivoire and Ghana

Service provision by cocoa cooperatives

The cocoa sector is the most important economic sector in the Ivory Coast, but still poorly developed. Its competitiveness is not sufficient to succeed in international trade.

The program PRO-PLANTEURS explicitly targets co-operatives and farmer organizations as means to upgrade the cocoa value chain. The program provides support in professionalizing 50 cocoa farmer organizations enabling them to provide better services for their members and gain access to markets. There is a explicit focus on the needs of young and female farmers.

The cooperatives receive substantial support to develop service offers for the members. Interventions include building capacity in good management practices and leadership. The support also extends to create a service organization that conducts business effectively adopting transparent administrative and financial procedure.

Source: GIZ Ghana

7.3.3. Subsidized operational services

The distinction between support services and operational services implies that the latter are a private business. Hence, in a value chain approach government administration and development agencies should *not* provide or subsidize any *operational* services. The reason is that cost of operational services is part of the production cost. A viable business model necessarily includes the cost of inputs, maintenance, transport, information and other services. Enterprises have to pay for them with the revenue generated. If governments take over part of the private cost, they risk to

- distort market relations crowding out private service providers and private investment;
- and create a false impression of economic progress that is not based in viable business models (“white elephants”).

However, there may be some exceptions to this rule. They always have to do with a public interest, such as public funding of disease control measures or the provision of market and weather data. Reducing the market rates is a form of income transfer to poor entrepreneurs and helps to overcome the capital constraint when operators move to an improved business model. However, it is necessary that the provision of subsidies is reliable. Short-term subsi-

dies to jump-start business development are justified if the operator can generate the revenue covering the cost of services later, once the new business model is stable.

Box 0.6: Tool – Criteria justifying public subsidies on operational services

Conditions under which public administrations may subsidize operational services

Temporary subsidies for operational services can be useful to...

- support the start-up of small enterprises or the move to new business models;
- realize pilot and demonstration schemes;
- generate a direct social benefit for poor self-employed operators;
- fund people-centered training and advisory services that have the character of support services.

Source: own compilation

The last point in the list above refers to the special case of services that fall somewhere in between the operational and support categories. We come back to them in the next chapter.

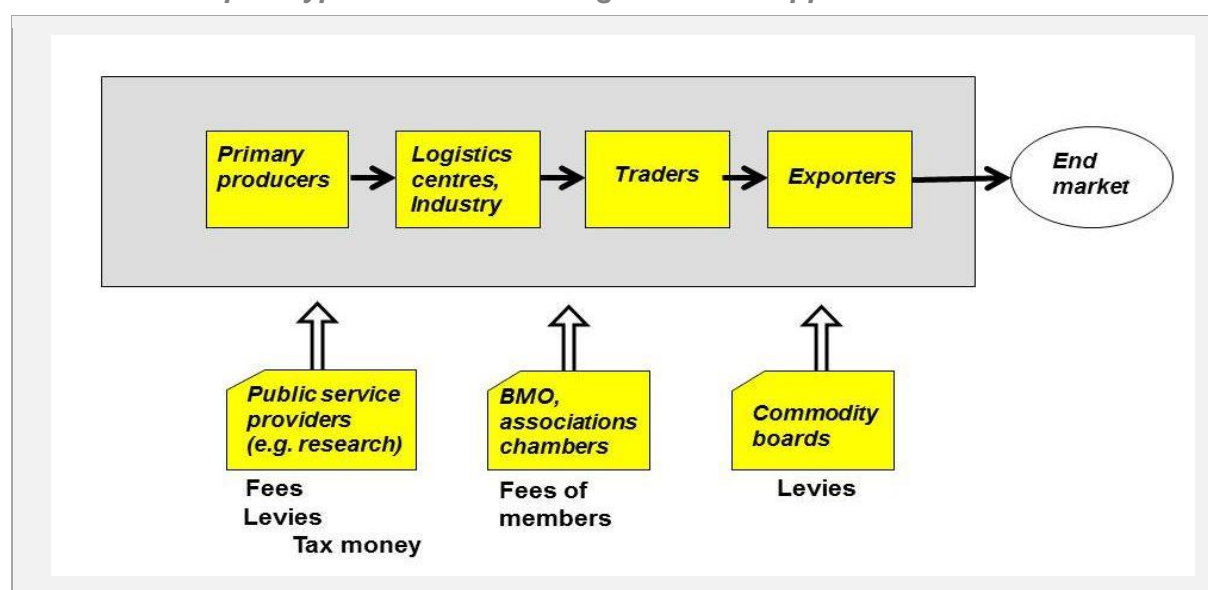
7.4 Solutions for support service provision

Support services are services that are supposed to benefit large groups or even all operators in a given value chain. They serve a collective or public interest. Therefore, the dominant arrangement is the public delivery of support services. Apart from some sector-specific support services funded by private contributions and fees, government agencies and other public organizations are often the only providers of such services.

The solutions to providing public support services have to solve the incentive problem explained in section 7.2.2, above. Value chain development seeks to close the service gap by orienting public service providers to the actual needs of the business community and improving their overall service quality. We look for solutions that change the service system moving away from the traditional arrangement of supply-driven public funding and provision. The question is how the behavior of public support service providers can be directed towards the needs of the value chain and the business community.

The chart in the following box shows the position of support service providers vis-à-vis the community of value chain actors. The classic provider is a public agency such as a research or extension service, traditionally funded by tax money.

Box 0.1: Concept – Types of service arrangement for support services



Source: own concept

There are three principles to achieve change in these support service arrangements:

- Strengthening the effective articulation of demand
- Incentives to increase the demand orientation of public service agencies; and
- Private delivery of support services

The guiding principle is to strengthen the articulation of demand, which refers to the connection between service clients, the Ministry or governing body commission the service and the service agency.

This can be achieved by mobilizing funds from the clients and third parties to pay for the support services giving enterprises a say in the allocation and utilization of funds. Redirecting

the financial flows provides a performance incentive to the service providers and enhances their overall capacity.

The third element is transferring the provision of support services from public service organizations to others (private enterprises, associations, NGOs) who provide services on behalf of government or international donors. Privatizing service supply has the advantage that public organizations contract the support services, which allows a closer supervision and control.

Independent of the financial incentives, service agencies still have to have the capacity to comply and actually deliver the right services. Capacity building of service providers therefore is an indispensable element.

7.4.1. Effective articulation of demand

A service gap in the support service system can have different reasons. One is the fact, that the operators do not consume support services individually but as a group. If there are no cooperatives and business associations or where they are not strong enough, it is difficult to detect, formulate and express the collective need for support. Even where industry associations exist, political influence may prevent certain groups of operators from articulating their demand.

The main way to organize effective demand for support services certainly is to strengthen private business associations who precisely have the task to voice common interests. However, developing industry cooperation takes time, so that we also need other mechanisms by which value chain operators can express their collective needs vis-à-vis the service agencies. One option is to include representatives of farmers and microenterprises in the boards of public service agencies. Another is to create local platforms and roundtables. All cooperation mechanisms within the value chain are useful¹¹⁵.

Another principle is to give service clients a role in the preparation and delivery of support services. Examples include education and training curricula for extension staff in which trainees spend part of the training time in companies or on farms¹¹⁶. Agricultural research gets more oriented towards needs, if it uses on-farm research methods and invites farmers to participate in trials.

Governments tend to direct public resources to gain political influence in particular groups of operators and areas. Value chain development can build on the political nature of support services to strengthen the needs orientation of public agencies. Wherever local leaders pursue a political agenda, there is space for advocating the interest of local enterprises. The point is to clarify these interests systematically highlighting their significance for development. This is an opportunity-driven approach. Public decision-makers get a chance to align public support with realistic ideas on economic development and are less likely to waste the funds for interventions that are not sustainable.

Action to articulate service demand:

Enterprises have to understand in which way they are benefitting from the support services. As the joint upgrading vision and strategy evolves, the opportunities for collective action in the value chain increase. Facilitators can help to formulate common needs for support and the self-organisation of operators. Mandated members of the business community may join

¹¹⁵ See chapter 7.3, above, and the considerations on cooperation and steering in module 4

¹¹⁶ Compare with the 'dual system' of vocational training in Germany

boards of service agencies to decide on topics and evaluate results. Their lobbying power can also be used to raise additional funds.

7.4.2. Demand-driven public support services

Many support services provide genuine common goods which are relevant for society at large, such as product safety testing and the supervision of environmental hazards. These core services should stay in the domain of government. Other services, such as technology development and export promotion are of public as well as of private interest. Here, private organizations should take over at least part of the financing and delivery.

Government is the major funder as well as provider of important support services for the economy. Public institutes and agencies conduct research, provide education and training, supervise compliance with environmental and social regulations, maintain infrastructure, implement local development activities and inform the public. Government funds these services with tax money and provides them free. Their range of public tasks is broad. Public funding and public provision will remain to be the most important modality of support service provision, especially wherever economic structure is weak.

The problem is that governments of poor countries often do not have the financial basis nor the capacity to cover the many tasks allocated to them. This is not just a question of the size of public budgets. Public services also suffer from the late allocation of funds, insufficient equipment, cumbersome bureaucracy and a lack of control.

The objective of a functioning public service is the wise use of the limited funds available. The most important point is to make public services respond to the needs and the demand of their clientele. This is the subject of the following considerations. The other point, quality and efficiency of service delivery, applies to every kind of service provider, public and private alike. We cover it at the end of this section.

The principle for enhancing the demand orientation of public service agencies is to create financial incentives rewarding the quality of service delivery. This can be achieved through fees, by the use of voucher systems and through competitions.

Fees and co-funding for public support services

Instead of providing free services, public agencies can charge a small fee depending on the purchasing capacity of the clients. Mobilizing funds from clients and from third parties not only provides financial means, but also gives the service clients a say in the allocation and utilization of the funds. At least, clients get the chance to send a signal to public providers whether they appreciate the service or not.

Options for organizing private contributions include entrance fees at public fairs and meetings, fees for training events and for the use of information sources. Before introducing fees for service, we have to look at the economic status of the service clients. The question is how many operators are benefitting and whether they are able to cover some part of the service cost. Contributions have to be affordable. The funding mechanism can be designed accordingly. However, under conditions of poverty and weak markets...

Indirect financing through vouchers

Another way to effectively distribute public funds for private service provision is through a voucher system. In this system, clients (e.g. farmers) are given subsidized vouchers with

which they can access private services (e.g. advisory services. In this way, a certain degree of competition is created

Box 0.2: Case: The voucher system for agricultural extension

Voucher system

To be complemented

Source:

Competitive funds

Another option is to tender services. Instead of funding service providers directly, the money is made available via a competitive fund. Different private as well as public agencies can apply for the funds by presenting a concept and financial offer for delivering the required service during a certain period. A good example is competitive research funds in which a Ministry of Agriculture organizes a competition among researchers, including private ones¹¹⁷. The idea is to attract alternative service providers and create a performance incentive. Of course, competitive funding makes little sense in completely undeveloped service markets.

7.4.3. Private delivery of support services

Support services of private business associations

In advanced and well-organized value chains, business associations take over public support service functions. Value chain development should facilitate the move away from the traditional arrangement of public funding and provision of support services. A promising solution to support service provision is to mobilize the existing private institutions. In fact, enterprises create industry associations for the very purpose of serving the business community¹¹⁸. Privately funded technology and training institutes have the most direct relation to the needs and demands of the member businesses. This helps to overcome the incentive problem.

The funding of business associations derives from export levies, contributions of members, own funds generated by business associations and the compulsory membership contributions to chambers.

Box 0.3: Case: Mobilizing private funds for public service provision

To be complemented

Source:

Mixed funding and outsourcing arrangements

Private business associations can often count on public funding to perform their functions. The idea is to transfer the provision of support services from public organizations to private associations who provide services on behalf of government and international donors. Privat-

¹¹⁷ **Competitive agricultural research funds**

¹¹⁸ See the treatment of industry-wide cooperation in module 6, chapter 6.4.

izing service supply has the advantage that support services are publicly contracted and can be closely supervised.

There are different forms of funding and outsourcing arrangements. In many cases, outsourcing of public services implies some form of co-funding. The mix of public and private elements depends on the type of support service, the possibilities of raising additional funds and the existence of alternative providers. Mixed funding and outsourcing of public services are aspects of public sector reform policies and as such part of economic development policy.

Improved service quality and capacity

Whichever is the arrangement to secure the availability of support services, the service provider needs to have the requisite capacity to deliver good quality at reasonable cost.

An important first step is a political decision on the core functions of government. Public sector reform is the most appropriate context to determine which services that government should and actually can perform. Improving public management needs the participation of business organizations advocating the importance of and need for public support services. In our case, (re)definition of core function refers to the provision of support services for the private business community and the development of value chains. This includes steps to prioritize the service functions and to secure sufficient budget allocations. Public sector reform also is an opportunity to change the legal status of a public agency giving it the possibility to raise and administer external funds.

The next point is the capacity of a public or private service organization to provide the expected service in sufficient quality and at reasonable cost. These are some criteria to assess the performance of a service organization¹¹⁹:

- *Client orientation*: This is probably the most important criterion as the quality of a service is a matter of attitude. Service providers who are devoted to their clients can compensate many deficiencies of the organization; generally, service providers have to understand the position of clients in the value chain.
- *Staff skills and know-how*: The human resource capacity has a quantitative side, simply the number of staff directly active in service provision, and a qualitative side – the technical knowledge, communication skills, and skills of working with people;
- *Range of services provided*: A broad range of service products offers choice to clients and also has advantages for the economics of the service agency. The agency has to adjust the portfolio of services as economic development proceeds;
- *Service efficiency and cost*: Strict cost control is a key concern. Clients in a weak economy can only make an appreciable contribution if the expenditure per client stays within reasonable limits.
- *Financial resources*: This is the size of the budget per year, its stability and evolution;
- *Technical capacity*: This refers to equipment, mobility and ICT competence;
- *Linkages and partnerships*: The quality of services depends to large extent on the networking of a service provider in the scientific business communities;
- *Leadership and management*: This criterion covers the organizational setup, the delivery processes and the quality of managers.

These criteria apply to all types of support service organizations, private associations as well as government agencies.

¹¹⁹ The points are partially derived from the survey of agricultural extension organizations by B. Swanson and R. Rajalahti, 2010 – a sourcebook of tools to assess the performance of extension systems

Value chain development clearly has a role in building the service capacity of the service organizations concerned. In principle, capacity building can refer to all points mentioned above. Development projects can upgrade the capacity and quality of support services by:

- Facilitating the transfer of know-how and technology
- Providing staff training (both long-term and on-the-job training);
- Twinning the agency with similar institutes from other countries;
- Supporting networking;
- Financing specialized equipment, e.g. of public laboratories.

Capacity building entails a mix of interventions; it should not be limited to training alone.

Box 0.4: Case – Strengthening public support service agencies

Approaches to support the performance of research and extension institutions

To be complemented

Source:

7.4.4. Support services by development agencies

The activities of development projects are support services as well and external facilitators are service providers by their very nature. However, they are only available for the duration of a project. The service is temporary and therefore does not constitute an institutional solution for public service provision.

Nevertheless, external support services often are the only way forward in a poverty context. The absence of government and the underdeveloped private service markets often lead to an extended service vacuum. There are simply not enough offers around to support chain development. At the same time, external facilitators, internationally funded development programs in particular, are under pressure to show impact within a limited period. Value chain programs thus have to take over public tasks that they would leave to government otherwise. Here, it is important to distinguish between temporary interventions on the one hand — and the operational and support services required permanently for the regular functioning of the value chain on the other. If agencies that are external to the value chain the latter, this will affect economic and institutional sustainability.

If development agencies substitute service functions in the value chain they can get in conflict with the definition of roles in economic development discussed earlier¹²⁰. The critical risk is obvious and well known to every development practitioner: Development agencies substituting the genuine functions of enterprises, business associations or government generate a pseudo solution that is not economically and institutionally viable. What's more, spending money to substitute the role of the truly competent actors is inefficient, because it takes resources away from the real task of external facilitation.

It is not always clear how best to differentiate between temporary and permanent support services. To clarify the point, external facilitators should make the criteria transparent with which they justify the provision of own services to value chain actors.

¹²⁰ See ValueLinks module 4, chapter 4.2

To be acceptable, external support services have to fulfill one or several of the following criteria. They should

- be designed as temporary facilitation (such as confidence building via round table meetings);
- have the characteristics of a public investment into economic development in order to jump-start value chain upgrading, e.g. technology development, export intelligence and promotion, or assistance in association building;
- be of a pilot nature, e.g. demonstrating new technologies and business models;
- be phased out gradually so that local service providers can take over and continue.

Development support services should benefit all chain operators alike to avoid market distortion. The only exception to this rule is special services for small producers. Benefitting small-holder farmers and micro-enterprises is justified as a public investment into equal opportunities and the pro-poor aspects of economic growth.

The long-term economic development of chains requires that support services are permanently available, but external promotion always has a limited time horizon. This means that external service provision needs a clear exit strategy. Development practitioners have to anticipate the scenario of the situation at the end of external program funding. They should provide any support services in close cooperation with partners. Service provision as such is one thing, the second aspect always is to build the capacity and prepare partners to take over the support service themselves.

It goes without saying that development agencies have to be even more very prudent when it comes to operational services and the delivery of inputs. The criteria set out in the section on public subsidies apply here as well.

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Module 8

Value Chain Finance

Contents

8.1 Introduction: Financing value chain development	137
8.1.1. The financial dimension of value chain development	137
8.1.2. Financing solutions	138
Financial markets and services	138
Value chain finance	138
Process to develop financing solutions	139
8.2 Financing needs and gaps	141
8.2.1. Calculating financing needs and gaps	141
Financing needs derived from business model analysis	141
<i>Long-term investment capital needs</i>	142
<i>Short-term working capital needs</i>	143
<i>Financing needs along the value chain</i>	144
Identifying financing gaps	145
Aggregate financing needs and gaps of the value chain	145
8.2.2. Analysing the constraints in obtaining financing	146
Risk and cost of lending to small farmers and micro-enterprises	146
Weak value chain structure and governance	147
Underdeveloped financial system	147
Lacking knowledge of the value chain at stake	148
8.3 Financing solutions	150
8.3.1. The choice of financing instruments and arrangements	150
Types of financing	150
<i>Lending period</i>	150
<i>Sources of finance</i>	151
<i>Types of collateral</i>	152
Overview of financing solutions	153
8.3.2. Identifying a financing solution	154
Enterprise finance	155
Internal value chain finance	156
External value chain finance	157
8.3.3. Services supporting financing solutions	159
8.3.4. Financing value chain development at the meso level	161
8.4 Risk management	164
8.4.1. Types of risks in value chains	164
8.4.2. Risk management strategies	165
General risk management instruments	165
Financial risk management	166

8.5 Tools to facilitate financing solutions	168
8.5.1. Matching demand and supply of financial services	168
The interface between the value chain and financial institutions	168
Supporting a learning process on business and financial matters	169
8.5.2. Supporting demand: Financial planning of operators	170
Financial literacy of value chain operators	170
Business planning	171
Cash flow from investing and financing	171
Usefulness of a long-term investment – returns	173
Financial ratios	174
Becoming creditworthy – how financial institutions analyze borrowers	175
8.5.3. Supporting supply: Ability of financial institutions to respond	177
Legal preconditions for employing financial instruments	177
Resources	178

Module 8 Value Chain Finance

8.1 Introduction: Financing value chain development

Value chain development aspires to generate sustainable economic growth by upgrading technology and products, and by expanding productive capacity and marketing. Inevitably, this has financial implications. The financial dimension of value chain development has two levels. One is the chain operators who have to make sure that their business models are financially viable. The other is the value chain at large. To reach scale, we have to add up the individual financial needs of the individual enterprises and the investment into chain-wide public infrastructure and services.

8.1.1. The financial dimension of value chain development

Finance plays a key role in value chain development. It is not only a field of upgrading in its own right; the availability of funding also is a precondition for almost any improvement of business models, linkages and services.

Capital needs

The value chain concept describes not only the flow of produce from producers to consumers but also the reverse flow of money from consumers back to producers. All business linkages include financial transactions at the same time. The most important financial parameter of the chain is the total value generated that finances all business activities along the chain. Total value added is an indicator for the capital employed in the chain.

Value chain development implies that the capital expenditure goes up as well. This applies to the circulating capital first. The growth in value added entails a proportional increase in the short-term capital, as producers use more raw material, inputs and labor. Even where technology remains unchanged, operators need additional capital to cover a growing turnover. The second point is the improvement of productivity. Leaving aside the marginal subsistence economy, which only uses manual labor, economic growth is the result of an expanded *physical* production capacity and better technology. Value chain development means investing into better equipment, buildings, tree plantations, irrigation, storage and processing facilities and many more assets. Building the productive infrastructure calls for long-term capital investment.

Although the operators have to invest and mobilize the capital, we can speak of a financing need of the value chain at large. The value chain only moves ahead if the majority of operators in a particular channel adopt and finance an improved business model. Wherever a value chain stage comprises large numbers of small-scale farmers and enterprises, the financing issue is no longer individual.

The challenge

Despite existing growth potential, many small-scale operators have great difficulties to satisfy their capital needs. In many places, commercial banks regard small rural operators as non-bankable and do not give them access to adequate financial services. Either value chain projects find solutions to finance the innovation of small-scale business models or the results remain restricted to prototypes and particular locations.

Fortunately, the business linkages along the value chain hold opportunities. The integration of small operators into a value chain provides the possibility to connect financing solutions to the development of business linkages.

Facilitators of value chain projects do not have to be financial experts or bankers to provide advice on how to resolve financing problems. While facilitators would not get directly involved in financial arrangements, they can clarify financial needs and problems and contribute to enabling enterprises to obtain funding. Facilitators can also pave the way by supporting non-financial value chain solutions that create better conditions for funding and help reduce risk.

8.1.2. Financing solutions

There is no financing without a proven business case. The precondition for resolving the financing question is the existence of a viable business model. Entrepreneurs and analysts first have to get back to module 5 to make sure that the intended business model improvements make financial sense.

Financial markets and services

Wherever enterprises with sufficient collateral can present an interesting business idea, an individual financing solution will not be far. A promising investment opportunity should attract the interest of bankers. If the financial system is well developed, value chain projects do not need to look for specific arrangements. The solution of choice is financial institutions providing short-term credit and long-term loans directly, at least to medium and large enterprises. Many value chain projects focus on technical cooperation and rely on financial service providers to provide the capital.

However, middle-sized enterprises may still have trouble obtaining credit even if their business model is sound. Financial institutions often only see the high risk and cost, and presumably low return of potential customers. To make sure that private lending solutions actually work, public projects can facilitate the relation between borrowers and lenders. Bankers need to understand the value chain, its economics and potential before they go ahead. This is where the value chain approach can be useful. With better knowledge of the value chain strategy financial institutions have stronger incentives to grant loans, both in their own commercial interest and in the public interest.

Value chain finance

In many cases, presenting a viable business model to financial institutions is not sufficient. The operators of greatest interest in sustainable value chain development have the most serious problems getting their business ideas funded. Micro-entrepreneurs, smallholder farmers, start-ups led by women, rural groups, and any self-employed businesspeople all have difficulties mobilizing funds, even if their business plans are green and innovative.

Financing solutions for these enterprises cannot simply rely on the attractiveness of an individual business model. They have to include additional means to manage the risks. The idea of value chain finance is to embed financial services into the established business linkages between small operators and their upstream and downstream partners, connecting the product flow in the value chain with the flow of funds between the chain links¹²¹. Input suppliers,

¹²¹ Miller and Jones, 2010, p.2

output marketing firms or processors thus assume a role in the financing arrangement¹²². One option is that the business partners of small enterprises make the funds available themselves. This would be a value chain internal financing arrangement. Alternatively, they perform mediation and supervisory functions enabling external financial institutions to participate. Both possibilities of connecting commercial and financial transactions help to control the risk of lending to small and medium enterprises. “Value chain finance resorts to other forms of collateral. It partially replaces traditional hard collateral with the soft collateral that is inherent in the business case”¹²³. Value chain finance is not only relevant for small enterprises, it serves the interest of any operator seeking to enhance its competitiveness.

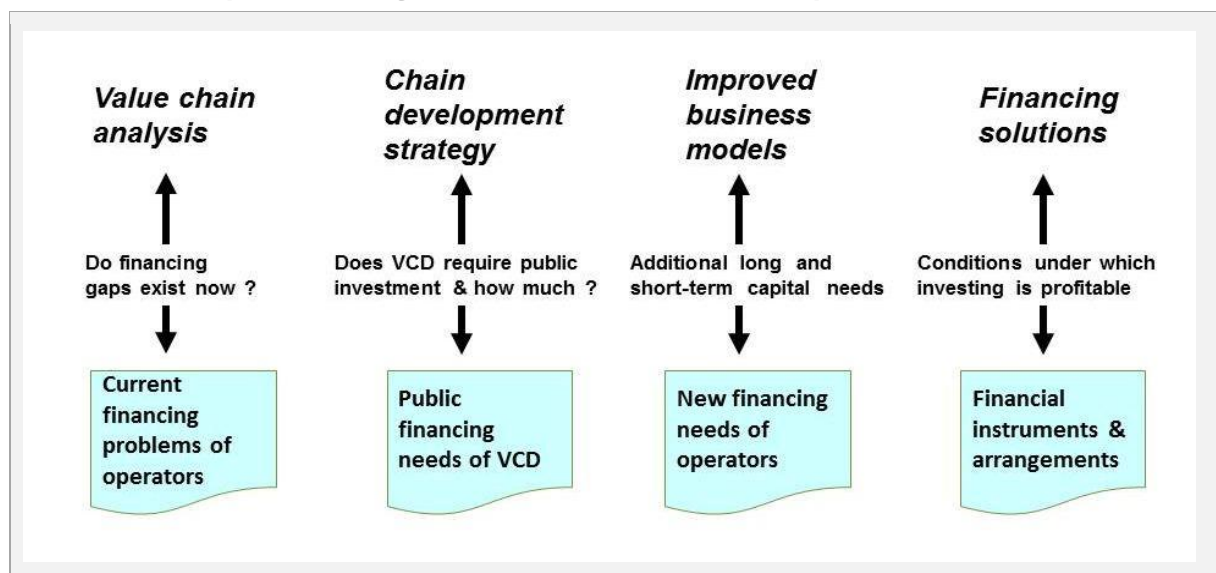
Process to develop financing solutions

Financing is an essential element of any value chain strategy. The search for financing solutions always starts at the level of the chain operators and their business models. Value chain projects have to deal with the question how to finance the business model solutions identified earlier. In this sense, this module continues Module 5 on business model improvement.

Financial systems and enterprise financing is a universe of its own. ValueLinks can only cover the connections between the value chain concept and the world of finance. Therefore, we place particular emphasis on ‘value chain finance’ as such advocating solutions based on commercial transactions and the flow of produce. Such financing solutions are embedded in the value chain and therefore necessarily chain specific. Clearly, this is only one answer to the financing problem. Others refer to the financial system at large, such as the development of financial markets in general or the support to savings and loan cooperatives.

Box 0.1 presents the main issues in the wider context of chain development, starting from the initial chain analysis. Obviously, the different questions are connected.

Box 0.1: Concept: Financing issues in value chain development



Source: own concept

¹²² Acharya, 2006, p.16

¹²³ KIT and IIRR, 2010, p.230

In the following, we cover financial services only to the extent that they contribute to implementing the chain strategy. The procedure of developing finance solutions has three steps

- analyzing the financing needs arising from business model improvement and the needs for collective investment
- choosing financial instruments and arrangements to solve the financing needs, and
- enhancing the mutual understanding of financial institutions and small entrepreneurs

Determining financing needs and gaps

The first step addressing financing issues is to complement the value chain analysis by estimating the aggregate financial needs of the value chain. A financing gap exists wherever enterprises cannot cover the financing needs adequately and have to get by with internal resources, often to the detriment of other cash needs within the enterprise and household. Financing gaps prevent long-term investment, optimal allocation of resources and hamper the flow of goods and services. The identification of gaps defines possible intervention areas of value chain projects. It is important for value chain actors and financial institutions to understand the problems behind the shortage of liquidity and the lack of access to credit. These issues have to do with risk, lack of information, transaction cost and scale of business, and with financial literacy and trust.

Financial instruments and arrangements

Chain development supports financial instruments and arrangements to mobilize the volume of funds needed for upgrading, and it seeks solutions to respond to the typical financing problems of small-scale enterprises and farmers. Here, the first task is to identify potential sources of funding, whether internally within the value chain or externally in the financial system. Second, analysts review the range of available financing instruments assessing their aptitude for the business models in question. The result of this exercise is the identification of financial instruments with which to mend the financing gap. In most cases, different funding sources and instruments will have to be coordinated in a comprehensive financing arrangement including financial instruments as well as non-financial services.

Facilitating financing solutions

Putting any financing solution into practice presupposes that enterprises are able to analyze their financing needs and formulate their credit proposals towards financial institutions effectively. This is the task of the enterprises, not of external facilitators. Based on the financial analysis of their business model, enterprises have to be able to calculate their investment needs, prepare financial plans and propose them to financial institutions professionally.

However, projects can assist with supporting financial literacy and provide orientation on how to identify and describe potential sources and financial instruments. As in the case of business linkage solutions, public value chain projects should promote the mutual understanding between operators and financial institutions, providing financial institutions with the necessary information on one side and supporting the financial literacy of enterprises on the other.

External development agencies can also play the role of a broker. This includes matchmaking. However, they have to refrain from getting directly involved in the financing arrangements and should not provide financial or finance-related business services themselves.

8.2 Financing needs and gaps

Before engaging in any financial solution, analysts first have to understand the financial needs and constraints of the operators that take part in value chain development. The first task is to assess the financing needs related to the business models at stake, for investment as well as working capital.

The financing needs do not necessarily constitute a problem for value chain development. Operators who can finance their business via the services of a functioning financial market do not need to look for specific solutions. They can rely on market offers. The situation is different where operators cannot satisfy the needs and encounter a financing *gap*. We can distinguish two financial situations that call for action. Specific financing solutions are required if

- upgrading requires additional investment that has to be financed and no sources of finance may be immediately available; and
- the financing of business operations is already insufficient in the present state of the value chain, especially if it lacks liquidity, current financing mechanisms are costly and at least *some* operators do not have sufficient access to financial services.

The situations are interlinked. If the current financial situation already poses problems for small-scale enterprises, the financing of upgrading will probably suffer from the same underlying problems. Operators require adequate financial instruments and arrangements, whether they fund current operations or any new business activities.

The financing gaps of individual operators translate into a financing problem of the value chain at large if the problem hits many enterprises in a particular category of operators. If many farmers or micro-enterprises don't have sufficient access to funding, the constraint becomes a general problem of the value chain. To determine the significance of the problem we have to aggregate the individual funding needs and gaps.

The question is what the chain-wide reasons for the financing constraints are, so that the search for solutions can respond adequately. Analyzing the financing gaps at the level of the value chain also creates transparency of the financial implications of upgrading.

8.2.1. Calculating financing needs and gaps

Financing needs derived from business model analysis

The additional financing needs become obvious once the value chain strategy has been translated into improved business models. Other upgrading solutions have financial implications as well. In generic terms, there are two kinds of financing needs:

- (additional) short-term *working* capital for the business cycle to finance the growth in output value; and
- (additional) long-term *investment* capital to maintain or expand production capacity and innovate products.

These categories apply to *all* types of operators and business models along the value chain.

The financing needs are qualified as 'additional' if they result from the business model improvements. The table in Box 0.1 classifies the financing needs further according to whether

they refer to existing business models or to new business model solutions intended to contribute to the chain development strategy. The upper row shows the additional financing needs that arise with value chain development as soon as operators invest to improve their business models.

The lower row includes the unsatisfied financing needs of enterprises under the current conditions of the value chain. The lower right box is of particular importance. An enterprise that does not have sufficient money to run the business at full capacity is not able to put its business model into practice and makes less profit than it could. This is also true for smallholder farmers who do not own fixed assets. A lack in short-term capital prevents them from using the inputs with which they could intensify their current farming system.

Box 0.1: Concept – Types of financing needs

	Long-term capital	Short-term capital
New, improved business model solution	Investment into fixed assets to expand production capacity or innovate products (equipment, buildings, investment for product development and branding)	Working capital to finance additional and/or higher-value inputs, additional labor and services, and the value of stored materials and products
Existing business model	No additional need for existing assets (sunk cost) but need to make long-term savings to finance replacement	Working capital to finance inputs, labor and services; There is a financial need wherever the working capital is insufficient to run the business at full capacity

Source: own concept

Long-term investment capital needs

The investment capital needs depend on the intended innovation of business models. To calculate the investment capital needs it is necessary to get back to the business model analysis. Investment calculation is part of the description of the business model(s) constituting the core of a chain upgrading strategy – expanding production, improving product quality or enhancing productivity. The business model canvas defines the size, technology and capacity of a business operation and thus the necessary investment into additional fixed assets. The financial analysis contributes the numbers¹²⁴.

To calculate the long-term financing needs, we add up the values of the additional fixed assets required to realize the business model.

¹²⁴ See module 5

Short-term working capital needs

Any growth in production and trade entails a proportional increase in the expenditures for the purchase of raw material and inputs and for the laborers making and selling the products. The need for more working capital arises as sales and the corresponding expenditures go up. Calculating the working capital needs is more complicated than determining the long-term investment capital because it depends on several variables.

To estimate the short-term working capital need, analysts have to analyze the cash flow of the enterprise. Generally, the working capital grows with the scale of operations. The cash need goes up with

- the unit cost of production, the share of storage losses
- the length of the operating cycle, that is the production period from purchasing inputs to sale of the harvest, or from acquiring raw materials to finally selling the product¹²⁵
- the average inventory of raw material and intermediary products
- the volume of sales credit to buyers

In the cash flow analysis, we can differentiate these factors further and introduce the time dimension to show how working capital fluctuates during the year. What counts here, is the average working capital that an enterprise needs to continue operations. A conventional method to estimate the working capital is the 'operating cycle method'¹²⁶. The following box presents a simplified calculation procedure to demonstrate the principle. The idea is to measure how much capital is tied up during the production process, the storage time and the time between the sale and actual reception of payment from buyers.

Box 0.2: Tool – Calculating working capital needs

Working capital need

- The complete operating cycle includes the number of days of production, ('work in progress time'), the number of days the product is stored and the period during which the producer waits for payment (credit period in days)
- Production cost includes the material, energy and labor cost, as well as the minimum permanent stock of raw material and inputs
- Storage cost refers to losses

Working capital =

(Production cost /day + storage cost /day) * total operating cycle in days

Production cost /day = *Number of units* * (production cost / unit) / production cycle in days

Storage cost /day = *Number of units* * (storage cost / unit) / storage period in days

Source: own concept based on internet sources¹²⁷

¹²⁵ In trade enterprises, it includes the time elapsing between buying and selling.

¹²⁶ <https://efinancemanagement.com/working-capital-financing/working-capital-estimation-operating-cycle-method>

¹²⁷ See the weblinks at the end of this module

Farmers can base the calculation on hectares instead of units of final product. Farms have to repeat the calculation for each crop and add the numbers up.

A shortcut to estimating working capital requirements is to calculate a percentage of the total value created or the total cost incurred. Typical working capital ratios in agricultural production are around 60-80% of the incremental expenditure. Typically, the ratio is higher in downstream chain stages closer to terminal markets.

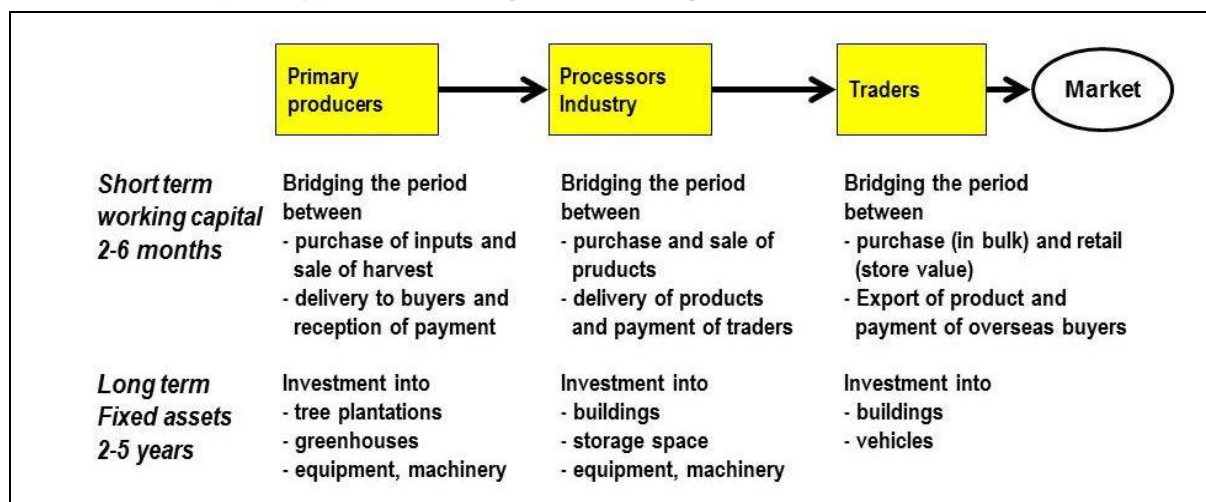
Obviously, the length of the operating cycle depends on the type of enterprise and the technology. A small capacity that processes low numbers of units and a short operating cycle require less working capital than otherwise. Enterprises can and should manage the amount of working capital. The short-term financial needs go down with greater efficiency, e.g. shortening the operating cycle and reducing production cost and/or losses. However, the business model imposes a minimum level of working capital below which the enterprises become less profitable.

Poor farm households often experience cash constraints before the next harvest. Their short-term financial needs include basic consumption requirements in addition to the working capital to run their agriculture businesses. Rising cash crop production may in fact increase the short-term financial needs of the household disproportionately if the farm withdraws land and labor resources from subsistence production.

Financing needs along the value chain

Box 0.3 summarizes the typical financing needs identified in development practice – organized by the stages of the value chain. The examples pertain to markets and value chains of natural resource based products.

Box 0.3: Concept – Typical financing needs along the value chain



Source: own design

Obviously, the financing needs differ between the stages and types of operators in the value chain. In general, financing needs are higher in the downstream part of the chain as the value of the products increases. An exact calculation of the financing needs along the chain is only possible based on a cash flow analysis for each business model.

Identifying financing gaps

A financing gap exists wherever enterprises cannot cover the current and/or intended future financing needs of the business model by owner's equity, trade credit from input suppliers and buyers in the value chain, or by credit from financial institutions. The typical financing gaps are missing credit for long-term investment and a general shortage of liquidity in enterprises.

The enterprises that are most likely to experience financing gaps are the small, poor and newly established enterprises. In agricultural value chains, upstream farmers experience financing gaps more often than downstream traders, processors and warehouse companies. Large numbers of small farms and micro-enterprises are forced to rely on self-financing exclusively. They often use internal resources exclusively – their own equity combined with savings and loans from family and friends to finance all of their operations. The low capital endowment prevents poor operators from actually realizing their business model.

Short-term financing bottlenecks become visible in the low productivity and profitability of an enterprise. One thing is a lower usage of inputs than necessary, low volumes and quality problems of products. Enterprises that are short of working capital revert to lower-yielding activities; farmers limit their production to simple, low quality crops. Another indicator of lacking working capital is farmers selling their crops immediately after harvest albeit at low prices. The only way out are informal lenders who may still provide credit but at a very high cost. The use of inefficient, high-cost and risky financial arrangements, especially loans from informal moneylenders, clearly indicates a financing gap. The exact size of the short-term financing gaps is difficult to calculate. One possibility is to determine the optimal amount of inputs in a farm model, or the value of raw materials and labor in processing enterprises operating at full capacity. The financing gap appears when we compare the figures with the real numbers of similar enterprises.

A gap in long-term financing simply shows in enterprises that fail to invest into a promising business model and fall behind in technical innovation. If we can prove that the proposed improvement of the business model works out financially, the only reason for not investing is a financing gap.

Aggregate financing needs and gaps of the value chain

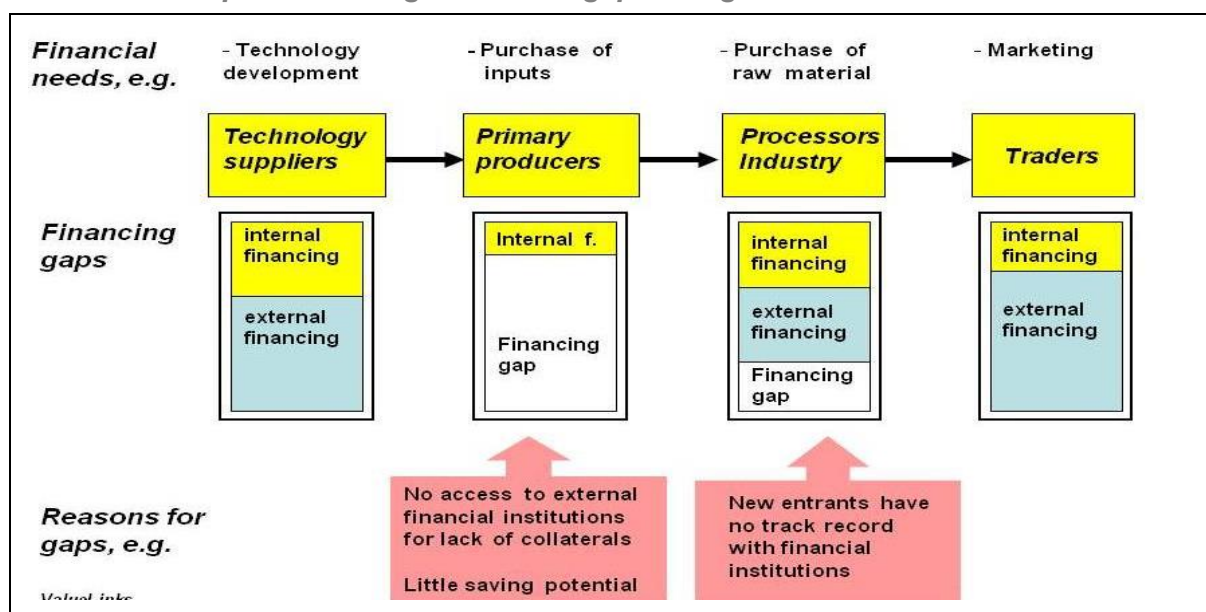
So far, the analysis of financing needs and gaps referred to individual enterprises and their business models. Next, we return to the value chain. We can infer the *aggregate* financing needs of the entire value chain by multiplying the financing needs derived business models with the number of operators sharing the same model.

Again, two situations exist. One is the investment into an innovative business model. The aggregate capital need corresponds to the value of investment goods and the incremental working capital calculated in the analysis of the business models. The aggregate figure for the value chain depends on the number of times the business model is put into practice.

The second financial situation refers to the gaps in working capital of the *present* business models. This is more complicated because it is a figure that has to be derived from observation. Aggregation is only possible to the extent that the financial analysis of typical enterprises delivers the data.

It is important to note that the financing needs of different operators are interrelated along the chain: As the market value/turnover of final products rises, the value of intermediate products goes up as well. The upgrading strategy implies parallel investments into fixed assets at several stages of the chain, e.g. in primary production as well as in processing investment.

Box 0.4: Concept – Financing needs and gaps along the value chain



Source: own design

Box 0.4 above shows the relationship between financing needs and gaps and some examples of the reasons for the financing gaps.

8.2.2. Analysing the constraints in obtaining financing

The review of financial constraints is the final step before we can turn to the design of financing solutions for value chain development. The issue is to analyze the problems behind the lack of investment and liquidity. Analysts should focus on those enterprises where internal and/or external finance is in shortest supply.

Different markets and value chains imply typical funding constraints. They are related to the market conditions, the degree of chain integration and the size of operators. In the following, we discuss the most prominent reasons for the existence of financing gaps.

Risk and cost of lending to small farmers and micro-enterprises

Financial institutions are reluctant to finance small-scale value chain operators because they do not consider them creditworthy. The lack of financial services for small-scale operators has to do with (real and perceived) high financing cost and risks. The following points can be used as a checklist of constraints:

- Transaction costs are high due to the small scale of operations and small credit amounts.
- Agricultural Value Chains are risky due to production risks such as adverse weather events / pests/ diseases, as well as the systemic nature thereof. Smallholder farmers cannot pay off at regular intervals mirroring their own lack of regular earnings.

- Financial institutions normally require farmers and micro-enterprises to provide physical securities (especially land), which they cannot provide if they don't have a strong title to the land they farm.
- Enforcing legal claims and the political risks of dealing with small-scale operators are high.
- Poor producers entail a performance risk – the potential failure of enterprises to implement the business model and generate predicted cash flows.
- Small informal enterprises often do not have credit histories, do not have bank accounts and do not use formal procedures of contracting and money transfer (such as invoices, purchase orders); financial illiteracy is a related problem.
- Financial offers normally do not cover consumption needs during the investment phase and generally smallholders may see borrowing as a risk to their livelihoods.
- Informal moneylenders compete with the formal system as informal, kinship-based lenders are better informed and more likely to extend credit to local borrowers in more timely, convenient and flexible manners but at a higher cost.
- Potential small-scale borrowers may be cultural averse to debt.

An unequal distribution of assets along the value chain may perpetuate itself: Poor operators lacking access to formal finance pay high interest rates to moneylenders, or do not get access altogether. Consequently, they cannot consolidate their business and remain unattractive for financial institutions. Micro-enterprises and smallholder farms are the operators with the most significant and persistent financing gaps.

Weak value chain structure and governance

Apart from the issues related to scale, a value chain may also be characterized by its fragmentation, poor logistics and infrastructure as well as low degree of trust and integration. Typical constraints within value chains to check for are:

- Weak organization of business linkages and subsequent high contract risk along the value chain
- Fragmentation of operations, lack of business leadership and governance
- Demand / market risk of final products
- disruptions if the enterprise does not have enough cash to pay for material or labor.

Underdeveloped financial system

Although there are specialized rural and agricultural banks, funding agriculture-based value chains remains particularly problematic. Banks shy away from loans to rural enterprises and often have few branch offices in rural areas because:

- The inherent risk profile (i.e. inability for banks to mitigate many of the business and exogenous environmental risks) of agricultural production is high, especially under adverse rural conditions (weather and crop failure risk, post-harvest loss due to spoilage and deficient infrastructure).
- Agricultural markets often suffer from price volatility and high price risk.
- Apart from the real risks, there is also a high perceived default risk as rural and agricultural credit has a bad reputation due to past experience with low payback rates.
- There is also a (perceived) risk of political interference restricting foreclosing on defaulting farmers' lands and politicians telling farmers not to repay their loans for populist purposes.

Lacking knowledge of the value chain at stake

A general difficulty in financing value chain development is that not many financial institutions engage in sector-specific lending. Most ignore the systemic nature of value chain transactions and the relation to financial problems. Therefore, they do not see the profit potential of financial services to the value chain.

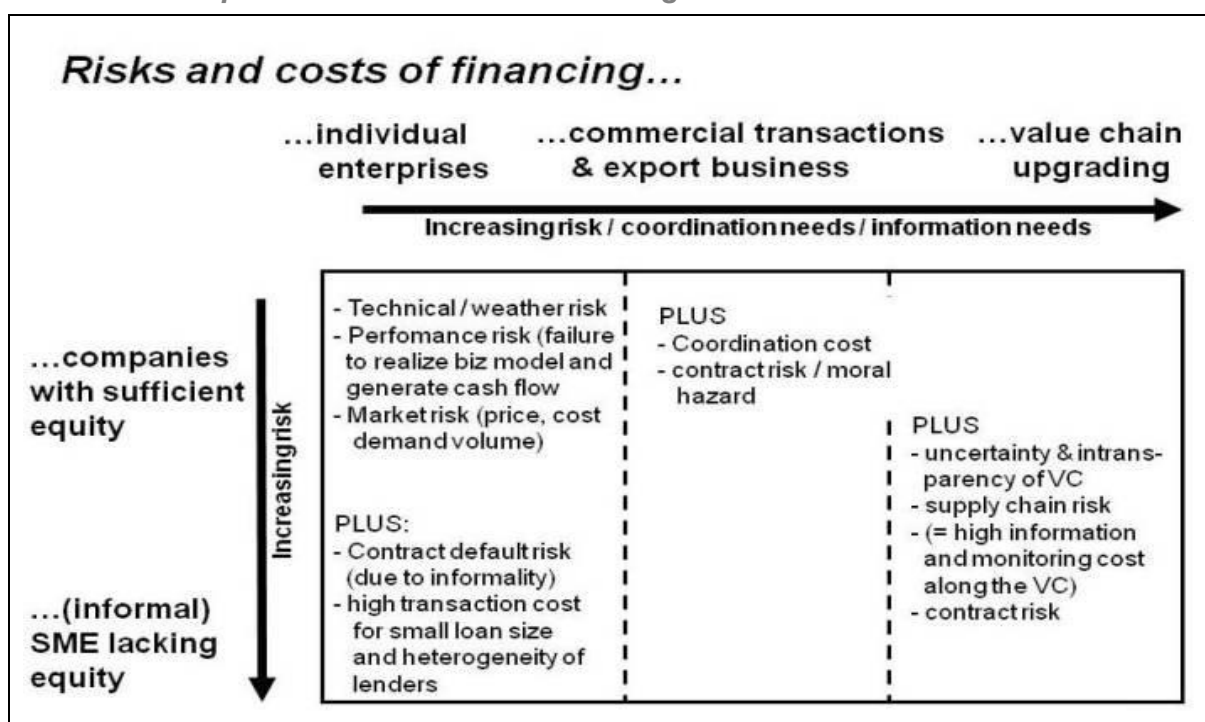
The reluctance partly is a result of the constraints mentioned earlier, but it also has to do with the financial institutions themselves. Value chain analysts should look for the following constraints:

- Financial institutions' knowledge and information on the sector economics and the markets relevant for the value chains at stake;
- Experience of financial institutions with instruments of value chain finance;
- Offer of sector-specific financial products and financing instruments;
- Size of rural branch networks;

Financing risks and costs differ between different chain stages and different types of operators. Box 0.5 presents an overview of typical risks and costs of financing in value chains.

The constraints are particularly severe for small-scale enterprises and in value chains that are of great importance to the poor. In informal, traditional crop and livestock-based chains, the risk and cost of lending to smallholders and micro-enterprises combine with a generally weak and fragmented value chain structure.

Box 0.5: Concept – Risks and costs of financing the value chain



Source: own compilation

The high risks and costs can effectively prevent the emergence of a market for financial products serving small farms and informal enterprises. Given the difficult conditions, financial institutions often do not make an effort in understanding a “difficult” value chain, let alone

develop financial products for enterprises operating in them. Banks will always have options that are more attractive to them and therefore no incentive to invest in value chains affected by the problems mentioned, even if the business is fundamentally profitable. This phenomenon is known as “credit rationing”.

On the other side, the absence of accessible financing offers hampers the development of an effective demand for commercial financial products. Even new business opportunities and business models that are of interest to small enterprises do not necessarily translate into a felt need and active demand for financial products.

The challenge of value chain development is to work around this problem. Identifying business development possibilities and quantifying financial needs is a first step to developing adequate financial products and solutions.

The insights have to be taken up by individual enterprises that need to analyze their own financial situation and develop realistic financing plans and find a missing that suits the needs.

8.3 Financing solutions

All solutions for value chain development have a financial side. Finding solutions to close the financing gaps is a key task in value chain development.

In principle, banks and other financial institutions offer standard products responding to the typical financing needs of enterprises. To the extent that conditions permit, commercial products are the solution of choice. However, many small-scale operators don't have access to them. In many cases, the constraints discussed above prevent the use of bank loans.

The search for financing solutions has to take off from a much wider range of instruments and arrangements. The value chain approach makes it possible to seek arrangements that integrate business model, linkage and financing solutions. Value chain finance not only covers the financing problem as such but also addresses the related constraints at the same time. The reference to the value chain also helps to see the connections between financing needs at different points in the value chain. Solving the financing problems of one group of operators may not be sufficient. If there are no solutions to close the corresponding financing gaps of business partners upstream and downstream, the bottleneck remains.

The present chapter first goes through the range of available financing instruments and arrangements. The second step is to design a solution selecting possible instruments from the list of options. Sections 8.4.3 and 8.4.4 expand the perspective to the financial system and public funding of value chain development at large.

8.3.1. The choice of financing instruments and arrangements

There are three main criteria to classify the instruments for financing enterprises in a value chain. The first is the lending period corresponding to the capital needs of enterprises. Second are the sources of finance within and outside the value chain. These are closely related to types of collateral used to secure the credit.

Types of financing

Lending period

Financing instruments differ substantially depending on the duration of the lending period. The lending period corresponds to the lifespan of the assets to finance. Conventionally, we distinguish

- Short-term working capital loans to finance inputs into the operating cycle, repayable within less than 12 months,
- Medium-term loans ranging between 1 and 5 years, for productive equipment
- Long-term investment loans beyond 5 years for durable investment goods such large-scale industrial installations, buildings and land improvements.

There is no consensus on the exact dividing line between the *medium term* and the *long term*. In the following, we will take both categories together. Short-term lending serves the working capital needs, medium to long-term lending covers the investment into fixed assets. This is in accordance with the assessment of financial needs in chapter 8.2.

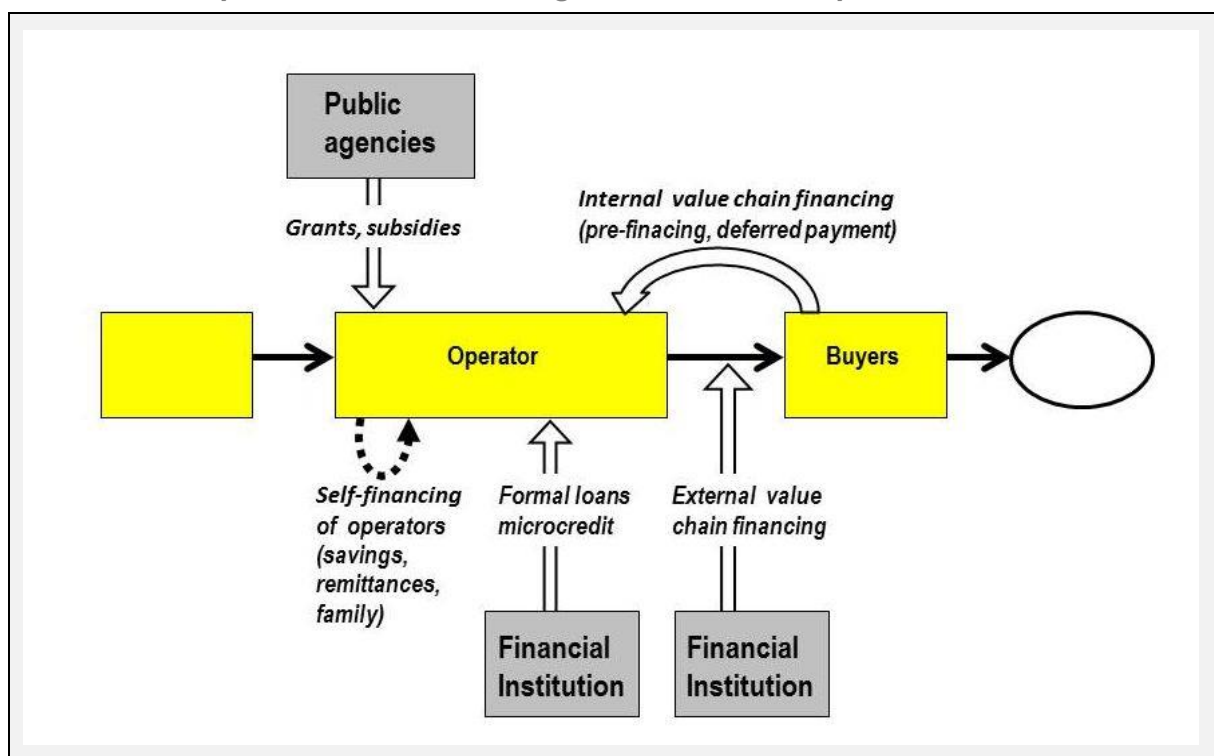
Sources of finance

We can classify the sources of financing as follows¹²⁸:

- *Self-financing of the enterprise:*
This includes savings, retained earnings, informal loans from family and friends and remittances of family members.
- *Standard enterprise financing products:*
These are loans from any formal financial institution – banks, microfinance institutions, cooperative banks or leasing companies providing individual lending.
- *Financing from business partners in the value chain (VC internal):*
Here, the enterprise receives financing from business partners in the value chain (suppliers and/or buyers), most of the time embedded in commercial transactions.
- *Financing from financial institutions via business partners (VC external):*
Formal financial institutions provide credit based on the commercial contracts between enterprises within the value chain, organized as a triangle between the financial institutions, a big company and its smaller suppliers.

Only the third and fourth categories classify as *value chain finance*, because they are directly related to existing business linkages. Box 8.3.1 visualizes the different sources of funding in relation to the value chain.

Box 0.1: Concept – Sources of financing for a value chain operator



Source: own design

The position of the arrows indicating financing flows is not haphazard: Smallholders and micro enterprises often rely on self-financing because of the constraints discussed earlier. New entrant enterprises also tend to revert to self-financing until they can show several years

¹²⁸ Meyer, 2007, p.5

of successful operation. Self-financing thus is the starting point. The chart indicates it with a dotted line as it does not imply interaction with other enterprises.

As enterprises and farmers engage in stable business relations, they get access to financing from business partners. The hollow type of arrow indicates a service relationship¹²⁹. The suppliers or buyers of the operator effectively become lenders in cash or kind when they use the business contract to pre-finance the need of the smaller partner. These “lenders are primarily motivated by a product market objective, such as selling their inputs or ensuring a supply of commodities for their trading and processing activities... they offer credit to their clients as a means to achieve that goal”¹³⁰.

Next, enterprises get access to external financing sources via the financial intermediation of their partners in the value chain. External value chain finance again builds on the business linkages in the value chain. Financial institutions external to the chain become sources of funding to the extent that they accept the business linkages and/or the flow of produce as collateral.

The source of finance that has the most demanding requirements is standard commercial financing products. Formal financial institutions provide loans to enterprises against physical securities, based on a loan contract. This source does not include the business partners of the enterprise but often benefits from information on the value chain as well.

For the sake of completeness, the chart also includes grants and subsidies from public agencies that can also be an important source of funding.

Types of collateral

The third criterion to classify financing instruments is the kind of securities required. Financial institutions require securities or collateral, conventionally defined as any assets securing a credit in case the borrower fails to pay back. In case of default, the bank takes ownership of the enterprise assets pledged and sells them for cash. Different assets are acceptable depending on the lending period. A credit normally has to be fully secured (collateral worth 100 percent or more of the loan amount), but may also be partially secured (with less than 100 percent). Commercial contracts in the value chain also qualify as collateral, especially accounts receivable. The pledging of assets as collateral is the main mechanism to manage credit risk. Its absence is a critical constraint.

We distinguish physical and financial securities (“hard collateral”) from securities based on personal and social relations (“soft collateral”). Where hard collateral is in short supply, it can be replaced by soft collateral, at least partially. The linkage of an enterprise to value chain partners is particularly relevant. The long-term business relationships of enterprises within a value chain provide security to lenders and “offer proven risk reduction strategies: market risks are reduced through sales contracts; production risks through technical assistance; management risks through producer group formation; moral risks through regular information and communication; and repayment risks through a claim on the product”¹³¹. Hence, the position of an enterprise in the value chain is an important source of securities. Linking fi-

¹²⁹ Compare to the list of mapping symbols in the first volume, box 2.2.4.

¹³⁰ Meyer, 2007, p.6

¹³¹ KIT and IIRR, 2010, p.230

financing to the value chain opens the space for the financial inclusion of small value chain operators.

Soft collateral also is the basis for microfinance institutions and for saving and loan cooperatives. Here, financing is based on personal relations and active membership in groups. Trusting social relationships often are the only assets of poor people who would remain “unbankable” otherwise.

The following Box 0.2 presents different types of collateral based on physical and financial assets, on contracts and on personal relationships. The list presents important categories making no claim on completeness.

Box 0.2: Concept – Hard and soft collateral

Hard collateral includes pledge/mortgage/security agreements over an individual enterprise's assets. The physical assets include:

- Land and buildings (title documents)
- Equipment and machinery
- Inventories
- Other documents evidencing ownership of assets
- Warehouse receipts (for physical product stored)

Financial assets are

- Accounts receivable
- Invoices
- Shares in companies

Soft collateral does not give financial institutions recourse to an enterprise's assets. However, some financial institutions accept soft collateral to substitute for hard collateral, at least partially. One form of soft collateral is contracts held by enterprises:

- Purchase and sale contracts
- Production contracts, such as for contract farming

Securities based on social relationships include

- Membership in producer groups / production or marketing cooperatives
- Membership in savings and loan cooperatives
- Third-party personal and/or enterprise guarantees

Source: own compilation

The many possibilities of securitization explain the great variety of financial instruments. They are a main criterion for distinguishing different types of financing instruments.

Overview of financing solutions

The table in Box 0.3 uses the criteria presented above to show a portfolio of financing instruments, organized according to sources of finance, the borrowing period and the types of securities used. The table includes major categories of conventional financial instruments.

Unfortunately, the terminology is not uniform: The same instrument has different names in different countries. There are many variants depending on economic sectors and even indi-

vidual banks. Lists of financial instruments and products can be found in the literature and in the offers of financial institutions. An example is the Standard bank in South Africa¹³².

Box 0.3: Tool – Overview of financing instruments

Lending Period	Enterprise Finance	Value Chain Finance	
	Lending products	Internal VC Finance	External VC Finance
Short-Term (up to 12 months)	based on hard collateral: Working capital loans Revolving credit lines based on soft collateral: Short-term lending by Microfinance institutions Savings and loan co-operatives	based on contracts: Trade credit Supplier credit and buyer credit in the form of pre-finance in kind and/or cash interlinked with commercial trade or production contracts	based on hard collateral: Trade finance Accounts receivable finance, Warehouse receipt finance, Factoring, export financing with letter of credit based on contracts: Short-term loans based on supplier/buyer contracts
Medium to Long-Term: (1 to 5 years and beyond)	based on hard collateral: Leases Bank loans, term loans based on soft collateral: Long-term lending by Microfinance institutions Savings and loan co-operatives	Based on ownership: Equity investment into partner enterprises	based on hard collateral and contracts: Triangular term loans based on supplier/buyer contracts, third-party guarantees, and long-term association support

Source: based on Coon et al., 2010; KIT and IIRR, 2010; Meyer, 2007; USAID, 2008.

Which of the financial instruments may become part of a solution depends on a on the nature of constraints, the preconditions for using the instruments and on the legal conditions. These factors that are treated in the following.

8.3.2. Identifying a financing solution

Before choosing and recommending any financing solution, it is necessary to understand the conditions under which operators can utilize a particular financial instrument. The requirements vary considerably. Commercial companies are free to choose a financing instrument, while micro-enterprises without sufficient hard collateral and weak market integration only have few options. Enterprises and facilitators need to assess the choices realistically.

The following tables provide guidance on which financial instruments may be applicable depending on the conditions of the borrower and on the development of economic framework conditions. The stages of economic development run from “beginning” characterized by in-

¹³² [Standard Bank South Africa](#)

formal, unrecorded transactions, unclear property rights and a weak financial sector to “intermediate” on to the “advanced” stage with fully established financial and legal infrastructure.

Enterprise finance

Products of financial institutions for individual borrowers provide the most conventional financing solutions. The range of products is broad.

Box 0.4 shows instruments to finance enterprises individually, organized by lending period and the conditions attached. At the top of both lists are financing products that based on soft collateral. Microfinance loans and (micro) build on social organization and social pressure to provide repayment security. Microfinance institutions lend to enterprises integrated in joint-liability groups. SACCO

Box 0.4: Tool – Standard financing instruments

Financial Instruments	Preconditions for usage	Development Stage
Short-Term Enterprise Finance		
Cooperative loans	•	
Microfinance Loans	<ul style="list-style-type: none"> • Small amounts of financing • Meant for microenterprises exclusively • Other individuals or micro-enterprises at local level willing to offer joint guarantees 	Beginning Stage
Banks: Working Capital Loans / Revolving credit lines	<ul style="list-style-type: none"> • Borrower is a formal enterprise conducting financial accounting • Company has sufficient assets • Track record of business operations 	Advanced Stage
Medium to Long-Term Enterprise Finance		
	•	
Leases	<ul style="list-style-type: none"> • Availability of the appropriate equipment • Repossession is legally possible and services available • Leasing law established 	Intermediate to advanced Stage
Banks Term Loans	<ul style="list-style-type: none"> • Formal enterprises with sound business plans and sufficient equity • Physical collateral • Fully established financial and legal infrastructure 	Intermediate to advanced Stage

Source: own compilation

leasing solutions where the financial institution actually owns the asset leased and can repossess it in case of default.

available to formal companies with enough fixed assets to serve as collateral and a track record of successful business operations. Given the high risk and increased cost of lending to small-scale farmers and producers, financial institutions normally cannot provide stand-alone enterprise finance to micro-enterprises.

Long-term investment definitely requires external sources of finance and financial instruments. Financial institutions would simply not accept the risks and costs involved. Therefore, it is less accessible to individual small-scale enterprises.

Internal value chain finance

Wherever operators cannot present documents on their business models and transactions, external financing becomes difficult; and value chain internal solutions are left as the only option. The funds have to be generated within the value chain itself with no external financial institution participating. Financing embedded in commercial contracts is restricted to one-to-one relationships between commercial companies buying produce from small-scale enterprises or selling inputs to them. These contracts can be formulated flexibly to include trade credit which can respond to most of the risks and costs related to scale, informality and even performance of the small enterprises. For example, input suppliers can sell physical input supplies to growers on credit terms so that they can book sales while pre-financing growers.

Box 0.5: Tool – Internal value chain finance instruments

Financial Instruments	Preconditions for Usage	Development Stage
Short-Term Internal value chain finance		
Trade Credit – Suppliers Credit	<ul style="list-style-type: none">• Lending companies have access to finance themselves• Competitive supplier market• Contract law established	Beginning to Intermediate Stage
Trade Credit – Buyers Credit		Beginning to Intermediate Stage
Long-Term Internal value chain finance		
Selling stock to buyer companies (equity finance)	<ul style="list-style-type: none">• Only applicable where buyers face constraints in securing supplies• Selling enterprises willing to dilute ownership positions	Advanced Stage

Source: own compilation

As opposed to banks, chain operators are closer to the market so that they can assess and control risks much better than financial institutions. However, internal VC finance is mostly restricted to the short term. Even then, it may not be available to micro-enterprises and smallholders if the business relation is unstable and lenders do not trust their chain partners.

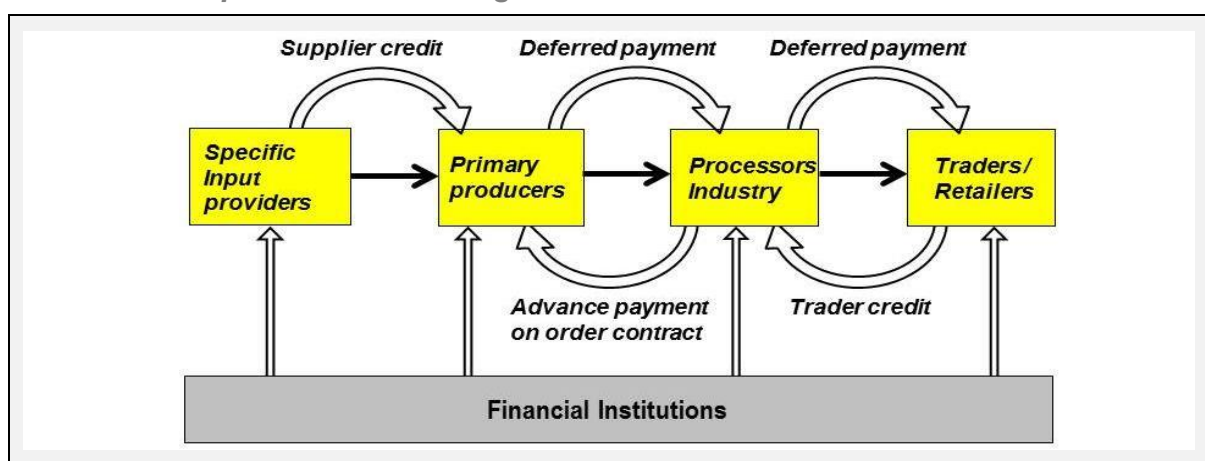
As upgrading requires long-term as well as short-term capital and financing for various types of enterprises along the chain, financing solutions will always include a combination of different financing instruments. In a well-developed financial system, the coordination is achieved via the market mechanism, which ideally should offer every bank client an appropriate financial product. However, in most cases, the financial markets will not deliver, and an active coordination of instruments across the value chain becomes necessary. Inclusive financing solutions have to seek the coordination and packaging of finance with other services¹³³.

¹³³ See section 8.3.3 on respective financing arrangements”

External value chain finance

The second type of value chain finance includes loans that build on the business transactions in the value chain as security. It is a triangular arrangement. This set of instruments is accessible to small enterprises as contracts partially replace fixed assets as collateral. The following chart shows the principle.

Box 0.6: Concept – External / triangular value chain finance



Source: own design

There are many instruments using the principle for short-term financing solutions. Generally, any one of the financial instruments in Box 0.6 is viable if the borrower has an ownership document of his product at the point in time (i.e. a title such as an invoice, warehouse receipt, etc.). Documentary evidence accompanying the product flow such as purchase agreements and bills of lading also are soft collaterals, which provide the foundation for trade finance instruments. If the document proves ownership and the laws allow financial institutions to use it as collateral, external financial instruments are a conventional solution for the short-term needs.

Box 0.7: Tool – Short-term external value chain finance instruments

Financial Instruments	Preconditions for Usage	Development Stage
Short-Term External VC Finance		
Accounts Receivable Finance	<ul style="list-style-type: none"> • Good relationship lender-borrower • Borrower uses transparent accounting system, formal documentation • Secured transaction law established 	Advanced Stage
Trade Finance: Factoring	<ul style="list-style-type: none"> • Formal documentation of transactions • Asset sales and factoring laws established 	Advanced Stage
Trade Finance: Export Financing / Bill of Lading Finance	<ul style="list-style-type: none"> • Export products only • Export facilities established • Formal documentation • Financial institutions have correspondent banking credit lines established 	Advanced Stage

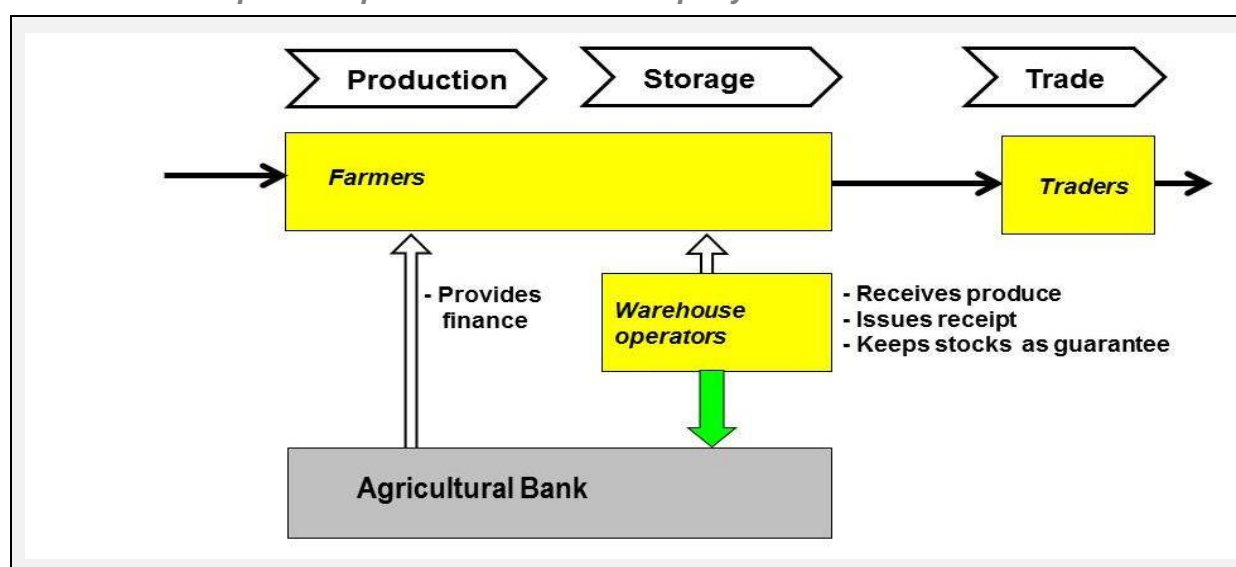
Financial Instruments	• Preconditions for Usage	Development Stage
Warehouse Receipt Finance	<ul style="list-style-type: none"> • Warehousing services exist • Products with longer storage life • Secured transaction law established 	Intermediate Stage
Triangular financing	<ul style="list-style-type: none"> • Incentive for chain integration • Strong downstream lead firms with good established credit ratings • Buying companies in need of external credit to prefinance suppliers • Guarantee laws established 	Intermediate Stage

Source: own compilation

Nevertheless, external finance institutions may still serve informal small enterprises if they partner up with a formal buying company with strong interests in the business. The basis for financing is the business linkage between the small suppliers seeking credit and the much larger and creditworthy buyer. Financing instruments can build on the information generated by the sales and purchase contracts which (partially) replace hard collateral. The solution is a “triangular” arrangement in which formal companies (buyers or processors) get directly engaged helping their suppliers obtain credit from external financial institutions. The buyers partake in the financial arrangement through the provision of guarantees, keeping of accounts and organizing the repayment of the loan principal and interest. The lending to the weak partner is based on a combination of collateral created from the product flow with the reputation of the lead firm. From the perspective of financial institutions, this triangular financial arrangement responds to many lending risks of micro-enterprises. However, trade finance instruments presuppose a formalized commercial relationship between the business partners. Factoring or export financing do not respond to the constraints of informal and very small enterprises and farmers who are not acquainted with the formal documentation.

A particular financing triangle is warehouse receipt finance, a short-term financing arrangement in agriculture. The chart in the following box presents the setup of the system.

Box 0.8: Concept – Setup of a warehouse receipt system



Source: own design

Warehouse receipt systems include three parties – the farmers who need short-term financing to buy inputs for the next season before they receive money for the harvest of the current season.

Triangular arrangements are also possible in long-term funding, although they are much less frequent. Long-term loans in a tripartite arrangement are used to finance investment projects that involve an agribusiness firm and its suppliers linked by a long-term contract. Often, public refinancing is required to make that possible.

As a matter of course, such arrangements do not work under conditions of weak value chain structure and poor governance. The contract risk implicit with unorganized producers and unreliable market links and the high transaction cost of fragmented chains rule out the use of triangular arrangements.

Any triangular financing arrangements have their limits where there are no lead firms, important buyers or input companies or where the characteristics of the end product do not require the integration of business processes. In some value chains, small-scale producers simply have little to offer for commercial ventures. Another point is the regulatory framework: Many financial instruments can only be used if the business contracts are formalized and there is legal security¹³⁴.

8.3.3. Services supporting financing solutions

The preceding section shows that most financing instruments depend on conditions that limit their use for informal and small-scale enterprises. This is also true for financing instruments explicitly referring to the value chain as a source of security. Merely choosing one of the financial instruments from the list may not be sufficient to provide a solution to the constraints of small-scale operators.

To address the problem of financial exclusion, development projects contribute to improving the conditions for applying the financing instruments listed above so as to pave the way for private financing products at a later stage. This means addressing the financing problem through additional financial as well as non-financial services and by strengthening the development of the value chain performance at large. The issue is to move beyond the choice of individual credit instruments to more complex *financing arrangements*. In such arrangements, the financial solution becomes embedded in a whole set of accompanying services of private companies, NGOs and/or public agencies provide additional security to lenders. Financing micro operators in a weak commercial setting has to use a mix of different financial instruments, securities and accompanying services.

Still in the realm of financial services, the most important additional service to include in a financial arrangement is insurance, such as crop insurance, price insurance (i.e. futures or options on commodities) or index-based weather insurance. For agricultural and rural-based value chains, insurance products mitigate many risks that small farmers and producers face and financial institutions are not willing to assume¹³⁵.

The other accompanying services are non-financial and cover the whole range of support services. Many support services are of direct relevance to financing as they contribute to

¹³⁴ See the last section in chapter 8.5

¹³⁵ See chapter 8.4 on risk management

mitigating risks and reducing transaction costs of financial institutions. Important services include

- *Information services*, especially those based on information and communication technology (ICT): The supply of market information (e.g. via SMS) reduces market risks. A mobile phone based support to the logistics of collecting products from producers generates information about small-scale suppliers and enhances overall transparency. The same is true for chain studies in general.
- *Support to contracting and inclusive business models*: Developing models of inclusive business contracts between larger companies and small suppliers and assisting the business relation enables the use of internal and external financing instruments to be interlinked with the contract. The business model as such is a source of information for credit applications.
- *Organizing cooperative ventures and associations*: Wherever the vertical business links to buyers provide an incentive for cooperation across suppliers, the cooperative venture provides the basis for generating joint liability securities. If a group of small producers holds a sales contract, they can move on to formalize their legal status to obtain a group credit. Cooperatives can also play a role as financial intermediaries and take over part of the transaction cost.
- *Capacity development for informal businesses and smallholders*: Chain development often implies training and advisory services for firms and individual entrepreneurs. To the extent that such services enhance financial literacy, help the elaboration of business plans and the use of easily accessible financial products such as mobile banking, insurance or savings groups, the performance risk is being reduced.
- *Direct risk management*: This includes activities making production and marketing processes safer, such as services improving storage and transport logistics, security of water and energy supplies, or preventive veterinary care. All contribute directly to reducing chain risk.
- *Technical assistance services*: Managing technology properly helps to comply with business plans and reduces performance risk.
- *Mobile Banking*: A number of cellular service providers are providing mobile banking services; this innovative tool can further mitigate certain transaction risks. Since there is no hard cash involved, loss of money from burglary or personal expenditure is minimized, leading to a smooth transaction within the value chain. Transfer times are also minimized and some banks already recognize mobile receipts as collaterals.

These services have a direct influence on transaction cost and reduce the risks of lending to the weak partners in the chain. They may be preparatory, conceived to create the conditions for using standard financing instruments subsequently. But for the purpose of actually generating financial solutions for underserved operators, it is better to integrate non-financial and financial services from the start of a chain development project.

There are no standard models of such arrangements. Every solution will be different and include a specific set of measures directed to the respective constraints of the subsector in question. Mixed financing arrangements are as varied as the chain development strategies. If there is one way of distinguishing types of arrangements, it refers to financial institution taking the lead in orchestrating the combination of services:

One option is a commercial financial institution. The most prominent example is BASIX, an investment and consulting company in India that combines financial inclusion and livelihood

promotion services related to particular subsectors¹³⁶. The commercial Rabobank offers structured finance solutions that include partnerships with non-financial service providers.

The combination of financial and non-financial support services is also frequent in micro-finance, e.g. BRAC in Bangladesh or the K-Rep Group in Kenya, of which a honey project is presented in detail by KIT and IIRR (2010, p.147). Another example is DECSI (the Debit Credit and Savings Institution) in Ethiopia which offers information, technical and networking services along with financial services to agricultural producers. However, the packages of microfinance institutions are more limited because they focus on microenterprises exclusively and normally do not address financial needs in the value chain beyond their clientele.

It is a tricky strategic question whether development agencies should provide some of the non-financial services themselves rather than merely facilitate their supply. An initial support with information and know-how, and a temporary support to the self-organization of producers can still be considered as facilitation. However, chain development projects should not cross the limit of becoming part and parcel of a financing arrangement, so that it cannot go on without continued public support and guarantees. Any quick fixes to the financing constraints do not actually lead the way out of the financing problem but tend to perpetuate it.

On the other hand, government has the interest and obligation to finance public goods. Hence, there is room for private-public co-investment into value chain development. The public funding should be singled out as a separate task. It is of great importance to understand the country's legal structure to determine which security arrangements are permitted, such as pledges or mortgages¹³⁷.

8.3.4. Financing value chain development at the meso level

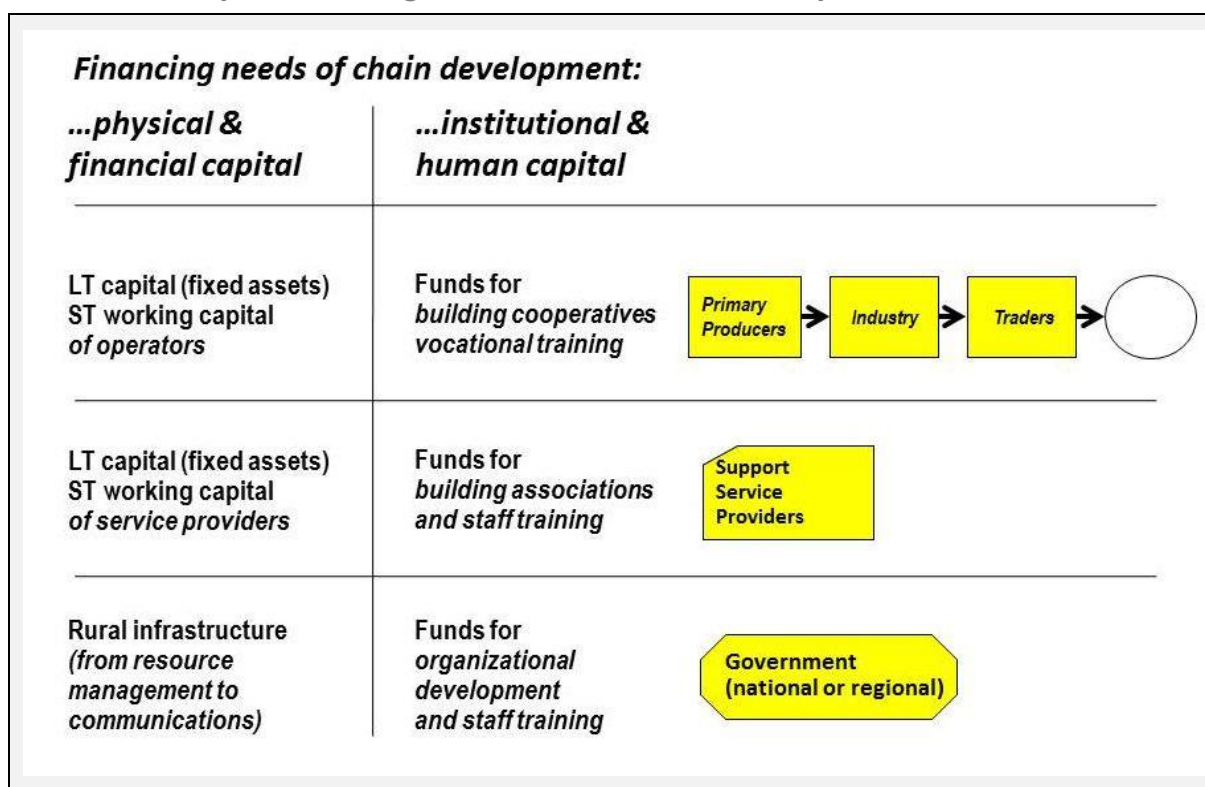
Value chain development not only requires financing private capital, but also the funding of public goods relevant for the value chain. Long-term finance is needed for physical public goods, especially infrastructure, such as roads or public market facilities and, possibly, land improvement for agriculture. Similarly, long-term investment may be required to build the public service capacity – research facilities and quality infrastructure (especially laboratories).

On top of the long-term investment, the actual delivery of public support services requires annual, short-term financing, e.g. for public R&D projects, information services or vocational training. Public funding is also required for the facilitation and support services provided by development projects. The non-financial support services have a public good character to the extent that they enhance overall competitiveness of the chain and especially if they help opening the door to private financial institutions.

¹³⁶ [BASIX](#)

¹³⁷ See section 8.5.4

Box 0.9: Concept – Financing needs of value chain development



Source: own design

In principle, both long-term and short-term public goods are funded through public budget allocations and/or foreign aid, either as grants or as *long-term concessional loans* (i.e. at very low interest rates with long grace periods). The important point is that the funding of public goods is in line with the objectives of private financing for value chain upgrading.

Another dimension of public value chain finance is the *refinancing of private investment*. It qualifies as public finance to the extent that Government makes resources available compensating part of the risk and cost of using the financing instruments and arrangements discussed in sections 8.3.2 and 8.3.3, above. There are different ways of channeling public funds to operators. Two instruments stand out:

- (Competitive) loan funds for investments of hitherto underserved operators. An example is the “Outgrower and Value Chain Fund” (OVCF) placed by the development bank KfW in Ghana: The OVCF provides medium to long term loans for small farmers engaging in a commercial business model (outgrower scheme) “based on defined contractual relations between the outgrowers, a Technical Operator, i.e. processor or trader etc and a Financial Operator, i.e. a participating bank, which provides access to services, inputs and funding” (KfW and Government of Ghana, 2010).
- *Enterprise finance guarantee schemes* are another instrument, in which Governments provide commercial banks with a guarantee for a substantial part of a loan which the bank makes available to a defined group of small enterprises. The criteria for eligibility may specify types and sizes of enterprises, economic subsectors, business models and the types of loans. It can thus be targeted to specific value chains.

Giving money to people who do not actively ask for it raises default risk, and should be avoided at all cost. Financial solutions should be demand driven.

Wherever the solution is subsidized temporarily, the exit conditions have to be spelled out clearly.

8.4 Risk management

The management of risks is an essential element in any financing arrangement. Financing solutions have to be accompanied by the use of risk management instruments.

8.4.1. Types of risks in value chains

Risks and uncertainty are inherent in agriculture and commodity value chains. Thus, effective risk management within agricultural value chains is a key factor to ensure sustainable agricultural production.

A typical agricultural value chain encompasses a broad range of actors from input suppliers and farmers over processors up to logistic companies. Linkages between the different actors of the value chain exist in the form of physical, financial and information flows. The overall objective of the value chain is to “provide the right product, in right amounts, to the right place, at the right time, at competitive costs and to earn money” while doing so.

Due to the diverse array of actors and linkages between them, a wide variety of risks can be encountered along the value chain (see Box 0.1).

Box 0.1: Concept – Typical risks along agricultural value chains

<i>Weather-related risks</i>	Periodic deficit and or excess rainfall or temperature, hail, storms
<i>Natural disasters (including extreme weather events)</i>	Major floods and droughts, hurricanes, cyclones, typhoons, earthquakes and volcanic activity
<i>Biological and environmental risks</i>	Crop and livestock pests and diseases, food contamination
<i>Market-related risks</i>	Changes in supply/demand that impact domestic / international prices of inputs and/or outputs, changes in market demands for quantity and quality, changes in food safety requirements
<i>Logistical and infrastructural risks</i>	Changes in transport, communication, energy costs, degraded and or undependable transport, or infrastructure, labor disputes
<i>Management and operational risks</i>	Poor management decisions in asset allocation and livelihood/enterprise selection or input use, poor quality control, forecast and planning errors, breakdown of farm equipment, use of outdated seeds
<i>Public policy and institutional risks</i>	Changing or uncertain monetary, fiscal, tax, financial policies, changing or uncertain regulatory, legal policies, trade and market policies, land policies. Governance related uncertainty, weak institutional capacity
<i>Political risks</i>	Security-related risks and uncertainty with domestic or external politico-social instability, interruption of trade

Source: own compilation

While these are typical risks experienced in agricultural value chains, they vary strongly between one value chain and another. For one they vary in severity and probability of occur-

rence. Depending on the following factors, certain risks are more probable and/or severe in one value chain than another:

- Commodity characteristics (e.g. perishability)
- Production characteristics (e.g. level of technology involved)
- Geography (e.g. regions prone to extreme weather events)
- Political boundaries (e.g. operations restricted by regulations)
- Transaction points (the more transaction points the more risk exposure)
- Infrastructure (e.g. conditions of transport, energy, communication)

Furthermore the nature of risks varies as some are idiosyncratic, only affecting one actor of the value chain, and others are systemic, reaching across several actors of the value chain.

8.4.2. Risk management strategies

A primary step to successful risk management lies in the actors' awareness of the different risks along the entire value chain. Having identified and acknowledged the different risks, a second step lies in establishing risk management strategies.

Risk management strategies can be implemented either ex-ante or ex-post. Ex-ante instruments are used to react before the event occurs — such as crop diversification to minimize the vulnerability to weather risks. Conversely, ex-post instruments are used to react once the adverse event has already occurred – for example the sale of assets to smoothen consumption.

There are three main strategies – risk reduction, risk mitigation and risk coping. While risk reduction has the goal to reduce the probability of an “unwanted” event to occur, risk mitigation strategies try to minimize the impact of a potential “unwanted” event and coping strategies pursue the goal of reducing the impact once the “unwanted” event has occurred. Whenever possible, ex-ante risk reduction strategies should be implemented.

Depending on the value chain, such strategies can either be implemented on the enterprise level (e.g. farmer management practices), at an interface with other value chain participants (e.g. contractual arrangements), on a meso-level (e.g. farmer cooperatives) or on a macro-level (e.g. banks, insurance companies).

General risk management instruments

Actors of the value chain have a broad range of instruments to deal with individual risks. They can be categorized in the following groups:

- *Technology development and adoption* (R&D, postharvest technology, software development, IT, education programs)
- *Enterprise management practices* (e.g. farm diversification, certification, Just-in-time management, inventory control, food safety practices, logistics planning, early warning systems)
- *Financial instruments* (e.g. credit, insurance, warehouse financing)
- *Investment in infrastructure* (e.g. transport / communication, energy, informatics and knowledge transfer, storage and handling, processing facilities, weather stations)
- *Policy and public programs* (regulatory measures, agricultural policies, property rights, labor laws, disaster management, safety nets)
- *Private collective action* (action by cooperatives, industry associations)

How these instruments can be implemented in an integrated risk management strategy for an agricultural value can be found in Box 0.2 (below).

While a combination of the different instruments shall be necessary for successful risk management, a focus will be put on financial instruments within the following section.

Box 0.2: Case – Example of an integrated risk management strategy

	Input Supplier	Production	Processor	Logistics
	Investment in infrastructure – transport and communication to ensure the provision of new improved seeds	Financial Instruments – contract financing to secure off-taker and price	Enterprise management – adoption and promotion of best practices for food safety	Policy and public programs – trade policies protecting local production
Type of Strategy	Ex-ante / Risk reduction	Ex-ante / Risk reduction	Ex-ante / Risk Reduction	Ex-ante / Risk mitigation
Level of implementation	Either enterprise level or macro level	Interface with value chain participants	Enterprise level or meso-level	Macro level

Source: own compilation

Financial risk management

Financial instruments allow an implementation of risks management strategies against natural disasters, market related risks and operational risks. Box 0.3 gives an overview of the most prominent financial instruments.

Box 0.3: Concept – Overview of financial instruments

Natural Disasters	<ul style="list-style-type: none"> Disaster insurance (CAT Bonds, Loss and Damage instruments)
Market related risks	<ul style="list-style-type: none"> Price index insurance Area index insurance Warehouse receipt
Operational risks	<ul style="list-style-type: none"> Guarantee banking, focused on SMEs in value chains can ease the process of acquiring mainstream credit Contract farming hedges price risks Traditional insurances (e.g. hail) Savings and credit Micro-insurance for life and endowment to focus on the risks of the producer

Source: own compilation

As shown by the Box above, varied financial instruments are available for effective risk management of agricultural value chains. However, their potential strongly depends on aspects such as availability (especially in rural areas), access (for all participants of the value chain), affordability, financial literacy (participants need to understand the instruments) as well as reliance (are instruments available and do they work on a long-term perspective).

Concluding, risk management in agricultural value chains is a critical task, which depends on a conclusive risk assessment along the value chain as well as the development of an integrated risk management strategy incorporating all actors¹³⁸.

¹³⁸ Jaffee et al., 2010

8.5 Tools to facilitate financing solutions

In many value chains, and especially in the rural economy, value chain development is faced with a severe financing gap. Even if there is a potential for economic growth, financial markets often fail to provide the financial services needed. To solve the financing problems it is not enough to advocate certain instruments and arrangements. The problems are rooted more deeply in a structural problem of economic and financial systems.

Financial market failure is a systemic problem that has two sides. On the demand side of finance, many smallholder farmers and microenterprises have neither the scale and resources, nor the knowledge to qualify for commercial financing products. Without clear and viable business plans there is no foundation for a financing solution.

On the supply side, financial institutions have no incentive to serve ill-prepared clients. They consider the potential market of poor clients as too risky and culturally too distant. Banks do not care to understand a developing rural economy. Therefore, they are unable to offer the appropriate financial services. To a lesser degree, this is also true for microfinance institutions, which also depend on informed and dynamic clients.

The demand and supply side problems reinforce each other. Value chain actors can only expect to resolve the financing problem if they tackle it from both sides. Building a trustful relationship is a long-term evolutionary process.

8.5.1. Matching demand and supply of financial services

The ultimate objective of sustainable economic development is that small enterprises actually become bankable and can refinance themselves in the financial market. To introduce financial solutions, development programs have to support the links between the value chain and the financial system addressing both the demand and the supply side of finance.

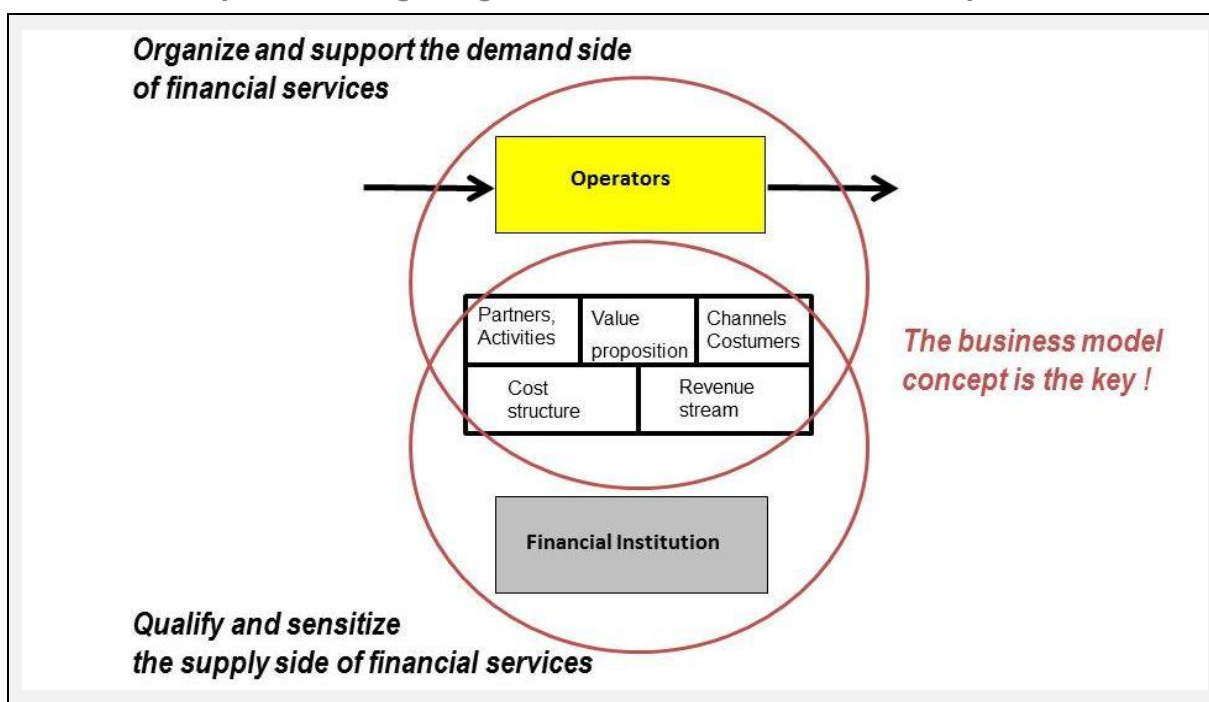
The interface between the value chain and financial institutions

The business model concept plays a decisive role in the development of financing solutions because both enterprises and banks relate to it. We have discussed the great importance of business model improvement for chain development earlier. Wherever financial institutions work to expand their portfolio they will look for business models that make financial sense.

The idea is expressed by the chart in box 8.5.1 that conceives the development of financial solutions as a process to make the financial market work for additional operators on the demand side, and the financial institutions on the supply side. The business model is the foundation for matching both sides. In ValueLinks, designing business model solutions goes hand in hand with the search for corresponding financing instruments.

The first step in matchmaking is to identify chain enterprises that have a business leadership role and the financial institutions that are already active in the sector. It makes sense to use the existing steering mechanisms for value chain development to bring both sides together. Market development begins with financing instruments that are quick and easy to implement. Formal financial solutions follow over time.

Box 0.1: Concept – The integrating role of the business model concept



Source: own design

Matchmaking between enterprises and financial institutions is a key. It includes tasks on both sides of the financial market. Typical activities on the demand side include the following:

- Generate a clear picture of the value chain performance and strategy,
- Work via lead companies and existing value chain linkages rather than promoting individual financial solutions for weak operators
- Identify promising business models
- Support financial assessment of business models and the financing needs they imply
- Enhance the financial literacy of enterprises of their understanding of the conditions under which financing solutions become possible

On the side of financial institutions, facilitators would...

- Enhance the understanding of financial institutions for the real economy, and the value chain in particular
- Explain the business model idea in the context of the value chain strategy
- Start by identifying short-term financing instruments responding to the financing needs

The efforts in value chain development lower the risk profile of operators thus motivating financial institutions to start providing finance to more operators.

Supporting a learning process on business and financial matters

The issue is to start a process of learning and development in search of concrete business cum finance solution. This means working with lead companies and small enterprises at the same time and with both lenders *and* borrowers. The basis for long-term financial solutions is the development of successful business models and – along with it – the financial literacy, ability and willingness of farmers and enterprises to repay financial obligations in a timely and responsible manner. Financing institutions, on the other side, have to understand the real economy and discover the business opportunities that lie therein.

The process of business and financial inclusion goes through several stages: In an early stage of development, small farmers and newly established enterprises have to resolve fundamental problems accessing markets and mastering business processes. Most likely, they are forced to rely on the business model of commercial chain partners and VC-internal funds rather than on financial institutions. As business experience grows and business and financial information is being generated, financial solutions can develop further and include VC-external sources. upgrading and financing solutions go hand in hand.

8.5.2. Supporting demand: Financial planning of operators

For any financial solution to work, the individual private enterprises have to play an active role. chain upgrading boils down to a series of individual investment and financial decisions. Public agencies can create better conditions for underserved operators and offer all kinds of support services, but in the final analysis it is the private entrepreneurs themselves who have to define their business models and prepare realistic loan applications. Public agencies should not act on behalf of enterprises, let alone provide credit themselves.

Therefore, a key component supporting financing solutions is to make operators “financially literate”. This means imparting financial and business know-how to operators, and especially to weak and underserved operators, so that they can actually take part in financial arrangements and use the available instruments. “Financial literacy” is the capacity to develop a business idea, make an individual business and financing plan, determine the amount of finance required in addition to own resources, understand and engage in internal and external financial solutions and, eventually, make a loan application to a bank. Any financial solution depends on whether enterprises understand financial institutions (and vice versa). Reducing information asymmetry is a key to success.

Financial and business advice to micro-enterprises should cover the major concepts and terms necessary to obtain and manage enterprise finance responsibly. This is another (non-financial) service to be offered by public development projects. In order to be able to provide this service, development facilitators have to be “financially literate” themselves. In fact, in many places, the need for financial education includes operators and service providers likewise.

In the following, the elements of financial competency are divided into three categories, viz. basic knowledge about money management, the development of realistic business models that qualify for external financing, and, finally, the understanding of banks and loan procedures.

Financial literacy of value chain operators

the conventional definition financial literacy “is about personal finance management and does not include how to manage a business” (GIZ and Bank of Uganda, 2010, p.16). It starts with basic numeracy and includes fundamental skills in managing money, such as running a bank account and keeping track, generate savings, planning expenditures ahead, choosing among the range of financial services, and utilizing them to the own advantage.

This is just a basic level of financial capability but nevertheless the foundation for developing commercial activities. Many informal entrepreneurs and smallholders require better knowledge in basic financial matters first before they can think of borrowing outside capital to run their business. At a barebones minimum, enterprises need to have deposit accounts

before any financial institution will even consider looking at their loan request. The first step to improve financial access is to encourage operators to open and use deposit accounts in order to record their business transactions rather than relying merely on cash transactions. The deposit account records provide a basis for constructing financial statements later.

Financial education has been a topic in economic development since a number of years. Advisory and training material for advising people and the topics to include financial literacy programs are well documented (e.g. Sebstad and Cohen, 2003).

Before enterprises can seek financing from chain partners or apply for a loan, there has to be a clear idea where the business of the operators is headed. Upgrading strategies necessarily translate into new business models of the operators. A sound business plan provides the basis for most kinds of long-term as well as short-term financing (probably with the exception of short-term trade finance that only refers to single transactions). Hence, enterprises have to have the capability to develop and present a business plan graduating to a more advanced level of financial literacy.

Prove the ability and willingness to repay financial obligations in a timely and responsible manner.

Business planning

“A good business plan must convince the banker that: 1) your business idea is sound; 2) you have the ability to implement the business plan (operational plan); and 3) you have the ability to raise enough resources (financial plan)” (ITC, 2009, p.62).

The main elements of a business plan are (see ITC 2009 and IFAC, 2006):

- A description of the enterprise and people involved
- Definition of the product and of the buyers to which the enterprise is going to sell to
- An operational plan describing production, marketing and sales operations
- A financial plan quantifying the financial requirements derived from the operational plan. It states sources of finance, financial needs and projected cash flow
- Financial statements showing projected profit, income and key financial indicators

As enterprises are interdependent along the chain, their business plans should be connected. The overall development strategy implies prototype business models with several partners, such as contract production and outgrower schemes. The business planning of small suppliers is made easier if it refers to such models in which a dominating buyer company determines the important parameters. Nevertheless, also in these cases the contracted small farmers and microenterprises depend on outside funding and have to account for it.

Cash flow from investing and financing

Financial implication of credit is the principal and interest payment and its effect on cash flow.

The primary condition for enterprises to be considered “bankable” is to sufficiently prove that their business models generate the cash required to repay the proposed loan in full and on time. This is done by calculating the future cash flow. Cash flow projections are a main element in financial planning and show the cash inflows and outflows over time, say a period of 3-5 years. The balance indicates financing gaps as well as the cash surplus that allows the business to service a loan and establish a repayment schedule. A positive cash flow is the precondition of a bankable proposal (and, for that matter, of a profitable business).

The cash flow calculation allows enterprises to determine (i) how much cash they need on a regular (e.g. monthly) basis to cover their expenses (buy inventory from their suppliers, pay workers, interests and other expenses) and compare these amounts with (ii) the cash they receive from their customers in the same period. The difference will be the size of the (short-term) financing need. As financial institutions will require that the enterprise owner fund a portion of this amount, the enterprise should request between 50 and 80 percent of its short-term funding needs. The cash flow turns into an investment plan, if it integrates the inflow and paying back of a long-term loan.

In principle, operators should cover the working capital needs with own capital to save on the interest.

The (one-time) investment into long-term capital assets generates a cash outflow as well, at the time when the investment into new equipment or constructions is actually done. As there is no equivalent inflow of cash from operations at the particular point in time when the bill for the new asset has to be paid, the cash flow becomes negative as a consequence. This is not a problem, as long as funds can be mobilized to effect the payment. This can be the own funds of the enterprise.

In most cases, however, the investment will have to be financed with money borrowed from external sources that has to be paid back later on. Before applying for a credit to finance the business model, an entrepreneur must establish the “cash flow from investing and from financing”. This type of cash flow calculation considers the financial transactions as well – the service charges required by the lending financial institution, the annual payment of interest, and the repayment of the loan. This calculation has to be repeated for the years following the initial investment until the end of the credit period.

The question is whether the net cash flow in the years after the investment stays positive once the financial obligations are deducted and still allows generating a reasonable profit. Only if the farm or small business generates enough cash throughout the year to cover the scheduled loan payments, the enterprise has the necessary repayment ability¹³⁹ The enterprise has to remain profitable after taking a credit. Only if this is the case, the external financing of the business model can be justified and entrepreneurs can approach a bank for credit.

Otherwise, the business model has to be financed with own funds of the enterprise. But even then, the “opportunity cost” of the own capital of the enterprise should be taken into account as well – the interest on its own capital that the entrepreneur could have enjoyed if she had invested it elsewhere. Obviously, this is a matter of opportunity.

Box 5.3.5 presents the composition and calculation of both types of cash flow – using the most important categories of cash inflows and outflows only. In calculations of real cases, the categories will have to be differentiated further.

¹³⁹ Another measure of repayment ability are the “debt coverage ratio”.

Box 0.2: Concept – Cash flow from operating, investing and financing**Cash flow from operations (CFO)***Cash outflows*

- Payment of operating cost
- Taxes

Cash inflows

- Cash collection from sales
- Savings on expenditures

$$\text{CFO} = \text{Operational cash inflow} - \text{cash outflow}$$

Cash flow from investing & financing (CFI)*Cash outflows*

- Payment of bills for assets
- Payment of interest
- Payment of principal

Cash inflows

- Loan disbursement

$$\text{CFI} = \text{Financial inflows} - \text{outflows}$$

$$\text{Net cash flow (CF)} = \text{CFO} + \text{CFI}$$

Usefulness of a long-term investment – returns

The projected cash flow from operations (CFO) after an initial investment is used to calculate the value of the investment. The principle is to establish a table in which the CFO values are collected for every year of the lifetime of the investment into a new business model. In addition, the initial expenditure to pay for the investment (into equipment and other assets) is calculated.

This causes the cash flow to become negative in the initial year 0, due to the necessary settlement of the bills for the assets. In the following years, the net cash flow has to be positive until the loan has been paid back. The table to collect the stream of cash flows over time is shown in the box below.

The table allows calculating the rate of return to the investment. This is achieved by “discounting” the projected cash flows over the entire period. Discounting means that the values of the future annual cash flows is reduced to their “present values”, that is the particular amount of money today, that would yield the value of the cash flow in the future if it generates and accumulates interest. Depending on the interest rate (the “discount rate”), the investment is more or less attractive. At a low rate, the cost of the investment can be recovered in a much shorter time than at high rates of interest.

Box 0.3: Concept – Projected cash flow over the entire investment period

Year	0	1	2	3	4	5	...	Sum
Inflows from operations - cash income & savings								
Outflows from operations - Operating cost								
Outflow to pay for the initial investment								
Annual CF from operations related to the investment, <i>minus the initial investment</i>	CF_0	CF_1	CF_2	CF_3	CF_4	CF_5		CF_{0-n}
Discounted annual CF								NPV

The “net present value” (NPV) of an investment is a measure often used for investment decisions. The NPV is the sum of the discounted annual cash flows over the years.¹⁴⁰ If the NPV is positive, the venture is supposed to be investment worthy. The NPV also indicates the ability of the enterprise to repay money borrowed to finance the initial investment. As long as the interest rate of the loan is lower than the rate at which the cash flow has been discounted, the enterprise will still be able to make money from investing. The critical parameter to look for is the “internal rate of return” (IRR) at which the NPV becomes zero. The commercial interest rate for the money borrowed should be lower than the IRR if the move to the new business model is to make financial sense.

However one should not only look at the sum. Individual cash flows are equally important. The entrepreneur might face situations, especially at the beginning of the investment period when cash outflows are greater than the inflows. It is up to the entrepreneur to decide how long she can withstand this lean period, and plan her finances accordingly.

Financial ratios

The cash flow calculation is the main instrument clarifying the financial side of the business model and may already be sufficient for VC-internal finance.

For external financial solutions, the cash flow statement has to be complemented by a balance sheet and profit & loss statements. Both analyses are needed to fully assess a term loan application. The financial performance of a business model and thus its bankability can be summarized in a series of financial ratios that banks use for evaluating a loan:

¹⁴⁰ http://www.financeformulas.net/Net_Present_Value.html

- EBITDA (“earnings before interest, tax payments, depreciation and amortization”) is a common measure of cash flow or pure operating income excluding financial charges (Siciliano, 2003, p.61).
- DSCR (interest coverage or “debt service coverage ratio”) relates EBITDA to loan (principal, interest and fees) and other debt obligations. Clearly, financial institutions will want this to be sufficiently greater than 1.0 in all periods (Siciliano, 2003, p.110). A typical *minimum* DSCR could be in the order of 1.5.

These are the most important indicators that operators and facilitators need to know. There are more financial indicators that are commonly used¹⁴¹. Some will be covered in the next section, below.

Becoming creditworthy – how financial institutions analyze borrowers

Banks use loan application procedures to collect the financial and business information from a potential borrower. While enterprises can make detailed presentations to financial institutions on their business models, the financial institutions will take a distrustful view toward the presentations and will always want and need to do their own bankability analysis themselves. With the provided information, financial institutions make the bankability evaluation of the enterprise. Most financial institutions in the world use a framework called the “Five C’s” to arrive at the determination of an approval or a denial decision for the loan request. The Five C’s are:

- Capacity
- Collateral
- Capital
- Conditions
- Character

The first C – *Capacity* – measures an enterprise’s ability to repay a loan by comparing its profits against recurring debt repayment obligations both historically as well as projected into the future. The cash flow is the first repayment source that financial institutions look to for repaying loans. “Capacity” is based on the business model the enterprise uses.

Collateral serves the purpose of providing a second repayment source in the event an enterprise is unable to repay its loan with the cash flow it generates from its business activities and defaults on the loan. Collateral consists of the assets that an enterprise owns. These include deposit accounts, accounts receivable, inventories, equipment and land. The collateral value of these assets (as shown on the balance sheet) are decreased from 10 to 50 percent of their stated amounts to account for the fact that the financial institution will receive less if they have to sell them fast to repay the loan in the event of a borrower default. The financial institutions also make sure that the collateral used is not already hypothecated to another loan. Financial institutions require the loan to be less than the value of the collateral anywhere from 50 to 80 percent. The measure used to show this restriction is the “Loan-to-Value” (LTV) ratio.

Capital: Financial institutions want to see a significant amount of the enterprise owner’s own funds (i.e. equity capital) invested in the business to make sure that the owners have a strong long-term incentive to keep the business running in a profitable manner. It is much

¹⁴¹ see IFAC, 2006, p.48

easier for owners with very little of their own savings invested in the business to “walk away” from a loan obligation. Capital as such is an important indicator to reassure financial institutions that an enterprise will continue generate sufficient cash flow. Financial institutions use the “Debt-to-Equity Ratio” (Total Debt / Total Equity) to measure the degree of owner’s capital invested. In general, D/E multiples are not allowed to exceed 1.0 to 3.0 times depending on the industry in which the enterprise operates. The ratio also indicates leverage/profitability versus degree of indebtedness and financial risk (Siciliano, 2003, p.109).

Whereas capacity of repayment, collateral and own capital stand for hard facts about the business model and the enterprise, the next two “C’s” rather function as a sort of “soft collateral”.

Conditions are the external influences that affect the enterprise’s ability to generate profits. These include the competitive landscape in which the enterprise operates; changes that are occurring in the industry and the specific value chain with regard to technology, labor, regulation, pricing, strength of competitors etc.

Character refers to a borrower’s reputation. It is a subjective measure but one of the more important factors in making the lending decision. It reflects the financial institution’s feeling on the trustworthiness of the borrower. Financial institutions will call an enterprise’s suppliers and customers and speak with them about their experiences doing business with the enterprise. Character includes the entrepreneurial spirit and competency and financial track record as well. Clearly, the financial institutions will only want to provide loans to enterprises which behave appropriately.

The character dimension points to more C’s that can become relevant, e.g. certification, in the case of farms producing high quality in line with standard practices that generate a price premium. Financial Institutions might mitigate character risks by lending through joint liability groups, self-help groups or cooperatives.

Many small-scale enterprises operating informally (not registered, licensed and/or paying tax) are reluctant to apply for loans given the fact that they are operating informally. They have a fear that the financial institution will report them to the authorities. The fear is usually unjustified. From a customer segmentation perspective, some financial institutions may have decided they will not lend to informal enterprises while other financial institutions may be targeting this customer segment. Denial or approval of the loan request will show their customer segment orientation only. Denial does not mean the financial institutions have reported the applying enterprise to the authorities.

8.5.3. Supporting supply: Ability of financial institutions to respond

Whether or not the matchmaking efforts lead to results not only depends on the development conditions of the value chain. It is also a matter of developing the financial system and its ability to respond to the financing needs.

Successful financing has a lot to do with a stable, commercial relationship between the enterprises in the value chain and the financial institutions. To support the relationship, value chain programs should also work with the financing side.

The most important contribution they can make is to provide financial institutions with better knowledge on the value chains approach and on the particular value chains at stake. Financial institutions first have to understand the business before they get involved. This is also true for agricultural and rural banks, which already have a sectoral focus. The decisive point is that they see the opportunities of different products and markets, and can assess the position of their clients better.

Financial institutions, which are prepared to engage in external value chain finance require information on the business partners and contracts before they can come up with offers. However, it is important to note that this applies to financial institutions that already utilize the respective instruments. Developing new financial products is a long-term process; and it is bound to the legal conditions.

Legal preconditions for employing financial instruments

Apart from the constraints of small-scale operators and the conditions of the value chain, financial solutions also depend on the financial and legal framework in the country. Financial institutions have to take into account the country's legal code determining which of the financial instruments are actually applicable. They can only offer instruments around what is legally possible.

We have to consider the following fields of law:

- Civil or common law defining financial instruments; in some countries, the basis is Islamic law (fiqh)
- Contract laws on which to base commercial and loan agreements
- Real estate property laws dealing with land ownership and/or land use rights, along with associated registry systems.

Personal property laws and related registry systems determine whether it is legally possible for an enterprise to pledge the ownership of assets (e.g. deposit accounts, crops/trees, inventory, equipment as opposed to just their buildings and land) to a financial institution to act as collateral for a loan. Hypothecations often require the borrower's assets (or title documents showing ownership of them) to be in the physical possession of the financial institution providing the loan.

A better understanding of the legal framework enables value chain programs to target the most appropriate financing solutions. It also prepares the ground for interventions into regulatory decisions.

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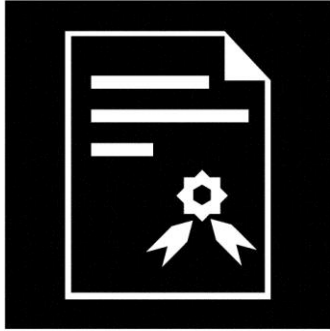
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Module 9

Quality and Standards

Contents

9.1 Introduction: Quality concepts	182
9.1.1. Product quality and its measurement	183
Concept of product quality	183
Norms and Standards	184
<i>Functions of standards</i>	184
<i>Classification of standards</i>	185
<i>Scope of application: How standards become obligatory</i>	187
<i>The interplay of public and private standards</i>	187
9.1.2. Institutional setup of quality assurance	188
Standard systems	188
Quality infrastructure	191
9.2 Quality management along the value chain	195
9.2.1. Determining the required quality of a product	195
Defining the appropriate quality of a product for the target market	195
Determining the relevant standards for a value chain	196
Food safety – the key quality concern in agricultural value chains	199
Linking quality requirements to the value chain	200
9.2.2. Quality management tools	201
Determining compliance gaps and management needs	201
Quality management and certification at enterprise level	202
Coordinated quality management along the value chain	205
9.2.3. Improved quality infrastructure and services	206
9.3 Sustainability governance of value chains	208
9.3.1. Overview of sustainability standards	209
Types of sustainability standards	209
Important value-chain specific sustainability standards	212
9.3.2. The role of standards for sustainable development	213
Significance and limits of sustainability standards	214
Conditions for the effectiveness of sustainability standards	216
9.3.3. Improved performance of standard systems	217
Professionalizing sustainability standard systems	217
Alignment of different private and public standards	219
Expanding the market share of certified products	219
9.3.4. Combined public and private sustainability governance	220
Interplay of private and public regulation	221
The 'Landscape Approach'	223
Resources	225

Module 9 Quality and Standards

9.1 Introduction: Quality concepts

Product quality is an important aspect in value chain development strategies, whether they aim at economic growth or at environmental and social improvements. The quality of a marketable good not only relates to the product features but also to the process side of the value chain. Apart from the intrinsic aspects of product quality such as the materials used and the processing quality, the characteristics of business processes count: Resource efficiency, the technologies used, conditions of employment and other factors all contribute to the quality assessment of a product. Therefore, most development strategies have to care for the question of quality.

We can distinguish various quality benchmarks:

- Legal requirements regulating the minimum level of product safety;
- Industry-specific technical norms and quality grades facilitating contracts
- Quality criteria defined by individual enterprises to position a product in the market;
- Sustainability standards on a wide variety of issues of social and political interest.

The first two points constitute the basic rules for any kind of business activities. Every enterprise first has to comply with the current laws and regulations, both in the country of production and in the country where the product is sold. Technical norms and grades are necessary to facilitate business linkages. They support the communication and trust building between business partners thus reducing transaction cost. Therefore, private industry associations traditionally play an important role in defining norms and strengthening the regulatory foundation of their respective industries. Any company that plans to penetrate a new market faces the challenge to comply with the applicable legal, trade and industry standards. This is particularly difficult for small enterprises in less developed economies which seek integration into global value chains. Unless operators in exporting countries are able to implement the standards applied in the US, Europe and some emerging markets effectively, they will hardly be able to enter these markets.

Just complying with the basic quality requirements is not enough to be successful. The third bullet point above refers to the individual quality strategies of value chain operators and their business models. Operators have to choose the quality level of its product(s) to achieve a successful position in the end market. Choosing and differentiating product quality is a competition factor.

The fourth bullet point refers to the growing concern for the environmental and social problems of economic development. Non-governmental organizations, policy makers and even the business communities themselves increasingly call for more sustainable conditions of production and marketing. Therefore, sustainability standards and codes of conduct have quickly gained in importance in recent years. Development policy and (some) companies use standards as a powerful instrument to foster the transformation of value chains towards more sustainability. This is an issue of value chain governance in the first place. At the same time, enterprises actively seek to get their products certified in order to gain competitive advantages. Thus, sustainability standards increasingly shape the course of globalization.

The quality concept of ValueLinks is twofold. On one side we consider the quality management of individual enterprises to comply with the prevailing norms and position themselves in the market. At a second level, we look at the evolution of standard systems as arrangements for sustainability governance. The following two sections clarify the concepts.

9.1.1. Product quality and its measurement

Concept of product quality

We define product quality in a holistic manner, both as the intrinsic quality of a marketable product, that refer to the product itself, and its extrinsic quality which refers to the characteristics of the processes used to produce and market the product.

Product quality shows in a number of attributes presented in Box 9.1. A conventional model of product quality is the SEC (search, experience, credence) paradigm that describes how consumers evaluate the quality of a product. Consumers can only assess the search attributes and the experience attributes of product quality, before and after buying it. They cannot assess the credence attributes themselves but have to rely on information provided by producers or by a third party. Consumers also want to be sure about the experience attributes of a product before they take the decision to buy, at least in the case of high-value products. This means that they depend on information from others for the experience attributes as well.

The credence attributes can be intrinsic or extrinsic. To measure the intrinsic quality attributes we can rely on tests and laboratory analyses of product samples. The extrinsic attributes are much more difficult to assess. To find out under which conditions the product is made and what impacts the production causes, we have to go back to the origin of the product and assess the complete sequence of process steps along the value chain. This concerns a wide range of environmental, social and other ethical values.

Box 9.1: Concept – Quality attributes of products

Attributes		Examples	Verification
(Physical) Search attributes	Intrinsic attributes of the product	Size, color, absence of damage, (smell)	Measurable at end product, client can select before consumption
Experience attributes		Taste of food, durability, functional efficiency	Measurable at end product, client knows only after consumption
Credence attributes		Residues, product safety, many technical features	Measurable at end product, client has to trust a laboratory
	extrinsic attributes of the product (process attributes)	Climate friendliness, employment conditions, absence of child labor, origin of produce	Not measurable at end product; but partly measurable during the production process (e.g. emissions, resource consumption); client has to trust an assurance system

Source: Own compilation, based on

The fact that many quality features cannot be observed directly means that quality management necessarily implies the use of norms and standards that can be verified objectively.

Standards are the yardstick to define, regulate, measure and manage product quality. Quality norms are ubiquitous: All value chain actors, from producers to consumers, individual companies to business associations, civil society organizations to government contribute to defining quality criteria.

A lot depends on how the actors define the credence attributes. Norms and standards depend on agreement and are never complete. Some issues raise questions of measurability, e.g. proving that no material from genetically modified organisms has been used. Other quality aspects are simply overlooked. An example is the official approval of neuro-active insecticides which later turned out to cause harmful environmental impacts.

Generally, the demands on product quality are continuously on the rise. Globalization, international sourcing, changing consumer behavior and the growing concern for sustainability all induce changes in the perception of quality. To compete and be successful, operators have to find their place in the world of standards.

Norms and Standards

A standard is a set of rules describing product and process quality. Standards are “documents, established by consensus and approved by a recognized body, that provide, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context”¹⁴².

Standards specify the characteristics expected of a product and of the process of making it. This includes all types of attributes mentioned in the table in box 9.1.1. Standards define and regulate product quality for the benefit market actors and consumers.

Functions of standards

Standards create public goods¹⁴³ serving private objectives as well as public concerns. They benefit operators and consumers by fulfilling several functions:

- *Regulation:* Standards operationalize the quality, safety and sustainability concerns of consumers, civil society and government. They create a common understanding of the issues at stake and assure safe and sustainable business practices by enforcing compliance.
- *Market transparency and efficiency:* Standards make the behavior of market partners more predictable. They support realistic expectations, facilitate contracting and thus reduce the cost of market transactions.
- *Quality management of enterprises:* Value chain operators use standards as an operational guide to integrate quality and sustainability considerations into their core business processes. Standards suggest concrete and measurable steps to improve quality management.
- *Risk management:* Companies increasingly face reputational risks if they don't control environmental impacts and socially harmful practices associated with their business operations and those of their suppliers. Standards help to lower the risk by introducing systems to detect critical points. Traceability mechanisms allow keeping control of suppliers.
- *Communication:* All market participants need information about the quality of products and the sustainability of processes. Standards simplify communication between busi-

¹⁴² ISO/IEC Guide 2 (1996/2004): “Standardization and related activities”

¹⁴³ This the difference to brands used by companies to make quality claims and which only benefit the brand owner.

nesses (B2B) and between producers and consumers (B2C). Standards enable companies to demonstrate and prove the quality of their products and assist marketing. B2B standards don't utilize labeling. They create transparency vis-à-vis business partners and serve to increase the number of suppliers from which to procure.

- *A level playing field:* Standards create a 'level playing field' because they create equal conditions for doing business. They allow enterprises to pursue common interests in a pre-competitive environment.

These functions are highly valuable for enterprises as well as consumers. However, they come at a cost. Formulating standards, setting up standard systems and service providers, assessing the conformity of products and processes with standards, certification and communication all involve considerable costs. Certain operators, particularly small-scale farmers may have difficulties covering the additional costs and thus risks being excluded.

Classification of standards

The fact that quality attributes and issues vary so widely implies that standards differ substantially with regard to their objectives and content, scope, the way they are applied and the methods by which they are verified. Obviously, standards on specific technologies have to be defined differently than the standards on forced labor which involve judgement on a complex social phenomenon. Many intrinsic attributes can be regulated through quality norms and grades, while safety and ethical aspects need specific and far more demanding standards. Adding to this complexity, the standards differ between countries.

The following table provides an overview of familiar terms and distinctions made within the world of standards.

Box 9.2: Concept – A basic classification of standards

	Objectives, issues regulated		
	Product quality*	Product Safety	Social and ecological objectives
issued by public bodies	<ul style="list-style-type: none"> - Technical norms - Regulatory standards 	<ul style="list-style-type: none"> - Food laws - Liability laws 	<ul style="list-style-type: none"> - ILO labor standards - Social laws - Environmental laws, labels
issued by private associations	<ul style="list-style-type: none"> - Organic standards - Specialty standards 	<ul style="list-style-type: none"> - GlobalGAP 	<ul style="list-style-type: none"> - Sustainability standards - Private ecolabels

*plus market transparency, interoperability

Source: Own concept

Standards can be classified according to many criteria, e.g. the products and activities they refer to, their objective, the attributes they describe, types of product features and processes

they cover, their scope, and still other criteria. In the following, we will use three main criteria to generate an overview of the existing standards:

- Objectives (such market transparency and technical interoperability, consumer safety, and different social and environmental concerns)
- Issuing body (public bodies, private associations or multi-stakeholder initiatives)
- Scope (business activities in general, particular products and value chains)

The classification in table 9.1.2 uses two criteria – the objective of the standard on one side, that is the quality attribute being regulated, and the issuing body on the other, which basically is the distinction between public and private standard setters.

The distinction between public and private standards is equivalent to the distinction between obligatory and voluntary standards used in international trade. The classification presented in the table above is incomplete as more classification criteria could be considered.

One is the *distinction between product and process standards*: Standards not only define product features. There are also technical definitions and specifications and standards on processes and procedures. Product standards refer to the characteristics of a certain product while process or production standards specify the characteristics of the production and marketing processes. The increasing incorporation of life-cycle analyzes in product standards has led to a mixture of these two types of standard. Another category is the generic *management standards*, which are applicable to entire management systems independent of the specific product, e.g. quality assurance systems, environmental management systems, and the procedures for setting standards and assessing conformity themselves. The mechanisms for complaints are also regulated by standards.

We can also differentiate standards according to the communication instruments, the institutional setup, geographical coverage, the financing mechanism and the methods of conformity assessment. Despite the efforts to classify and harmonize standards internationally, there is no uniform understanding of standardization and we cannot expect consistency. Therefore, the categories in table 9.1.2 are only one way of classifying. There will always be standards which do not fit into one or the other category.

Here are some additional explanations on the boxes in the table:

- *Public technical norms and regulations for quality and safety*

The upper left and middle boxes in table 9.1.2 include regulatory standards established by law. Legal provisions are provided by national public bodies, through international conventions, trade agreements or regulation within the European Union. Technical norms and regulations are the basis of business life and provide minimum requirements with regard to product safety, public health and contract security. These are mandatory, legally binding regulations. An example is the regulations on minimum residue levels.

- *Private standards on product quality*

This is the lower left box. Private standards on product quality aim at meeting the demands of certain customer groups. Private product standards describe quality features of products and production processes for specific markets. An important example is organic food. Organic food standards help segmenting the food market effectively, provide security for consumers and secure the market access of organic producers. Similarly, standards for the protected designation of product origin specify delimit a specific market niche with unique characteristics.

- *Public environmental and social regulations*

These are public standards regulating social and environmental issues of general interest. They are part of the general legislation.¹⁴⁴ They mostly concern business activities in general, especially such as the SA-8000 code of conduct on socially acceptable practices in the workplace. Certain regulations cover specific sectors, e.g. biotrade, construction and energy.

- *Private environmental and social standards*

The lower right box includes private sustainability standards. This category embraces standards that are issued by private consortia and multi-stakeholder initiatives supporting the sustainability agenda. The standards are used to segment markets for sustainably produced goods but also provide a guideline for sustainability transformation¹⁴⁵. Some standards in this category are used by companies that commit themselves to the responsible sourcing of inputs. In fact, many private standards exceed regulatory obligations because firms try to differentiate themselves from competitors and position their products in saturated markets.

Scope of application: How standards become obligatory

Standards prescribe business behavior. Whether or not they are binding for a particular market participant depends on their scope of application. The distinction between 'obligatory' and 'voluntary' standards is somewhat misleading because all standards are obligatory in the context for which they have been created. Standards either become binding by national legal regulations in the countries of production and sale, or by the obligations imposed by contracts in a particular market.

Public regulatory standards are rules for all enterprises in a specific industry or even for all enterprises in the economy. Compliance with standards established by national laws or by international conventions and trade agreements is a mandatory prerequisite. Failure to comply prohibits a product or service from being sold in a given market.

The same applies to private standards that refer to particular market segments. A private standard becomes obligatory once it is used in a contract. While enterprises can decide whether or not to engage in a particular market, they are no longer free once they are in. Unless enterprises fulfill the contractual requirements vis-à-vis their business partners and consumers, they have no access to these markets. If there is no other market outlet, they don't even have a choice.

The scope of standard application also concerns the scope of the value chain or industry concerned. Standards may refer to business in general or to particular products, value chains and industries. This is an issue in the classification of sustainability standards that will be treated in more detail in section 9.3.1, below.

The interplay of public and private standards

Governments can convert a private standard into a regulatory standard making it a legal requirement for business or use it as a reference in law enforcement. The principle is that public norms define the minimum requirements to be fulfilled while private standards establish the tools and processes to meet these requirements. In food safety, the private HACCP











¹⁴⁴ See module 10 for specific regulations in the fields of environmental and social policy

¹⁴⁵ The use of private sustainability standards for chain transformation is the subject of chapter 9.3.

standard identifies safety hazards and documents the food production and trade processes. This relieves public agencies from inspecting themselves. Public control can be restricted to the inspection of records¹⁴⁶.

Organic food is a good example of the interplay between both regulatory systems. Box 9.1.2 presents public as well as private standards for organic food.

Box 9.3: Case – Public and private organic standards

issued by Government	 USA	 EU*	 Germany	 Japan	 Saudi-Arabia
issued by associations or companies	 in the U.S.	 in the U.S.	 in Germany	 in Germany	 in Germany

* for all EU member states. "Third countries" considered equivalent include Argentina, Australia, Costa Rica, Israel, India, Switzerland and New Zealand

Source: Own compilation

9.1.2. Institutional setup of quality assurance

A standard is a document that specifies quality criteria and rules. The question is how to make sure that value chain actors use the standard correctly and comply with the norms it stipulates. This process is termed conformity assessment. To assure that actual practice conforms to the norms, every standard has to be embedded in an institutional system that audits the standard and reports on it.

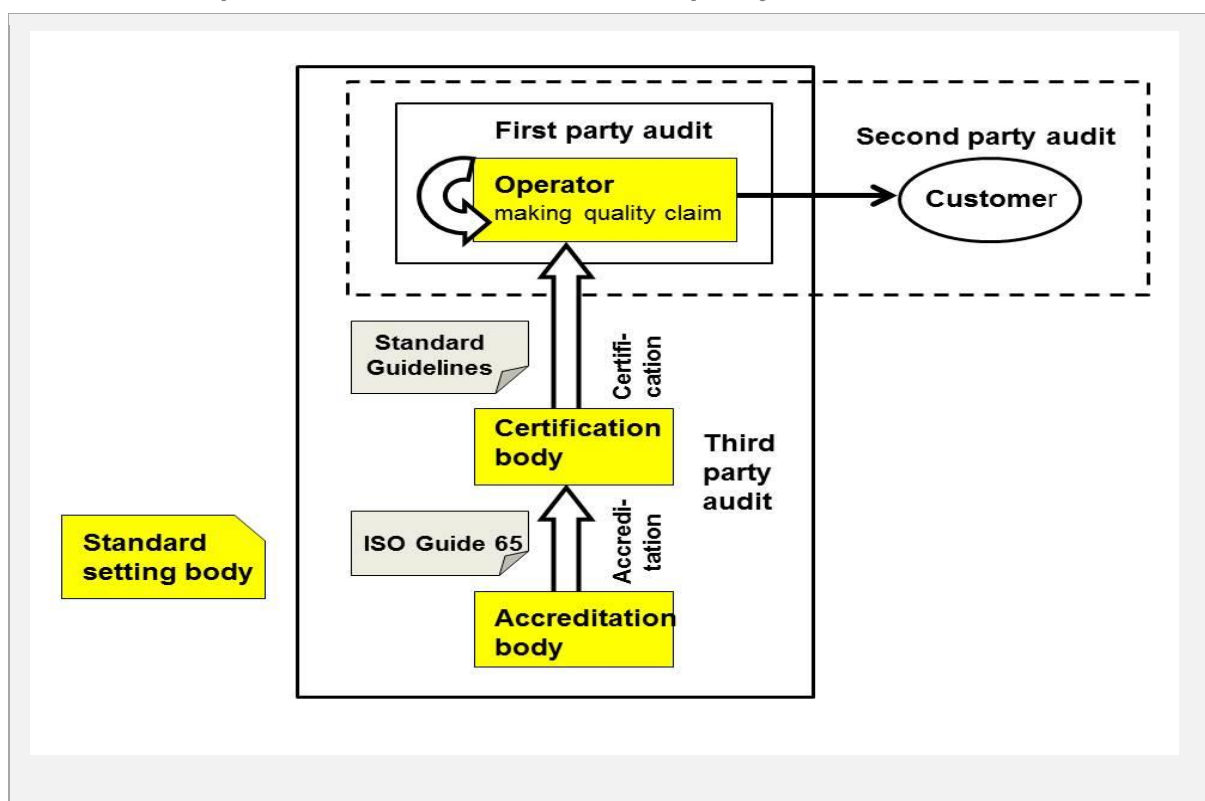
Standard systems

The core of any quality system is the standard document itself, the standard-setting organization and the user of the standard. The key elements of conformity assessment are the auditor who verifies compliance and an accreditor making sure that auditors apply the procedures of quality control correctly. In order to implement quality and sustainability standards, an effective system to verify, whether a standard is actually applied, has to be in place.

Box 9.1.4 shows the basic elements of a quality assurance system.

¹⁴⁶ More on co-governance follows in the last section of this module, 9.3.4.

Box 9.4: Concept – Basic functions and roles in quality assurance



Source: Own concept

Following is a description of the actors in the system:

Standard Setting Organization: A standard setting organization creates and maintains a standard. There is a wide variety of standard organizations, the most prominent being national organizations such as the American National Standards Institute in the USA¹⁴⁷. Standard setters of sustainability standards are often multi-stakeholder, not-for-profit organizations¹⁴⁸ such as the ‘Forest Stewardship Council’ (FSC)¹⁴⁹.

Users of a standard: The most important clients obviously are the enterprises to whose processes and products the standard refers, from smallholder farmers to industrial companies. In principle, all value chain actors use and refer to standards including the regulators, auditors and accreditors themselves.

Auditors / Certification bodies: Quality assurance can be achieved in three ways. First-party assurance means that the producer verifies the quality of process and products himself. Next, commercial buyers check the quality claims of their suppliers. This is a second-party assurance or a “business to business assurance”. In a third-party assurance independent auditors verify if a good or service is in compliance with the requirements of a standard. These can be public inspection authorities or private certifiers depending on the type of

¹⁴⁷ See the next section for national standards organizations as key elements of quality infrastructure.

¹⁴⁸ See section 9.3.1 for an overview of sustainability standards and their respective organizations

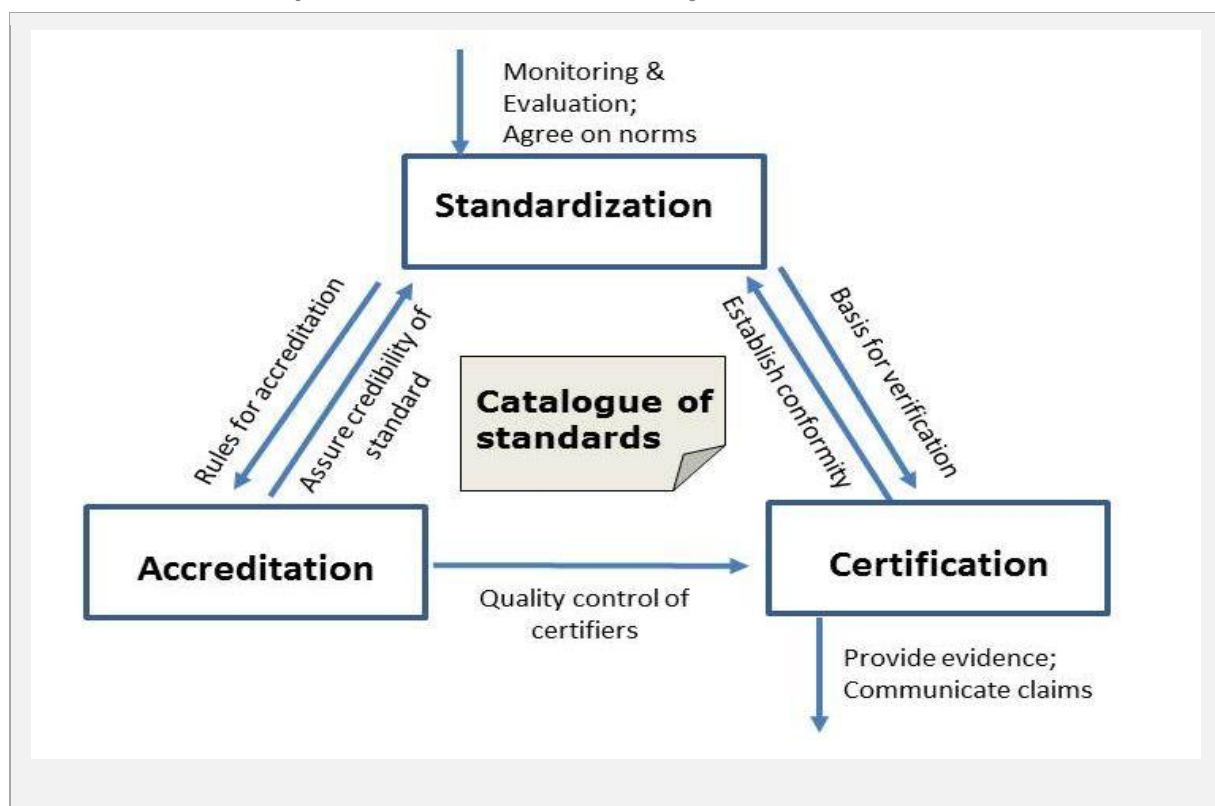
¹⁴⁹ FSC “sets the standards for what is a responsibly managed forest, both environmentally and socially” (<https://ic.fsc.org/en/what-is-fsc>)

standard. Third-party assurance is the most credible check of standard compliance, but it is also the most expensive.

Accreditation bodies: Accreditation bodies keep an oversight of the system; they verify that certification bodies have the required competencies and that they perform their job properly. They also accredit other service providers such as laboratories.

This institutional setup applies to any quality criteria whether they check a product's fitness for consumption or assure that the value chain satisfies sustainability objectives. The basic functions of the system are standardization, accreditation and conformity assessment. Elaborate standard systems perform even more functions that build on the basic triangle. The interrelation is visible in the next box, below.

Box 9.5: Case/concept – Functions of standard systems



Source: Own concept

Important functions in standard systems are:

Standardization: Every standard setting organization involves the different stakeholders in the creation of a standard and manages the system. This can include forming a collaboration platform: Sustainability standards are more effective if they build on a consensus of all interested parties. The standard setting organization therefore sets up an industry-wide platform involving private, public and civil society stakeholders, often organized in chapters and working groups. The platform steers the standard setting and management processes. Standardization involves revising a standard to adjust it to new requirements and respond to the practical experiences with applying it.

Accreditation: Every participant in the quality assurance system, especially the auditors, has to be qualified and credible. Quality assurance therefore includes a second level of auditing performed by the accreditation bodies. Put simply, accreditation means ‘controlling the controllers’.

Chain of custody: Standard systems require that that a certified product can be traced back to the origin of production. The operators have to control the flow of produce along the value chain separating certified and non-certified products. A chain of custody standard regulates the methods documenting how the product moves from one value chain stage to the next starting from the primary producers. A simple method is the ‘mass balance’: Where certified and non-certified products are not kept apart physically, the share of certified products in every load is calculated nominally.

Certification: Third-party quality assurance is often completed by a certificate. This is the written statement of an independent auditor that the product in question meets the criteria specified in a particular standard. Enterprises use certificates to prove and communicate their quality claims, e.g. by labelling.

Claim communication: Whether based on certificates or not, communicating the quality claim is an essential element of any standard system. Quality claims that are important for consumers show on the product label. However, claim communication goes beyond the information of business to consumers (B2C). The claim communication from business to business (B2B) is of equal, if not greater importance. This is achieved by sustainability reporting. Obviously, the information must be precise. The claim that a food product comes from a farm in transition from conventional to organic production is different from the claim that the product is actually organic.

Monitoring and evaluation: Sustainability standards are meant to promote environmental, social and other ethical concerns. Standard organizations have an interest to find out whether and to what extent they achieve the objectives.

A standard system does not necessarily include all of the elements described above. Not all standards imply certification and labelling. The creation of collaborative platform and a monitoring function are also optional. The institutional complexity of a standard system depends on the objectives and its market share. Generally, sustainability standards operating at large scale involve more sophisticated arrangements.

Public regulations are a function of public administration. Private standards, in turn, are financed by income from licenses and through the sale of services. Thus, private standard-setting organizations compete for market share.

Quality infrastructure

Every standard system is a part of a wider ‘quality infrastructure’ (QI). The national quality infrastructure comprises all institutions and functions concerned with quality issues in a country. Beyond standardization, accreditation and conformity assessment this includes metrology, testing and inspection¹⁵⁰.

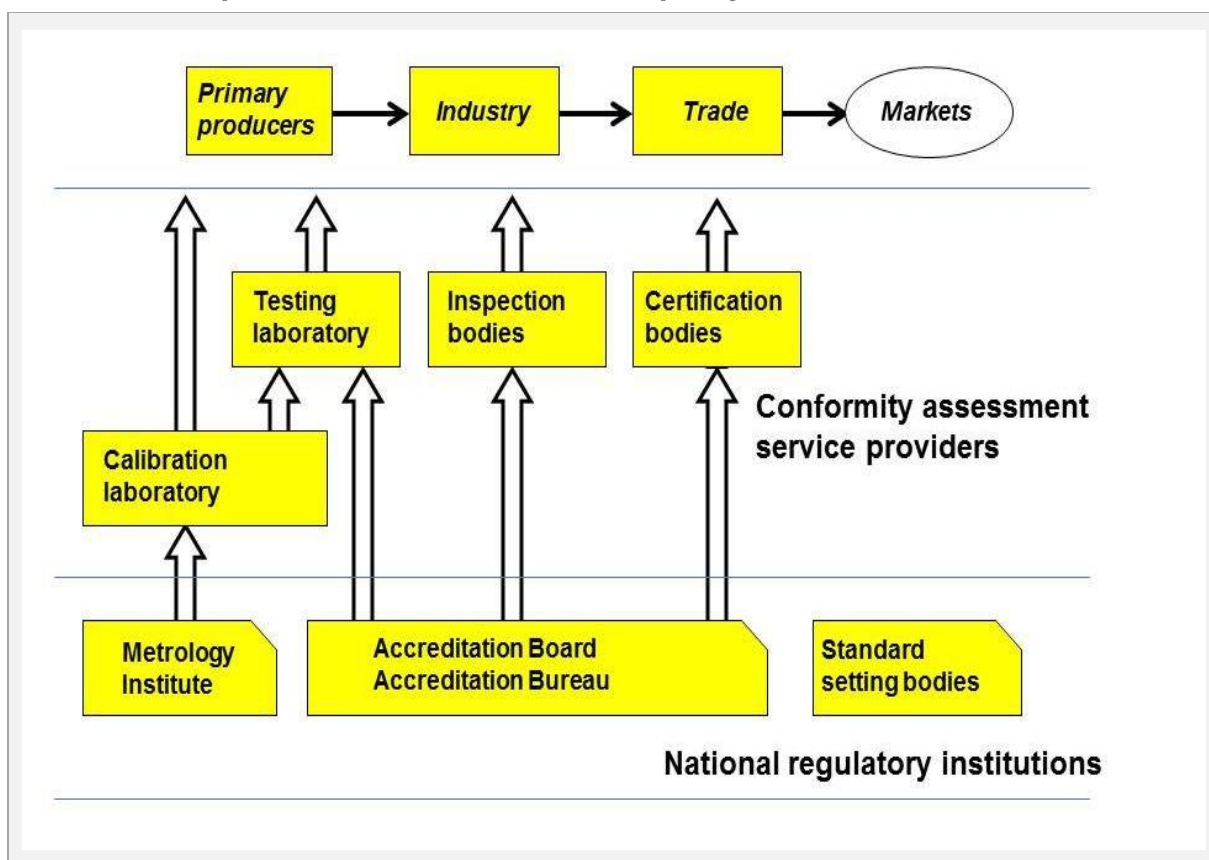
Many quality attributes are physical measures (for example the humidity in grains, residue levels in food or the chemical composition of fuels, fertilizers, pesticides etc.). Assessing the

¹⁵⁰ Harmes-Liedtke and Oteiza di Matteo, 2011,

conformity of a product with standards often means testing samples. Calibration and testing laboratories have to deliver reliable and comparable results. As technology and products evolve, additional laboratory services and ever more sophisticated devices are needed. This is the field of metrology.

Box 9.1.6 carries on from the image in box 9.1.4. It shows, in stylized form, the setup of a national quality infrastructure. The arrows show the flow of services. On the first level, service providers work directly for the enterprises to perform conformity assessment. In turn, the certifiers, inspection bodies and testing laboratories receive methodological and technical instructions from the second level in the QI system, the national regulatory institutions. These are general support services as well as one-on-one accreditation services.

Box 9.6: Concept – National and international quality infrastructure



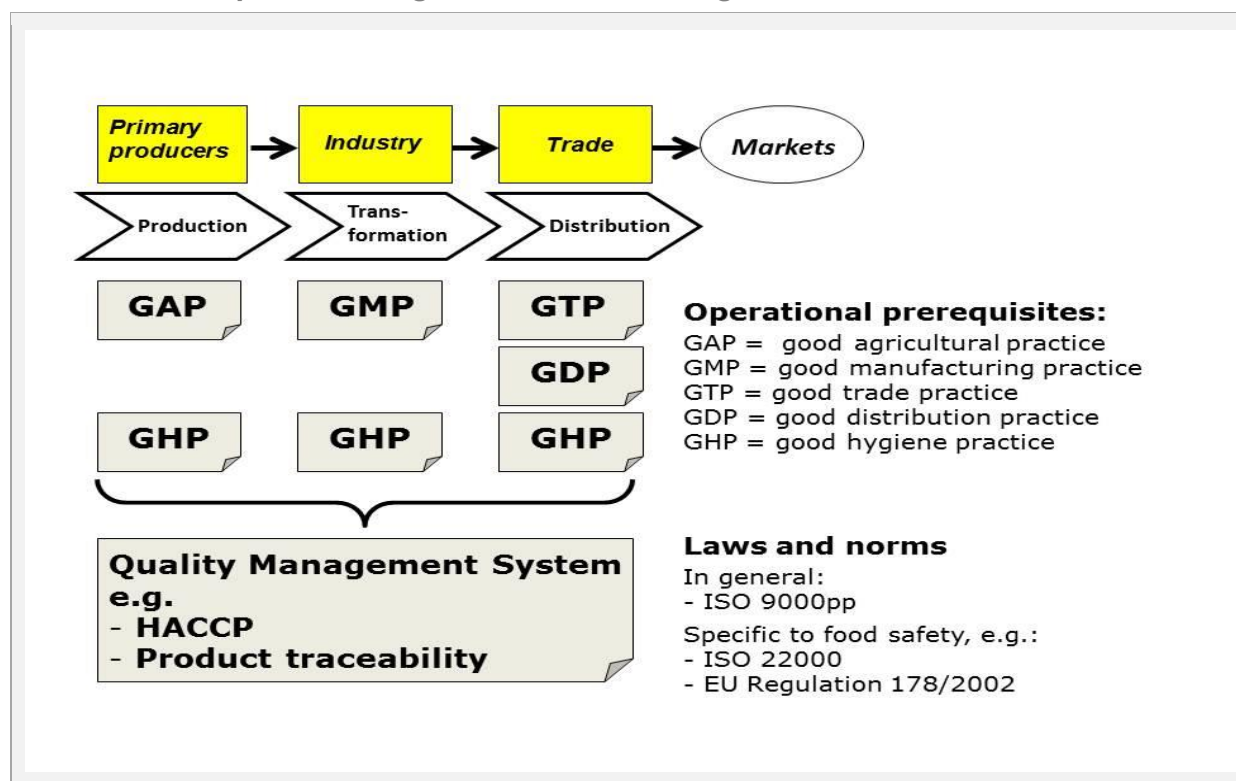
Source: Own concept

Most national standard-setting bodies are private or semi-private organizations, such as the 'Deutsche Institut für Normung' (DIN) association in Germany, the American National Standards Institute (ANSI), and the 'Association Française de Normalisation' (AFNOR) in France. It may also be a public agency as in the case of the 'Bureau of Indian Standards' (BIS) in New Delhi.

All government bodies, standard-setting organizations and service enterprises engaged in quality assurance refer to the same catalogue of norms and standards regulating economic life. The following box shows an example of how different norms are connected. This case includes the basic ILO standards on quality management and food safety that are used by

the European Union and its member states, and their connection with the series of 'Good Practice' guidelines published by different technical organizations. These guidelines specify the technical details for the application of the overarching ISO standards.

Box 9.7: Concept – A catalogue of standards along the value chain



Source: Own concept

The box above only shows just a small fraction of the complete body of standards as it has evolved nationally and internationally. To facilitate communication and trade between countries, the formulation of national standards should be in line with international practice. It is also economical to learn from each other and utilize the scientific findings of different countries. Thus, national standards should be based on the international framework of standards published by the International Organization for Standardization (ISO).

The national quality infrastructure is also institutionally connected to the international level: All national standard organizations are members of the 'International Standard Organization' (ISO) in Geneva. The accreditation boards belong to the 'International Accreditation Forum' (IAF), and the national metrology institutes are members of the 'Bureau International des Poids et Mesures'¹⁵¹ (BIPM) in Paris.

¹⁵¹ International Bureau of Weights and Measures (www.bipm.org)

Box 9.8: Case – ISO Standards*The Standards of the International Organization for Standardization (ISO)*

ISO is an independent, non-governmental membership organization. Its members are the standard organizations of 162 countries.

ISO is involved in developing international standards, covering a broad range of sectors, industries, products and management systems. These standards aim at making products and services safe, reliable and of good quality.

Important series (or “families”) of ISO standards are

- ISO 9000 for quality management,
- ISO 22000 for food safety
- ISO 14000 for environmental management
- ISO 50000 for energy management.

Source: www.iso.org

To play their roles in a standard system and perform the business activities in accordance with the standard, all actors need to have the requisite knowledge and capacity. This means that the quality infrastructure also includes capacity building services by private or public organizations. Generic arrangements for service provision are covered in module 7, capacity development for sustainability standards in chapter 9.3, below.

9.2 Quality management along the value chain

All actors in the quality system need to have the necessary know-how and capacity. This and the following chapter present value chain solutions for improving quality management and the quality of products. These solutions refer to several aspects of the value chain system – the quality management of operators, their business model, services for quality assessment, the institutional setup for quality assurance and the sustainability governance of an industry at large. Some of these issues are covered in other ValueLinks modules, especially the business model solutions and the solutions for operational service provision.

The present chapter covers solutions for quality management. Operators which base their strategy on high-quality products and/or seek to penetrate new markets, especially export markets, have to upgrade their own quality management and the quality management along the value chain. To achieve this, we suggest the following procedure:

- Define the level of product quality
- Determine the relevant standards in the target market
- Derive improvements in quality management and compliance with standards
- Determine necessary improvements in quality infrastructure and services

The first three bullet points concern private enterprises. Production and product quality will only improve if operators actually apply the relevant quality standards appropriately, individually and in cooperation.

Implementing a quality strategy includes the institutional side as well – the agreement between operators, public interest groups and government on standards and legal regulations. It also needs a good ‘quality infrastructure’ and quality-related services. Collaborative action has to assure that all parties play by the rules.

9.2.1. Determining the required quality of a product

Choosing the appropriate product quality is an element in any chain upgrading strategy that aims at penetrating new markets. To achieve this, operators start by determining the needs and demand of customers.

Defining the appropriate quality of a product for the target market

The appropriate quality of a marketable product depends on the target market. Apart from observing the legally binding standards in the country of sale, such as the food safety laws, enterprises have to choose the appropriate quality level of their products. Defining the own product quality is a means to position the product in a specific market and market segment.

Product quality is an element of the business model. The decision on quality attributes is closely related to production cost and the sales price. Determining the product price and the right level of quality goes together. Generally speaking, increasing urbanization and the growth of middle classes leads to growth based on quality rather than quantity of produce. However, there are big differences between advanced export markets and the local markets in poor countries. Poor consumers want simple, but low-cost quality products. Serving this need is the right choice in the respective market segment.

This implies that we find often different quality levels within the same value chain. The quality/price differences are important criteria of market segmentation.

Sustainability objectives may or may not be relevant for consumers in the target market. Individual companies face the challenge to balance consumer demand and the wider concern for sustainable development. On one side there is a great variety of ethical concerns advanced by different consumer groups. Companies can address them by using the corresponding standards. The market success counts.

On the other side, the sustainability goal imposes criteria reaching far beyond the current consumer wishes. The global agenda for sustainable development is another source of quality considerations that cannot solely depend on market demand. Sustainability standard systems are the arena to fight over this higher goal, and therefore include civil society and governments as well.¹⁵²

Determining the relevant standards for a value chain

The second task is to understand the requirements of the target market. The operators and their business partners in the value chain at large have to determine which are the relevant standards and legal requirements. It is important to identify all regulations and standards that are relevant in the selected domestic or regional and international export markets. Otherwise, operators will not be able to overcome the barriers to market entry.

Determining the quality requirements in end markets is a challenge for primary producers, especially for smallholder farmers and microenterprises. In fact, the task falls on the lead actors and exporters in a value chain, who then have to involve and inform their suppliers.

Following is an overview of the most important regulations and standards in different markets, organized by target markets. We start with domestic markets in less developed countries, the traditional markets for smallholders and micro enterprises. Next are the rules for international trade and those of the most important trade block, the European Union. The last types are markets for organics, products of certified origin and sustainably produced goods. The world of regulations and standards is vast. We can only provide an introduction and the most important web links. The market research for any particular value chain has to fill in the details.

- *Public regulation of product quality and safety in domestic markets*

Producers selling in domestic African markets face relatively few requirements except for the basic product safety regulations. The relevant standards depend on the regulatory conditions in each country. Food safety regulations are a separate topic in the next section¹⁵³.

However, the growing presence of supermarkets and transnational corporations investing in production and food processing means that the importance of international regulations and standards grows in the domestic markets as well.

- *Regulations in international trade*

The World Trade Organization (WTO) aims at harmonizing standards to facilitate the multi-lateral trade between WTO member states. Harmonization is sought for important product

¹⁵² The debate on sustainability standards is the subject of chapter 9.3.

¹⁵³ see the separate section on food safety, below

quality attributes that are subject to legal regulation in practically all countries, especially technological safety, the protection of human health and the protection of forests and wild flora and fauna. The fundamental principles for harmonizing national laws have been regulated in two international treaties:

- Technical Barriers to Trade (TBT) Agreement
- Sanitary and Phytosanitary Standards (SPS) Agreement

Every WTO member country is supposed to align its national regulations accordingly. WTO refers to specialized international organizations for the definition and regulation of the specific technical questions. The most important ones are the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC) and the International Telecommunication Union (ITU). Specialized technical agencies also contributing to international standardization include the Food and Agriculture Organization (FAO) and the World Health Organization (WHO), among others. At the same time, WTO aims at abolishing norms that are not internationally recognized and considered to be obstacles to free trade.

The labor norms established by the International Labour Organization (the ILO labor norms) are a special case. There are eight core ILO Conventions on issues such as forced labor, child labor, workplace safety and gender discrimination. ILO Standards are only binding in countries which have ratified the convention, but they also play a role in international trade. Both the European Union and the United States utilize social clauses to provide incentives to exporting countries applying the standards, or impose trade sanctions on those which don't. However, sanctions are based on complaints and not strictly implemented¹⁵⁴.

While the international agreements provide the foundation, the specific mandatory standards in different countries and trade blocks still differ. In addition, preferential trade agreements and contain special environmental and social clauses for the trade between the participating countries. Therefore, analysts have to compile the specific standards applicable to a particular product and a particular country for every individual case. Fortunately, there are several good publications and search tools to achieve this task. The major internet sources are listed in the box below.

Box 9.9: Tool – Sources of information on standards in international trade

Global trade:

International Trade Center (ITC) standards map – www.standardsmap.org/

ITC market analysis tools – <http://legacy.intracen.org/marketanalysis/>

ISO standards catalogue – www.iso.org/standards-catalogue/browse-by-ics.html

Export into the European Union:

Commission of the European Union, EU help desk – <http://exporthelp.europa.eu/thdapp/index.htm>, including the 'MyExport' search function for the relevant requirements for each product category

Centre for the Promotion of Imports from developing countries (CBI) – www.cbi.eu

Source: Own compilation

¹⁵⁴ See Agustí-Panareda et al., 2014, and Wikipedia on "International labor standards".

The most important tool for international exporters is the “standards map” of the International Trade Center (ITC). The ITC standards map provides information on more than 210 standards, codes of conduct and audit protocols for global value chains. It allows identifying and comparing standards. It provides comprehensive, verified and transparent information on voluntary sustainability standards covering issues such as food quality and safety. The main objective is to strengthen the capacity of producers, exporters, policymakers and buyers to participate in more sustainable production and trade.¹⁵⁵

As the South-South trade increases, quality standards become increasingly important for exporters within the regional economic communities in Africa, ASEAN and Latin America as well. Initiatives to create specific standards abound¹⁵⁶, including food quality standards such as ASEAN GAP or KenyaGAP.

- *Public regulations and private standards for exports into the European Union*

The public mandatory requirements of the European Union are defined by the European Parliament. Regulations concern, among others things, technical norms, the control of dangerous chemicals and pollutants, the trade in wild plants and animals¹⁵⁷, the use of eco-labels, product safety and food safety (see the section below). Obviously, all regulations build on the framework of the WTO. A regulation of particular importance for biotrade value chains is the ‘Novel Food Regulation’: “Novel Food is defined as food that has not been consumed to a significant degree by humans in the EU prior to 1997, when the first Regulation on novel food came into force. ‘Novel Food’ can be newly developed, innovative food or food produced using new technologies and production processes as well as food traditionally eaten outside of the EU.”¹⁵⁸ An example is chia seeds imported from Argentina and Bolivia.

The seal ‘CE’ (which stands for Conformité Européenne) on imported consumer products signifies that a product meets all safety, health, and environmental protection requirements of the European market.

GlobalGAP¹⁵⁹ started as an initiative of European retailers and now is the most important private standard for fresh agricultural products in the European Union. GlobalGAP dominates food retail and is a quasi-obligatory standard for European producers and exporters of fresh produce into the European Union.

- *Some specific market standards*

Organic food standards: Organic farming practices based on the principles of Organic Agriculture. Organic agriculture “is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and circuits adapted to local conditions rather than the use of inputs with adverse effects”¹⁶⁰. Although the share of certified organic agriculture has increased steadily over recent years, it still remains a niche market with customers almost exclusively in developed countries. However, in developing countries organic farming of export crops is slowly growing. There are numerous standards for

¹⁵⁵ www.standardsmap.org

¹⁵⁶ M. Will, 2011

¹⁵⁷ according to the Convention on International Trade in Endangered Species CITES

¹⁵⁸ Quote from https://ec.europa.eu/food/safety/novel_food_en

¹⁵⁹ previously called EurepGAP, see www.globalgap.org/.

¹⁶⁰ International Federation of Organic Agriculture Movements (IFOAM)

organic agriculture, both private and public. By now, 119 countries have set minimum legal requirements for organic production and processing. This includes the EC Eco Basic Regulation of the European Union (EU), NOP (National Organic Program) in the US and the JAS (Japan Organic Regulation) in Japan.

Protected designation of origin certificates: An interesting type of product certification is the ‘protected designation of origin’ (PDO). More and more consumers are looking for regional produce and food produced in traditional ways and attaching greater importance to the quality of food they eat. In the EU, the agricultural producers and manufacturers that produce traditional or regional specialties carrying protected geographical indications and designations of origin must comply with and be certified according to Council Regulation (EU) No. 1151/2012. Well known products with protected origins are the Italian Parmigiano-Reggiano (Parmesan) cheese, and French champagne. The PDO is a quality feature and marketing instrument outside the EU as well.

- Sustainability standards

From the public point of view, the ethical aspects of quality deserve particular attention. They concern product safety primarily plus, increasingly, the sustainability of value chains. There is a growing worldwide consensus that production technology should not harm the environment or destroy resources, that laborers be treated fairly and children kept out of commercial business. Sustainability standards therefore become more and more important and occupy an increasing market share. Today, most global commodity value chains are subject to an emerging scheme for sustainability governance. Determining the requirements of the sustainability agenda therefore goes beyond looking for the current market demand. Because of the enormous significance of sustainability standards for value chain development, we cover them separately in the following chapter¹⁶¹.

Food safety – the key quality concern in agricultural value chains

Food safety is a key concern. It is in the private interest of consumers as well as in the general public interest. Safety for consumption is the most important subject matter in domestic and international trade. The potential human and economic losses caused by foodborne diseases are considerable. Having to withdraw unsafe food once it has reached the consumer market is not only extremely costly; it also seriously damages the food producers and processors concerned. Food safety regulations aim at ensuring that all food is safe for consumption. The principle is to minimize or avoid hazards caused by chemical (Aflatoxin, Dioxin) and parasitic contaminants (*Salmonella* spp, *Escherichia* spp.). To fend off these hazards both the legislators as well as private industry and retailers set standards for food safety. The “Agreement on Sanitary and Phytosanitary Measures” (SPS agreement) of the WTO provides an international framework for national food safety legislation. For all technical aspects, the SPS Agreement refers to the international food safety norms of the joint FAO/WHO Codex Alimentarius Commission. It should be noted that food safety standards apply to all food products equally. They are specified for particular products and value chains by technical guidelines, e.g. for milk or meat.

In 2002, the European Parliament and the Council adopted the General Food Law regulation, which is the foundation of food and feed law. It sets out an overarching and coherent

¹⁶¹ see chapter 9.3.1

framework for the development of food and feed legislation both at Union and national levels. To this end, it lays down general principles, requirements and procedures that underpin decision making in matters of food and feed safety, covering all stages of food and feed production and distribution. It also sets up an independent agency responsible for scientific advice and support, the European Food Safety Authority (EFSA)¹⁶².

The Global Food Safety Initiative (GFSI) is an industry-driven initiative providing leadership and guidance on food safety management systems worldwide¹⁶³. The objectives of GFSI are:

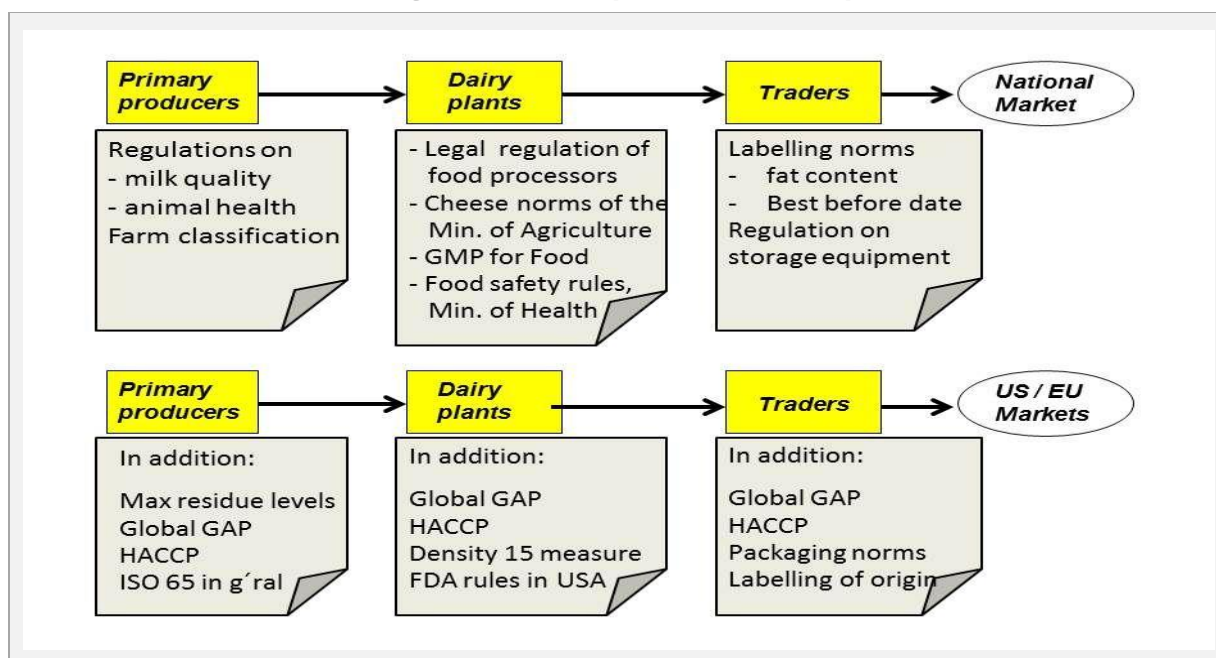
- Harmonization / convergence of food safety standards and food safety management systems determining equivalency between existing food safety scheme;
- Reducing transaction cost in the global food system by eliminating redundancy and improving operational efficiency;
- Development of competencies and capacity in food safety to create consistent and effective global food systems;
- A unique stakeholder collaboration platform, knowledge exchange and networking.

Supermarket chains and multinational companies submit suppliers to strict private standards. Their interest is to avoid food hazards jeopardizing their reputation and market shares. The most important private food safety standard in Europe is GlobalGAP.

Linking quality requirements to the value chain

Once the relevant regulations and standards have become clear, analysts and lead actors in value chain development should relate them to the chain map as shown in the box below.

Box 9.10: Tool/case – Linking the chain map to standard requirements



Source: Own concept

¹⁶² http://ec.europa.eu/food/safety/general_food_law/index_en.htm

¹⁶³ See: <http://www.mygfsi.com/>

We note the mandatory standards first, followed by the choice of other applicable standards. In additions, we can identify testing needs at each stage of the chain. In this context, the “Kompass Nachhaltigkeit” for small and medium enterprises is a valuable source.

The national German metrology institute PTB has developed a training and workshop methodology that identifies gaps in the use of quality standards in value chains and supports measures to overcome the constraints¹⁶⁴. Box 9.2.3 presents the methodology.

Box 9.11: Tool – The CALIDENA methodology

Overview of the CALIDENA methodology

CALIDENA is a participatory methodology developed and implemented by the ‘Physikalisch-Technische Bundesanstalt’ (PTB) to stimulate quality in value chains; it aims to systematically and sustainably support the improvement of the quality infrastructure (NQI) in developing countries and emerging economies. The target audience is project coordinators and members of steering committees of development projects, facilitators and also representatives of quality infrastructure organizations and of private sector organizations, who plan to work in the intersection between value chains and quality infrastructure. The methodology can be used in projects that aim to strengthen the user orientation of the NQI, and/or in value chain initiatives that seek to address gaps in quality services. Organizations that want to work with the methodology can contract trained and experienced CALIDENA facilitators and are required to inform PTB’s focal person at the beginning and end of the process. More detailed guidelines, templates and case studies can be found at www.calidena.org.

Source: text taken from the PTB website www.ptb.de

Compliance with food laws and private standards is a highly critical duty of any food producer and exporter.

9.2.2. Quality management tools

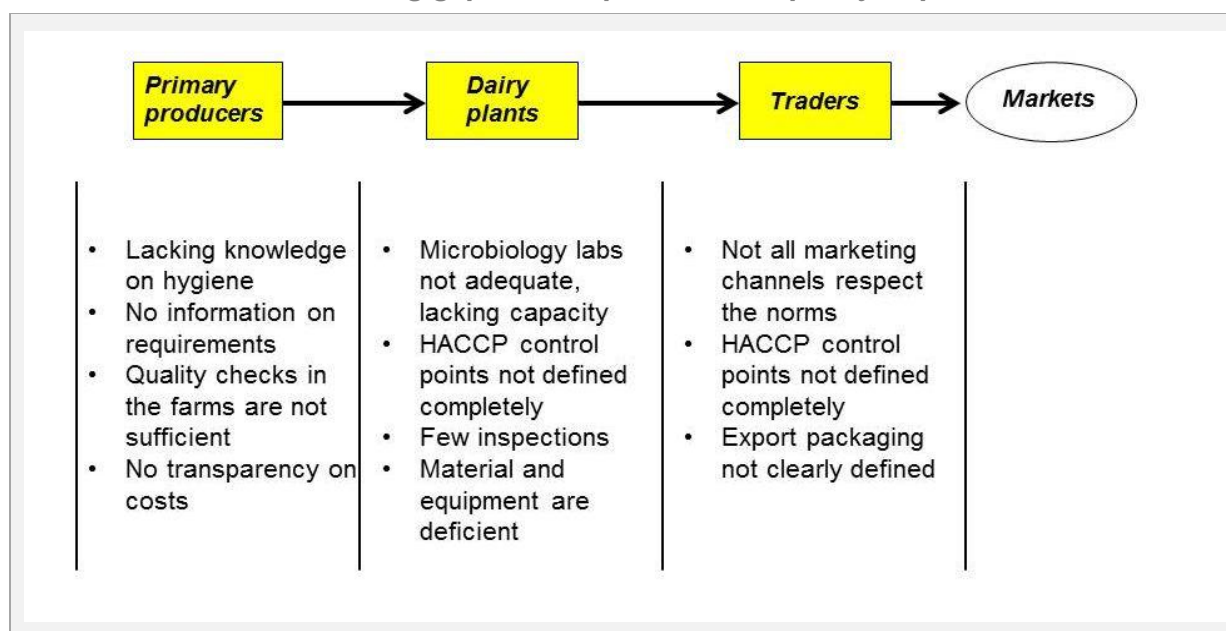
The private enterprises are responsible for the correct application of the standards at the production locations and for the market(s) they are serving. Once the quality requirements are clear, the question is how chain operators can efficiently satisfy them. Which deficits and challenges exist? And what needs to change?

Determining compliance gaps and management needs

To determine the agenda for quality improvement, we compare the quality requirements with the actual status of the value chain. Quality being a systemic concept, we again have to look at the entire product cycle along the value chain. The question is which of the quality requirements are already covered, which are not and which of them pose problems. This is an extension of the analysis presented in box 9.2.2. The following box refers to the same case – dairy products in Nicaragua.

¹⁶⁴ www.ptb.de/lac/index.php?id=5209.

Box 9.12: Tool – Determining gaps in compliance with quality requirements



Source: Own concept

Gaps in compliance are due to capacity constraints, missing coordination of chain operators, and the low profitability of investment into product quality. In fact, an important factor hampering implementation of standards can be the high cost of compliance. Smallholders and microenterprises often are the weakest link in the system as they have the lowest management capacity and buyers find it difficult to coordinate many small-scale suppliers.

There are three fields of solutions: The first point is that every chain operator has to answer the quality requirements by using the right instruments of quality management at enterprise level. This includes external auditing and certification. Second, the operators have to collaborate amongst each other. Individual operators cannot assure the quality of the end market product all by themselves. All processes along the chain taken together determine the final quality outcome.

Third, the ability of the value chain operators to comply with quality requirements is a question of the quality infrastructure in the country and of the access to services around quality assurance. This means that quality solutions have to extend to the meso level of the value chain as well.

Quality management and certification at enterprise level

Choosing the product quality is an important decision in business model design. Once the standards and quality requirements of markets and immediate buyers are clear, operators have to adjust their production technologies and business practices. Quality aspects show in several elements of the business model canvas: The starting point is the definition of product quality as part of the 'value proposition'. The value proposition has to specify product quality precisely by referring to the relevant standards. Adopting a standard implies adjusting the 'key activities' by using the required environment-friendly technology and/or observing social

standards under the ‘key resources’¹⁶⁵. Sustainable sourcing shapes the relation to the ‘key partners’ At the same time, operators have to communicate quality statements to buyers credibly. In short, quality management refers to all aspects of the business model. It not only implies the compliance with all criteria stipulated in a standard but also a system of internal control and record keeping.

All operators along the value chain have to comply with the requirements. Several tools are available to achieve this task. The common basis is the set of certifiable management standards published by the ISO. ISO 9001 defines the set-up of a quality management system and has been adopted around the world¹⁶⁶. The ISO 9000 family include eight guiding principles for quality management¹⁶⁷. Another tool is the PDCA Cycle (“plan, do, check, act”) for continuous improvement of quality¹⁶⁸.

Many sustainability standards include guidelines or separate management standards to guide the practical implementation of a standard. An example is the Standard setting organization ‘Utz Certified’ which has published a guidance document for the implementation of an internal management system¹⁶⁹.

Adopting quality management tools is a challenge for many smallholders and micro-enterprises, which have neither sufficient management experience nor the necessary specific skills for quality management. Quality issues are deeply embedded in the overall management of an enterprise. Enterprises that have no clearly defined processes, do not keep records and don’t use accounting systems obviously have difficulties introducing a quality management system and achieve certification.

Essentially, the adoption of a non-mandatory quality standard is a question of profitability: Enterprises compare the cost of certification and compliance with their benefits in terms of market access and reputation gained and risk avoided. It can be an option to stick to the minimal food safety requirements only and to low quality and low price markets. However, enterprises should perceive quality requirements not only as a cost and a barrier to market entry. The compliance with standards also opens new opportunities.

In any case, there should be no options when it comes to the sustainability of production. Sustainability standards operationalize the sustainability agenda and thus aspire to be generally valid. Implicitly, they set a normative basis for the development of the value chains they refer to¹⁷⁰. In fact, sustainability standards have a double nature: They...

- help enterprises that follow sustainable practices gain a competitive advantage,
- promote the sustainability transformation of a value chain at large¹⁷¹.

Both points justify investing into the management capacity of small-scale farmers and micro-enterprises. For one, the weaker partners in the value chain need assistance for adopting

¹⁶⁵ See module 5, chapter 5.2 for the business model canvas tool

¹⁶⁶ K. Iatridis,

¹⁶⁷ ISO, 2012

¹⁶⁸ See Wikipedia on PDCA

¹⁶⁹ See <https://utz.org/what-we-offer/>

¹⁷⁰ Paradoxically, sustainability standards are often termed ‘voluntary’, although the sustainable development agenda is widely considered to be the foundation of a future economy.

¹⁷¹ The role of standards in sustainability governance is the subject of chapter 9.2.

and applying a standard so that the system can work as a whole. Secondly, certifying smallholder farmers and including them in the value chain of certified products is a positive social impact in itself. Smallholders are users and beneficiaries of a standard at the same time.

The capacity building of small enterprises embraces a wide range of issues. One set is related to the specific standard in question and the respective quality management. Training and capacity development has to cover subjects such as

- the objective and the criteria of the relevant standard,
- the technology and sustainable practices to be used,
- Quality management tools, especially record keeping and internal quality control
- Procedures for certification

Quality management is part of the general management of an enterprise. Capacity development issues include:

- Development of the business model and business planning in general,
- Financing the shift to improved technology and product quality
- Participation in smallholder cooperatives for certification and market access.

The horizontal cooperation between enterprises is an essential point. Most smallholder farmers acquire certificates only as a group of producers. Capacity development has to support the horizontal cooperation of smallholders to achieve group certification¹⁷². Group certification reduces the costs and burden for small enterprises.

The list makes it clear that introducing quality management and certification of small enterprises is not an isolated solution but has to be part of a broader business development strategy within the value chain¹⁷³. Implementing quality and sustainability standards thus requires external development assistance¹⁷⁴ and support services: Examples of typical areas of support include

- Incorporating the farming practices required by standards into agricultural extension,
- Smallholder integration into an embedded service system, in which a downstream buyer transfers the know-how on quality management to the supplying farms,
- Creating greater awareness of sustainability problems of the value chain,
- Monitoring of progress towards improved environmental and social sustainability¹⁷⁵

The support services have to be available for a longer period of time to achieve continual improvements. The economic incentive of adhering to a standard is not sufficient as long as the price premium does not pay for the investments. The concern is that without continuing external support, smallholders may be excluded from the international certified markets¹⁷⁶.

¹⁷² For recommendations on group certification see M. Will, 2010, and the material of the RSPO (Roundtable on Sustainable Palm oil) standard (<http://www.rspo.org/key-documents/certification/rspo-group-certification>)

¹⁷³ We talk about the full range of solutions for value chain development. The idea of embedding the support to standards into chain development has also been put forward by the United Nations Forum on Sustainability Standards (<https://unfss.org>) and the sector transformation project funded by IFC and others (<http://sectortransformation.com>); also see the 'Aid for Trade' Program of the WTO.

¹⁷⁴ An example is the "Fit for Market" project funded by the European Union that aims at strengthening competitiveness and sustainability of the horticultural sector in ACP countries, see www.coleacp.org/

¹⁷⁵ See the reports of the Committee on Sustainability Assessment, COSA (<https://thecosa.org>)

¹⁷⁶ C. Brandi

Cooperatives that do not continue applying the required procedures risk losing their certificates quickly.

Box 9.13: Tool – Quality management in enterprises and cooperatives

Quality management in a cooperative

To be complemented

Source: xyz

So far, we have seen remarkable achievements introducing and implementing sustainability standards in global value chains that are in the focus of consumer attention. The business-to-consumers (B2C) sustainability standards for coffee and bananas have reached the largest market share. Standards are far more important for global commodities than for the food value chains serving domestic markets.

Coordinated quality management along the value chain

- Chain of custody

Coordinated quality management is particularly relevant for food safety, as food safety regulations call for a continuous and comprehensive quality management. Food hazards have to be detected at the source. Since the safety status of the final product corresponds to the capacity of the weakest link in the value chain, food safety and quality have to be managed at each point along the entire value chain. Every value chain operator has to establish appropriate safety and quality assurance practices.

- The ‘Hazard Analysis and Critical Control Points’ (HACCP) methodology

The HACCP methodology is a systematic preventive approach to food safety. It helps checking biological, chemical, and physical hazards in all production processes along the chain that can cause the finished product to be unsafe. This includes food production and preparation, packaging, handling, storage and distribution up to shelf-life management in retail trade. HACCP is meant to prevent problems rather than only detecting during the inspection of finished products, and designs measurements to reduce the risks to a safe level. Principles of implementation include risk assessment, an appropriate product and process management, use of HACCP plans, self-control of operators, the documentation of work routines and communication of potential risks. The technical aspects at each stage of the chain are operationalized in a series of good practice documents.

The HACCP approach includes the following activities / elements:

- Conducting a hazard analysis.
- Determine the critical control points (CCP).
- Establish critical limits.
- Establish monitoring procedures.
- Establish corrective actions.
- Establish verification procedures.
- Establish record-keeping and documentation procedures

The responsibility is shared between farmers, traders, processors, wholesalers and retailers, and also includes service providers such as forwarding agents and food control agents at international borders.

Although food safety legislation is not specific to particular products per se, safety assurance programs often are organized by subsectors or value chains. The particular technical characteristics of products call for specific HACCP plans for each category of product such as dairy or meat. These plans may specify requirements for segments of the respective value chains. Hence, building a food safety management system has a generic dimension at meso and macro levels (legislation, institution building and training) as well as value-chain specific technical and organizational aspects.

Governments promote HACCP systems at two levels, often in cooperation with development agencies: One is the organizational development of national food safety institutions at the meso level. Facilitators support the assessment of the current institutional structure in food safety assurance and derive measures. Services include organizational advice on functions and responsibilities of food safety agencies and the transfer of know-how. This is part of strategies to strengthen national quality infrastructure. Another field of action is training and coaching of staff and workers in food enterprises. This includes developing concepts, curricula and organizations for vocational training programs in 'Good Agricultural Practices', food safety assurance and quality management in general.

9.2.3. Improved quality infrastructure and services

While the practical and visible quality of a product can be assessed by consumers, the non-material and safety characteristics remain invisible. Substantiating them requires the supervision of technical equipment and production processes, laboratory testing as well as social and environmental assessments. The principle institutional setup of quality infrastructure (QI) has been presented in box 9.1.5¹⁷⁷. In many countries, the capacity to ensure that business processes conform to international standards is very limited hampering the implementation of quality strategies and standards.

Strengthening quality infrastructure is a value chain solution to the extent that quality-related services are required to ensure product safety and be able to export. The solution cuts across different value chains as national service providers usually do not specialize in particular economic sectors. However, the development of quality infrastructure has to follow the demand of the companies and standard setting organizations that are the clients of QI services. Their satisfaction with the services counts for the success. Thus, the evolution of national quality infrastructure will be driven by the major value chains in the country.

In Germany, the national metrology institute PTB¹⁷⁸ has the public mandate to cooperate internationally contributing to the development of quality infrastructure in partner countries. The typical support services embrace¹⁷⁹:

- Advice on national quality policy and the regulatory framework
- Human capacity development, education and training;
- Technical capacity development of testing laboratories and calibration facilities;

¹⁷⁷ see chapter 9.1.2, above, page xyz

¹⁷⁸ Physikalisch-Technische Bundesanstalt (PTB)

¹⁷⁹ PTB, 2016

- Comparison measurements and proof of competence to support the international recognition of national providers of quality assurance services;
- Support to international and regional networking.

An efficient way to strengthening the capacity of quality infrastructure is twinning agreements between the organizations that make up the quality infrastructure in Germany and other EU countries on one side, and public bodies in Eastern Europe, North Africa and Central Asia on the other. Administrative twinning is financed in the context of the new “European Neighbourhood and Partnership Instrument (ENPI)”¹⁸⁰ which replaces earlier twinning programs, such as TACIS¹⁸¹. Twinning programs operate through national contact points in the European Union. In Germany, the program is hosted by the German Federal Ministry of Economic Affairs and Technology.

Internationally, several UN organizations are active building quality infrastructure and facilitating trade competitiveness. Important agencies in this field are the United Nations Industrial Development Organization (UNIDO)¹⁸², and the International Trade Centre (ITC). ITC helps small and medium exporters meet the technical requirements in international markets and overcome technical barriers to trade¹⁸³.

¹⁸⁰ http://ec.europa.eu/europeaid/funding/european-neighbourhood-and-partnership-instrument-enpi_en

¹⁸¹ see <http://ec.europa.eu/world/enp>

¹⁸² www.unido.org/what-we-do/advancing-economic-competitiveness/quality-and-compliance-infrastructure.html

¹⁸³ <http://www.tradeforum.org/Export-Quality-Management-Programme-ITC-Overcoming-Technical-Barriers-to-Trade/>

9.3 Sustainability governance of value chains

The second domain of value chain solutions is the use of sustainability standards as an important instrument to promote the transformation of value chains towards greater sustainability.

Since the Rio Declaration on Environment and Development of the United Nations of 1992 the international awareness is growing that economic activities present threats for natural resources and the well-being of people. The triple bottom line of sustainability – people, planet, profit – has become increasingly accepted in the business community. Large companies have committed themselves to „universal principles on human rights, labor, environment and anti-corruption”¹⁸⁴ in the UN Global Compact and other initiatives.

Experience shows that the public legal governance that should provide the backbone of regulating the behavior of market players is insufficient. In many countries the enforcement of environmental and social laws is too weak to move the sustainability agenda effectively. At the same time, more and more businesses have realized that integrating sustainability aspects into their supply chains is critical for their competitive position. Civil society action influences and drives market demand for sustainably produced goods, and no company wants to be left behind.

Both trends have given rise to private sustainability standards that operationalize the sustainability concept for practical application in the economic world. Private business associations and multi-stakeholder initiatives have taken up the idea and claim to contribute to sustainable development.

For our definition of sustainability standards, the first classification criterion is crucial – the objective of a standard: If we take the standard setters by their word, sustainability standards relate to an *agenda for global change*, not just to a particular quality feature. A standard covering a social or environmental issue can only qualify as sustainability standard if it keeps the idea of sustainable development in view. Nevertheless, companies still use a sustainability standard to position their own products in the market and gain a competitive advantage. In practice, sustainability standards combine two aspects. They provide

- An operational definition of sustainability in particular value chains that provides a normative basis for transforming an *entire* category of products or value chain towards greater sustainability, at least in one sustainability dimension;
- A market standard that regulates environmental and social practices in order to highlight the quality attributes of a particular product. The use of sustainability standards offers companies a relatively easy solution to demonstrate that their products are superior.

The first aspect counts for drawing the line to other standards that seek market *segmentation*, and not the *transformation* of the value chain. Although this distinction may appear as mere semantics, it points to some of the conflicts surrounding the practice of certification.

¹⁸⁴ www.unglobalcompact.org/what-is-gc

9.3.1. Overview of sustainability standards

Sustainability standards translate the general idea of sustainable development into rules for business practices that are acknowledged as socially, environmentally and economically acceptable.

Types of sustainability standards

The following considerations continue the comments on the general typology of standards¹⁸⁵. The table presented in box 9.1.2 in the first chapter of this module¹⁸⁶ classifies sustainability standards in the lower box of the right column – as standards issued by private associations or multi-stakeholder initiatives that regulate social and ecological objectives¹⁸⁷.

We can differentiate the sustainability standards further by looking at their scope. The following table applies two criteria for the scope of application. The first concerns the objectives of the standard, the question whether they address one sustainability dimension or the sustainability agenda at large. The second criterion is the outreach of the standard that ranges between particular products and value chains and the economy at large. Until now, sustainability standards have almost exclusively been of relevance in *global* value chains, supplying consumers in the European Union, USA and other advanced markets.

Classification presented in box 9.3.1, below.

Box 9.14: Concept – Classification of sustainability standards

	Scope of sustainability standards	
	Particular product / VC	Economy at large
Particular Sustainability Issues	<ul style="list-style-type: none"> - Fairtrade standards - Ecolabels - Bird-friendly coffee - Dolphin-friendly tuna 	<ul style="list-style-type: none"> - SA-8000 code of conduct (on socially acceptable practices in the workplace) - Ethical Trading Initiative - Non-GMO project
Sustainability agenda	<ul style="list-style-type: none"> - Rainforest Alliance - ISEAL standards: FSC, MSC, BCI, etc. 	UN Global Compact

Source: Own concept

¹⁸⁵ See section 9.1.1

¹⁸⁶ See page xyz

¹⁸⁷ Many authors use the term ‘voluntary sustainability standard’. We drop the qualifier “voluntary” here for the reasons explained earlier, see section 9.1.1, page xyz

Starting at the upper left box of the table, we find standards that cover the environmental or social sustainability dimension applying them to particular commodities and value chains. This group also includes standards for special issues, such as biodiversity. These are small market niches, such as bird-friendly coffee or dolphin-friendly fish. Two types of standards deserve a closer look, fair trade and ecolabels.

- *Fair trade standards*

Fair trade products have the longest tradition in sustainability certification. Fair trade products are regulated by a series of global standards provided by the Fairtrade International Association (Fairtrade Labelling Organizations or FLO)¹⁸⁸. Fair Trade International provides an overview of the different fair trade labels in use.

- *Ecolabels*

Ecolabels mark eco-friendly products or services. They identify overall environmental preference of a good or service within a product category based on life cycle considerations¹⁸⁹. They are awarded by an impartial third party to products that meet established environmental criteria, such as recyclable, eco-friendly or energy-efficient¹⁹⁰. As with sustainability standards in general, many different types and variations of labels, declarations and claims exist. Ecolabels use a voluntary method of environmental performance certification based on the life cycle of a product. The International Organization for Standardization (ISO) has regulated ecolabelling in the ISO standard 14024. ISO distinguishes three types of environmental performance labels, ecolabels being the strongest type.

Generally, ecolabels are issued by public organizations at national and regional level to provide orientation to consumers as well as businesses. They form the Global Ecolabelling Network¹⁹¹. The box below presents important examples.

Box 9.15: Tool – List of selected ecolabels

Product range	Standard	Source
Environment-friendly products	Blauer Engel / Blue Angel	https://www.blauer-engel.de/en
Energy efficiency	Energy Star	https://www.energystar.gov/
Environment-friendly products	EU Ecolabel	http://ec.europa.eu/environment/ecolabel/index_en.htm
Private ecolabels		

Source: own compilation using information obtained from the websites mentioned in footnote 189

¹⁸⁸ www.fairtrade.net/standards/our-standards.html

¹⁸⁹ See www.globalecolabelling.net

¹⁹⁰ See, for example, the ecolabels in the US: www.epa.gov/greenerproducts/ and the overview of European ecolabels: http://ec.europa.eu/environment/ecolabel/index_en.htm

¹⁹¹ www.globalecolabelling.net

- *Social standards and codes of conduct*

The upper right box...

Social standards build on the ILO core labor norms and other international conventions. They are set by initiatives of international companies, often in collaboration with NGOs and trade unions – in response to the international debate about the little respect for labor and human rights in many supplying countries. Social codes of conduct are business to business (B2B) standards and do not entail labelling of products. This is because full compliance with the standard along the value chain is often hard to guarantee. Instead, member companies commit themselves to continuously improve labor conditions of their suppliers.

- *International agreements on sustainable business*

UN Global compact, UN Guiding Principles on Business and Human Rights, the trade for sustainable development initiative (T4SD), Paris Accord on Climate Change, G7 Ministerial Declaration Action for Fair Production and SDG 12 that calls for sustainable production and consumption.

- *Value chain specific sustainability standards*

Over the past twenty years, hundreds of standards and certification schemes were developed. They address different sustainability issues and serve different purposes. As a result, an increasingly confusing landscape of labels and claims exist. Understanding the credibility of these standards and which standard fits which purpose is a challenge.

Benchmarking is necessary to assess the performance and credibility of a standard. The Sustainability Standards Comparison Tool (SSCT) is an online tool that enables different stakeholders to analyze and compare different sustainability standards. Standards are evaluated against the ambition of their content as well as the credibility of their implementation system. The websites quoted in the following box offer information for companies, public procurers and consumers.

Box 9.16: Tool – Sources of information about sustainability standards

Sources providing an overview of standards

- ITC standards map (<http://www.standardsmap.org/>)
- Rainforest Alliance
- ISEAL Alliance (www.isealalliance.org)
- Sustainability Standards Comparison Tool for consumers (www.siegelklarheit.de) (in German)
- <https://www.globalreporting.org/>

Source: Own compilation

Many sustainability standard systems are members of the International Social and Environmental Accreditation and Labelling Alliance (ISEAL).

Box 9.17: Case – The ISEAL Alliance**International Social and Environmental Accreditation and Labelling Alliance (ISEAL)**

The ISEAL Alliance is the global membership association for international standard-setting organizations and international accreditation bodies. Its mission is to strengthen sustainability standards for the benefit of people and the environment. They work streams are improving impacts, defining credibility an, driving innovation and uptake as well as improving effectiveness. To improve the credibility of standard system, ISEAL has developed Credibility Principles, Good practice in claims and labelling as well as Codes of Good Practice. ISEAL's Codes of Good Practice are seen as global references for developing credible standards – standards that are effective and are likely to lead to positive impacts. These Codes of Good Practice are applied by leading standards systems and compliance is an ISEAL membership requirement.

Source: ISEAL Alliance (www.isealalliance.org/about-us.org)

Important value-chain specific sustainability standards

Many of the sustainability standards emerged over the last decades have been triggered by the disillusion with the effectiveness of government regulation and legislation to address sustainability challenges. Many of them have taken a multi-stakeholder approach, including producers, civil society and companies into the standard development and further improvement. While the specific focus may differ, they generally include all three dimensions of sustainability (social, environmental and economic). These sustainability standards have emerged as a market-based instrument for addressing sustainability issues within global value chains. They have experienced a rapid uptake within specific global value chains such as coffee, tea, cocoa, palm oil etc. The majority of these systems have a strong focus on the production stage, with fewer requirements along the rest of the value chain.

Box 9.3.5 lists important value chain specific sustainability standards that take a broad approach including all three dimensions of sustainability.

The standards organized in ISEAL Alliance have largely similar content and criteria. The differences relate to the technical and organizational features of the commodities and the specific sustainability problems. Differences also result from the historical evolution of a standard, their background in the fair-trade and environmental movement, and the role of private companies.

Although many of the sustainability standards have been pushed by the demand in European, US and other advanced markets, there is a slow but steady rise of national sustainability initiatives within developing countries. One example is the 'Certifica Minas Café' standard issued by the government of the Brazilian state Minas Gerais with the objective to promote sustainable practices in coffee production. The standard provides farmers with practical orientation to produce more efficiently while respecting social and environmental laws. In general, the number and leverage of standards for local markets is still limited.

Box 9.18: Case – List of important chain-specific sustainability standards

Value chain	Standard / label	Website
<i>Wood and Furniture</i>	Forest Stewardship Council (FSC)	www://fsc.org
	PEFC Standard Program for the Endorsement of Forest Certification Schemes	www.pefc.org/
<i>Carpets</i>	Rugmark label – Good Weave	www.goodweave.de/
<i>Cotton and cotton apparel</i>	Cotton Made in Africa (CmiA)	www.cottonmadeinafrica.org/de/
	Better Cotton Initiative (BCI)	http://bettercotton.org/
<i>Coffee, tea, cocoa, hazelnuts</i>	Utz Certified	www.utzcertified.org
<i>Coffee</i>	Global Coffee Platform (formerly 4C)	
<i>Flowers</i>	Flower label program	www.fairflowersfairplants.com/home-de.aspx/
<i>Aquaculture</i>	Aquaculture Stewardship Council (ASC)	http://www.asc-aqua.org/
<i>Seafood</i>	Marine Stewardship Council (MSC)	
<i>Palm oil</i>	Round Table for Sustainable Palm Oil (RSPO)	http://www.rspo.org/about
<i>Sugar</i>	Bonsucro	
<i>Soybeans</i>	Roundtable for Responsible Soy (RTRS)	
<i>Several commodities</i>	SAN/ Rainforest Alliance	

Source: own compilation

9.3.2. The role of standards for sustainable development

The application of a sustainability standard leads to the adoption of sustainable practices and therefore contributes to sustainable value chain development directly. Sustainability standards set objectives not only for enterprises but implicitly for value chain development at large. A growing market share of certified products in a commodity market indicates progress towards sustainability.

Significance and limits of sustainability standards

There has been significant progress in advancing sustainable production practices and consumption patterns. The importance of private standards has grown steadily over the last decades. Today, sustainability standards are firmly established and will continue to play an important role for sustainable development.

To assess the impact of sustainability standards, we look at three factors:

- the content and credibility of a standard
- the actual impact on sustainability
- the outreach - the current and potential market share.

Content and credibility: The first point concerns the question what the standard actually stands for. Usually, sustainability standards address particular aspects of sustainability within a value chain. Over time, standards have become more comprehensive adding new criteria. Nevertheless, no standard can actually guarantee the sustainability of the market segment it refers to. In particular, it cannot solve fundamental development problems. Persistent rural poverty, the general social conditions at production locations and migration have gained political importance but are difficult to address via sustainability standards. Standards prove that a product has been produced under a particular defined set of criteria but may fail to address other important issues. For example, including a living income criterion is a challenge. Critics argue that standards “certify poverty”¹⁹² as long as the poverty problem remains unsolved.

Impact on sustainability: While we have the tools to compare the criteria used by standards, the actual social and environmental impact is much more difficult to establish. Sustainability standards are still quite young impacts still need to be proven. Most studies provide anecdotal evidence of the environmental and social impacts. In general the impacts seem to be positive, but a high variation between different regions/farmer types¹⁹³. One example is the market access gained by some producers. In Ghana it was found that some producers who dropped Rain Forest Alliance certification still retained the best practice because the quality improvements and access to formal markets still provided a benefit. Previous access to technical assistance and training to prepare certification thus had a productivity effect in the long term.

Outreach: Finally, the significance of a sustainability standard is a matter of its market share. The market share can relate to the number of enterprises adopting the standard and the volumes of produce they represent.

The share of certified products in total market value has increased. It is generally between 5 and 10 percent. In some commodities, certified products have reached a significantly higher market share. The most interesting commodity in this respect is coffee. 40% of the coffee is certified. Coffee also has a long tradition in the fair trade movement. Coverage is generally higher if related to value and volumes. It is much lower in relation to participation of farmers. Despite the progress made, the outreach of sustainability standard systems still remains limited. 20% coverage appears to be a threshold that is difficult to cross. Coverage limited to “sustainability islands”. Progress varies across the value chains depending on the degree of

¹⁹² xyz

¹⁹³ See the studies of COSA

integration and formalization. Sustainable commodities that are still recognizable as the single product state when they reach the consumer, such as coffee and tea, receive more attention of consumers than products that are ingredients such as soybeans, palm oil and cotton.

There is a great mismatch between the volumes which are sustainably produced and those who are traded as sustainably certified. Even if we consider double certification, it is still a gap we need to take into account. For example, in coffee only ~13% of 4C certified coffee is sold as such. For other standards it is around 25%. Despite numerous commitments by multinational companies towards sustainable procurement, a large proportion of sustainably certified raw materials cannot be sold as such.

Generally, the market penetration of sustainably produced goods is still low. The uptake of sustainability standards has been mostly limited to global value chains targeting Western markets. Only certified products with a high visibility reach significant market shares. Value chain strategies that build on standards as solutions have to find a response to the critical questions around the role of private standards.

Following is a discussion of the main limiting factors.

- Demand of consumers in end markets is limited.

Once retailers have reached the consumers who are interested in sustainability, further market penetration becomes difficult. Mass market consumers are still unable or unwilling to pay extra. The demand for sustainably produced products thus is not high enough to justify a price premium that could be used for investing into additional improvements. This is particularly true for commodities that do not maintain their identity along the value chain. Where products are not traceable to source and certification is based on mass balance, the communication with consumers is often less than simple.

- The incentives for the value chain operators are insufficient.

Voluntary standards contribute to sustainability only to the extent that private enterprises see the advantage of adhering to a standard, greater demand, better prices or the reputation gained. The use of a standard has to be economically viable. Using a standard to optimize supply chain management is ultimately a question of costs and benefits. Given the ceilings in demand volume and prices, the cost becomes the decisive factor. Therefore, buyers tend to shift the burden of proving compliance to the upstream producers. Given the cost pressure, labelling as a marketing instrument becomes the center of attention. Retailers rather focus on fashionable topics they can communicate easily. It is against this backdrop that they are accused of 'greenwashing', i.e. limiting the offer of certified products to what is necessary for marketing purposes¹⁹⁴.

The incentives for the farmers are weak as well. As long as the price premium on certified products is as low as it is today, the primary producers cannot generate enough funds to invest into sustainable practices. The constant pressure on food prices in mature markets adds to the problem. Without a tangible financial benefit, they will turn to public support for finance and capacity building. However, this is not the idea of a market-driven approach.

- Inclusion / exclusion of small and marginal producers is critical.

¹⁹⁴ xyz

Smallholder inclusion in sustainable value chains is a highly critical and difficult subject. For one, it is clear that not all producers can be included in a commodity chain. This has to do with the size of farms in the first place, but also with socioeconomic factors. It can be difficult to achieve technical change with an older generation of farmers. It is an entirely different question whether standards put certain groups at a disadvantage. Depending on the conditions of locations, the development of the value chain may squeeze particular groups of suppliers. Entire sourcing regions may fall out of the system if they cannot create the required conditions in time.

Conditions for the effectiveness of sustainability standards

Given the conditions explained above, value chain development programs need to carefully review and select the standards they would support. Standards will only contribute to value chain development if two basic conditions are met. For one, there has to be an effective market demand for the sustainably produced variant of the consumer good. The standard should effectively serve and segment the market. Second, the farmers and all other operators should have a significant net benefit from using the standard. There needs to be a true reward for sustainable production. Only if the costs of implementing a standard are covered by a price premium or can be made up for by increased efficiency, adherence to the standard is a viable option. The economic benefits have to be identified prior to implementation and verification of any standard – especially in the case of small producers.

Other conditions are at least helpful to make standards a success. There are three important success factors:

- *Type of product:*
Commodities that maintain their identity along the value chain, e.g. fresh bananas or coffee, have the interest of certain consumers groups and are more likely to fetch a premium price. Non-compliance with the standard is more likely to be revealed.
- *Value chain structure*
Value chains with few leading companies can more easily reach a consensus on sustainability topics and agree on industry-wide regulation. Where a basic agreement exists, the supply chain management of few large companies that combine a considerable market share is sufficient for scaling up. An example is the agreement between the big retailers organized in the Consumer Goods Forum on render their supply chains free of modern slavery.
- *Degree of value chain development:*
Well-organized, integrated chains have fewer difficulties introducing innovative practices than fragmented chains.

These are not the only points. The questions in box 9.3.6 help clarifying whether or not a sustainability standard has the potential to contribute to sustainable value chain development.

Box 9.19: Tool – Lead questions to assess the significance of a standard

Assessment of target markets:

- What are the specific requirements of the target market?
- Current demand and demand trends

Assessment of standard objectives:

- hot spots addressed by a standard?
- Can small producers expect an economic benefit from adhering to the standards?

Assessment of performance and credibility of the standard

- How likely will the implementation of the standard achieve positive social, environmental or economic impacts?
- How does the standard perform in comparison with other standards?

Assessment of market access capacities:

- Can small producers meet the standards of these new markets?
- Which capacities need to be strengthened along the chain to meet the standards – and at what cost?

Identification of leverage points and intervention strategies:

- Which constraints and opportunities are critical for implementing the standard
- Which technical or financial assistance is necessary to initiate and strengthen the implementation of the standard?

Source: adapted from Reardon, 2004, p.80

The following two sections present possible solutions and areas of action to enhance the role of standards for the sustainable development of value chains. One thing is the improved performance of the existing standard systems. Other points are the alignment of standards and strategies to expand their market penetration. The last section looks at standards as an element in the sustainability governance of value chains that also has to include public governance and regulation.

9.3.3. Improved performance of standard systems

Standard initiatives need to be professionalized and systems need to be adjusted to manage the growing demand and supply. For the quality, credibility and effectiveness of standard systems, participation of all relevant stakeholders is critical. It is important to help standard systems to shape their decision-making-structure to become more efficient and operate independently from donor support.

Professionalizing sustainability standard systems

The first field of action is to improve the setup and functioning of existing standard systems.

- *Functional efficiency of a standard system*

Standard systems can benefit from innovations to improve their outreach and efficiency. This applies less to the given institutional set-up of a standard system, although it can make sense to support membership-based standard-setting organization in the interest of greater credibility. More importantly, standard systems have to keep up with new technologies such as satellite monitoring, big data, and IT solutions that have the potential to reduce costs sig-

nificantly. All process innovations have to be in line with the ISEAL code for good standard setting.

- *Benchmarking of standard requirements*

National standards have to demonstrate equivalence with international conventions and sustainability standards. An example is the Global Coffee Platform that understands the 4C Code as an entry-level sustainability standard. It works together with other national or sub-national standards and assists in further developing them. It also serves as an entry standard for more demanding standards systems such as Fair trade, SAN/Rainforest Alliance and UTZ Certified with which it closely cooperates. building the capacity of national or local initiatives to align their standard requirements with more demanding market entry standards.

- *Broadening the coverage of sustainability issues*

Given the large number of existing standards and the range of topics they cover, developing any new standards does not appear very useful. However, in the interest of serving the sustainability goal better, the revision of a standard can lead to the incorporation of new topics, such as climate change adaptation or living wages. In fact, the trend is that sustainability standards cover more and more aspects of the sustainability agenda. Some standard systems actually have GHG calculation and reduction criteria (RSB), others address quite extensively land use change (RSPO) or the adaptation to climate change (e.g. RA). Other issues are in the process of being included (modern slavery, deforestation).

Including new concerns in standard setting has an eminently political character. Standards systems that are governed by multi-stakeholder for a give all participants the possibility to make suggestions and to influence the agenda. An example is the Forest Stewardship Council that meets every three years in a General Assembly which is the major decision making body. It determines strategic directions and allocates funds to activities and projects. The participation of small-scale producer organizations and other social groups in taking these decisions is in the interest of the sustainability agenda.

However, we should not forget that government, civil society organizations and development agencies are interested parties alongside with private companies. Standard setting organizations should not try to cover too many issues beyond the ones that consumers want to be solved.

- *Capacity development for all parties in the standard system*

It is clear that a standard system can only work, if the actors take their roles. This is true for all participating actors. Small businesses as well as managers and staff of medium- and large sized companies have to be able to implement the measures required by the standard and develop ownership for the whole process. The capacities of certifiers and providers of accreditation services are essential for the smooth operation of the system. Public administration is needed to enforce the rules. Likewise, the stakeholders in standard setting need the requisite communication and negotiation skills. It is important that representatives of developing countries get their points across. Development agencies can assist by imparting training and other qualification measures and by supporting the organizational development of verification bodies.

- *Financing investment into the implementation of a standard*

Implementing a standard or a regulation incurs investment costs for assets (e.g. pesticide stores), equipment (e.g. protective clothes) and technical and managerial skills. Operators need to build the capacity and acquire the appropriate technology. Small farmers and enterprises often face serious problems responding to the requirements as the fixed cost of individual investment may be too high given the small scale of their operations. This problem should be resolved by forming associations rather than by subsidies. Finding financial solutions is the key to any investment.

Alignment of different private and public standards

The growing concern for product quality and social and environmental problems has led to an ever expanding and sometimes confusing list of standards and regulations. The ITC Standard Map alone includes more than 210 standards addressing sustainability issues. Many public and private standards duplicate each other.

The proliferation of standards has made it increasingly difficult to keep track. Issues and definitions vary. Certain demands are not compatible or even contradictory. The cost of compliance is unnecessarily high for producers that have to respond to different standards at the same time.

Overcoming the contradictions and strengthening the complementarity between sustainability standards is an important general objective¹⁹⁵ and a value chain solution at the same time. Improved alignment between different standard systems not only means more compatible criteria and common minimum requirements, it also leads to economies of scale in auditing processes, mutual recognition of conformity assessments, and in the cooperation on data management and capacity development. Standard systems can consider enlarging their units of verification from farm to regional or landscape level.

The parallel existence of public and private regulations both addressing public objectives can generate confusion if the governance systems evolve independently. The interplay of public and private standards is a subject of its own¹⁹⁶.

Expanding the market share of certified products

The ultimate objective is to increase the uptake of sustainable practices. To reach a greater market share of sustainability standards, value chain development programs have to utilize standards strategically. Value chain strategies based on standards obviously have to take into consideration the success factors and the constraints discussed in section 9.3.2. Development strategies can influence some of the conditions:

One strategy affects the cost-benefit relation of utilizing a standard by reducing the cost of compliance and/or by enhancing the risks of non-compliance.

Stepwise introduction of standards: Standards making too high demands can be counter-productive if the operators are not able to meet the criteria or cannot carry the cost of certification. They also can become a trade obstacle and hinder sustainable growth. Arrangements that aim at including people should use a stepwise approach. Instead of fulfilling the com-

¹⁹⁵ ITC, 2011

¹⁹⁶ See the next section 9.3.4, below.

plete set of requirements from the start, producers get time to gradually build their capacity¹⁹⁷.

Some sustainability standards have opted for a low threshold for entry and allow continuous improvement of social and environmental performance over time. The coffee sector provides a case in point: Smithsonian Institute (for “bird-friendly” shade grown coffee) is a typical specialty coffee, with relative low market share. Conversely, the 4C standard has been developed as a less strict sustainability standard for the mainstream coffee market, which may eventually become an international industry standard. As large volumes of trade are affected, the impact is more broad-based. Highly ambitious standards can only target niche markets. In mainstream markets, the criteria have to be relaxed.

Transformation driven by information technology: Better IT solutions bring the cost of information down. The use of IT makes it easier to follow-up on rules and compliance. Internet-based communication and blended learning reduce the cost of information and capacity development. At the same time, information on unsustainable practices becomes public, naming and shaming drives change. Increasing availability and relevance of data and information makes it difficult to hide unsustainable practices and erodes privacy.

Value chain development: A second set of strategies addresses value chain structure and integration: Combining the implementation of standards with other (private as well as public) interventions for value chain development improve the conditions for the success of standards. Value chain development supports the integration and organization of the value chain, so that innovations can hold more easily. Public-private partnerships enable investment into technical and other chain innovations. Of particular interest are business model solutions that are win-win, which means that they reward sustainable practices financially. Other value chain solutions that facilitate standard implementation are improved business linkages and contracting and financing arrangements for investment in quality and productivity improvements

The idea behind scaling up is to reach a critical market share which becomes a tipping point in the development of the value chain beyond which sustainably produced goods become the default. It is important to set off a dynamic, in which certified producers and traders become opinion leaders driving the diffusion and adoption of sustainable practices. Ideally, the value chain would take a sustainable pathway and evolve towards adopting the better practice. The standard would cease to be used for market differentiation and provide point to a sustainable future of the value chain at large.

9.3.4. Combined public and private sustainability governance

Sustainability governance refers to the rules and processes of sustainable production and consumption, formalized in private standards on one side and in laws and regulations on the other. Accordingly, we speak of private value chain governance and of public governance for sustainable development. Both sides agree that sustainable development can only be achieved if business processes follow the rules. Good governance is the key to promoting sustainability.

¹⁹⁷ GIZ, 2013

It becomes increasingly clear that neither the market demand nor the regulatory power of government is sufficient to bring about the structural change needed. Current sustainability standards and governance solutions have reached a point where they cannot continue to be the sole drivers of change.

The question is not just which criteria a standard covers and whether it is credible. The crucial question is whether we achieve a 'sector transformation', that is the transition from a currently unsustainable to a sustainable value chain. We have to look at the improvement of standards and also beyond, at the role of standards in the wider context of sustainability governance.

The debate is ongoing in the world of standards. The following box presents selected voices and sources.

Box 9.20: Concept – The debate on the sustainable transformation of chains

Organizations participating in the debate on sustainability transformation

- New foresight
- Consumer Goods Forum
- To be complemented...

Source: Own concept

Generally, the move is from standard systems to systems of sustainability co-governance. The value chain solution is in a smart combination of private standards and public regulation, leveraging the relative strengths of both governance systems – the legitimacy and regulatory power of public administration on one side and the agility and economic efficiency of private standards on the other. The criteria and systems requirements have to be compatible and complement each other. In the following, we highlight two strategies, 'smart regulation' as the successful interplay of private and public regulators, and the 'landscape approach', that is the combination of chain governance with public governance of regions and locations.

Interplay of private and public regulation

The combination of private and public regulation works both ways:

- Private standards used for public regulation
- Government supporting private value chain governance

Smart regulation refers to both. Private standards and public regulation can mutually reinforce each other as each has a particular unique strength – the obligations imposed by public regulations and the agility of private standards.

- *Benefits of private standards for public regulation*

Private sustainability standards have never been an instrument solely used by the private sector. They are also used by government. Co-regulation refers to the use of private standards within public regulations. This allows governments to promote sustainable economic activities more effectively and efficiently. Instead of regulating every aspect on the public side, governments make use of existing private systems to keep control over value chains. Governments use sustainability standards to substantiate regulations and enforce them, e.g.

as proof of compliance, or to define criteria for the access to subsidies, tax concessions or government procurement. Private standards thus provide a baseline also public standards¹⁹⁸.

The idea is to combine the strengths of both private and public regulatory capacities. Advantages of governmental regulations are the democratic legitimacy, applicability to all actors within state jurisdiction and the enforceability through state supervisory agencies. In turn, private sector standards are quicker in reacting to problems, and they extend over judicial borders. Prominent examples for the use of private systems within public regulation are the European Renewable Energy Directive and the regulations of timber procurement in the EU and several European countries.

Both private and government regulation need to complement each other. Smart mix or smart regulation refers to the best combination of public and private regulations, which seeks to ensure an efficient and effective regulatory framework. A pooling of all current activities at supranational (e.g. EU level) and international level and a greater cooperation between the various actors is a key area of improvement.

Box 9.21: Concept – Arrangements for Co-regulation

We can distinguish three arrangements of co-regulation:

- Governments set binding goals which they enforce by officially recognizing private compliance schemes. Details on implementation and verification of compliance are left to the discretion of a private scheme
- Governments adopt private regulations into national laws
- Governments support private schemes without legislation or adoption, e.g. by creating conducive legal and regulatory frameworks (national accreditation), support private party implementation directly (e.g. by providing loans) or to participate in the development of private schemes.

Source: own concept

Companies and sustainability standards can benefit from existing legal rules by including them into their systems. Relying on legal regulation reduces transaction cost. The UN Global Compact uses the intergovernmental standards set by the international organizations in areas such as human rights or labor standards, and consolidates them for application by private sector players. They also encourage initiatives and partnerships between governments, civil society and private business stakeholders.

Sustainability standards can contribute and help promote change processes to improve government regulation, but they cannot substitute public regulation.

- *Benefits of public regulation for private chain governance*

Strengthening and improving public sustainability governance in producing as well as consuming countries is key for reaching the ambition goals set by the international community. Public regulation clarifies and simplifies rules, processes and communication leaving the companies to concentrate on solutions for improved compliance with accepted norms.

¹⁹⁸ ITC, 2011

Governments set the legal framework and provide economic incentives for sustainable business practices. They can create incentives in various policy areas in order to influence the demand for sustainable produced products. Government can support the transition to sustainable production and consumption for example, by

- A level playing field for all businesses through the design of policy frameworks (e.g. uniform regulation of minimum wages in social legislation)
- Support for the transition by incentive systems
- Establishment of monitoring and sanction mechanisms
- Financial support for investments in sustainable technologies

cooperation of governments in producing and consuming countries

Governments in producing countries play a decisive role for the establishment and enforcement of legal regulations that foster the development of sustainable living and working conditions. Governments in consuming countries create enabling framework conditions and incentives for more sustainable consumption.

Other policy areas include trade regulations for market access, transparency requirements and public procurement. Sustainable procurement is public procurement that is consistent with the principles of sustainable development¹⁹⁹. Because of its significant share in the economy, the public sector has a huge potential for contributing to sustainable production and consumption. In Germany for example, public procurement has a volume of approximately 360 billion € per year, which is about 13 % of gross domestic product.²⁰⁰

An area of great importance is foreign trade. Governments set minimum requirements in trade agreements. Products which do not fulfill minimum standards, can be banned through market regulation. Financial incentives and tax breaks are two examples for incentives mechanism fostering more sustainable products. Regulatory action can be used to increase the transparency of processes and products in way of including transparency requirements. As a last resort, demand countries can declare moratoria for products from a certain regions where repetitive and severe violations of standards were reported.

Governments in consuming countries increasingly support sustainability initiatives to foster sustainable consumption and production. The German Government for example has been actively involved in the establishment of a number of national roundtables such as the German Cocoa Initiative (GISCO), Textile Partnership and Forum for Sustainable Palm Oil. Objective of these national round tables is to foster sustainable consumption through raising the market share of sustainable produced products within the German market. Private sustainability standards play a key role for proving compliance and contributing to the reporting success.

The 'Landscape Approach'

The 'landscape approach' is another example of the cooperation between public and private actors in promoting the sustainability agenda. The idea is that private and public sustainability governance systems take differing perspectives: Value chains are the domain of private

¹⁹⁹ Walker and Brammer, 2007

²⁰⁰ Kompetenzstelle öffentliche Beschaffung: http://www.nachhaltige-beschaffung.info/DE/Allgemeines/allgemeines_node.html)

sustainability governance, natural resource management at particular locations is a public task.

Both complement each other: Standard systems focus on best practices of value chain operators but can only reach a certain percentage of producers in a particular production zone. Even as the certified production area is protected, deforestation continues when other producers move on to occupy new land. Public policies for natural resource management, in turn, may well protect an entire region but lacks the instruments to make protection economically attractive.

Landscape approaches combine the commodity with a spatial perspective. While buyers ask for the application of a sustainability standard and provide an economic incentive, local and regional governments allocate and manage the land resources spatially – in their area of jurisdiction. The cooperation of private companies with public stakeholders in supply regions, allows addressing the sustainability problems from both sides²⁰¹. The commodity thus responds to an important concern for sustainability. The disadvantage is that enterprises can only source from the certified supply regions.

The landscape approach finds more and more attention, most prominently within deforestation free supply chains (see the box below). Only the complete coverage of an entire supply region enables an effective protection of the natural resources.

Box 9.22: Case – Deforestation-free value chain, Indonesia

Case to be complemented

Source: GLZ

²⁰¹ ISEAL. 2016

Resources

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Websites

Resources List, [hyperlink](#)



Module 10

Policy instruments

Contents

10.1 Introduction: The need to regulate value chains	229
10.2.1. The business environment of value chains	229
10.2.2. Principles of policy design	231
10.2.3. Classification of policy instruments	233
Types of policy instruments	233
Geographical scope	234
The policy instrument matrix	235
10.2.4. The policy cycle	237
The policy cycle and its relevance for value chain programs	237
10.2 Economic policies	240
10.3.1. Growth policy	240
Market regulation and transparency	240
Infrastructure Policy	241
Financial policy	242
Industrial policy	242
10.3.2. Property rights	245
10.3.3. Trade policy	247
Regulation	247
Regional trade agreements	248
Trade Facilitation	248
10.3 Environmental policies	251
10.3.1. Environmental regulation by 'command and control'	252
10.3.2. Market-based environmental policy instruments	252
10.3.3. Voluntary regulations	254
10.4 Social policies	255
10.4.1. Labor policy	255
Decent work	255
The International Labour Standards of the ILO	256
Active labour market policy at national level	257
10.4.2. Corporate codes of conduct and social responsibility	258
Resources	261

Module 10 Policy instruments

10.1 Introduction: The need to regulate value chains

All efforts to support sustainable economic development are put at risk under conditions of market failure. The value chain analyses and the strategic considerations in Module 3 have shown that we can never rely on market processes alone to generate the desired social and environmental outcomes of value chain development. Four of the nine strategic options defined by ValueLinks explicitly include regulatory improvements, in the economic, environmental, the social and gender dimension of sustainable development. Adequate policies regulating and supporting a value chain are fundamental preconditions for its development. Ultimately, the outcome in terms of sustainable development depends on the political guidance and control of private business activities. *Sustainable* value chain development is only possible within a politically agreed corridor.

Public policy has two sides: One is regulation in the sense of putting restrictions on resource use and the use of economic power. The other is the creation of favorable conditions to support any environmentally and socially desirable business activity. Policies have to be restrictive on one side and enabling on the other. In any case, sustainable value chain development needs strong collective action and a clear focus on protecting and promoting collective goods.

For sure, we cannot rely on government alone to provide these regulatory services and the requisite leadership. Policy failure is as notorious as market failure. Value chain programs would be negligent if they simply shifted the responsibility to already overstrained government agencies. What's more, public policy cannot be effective without the active contribution of economic and civil society actors. This module discusses policy solutions improving the legal and institutional environment of chain development.

10.2.1. The business environment of value chains

Political intervention is necessary wherever private business decisions create the risk of negative social and environmental outcomes or if market mechanisms fail to achieve sustainable economic development. Well-functioning and coordinated national policies, regulations, and institutional frameworks are crucial to provide a healthy business environment. Whether or not enterprises are able to realize their market potential depends on the general conditions of doing business in the economy as a whole and on the particular conditions in each value chain.

Constraints caused by the policy framework affect value chains everywhere and often are the major reason why there has been little economic development in the past. Identifying these issues is part of the value chain analysis. While general framework conditions set the business environment for all actors, certain sector-specific framework conditions can affect specific value chains. The most important factors are the rule of law, infrastructure and an atmosphere of trust and security.

Box 0.1 summarizes the critical factors, divided into general and sector-specific framework conditions. Restricting the analysis to the business environment of the value chain is insufficient. In fact, the value chain structure itself, its organization and performance constitutes the business environment for the individual enterprises.

Box 0.1: Concept – Critical factors in the business environment of chains

General framework conditions of the business environment in the country (investment climate):

- Macro-economic policies and conditions (monetary policy, interest rates, customs duties on imports of intermediate goods, taxation etc.)
- Laws and regulations for business registration and licensing, employment, associations and cooperatives
- Contract security and enforcement
- Extension and quality of road and rail network and port infrastructure
- Availability and cost of utilities (energy and water)
- and other factors

Sector-specific framework conditions for doing business in the subsector / VC in question:

- Existence (or absence) of grades and standards regulating the market of the product
- Subsector-specific legal and administrative regulation, such as land and water rights in agriculture, food laws, sector-specific trade policy or product-specific taxes and levies
- Existence (or absence) of specific support services funded by government, such as specialized research, technology and education institutions
- Market failure within the value chain, such as a lack of coordination, information asymmetry, opportunistic behavior and mistrust

Source: own compilation

The business climate (or investment climate) affects value chain development across all sectors. Favorable conditions make investment easier and safer. For example, contract security and enforcement remain of utmost importance for the establishment of associations and cooperatives. Competitive infrastructure and utility costs, such as water and electricity or charges for shipping, give the country a competitive edge in export-oriented chains. Sector-specific conditions, on the other hand, may affect only certain value chains within a specific sector and may have no relevance for others.

The promotion of value chains will therefore have to focus on both general and sector-specific policy constraints. Both areas may not always be easy to differentiate. In fact, many policy fields cut across industries. For instance, securing land property rights by handing out land titles to investors may be crucial for agricultural value chains. Yet, in the absence of a functioning court system, macro-level judiciary reforms might become necessary to guarantee such rights in the long-run and make land titles enforceable in court in cases of conflict or competing claims. Similar, reforms in education policy, environmental legislation, water policy or energy may trigger other macro-level reforms in other sectors. So called spillover effects cannot always be foreseen.

Overall value chains operate in a business enabling environment which can take place at all levels - global, national and local - and includes the mentioned norms and customs, laws, regulations, policies, international trade agreements and public infrastructure. The policy framework needs to promote a business environment that not only makes a country attractive for location of VC, but also facilitates upgrading opportunities over time. This business enabling environment is an important factor for investment, and subsequent employment and income generation. Many policies impact recurrently on the business throughout its entire life-cycle. A large number of methods have been developed to measure the quality of the policy framework for business activities. An often used indicator for an enabling business

environment is the “Doing Business”²⁰² index published annually by the World Bank. It measures general conditions, for instance how long it takes to register a new business.

We first have to consider the content of policies, the laws and regulations and their consistency. The legal perspective takes off from the range of legally permitted activities. However, in many countries the *de jure* regulations are not be adequately enforced or administered leading to illegal rents and corruption and to a loss in efficiency. Therefore, we need a second approach as well – the administrative perspective on the legal reality (GIZ, 2014).

Regulation and promotion of rules are one side of the same coin. Policies can be regulatory in nature, and at the same time they may promote value chains and guide them into a certain direction. For instance, levying taxes on fossil energies may constrain the profitability of coal power plants. At the same time it can trigger a dynamic renewable energy market.

The crucial policies addressed to be changed should be analyzed according to whether specific action is needed, possible and likely to succeed. This module will give an overview on tools and instruments to help make that decision. For this purpose this chapter helps to attain a better understanding of policy making and its principles as well as introduces the different kinds of policy instruments and the level at which policies can be applied. The chapters 10.2 to 10.4 focus on the three policy areas of importance for sustainable development. The compilation of policy instruments in each area gives an overview of how policy instruments can work for value chain development.

10.2.2. Principles of policy design

One can look at policy design and policy change from two perspectives. We often assume that public policy-making is carried out by a benevolent government acting in the public interest and for the common good. However, in many countries, policy-making follows rather particular political interests of different actors. In the latter case, we often observe the existence of powerful actors that use the public power assigned to them for their own interest. Decision-makers are often powerful members of the political elite that use the public domain as source of personal income. At the same time they have to share some of their returns with their supporters to stay in power. This creates a cobweb of interdependencies and of personalized and informal relationships that is typical for many developing countries. Such states contrast with the idea of a modern state that should be impersonal, accountable and whose representatives should be non-corrupt and acting in the public interest (Khan, 2012).

Of course, the policy context will vary from country to country. While in many states pockets of good governance are emerging and development progress takes place, other states seem to be locked into a spiral of governance failures. To make matters worse, the rise of armed groups for example in Northern and Sub-Sahara Africa and the Middle-East take a heavy toll on the governance frameworks of affected countries. It is therefore crucial to gain an understanding of the general policy context of a country. This will include macro-economic concerns as well as sector-specific issues.

As the context of good or bad governance in general matters, the type and sophistication of a policy to be changed or introduced is likewise crucial. Promoters of value chain might not be able to implement policy changes directly. However, developing policy recommendations and pushing for the implementation of such policies becomes often necessary. When planning for

²⁰²²⁰² Doing Business Index (World Bank): <http://www.doingbusiness.org/data>

the elaboration of policy recommendations and designing policies, a few simple considerations should be taken into account to increase the likelihood of their adoption and implementation (Box 0.2). Following these principles can help increase the likelihood of adoption of certain policies where appropriate.

Box 0.2: Concept – The eight principles of policy design

- (1) **Address the problem.** This may sound obvious, but in some instances, policies are created that do not address the problem properly they are aiming to solve. If there are technical solutions available they should be formulated clearly.
- (2) **Address only one problem.** Policies that are aiming to hit several birds with one stone can be inefficient and contradictory. It is best to seek a solution of one particular problem for each policy recommendation formulated. To avoid the danger of spill over affects, policies should be targeted to a single issue.
- (3) **Be implementable:** In many countries, policies are formulated but not implemented. If the chances for implementation are low then the policy might have no impact. It would be then better to look for other interventions outside the policy field.
- (4) **Affordable:** If the funds are lacking for implementation or no proper cost assessment for the policy was made, the policy suggested is most likely not to be implemented.
- (5) **Consider different interests to find political majorities:** It may be that political debate over the correct solution changes the outcome of the political discussion. If political majorities cannot be found, for example to pass a legislation, than a seemingly technically correct solution will be ineffective because it will not be passed. Negotiating the interests of VC policy actors is a matter of influencing the process between public policy and politics. For the processes of policy-making, roles of state and private sector, the civil society as well as and institutional formats such as private-public dialogue (see Module 4) are crucial.
- (6) **Be in compliance:** Suggesting changes that are not in line with existing legislations or the constitution will not gain support. Rather, it is important to move within the existing legal framework or other relevant rules and regulations.
- (7) **Consider the target group.** It is always important to identify winners and losers before making recommendations. Those who benefits can be supporters but those who loose might be strong veto players.
- (8) **Preconditions for use of the suggested policy instruments should be in place.** For instance, in order to implement a certain policy, institutions for enforcement should exist. Likewise, the necessary technical know-how and capacity in the administration might be relevant to consider. In some cases, building such capacities may become necessary.

Source: own compilation

Based on those principles, a possible intervention strategy for policy changes could be an incremental approach: Instead of looking for the big push, it is better to go for a gradual change with modifications of existing rules and regulations. Such an incremental strategy avoids the danger of too many spillover effects (that means too many other policy fields become necessary to consider) and is likely to find more support. It might be also easier to implement such policy recommendations with less costs and faster results.

For instance, instead of introducing a massive land titling program to improve property rights that will most likely create large cost and run for many years, the assignment of certain zones for agriculture and industrial parks could be a more immediate solution. In such zones, improved property rights can be implemented. The advantage of such a strategy is that a weak government bureaucracy can bundle its resources in one geographic area to provide such pockets of functioning property rights. The establishment of a land agency might further such efforts (Khan, 2012). Recent experience shows that this is not an easy task, but many coun-

tries are in the process of going in that direction, for example Ethiopia's Agricultural Investment Land Administration Agency.

10.2.3. Classification of policy instruments

The classification of policy instruments used in this chapter builds on publications of the World Bank (1997), Sterner & Coria (2012), and Ugarte & Swinkels (2015).

Types of policy instruments

Policy instruments exist for different levels and purposes, We categorize them as follows:

- Regulatory instruments
- Market-based instruments
- Voluntary instruments

Regulatory instruments

Most government interventions are prescriptive and regulatory in nature. Regulations define allowed or disallowed business activities. They contain the norms and rules to follow and the mechanisms of control ensuring compliance. They exist on all levels. To be effective, regulations impose sanctions in case of non-compliance. Regulatory solutions must be reliable, so that actors can build their business models on stable conditions.

A specific case is co-regulation instruments. There may be industry voluntary initiatives or programs that can be recognized as part of the public regulation. Co-regulation can especially support cross-border initiatives in settings of limited state power or reach. Yet, it requires extensive negotiations to even out conflicting interests from the participating stakeholders and governments. Three pathways to co-regulation can be distinguished. Governments can set binding goals for firms and enforce these by recognizing private verification schemes. Governments may also support private schemes without turning them into law for example using accreditation systems. Governments can also adopt private regulations and make them national laws. This is especially effective if global value chains are involved that exceed national borders²⁰³.

Market-based instruments

Market-based instruments use markets to create incentives for a specific industry to adopt the wanted behavior. This can include favorable taxes, subsidies, loans or other kinds of support to private firms. Market-based instruments can also be used to create new markets. The European carbon trading system is such an instrument as it created a new tradable commodity, the emission certificates, at a global scale. Guaranteed feed-in-tariffs used in Germany for electricity are another instrument to stimulate renewable energy production by private firms and households.

Voluntary instruments

Voluntary instruments are used in order to create change on a voluntary basis and without changing regulations or laws. Ugarte and Swinkels²⁰⁴ classify such instruments as either "supply-push" or "demand-pull" instruments. On the supply side, this can mean voluntary research and development or demonstration of technologies by private firms. Examples in-

²⁰³ GIZ, 2013

²⁰⁴ Ugarte and Swinkels, 2015

clude research on alternative energy or certain medications although there are often public subsidies involved. If private firms choose to use only certain inputs that refer to certain standards this can also bring positive change in a market. Voluntary instruments can be very crucial for the promotion of value chains. For instance, to add a customer or consumer perspective can change the way value chains are organized and what output they produce.

Many entrepreneurs prefer to listen to customers instead of policy-makers or chain advisers²⁰⁵. Experience with consumer pressure shows that firms value consumer opinions and are prepared to introduce for example higher standards if consumers are willing to accept a higher price as the introduction of organic or fair trade labels has shown.

All policy instruments are used at different geographical levels, from the international to the regional, national and sub-national level of policy and governance.

Geographical scope

International level

At the international level, international agreements, treaties or regimes can have an influence on national policies. For instance, international trade agreements or environmental regimes, such as the UN Framework Contract on Climate Change, impact on national level policy-making as they prescribe mandatory or voluntary actions that member states should implement. International agreements can range from a guiding character to a binding instrument. In the field of trade, WTO regulations overrule national law in principle. Trade conflicts can arise because countries try to circumvent WTO regulations. Countries in conflict need then to seek arbitration in international courts or committees if not solved. For certain guidelines, even though countries have agreed to implement them in national law, national compliance remains low. For example, the ILO Labour Standards have been ratified by most of the countries. Yet, many states have only partly implemented all required provisions even though they have often been integrated in national law²⁰⁶.

This shows that certain policy fields highly depend on international agreements. The stronger the incentives and compliance mechanism of an international agreement are, the higher is the likelihood that states will adopt and implement such provisions.

Regional level

As for regional agreements, they can range from a highly integrated area such as the EU to more loosely integrated agreements such as ASEAN or ECOWAS. They can be likewise binding, such as in the case of EU regulations, or more general in nature as in the case of ASEAN. Especially regional integration plays a major role for economic policies of states. In many policy fields in Europe for instance, national regulations have to follow the EU norms and policies. This also impacts on third countries for example in terms of industry standards or trade if they wish to import goods into the EU.

National and sub-national level

At the national level, all instruments can be used depending on the need. Economic incentives, regulation or voluntary instruments can play an important role, both at the national and sub-national level. Typically, the national level should be responsible to implement policies.

²⁰⁵ Schmitz, 2005

²⁰⁶ ILO, 2015

Nevertheless, especially sub-national levels in decentralized states can implement certain policy instruments if they are within their mandate. For example, states in India can provide land and tax incentives to attract foreign investors²⁰⁷ and do not have to acquire national level consent. Based on the principle of subsidiarity, states can choose to give the sub-national level more leeway to implement policies in areas they can manage independently. Local labels or organizing local producer groups may be a suitable option. Nature park management is often implemented at the sub-national level where regions or local governments regulate and enforce user access for instance to reduce the amount of visitors or extraction of natural resources.

Likewise, there can be strong interactions or even interdependence of states with regional or international agreements, such as in the case of states wanting to export to the EU. Additionally in some cases a combination of various policy instruments might be more effective than implementing a single one.

The policy instrument matrix

Apart from the types of policy instruments and their geographical scope, we can also distinguish policy instruments according to policy fields. Here, we consider three major fields of policy making, in line with the sustainability dimensions:

- Economic policies
- Environmental policies
- Social policies

This gives us three criteria for classifying policy instruments and thus policy solutions for value chain development. They have been used to compile the policy instrument matrix in Box 0.3. The rows denote types of instruments and geographical scope, the columns present the policy fields.

Columns 2 to 4 highlight a few examples of policy instruments in the three relevant policy areas with which ValueLinks is concerned. The main chapters of this module are organized by the Economic, environmental and social policy fields. Chapters 10.2 to 10.4 present and discuss selected policy instruments applying the types of instruments to the various policy fields. The list is certainly not comprehensive but provides an overview on the broad spectrum of available policy instruments. There are many more options than we can highlight here.

Some policy instruments for chain development have been already been taken up in the previous modules. This is particularly true for Module 9 that treats public and private sustainability governance of value chains and the standards regulating specific value chains in particular. Module 9 and 10 belong together as both treat regulatory solutions that apply to value chains as a whole.

Module 7 covers the provision of public support services such as research, education, advisory services or technology transfer. Entrepreneurship development and business skills development is the subject of the last chapter in Module 5.

²⁰⁷ Sen, 2015

Box 0.3: Tool – Policy Instrument Matrix

		Examples of instruments in different policy fields		
		Economic policy	Social policy	Environment policy
International Level	Regulation International Agreements	WTO Trade agreements	Ratified ILO Convention concerning minimum standards of social security (No 102), ILO Fundamental conventions on labour standards (e.g. freedom of association, collective bargaining, abolition of forced labour, child labour, equal remuneration)	CO ₂ emission targets (UNFCC)
	Voluntary Voluntary Guidelines	UN Global Compact, UN Principles for Responsible Investment (PRI), Voluntary Guidelines on Land Tenure (FAO)	ILO labour standards, fair trade labels	Roundtable on Sustainable Palm Oil
Regional Level	Market-based Regional incentives, taxes or subsidies, research grants	EU agriculture subsidies		European carbon trade system (UNFCC)
	Regulation Regional Agreements	EU common market, Currency Unions (EURO-Zone, UEMOA), trade tariffs Regional Integration (EU, ASEAN, AU, ECOWAS, SADC) Regional Trade Regimes (EFTA, West Africa, NAFTA)	EU rules on social security coordination	European environmental standards (i.e. water framework directive), EU car emission standards
	Voluntary		ASEAN Declaration on Strengthening Social Protection	
National Level	Market-based Using markets (incentives, taxes, subsidies, loans, grants, user charges) Creating markets (property rights, feed-in tariffs, tradable permits)	Fertilizer subsidies for small farmers; tax breaks for investors	Partly active labour market policies (e.g. employment subsidies, skills training)	Electricity feed-in tariffs from renewables
	Regulation Central government laws, rules and procedures, export or import restrictions Co-Regulation (recognition of industry voluntary initiatives as part of public regulation) Setting industry standards	Competition law, import duties	Labour law, minimum wages, work place health and safety standards, social protection provisions	Emission or clean water standards, national parks, fines
	Voluntary "supply-push" (supporting research) or "demand-pull" (changing market conditions like voluntary private procurement) Information and public education Use of labels and certificates Voluntary self-restrictions by firms, code of conducts	Corporate responsibility initiatives	Child care provided by firms; employee wellbeing programs (health promotion)	German energy efficiency networks initiative
Sub-National Level	Market-based Local incentives, subsidies, loans Tradable permits	Communal business tax	Private hospital subsidies	Payment for environmental services (garbage collection, water fees)
	Regulation Local government regulations Cooperation with private enterprises	Business permits and registrations	Social housing, rent price controls	Nature park access restrictions
	Voluntary Local producer organizations and consumer organizations (as voluntary control mechanism) Local labels and certificates			

Source: own compilation

10.2.4. The policy cycle

The policy cycle is a normative and ideal depiction of reality. It aims at guiding policy-makers to take decisions and implement them. It looks at policy-making as a sequence of actions that logically build on each other. First described by Harold Lasswell in 1951, it was adopted by several scholars, e.g. Bridgman and Davis, who describe the Australian policy cycle as a scheme that is “designed to answer the daunting question ‘what do I do now?’”²⁰⁸.

The policy process normally starts with identifying issues and a corresponding analysis. Based on that analysis and combined with the eight basic principles for policy recommendations described above, VC practitioners can identify policy instruments to address the issues at hand. Consultations and coordination processes may take place prior or during the analysis. They may become also necessary after certain instruments were identified and are to be decided on and implemented. The policy cycle is not to be seen as a strict sequence. Rather, individual steps often take place in parallel. It is thus a reiterative process. This module will not touch in detail on the other steps in the policy cycle. However, policy-makers often follow some sort of policy cycle so it might be useful for VC practitioners to keep this sequence into mind while addressing policy issues.

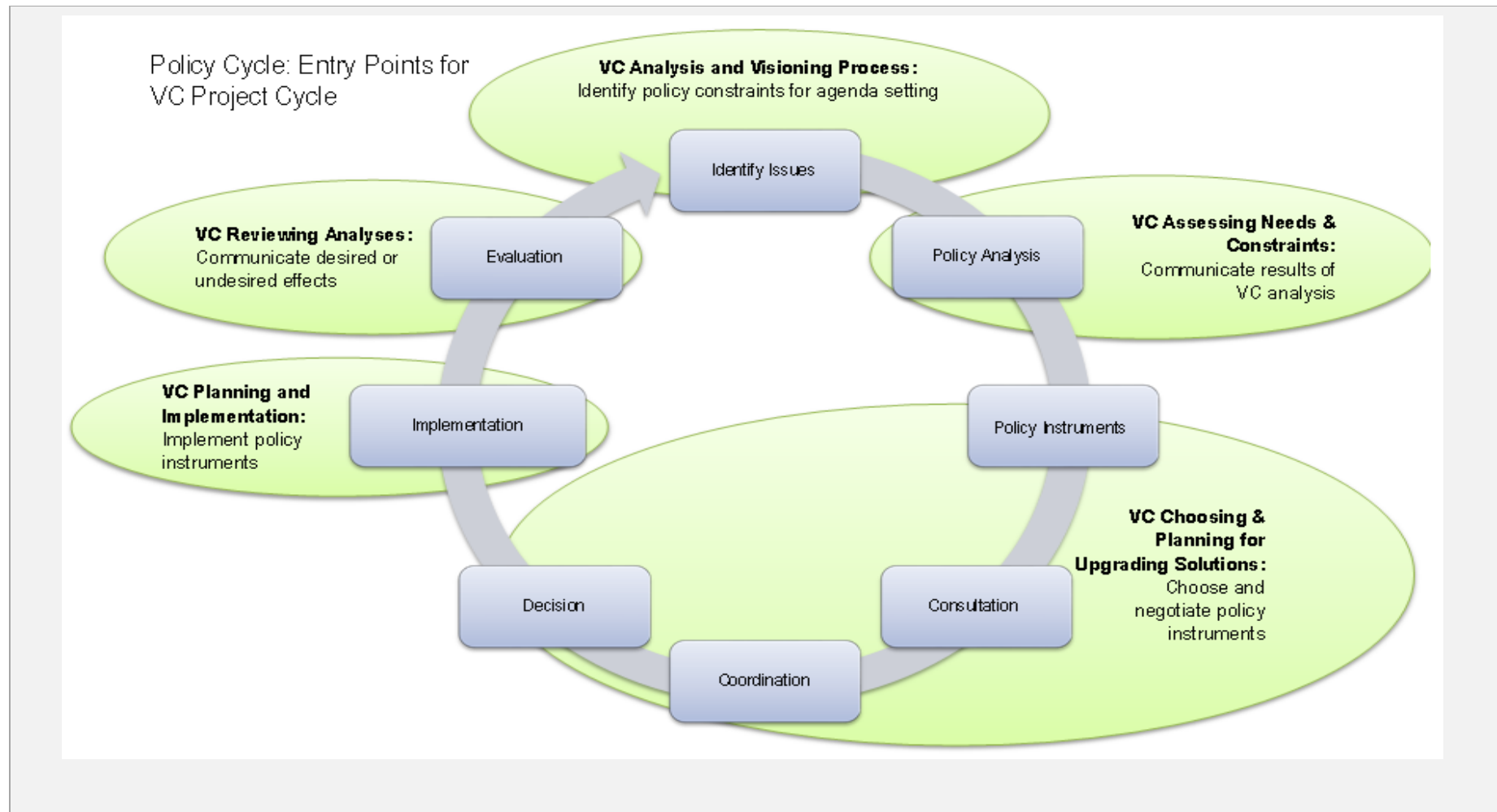
The policy cycle and its relevance for value chain programs

For VC practitioners, the policy cycle has practical relevance as it helps to locate policy interventions in a larger scheme of action. It is important to mention that the policy cycle is not identical to the value chain project cycle. It rather follows the logic of politics and policy-making. The involved stakeholders in the policy cycle differ from those in the value chain project cycle. The stakeholders in policy-making can be a broader group of individuals or groups, such as members of parliament, government officials or members of pressure groups and business associations. At every step of the VC project cycle, constraints for value chain development may appear. It is crucial to decide whether these constraints concerns policy matters and should be addressed accordingly. The policy cycle becomes relevant for VC practitioners once the decision was made to seek policy solutions to address issues that hinder the VC development.

There are various possibilities for VC practitioners to participate in and shape the process of policy-making in a way that their objectives are achieved in the most effective way. These interventions may take place at all levels of the policy cycle. For this purpose, Box 0.4 displays the policy cycle and overlays it with the steps identified in the VC project cycle. The figure identifies examples of possible interventions for VC practitioners in the policy-making process. Since the VC project cycle is likewise iterative, both processes interact with each other. Yet, it is important to differentiate the two, as the policy cycle follows the logic of politics, while the VC project cycle is based on the development of specific value chains.

²⁰⁸ Bridgman & Davis, 2003

Box 0.4: Concept – The policy cycle and entry points for the VC project cycle



Source: own compilation, based on Bridgman & Davis, 2003

It is important to analyze the crucial policies addressed to be changed according to whether specific action is needed, possible and likely to succeed. This should be done by including the mentioned aspects of policy making discussed in sections 10.1.1 – 10.1.3. For this purpose, the questions in Box 0.5 offer guidance. VC practitioners should always consider them while addressing policy issues. Additionally they are a guideline for assessing the policy instruments in their performance for VC development presented in the next chapters.

Box 0.5: Tool – Guiding questions on policy issues in VC development

Which policy instrument is appropriate to address the problem?

After the constraint has been identified, it is important to choose an appropriate policy instrument for addressing the policy issue. VC practitioners should always consider if a policy instrument is necessary to address the problem as implementing policies is often associated with high expenses. Other interventions outside the policy field should be taken into account as well.

How does the policy instrument work?

It is essential to analyze the chosen policy instrument intensively regarding how it works and what effects it might have. This includes dealing with the questions “Is it possible to achieve the objective with the chosen policy instrument?” and “How effective is the policy instrument in achieving its objective?”.

How complex is the implementation of the policy instrument?

While choosing policy instruments for VC development it is crucial that they are implementable and affordable. Many policy instruments are complex and not implementable under the given conditions. These constraints may be related to the complexity of the implementation associated with high expenses. Moreover the administrative perspectives as well as the costs for implementation have to be considered. Some policy instruments, for example those that include sanctions for not compliance, need ongoing monitoring. This might imply running cost and high expenses. Furthermore the implementation time of a policy instrument may be too long for the given timescale of the VC development. In the course of this, VC practitioners should take into account that some policy instruments will take time to make an impact. Furthermore for many policy instruments a good political framework is required. As long as these framework conditions are not clarified policy instruments cannot be implemented.

How can the policy instrument be modified so that there is an easier solution?

If VC practitioners face constraints regarding the implementation, modifying the policy instrument may be a solution. One approach is applying policies at a lower level. For example agreements at local level do not have a global reach but might provide a solution for the given value chain. Additionally VC practitioners should consider alternative policy instruments that provide a temporary solution until the actual policy instrument is implemented.

Source: own compilation

10.2 Economic policies

The economic dimension of sustainability secures the financial viability of private as well as public investment. Without a strong economic performance, the prospects for sustainable development are limited²⁰⁹. An enabling business environment attracts investment and supports chain development. Furthermore, developing countries are increasingly connected to global value chains. To benefit from the opportunities in international market, suppliers have to become more efficient and competent. It is thus important to implement national economic policies that increase the competitiveness of the domestic enterprises. At the same time, economic policies have to be stable and reliable²¹⁰. Both aspects have to come together to support chain development.

This chapter covers three areas of economic policies that are highly relevant for chain development – growth policy, property rights and trade policy.

10.3.1. Growth policy

Growth policy generally refers to any government measure, or set of measures, to increase a country's long-term economic output per person. Herein, its objective is to improve the fundamental determinants of economic growth in order to raise growth rates over the long run, as opposed to transitory increases in economic output or growth rates. A comprehensive growth policy necessarily broaches a wide span of policy areas. These can be categorized into general and specific policies; the former targeting the functioning of the overall economic framework, whereas the latter fosters certain sectors or promotes the structural transformation of the overall economy (structural/industrial policy). General policies may of course have sector-specific effects in terms of both direction and extent. General policies include regulatory policy (property rights, rule of law, enforceability of contracts, competition policy), financial policy, monetary policy, infrastructure policy, investment policy, and innovation policy; a broad definition of growth policy may even include trade and education policies, since both may be strongly conducive to economic growth. In many countries, growth policy is embedded into overall developmental policies, like poverty reduction strategies which may lead to a pro poor growth policy concept, or green and inclusive growth policy, as promoted by the German government in its development partnerships. These also cover social and environmental policies.

Market regulation and transparency

Regulatory policies shape the legal and institutional framework of the economy. This includes, among others, property rights regulations, the enforceability of business contracts, and competition policy. The enforceability of business contracts is a vital prerequisite for participation in value chains and indeed many economic activities. It may require efficient court procedures, specialized commercial courts, and law enforcement agencies with sufficient capacities, and may benefit from the introduction of technological improvements such as electronic filing or the automation of court proceedings. Effective competition policy needs a clear legal basis and well-funded, legitimized institutions able to investigate suspected cartels or collusion agreements, break up monopolies and oligopolies, push for sector inquir-

²⁰⁹ GIZ, 2015a

²¹⁰ UN, 2011

ies, and enforce merger controls. Competition policy may be a supranational issue as much as it is a national one.

Regulatory policy involves the design of governance mechanisms for economic sectors. A particularly critical example is the extractive industry. As the national legislation is insufficient in many countries, an international framework has been created to regulate extractive value chains. Box 0.1 describes the EITI standard.

Box 0.1: Case – Extractive Industries Transparency Initiative (EITI)

The EITI standard

Few value chains both attract as much attention and bear as much potential for a country's economic development as extractive industries. Still, large parts of the population in resource-rich countries' have not been able to benefit from resource extraction, most importantly due to the mismanagement of resource revenues, and have occasionally even suffered from it, for example in the context of civil conflicts sustained by the revenues from resource extraction.

In order to promote transparency and accountability in extractive industries, the Extractive Industries Transparency Initiative (EITI), developed the EITI Standard as a *voluntary policy instrument*. Countries implementing the EITI Standard have to disclose information on key elements around resource extraction, e.g. on tax payments, licenses, contracts, or production, in an annual EITI Report, which has to be publicly available, comprehensible, actively promoted, and contribute to the public debate. As of 2016, 49 countries are implementing the EITI Standard, 31 of which are compliant with EITI requirements, resulting in a total of USD 1.8 trillion of government revenues from extractive resources managed under the EITI. The GIZ has actively supported the EITI in the DR Congo, Mozambique, Mali, Mauritania, Burundi (among others) and Germany itself.

Whether and if yes, to which extent EITI has been effective in the promotion of transparency in the extractive sector is subject to debate. Case studies from Madagascar, Kyrgyzstan, Azerbaijan, and Liberia criticize EITI as “paperwork exercise” (Smith et al. 2012) and for lacking a consolidated approach and suffering from competing objectives (Furstenberg 2015) or are unable to attribute improvements in governance causally to the EITI (Sovacool and Andrews 2015). Up until 2009, however, the EITI seems to have positively affected economic development, government effectiveness, and regulation quality, but has had no significant effect on either democracy or political stability (Corrigan 2014). Finally, the first 16 EITI-compliant countries did not perform significantly better in most metrics during EITI compliance than before it, which may be due to insufficient civil society capacities, stakeholders' resistance against the EITI, EITI's voluntary nature, or a limited government mandate.

Source: Sovacool et al., 2016; EITI, <https://eiti.org/>

Infrastructure Policy

Value chain development presupposes adequate infrastructure. Poor roads increase the transit times and, even more importantly, the variance of transit times²¹¹, caused by frequent and unpredictable disruption, in already tight international transport schedules²¹². Therefore, infrastructure policy form a vital part of any growth policy²¹³. The production of goods requires energy, water, and raw material, while the transport of inputs and products needs correspondingly large road networks, airport, and seaport facilities. Moreover, adequate communication infrastructure has become more important, especially in emerging countries participating in global production chains and networks²¹⁴. This includes high-speed internet

²¹¹ Arvis et al., 2012

²¹² Ferrantino, 2012

²¹³ See the treatment of the role of infrastructure policy for value chains by Ferrantino, 2013

²¹⁴ Zhai, 2010

connectivity. Box 0.2 has a list of different types of infrastructure items relevant in economic development.

Box 0.2: Concept – Different types of Infrastructure

Examples of infrastructure items

Energy and water supply infrastructure:

- Canals
- Pipework
- Purification plants
- Storage facilities
- Power plants
- Power lines

Transportation infrastructure:

- Motorways
- Port and airport facilities
- Railway networks

Source: own compilation

In the food sector, infrastructure policy and investment includes building collection points, constructing wholesale market places and supporting their management. In the specific case of agricultural markets, a wide range of references is available and FAO is probably the best source of know-how.

Another issue is the deregulation of trucking, which has been the victim of cartelization in some countries. Since investments in transport infrastructure are very expensive, shared use agreements offer the possibility to engage firms in the investment into specific road connections. Better roads also encourage complementary private investment in means of transportation.

Financial policy

Financial policy encompasses all “policies related to the regulation, supervision, and oversight of the financial and payment systems, including markets and institutions”²¹⁵. Policy areas of relevance for value chains are the monetary policy and taxation.

Currency risks are particularly important in global value chains. Cross-country flows of raw materials, financial capital, and final products expose chain actors to considerable risk. A stable, well-communicated *monetary policy* forms a vital part of a sound macroeconomic framework favoring value chain integration and upgrading. This can include a deliberate undervaluation of the exchange rate in order to reduce the price of export products, a strategy used by South Korea in the 1960s and 1970s and, more recently, by India and China²¹⁶. Taxation should encourage investment by keeping corporate and payroll taxes tax rates low and avoid complicated and overly variable taxation instruments.

Industrial policy

All developing countries run through a process of structural change in which people leave subsistence agriculture seeking employment in services and manufacturing. It is this process

²¹⁵ OECD, 2002

²¹⁶ Rodrik, 2008

that creates new value chains. A coherent industrial (or sectoral) policy²¹⁷ coordinates and promotes the ongoing structural change.

Contemporary industrial policy promotes business networks taking into account the interests of international non-governmental organizations. Gereffi and Sturgeon give a useful overview of industrial policy for global value chains²¹⁸. Importantly, lead firms increasingly require their suppliers to have a global presence in order to provide an array of processes, specialized inputs and services not only domestically but wherever the lead firms' supply chains make it necessary. Another feature of value chain-oriented industrial policy is the targeting of specialized, high value-added niches within global value chains that suit a country's capabilities. Although perhaps less important than in the past, local content requirements and the development of linkages from the export sector to other parts of the economy remain important. In the context of industrial policy, industrial clusters, special economic zones (SEZs) and export processing zones (EPZs) play a particular role by providing a delimited area that may subsequently serve as a nexus of economic development (as e.g. in Shenzhen or Xiamen in China)²¹⁹. Especially the economic zones have helped developing countries attract foreign investment through agglomeration economies and benefits from technological spillovers²²⁰.

The development of and integration into value chains is a key component of industrial development, i.e. the movement into more sophisticated and higher value-added manufacturing activities. Many developing countries would benefit substantially from inclusive and sustainable industrial development, but do not possess the capacities necessary to design an evidence-based industrial policy. This problem is addressed by the EQuIP toolbox described in Box 0.3, while Box 0.4 gives a summary of growth policy instruments.

Box 0.3: Tool – The EQuIP Toolbox

Enhancing the Quality of Industrial Policies

The integration of a sector into a value chain and its potential upgrading towards higher value-added activities critically depends on the economic framework wherein the value chain would be set. The project “Enhancing the Quality of Industrial Policies” (EQuIP) is a joint project of UNIDO and GIZ that started in 2014. Its core component, the EQuIP toolbox, offers nine tools, that policy-makers can use to conduct national or sectoral industrial diagnoses by analyzing economic, social and environmental aspects of their countries' industrial development as well as the drivers of that performance. These industrial diagnoses can subsequently be used to formulate a coherent industrial strategy. Further toolboxes exploring the selection and implementation of industrial policy instruments as well as the effect of the institutional setup follow.

Source: EQuIP, www.equip-project.org/

²¹⁷ Curzon Price, 1981

²¹⁸ Gereffi and Sturgeon, 2013

²¹⁹ Humphrey and Schmitz, 2002

²²⁰ See for example Wang (2013) for an analysis of the economic impact of Chinese special economic zones on nearby municipalities.

Box 0.4: Tool – Specific growth policy instruments

Policy instrument	Type	Description
Special Economic Zones	Regulatory	Special economic zones refer to areas governed by business and trade laws that are different from the rest of the country and grant companies more freedom in their activities. SEZs may exempt trade from certain interventions by customs authorities (free trade / export processing zones), exempt corporate activities partially or completely from taxation (free economic zones), provide industries with advanced infrastructure, and offer space for clustering (industrial parks). By doing so, SEZs aim to attract firms into (re-) locating their activities within the SEZ and thereby integrate a countries economic sector within international value chains.
Tax reductions	Market-based	General reductions on corporate, personal and withholding taxes or customs duties (among else) increase the return on investment on foreign direct investment. They thereby incentivize foreign firms to invest into production/distribution facilities within the country, thus integrating it in an international value chain.
Linkage policies	Regulatory	A key objective of value chain development is to expand a country's initial value chain activities down- and upstream as well as to new sectors towards activities with greater value addition. For that purpose, local content requirements may force foreign firms to source their production inputs – raw materials, intermediate products, machinery or personnel – from local suppliers. Export bans on intermediate products may make it necessary for foreign firms to further refine their products domestically and only export finished goods.
Infrastructure policies	Market-based	Depending on the specific type of activity within a value chain, certain infrastructure requirements must be met. For example, a smeltery requires reliable transport links to port facilities, continuous power and access to water; a call center requires constant connectivity to international communication networks.
Simplification of business start-up procedures	Regulatory	In order to perform activities within a value chain, one generally has to start a business organization. In many countries this is associated with considerable difficulties, e.g. through extremely time-consuming procedures. Simplified registration formalities (publication, notarization, inspection, tax and social security registration, licensing, etc.), the abolishment or reduction of minimal capital requirements, the introduction or improvement of online procedures, and the creation of a one-stop shop are all measures that can be undertaken to ease the starting of a business.
Value chain finance	Market-based	Many companies hesitate to enter value chains because they are uncertain to dispose of sufficient access to financial services to handle large production volumes. Value chain finance may ease this access to finance through the provision of credit, savings, guarantees or insurance to or among value chain actors, the creation of strategic alliances through financing between value chain actors and financial institutions, and the provision of tools and services to manage risks related to prices, production, or marketing.

Source: own compilation

10.3.2. Property rights

As already outlined in the previous chapter property rights can be categorized as growth policies and are important for value chain development. Land and water are essential resources for any development. By nature, they are both limited and access is often regulated. Fast growing cities and a growing population increasingly consume land for all kind of purposes, such as settlements, transport or food and biomass production. Climate change heavily affects the availability of water. In some areas of the world, competition among states for ground water, fishing grounds or deep-sea natural resources is fierce.

Delineating rights of private actors, for example by defining private property rights over land and water, can be a powerful tool for national governments to create new markets. By setting rules for long-term tenure agreements for landholders or implementing comprehensive land registration programs, states can create new land or housing markets. Tenure holders might start investing in their land; new land owners can sell land or mortgage it to invest loans into productive activities.

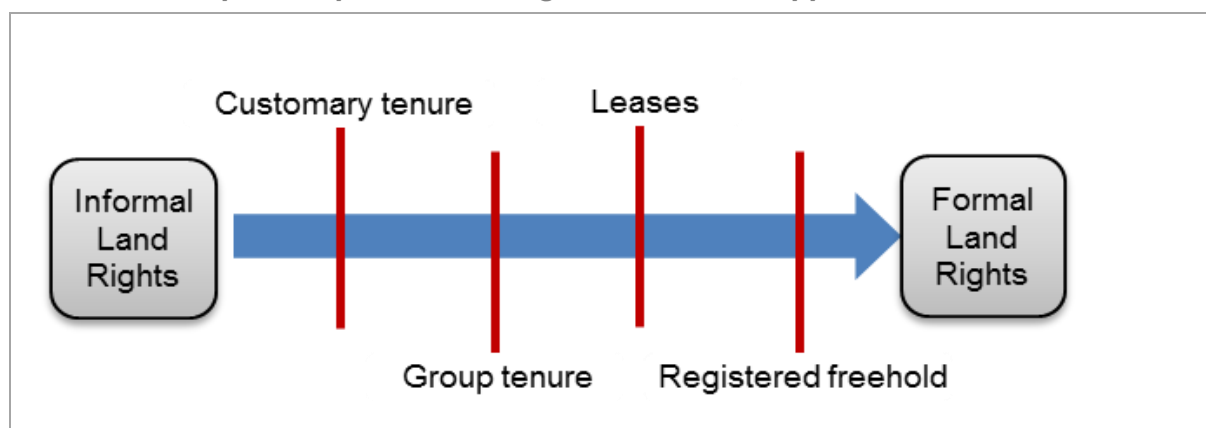
All investors heavily depend on the security of their property rights, whether small family farms or large industry firms. Farmers who cannot be sure whether they can still till their land in a few years are unlikely to improve their land and invest into facilities such as irrigation.

Many countries have identified secure property rights of land as a key factor in development. The choice of policy instrument to secure such rights largely depends on the institutional context of a country. The policy response to undocumented property rights has often been the formalization of land rights. That means that informal or customary rights are incorporated into a formal system mostly using freehold titles. However, evidence shows that this was often not successful. Moving from a largely informal system to a formalized system with freehold titles has little chances of success because it neglects the complexity of traditional land relations. Many states have little capacity to maintain central land administrations for the issuance of titles and often take decades to introduce functioning systems.

Introducing such a regulatory policy instruments is thus costly and time consuming as it requires a systematic approach. Recently, therefore, many practitioners adopted the continuum of land rights approach developed by the Global Land Tool Network (GLTN).

The continuum approach is an inclusive, pro-poor and gender-responsive approach that incorporates documented and undocumented tenure rights, formal as well as informal rights, individuals or group rights, and many other forms (Box 0.5).

Box 0.5: Concept – Simplified Land Rights Continuum Approach



Source: own compilation, based on the Global Land Tool Network GLTN

At one end of the continuum one finds individual land owners that hold formal rights to a parcel delineated on a map and registered in a records office. With this right comes another bundle of rights, such as sale, transfer or use (within the existing legal framework). At the informal end are informal rights. Groups or individuals may have traditional rights to use the land. But that land might not exist in a map, it may be contested by others and may be just inherited or passed on by word of mouth.

Securing such rights, whether informal or formal, are key challenges for most states. What policy instruments to choose and how to implement them will have strong effects on the economy and society at large.

This continuum approach allows analyzing the institutional environment of countries. It helps decide what form of policy instruments to secure such rights might be suitable. It responds thus to some of the policy principles presented in this module. For instance, it chooses a more adjusted approach to local conditions that is easier to implement, less costly and that can make faster progress. At the same time it is incremental and does not require the big push. It allows introducing land formalization based on target group needs, from a very informal approach for small-scale farmers to freehold titles for business enterprises.

Land registration and demarcation can likewise be implemented together with private partners. Even though it may not become a full co-regulation instrument, state-accredited surveyors often take over the task of demarcation and mapping and submit the final product to a state registry office where the final registration of the property takes place. That means that the policy implementation can take place using private resources depending on the policy instruments chosen.

Box 0.6: Case – Land policy in Uganda

Uganda's Land Act and National Land Policy

The Government of Uganda has passed a land act in 1998 and a national land policy in 2013 as regulatory instruments to formalize property rights. Both provided for several implementation procedures that give flexibility for land formalization based on the current tenure situation. In urban areas for instance, freehold titles shall be registered. In the rural areas freehold titles can be likewise issued. However, the traditional land ownership structure is recognized and guaranteed by the law. That means that land holders can choose to seek formalization along the continuum line for example with customary ownership titles, freehold or leases. Even the current unregistered customary holdings are legally guaranteed. In reality however they are problematic for other reasons as they are subject to illegal transfers or land grabs. This land policy provides several procedural instruments that enable an incremental approach based on the will and need of target groups. It also allows for a sub-national implementation as long as the basic national principles are followed as districts are allowed to survey and register land independently from the national offices. Uganda has recently started to register 800.000 rural and 150.000 semi-urban freehold titles in the more developed South. As a side effect, it gives a boost to the national budget as registered titles will be taxed.

Source: Global Project Responsible Land Policy, Uganda

As in the case of Uganda (Box 0.6), the flexible use of several policy instruments to reach one goal, that is the securing and formalization of land rights, can also be supported by the policy cycle steps. Especially implementation and evaluation become important as each of the instruments may require separate approaches depending on their position of the continuum.

The Philippine example (Box 0.7) gives yet another approach to policy instruments. A lower level instrument was chosen to support a change in framework conditions for local govern-

ment units that intend to improve their land use planning practices including access and use to a 15-km wide municipal coastal water zone. Such national-level guidelines in connection with capacity building and training for target groups can become powerful policy instruments when implemented properly. They do not require lengthy consensus building if the basic legal framework is in place.

Box 0.7: Case – Land use planning guidelines in the Philippines

Poor spatial planning and management due to capacity constraints and a lack of integrated approaches are a major reason why the responsible government units in the Philippines can often not adequately respond to challenges they face, such as an increasing population, a large amount of natural hazards, unsustainable land use practices and loss of biodiversity.

GIZ has supported the Housing and Land Use Regulatory Board of the Philippines in enhancing the Comprehensive Land Use Plan Guidebook based on a “ridge-to-reef” concept that was tested in 100 municipalities: the Sustainable Integrated Management and Planning for Local Government Ecosystems (SIMPLE) approach. It merges forest, coastal and urban plans into one planning document. This guides local governments with new technical concepts in ecosystem management such as climate change adaptation measures and disaster preparedness, urban management, biodiversity protection or urban development control. To realize such a landscape approach nationwide, a change in framework conditions was crucial. Yet, legal initiatives often take time. Using a national guideline as a regulatory instrument can be more effective because it can be implemented without legal adjustments. A training program introduces the new comprehensive land use plan to the Philippine municipalities since 2016.

Source: SIMPLE, Environment and Rural Development Program²²¹

10.3.3. Trade policy

Global value chains have become a significant element of world trade. All the stages of producing goods, which take place across a value chain, are increasingly shifted to where the necessary skills and materials are available at competitive cost and quality (OECD, 2013). Additionally with growing complexity and development national value chains are integrated in global value chains. This development from a national to a regional or even international level also changes the levels of policies which set the framework conditions for the value chain. At the same time the share of developing and emerging economies in world trade is growing, as is the importance of integration into regional and global value chains. As a consequence, international, regional and national trade policy is becoming increasingly important for developing countries and for the development of value chains.

Regulation

On an international level, trade policy is primarily about regulating market access, mainly through tariff measures (customs duties). Trade policy in this sense is based on regulations in the form of international agreements, including bilateral agreements and multilateral agreements. The World Trade Organisation (WTO) provides a forum for multilateral negotiations on the liberalization of world trade. As a result of continuous multilateral negotiations throughout the last 60 years the average customs duty on industrial goods decreased from an average of 40% to about 4% ad valorem. The WTO also provides a rule-based system. Its

²²¹ The Environment and Rural Development Program: <http://enrdph.org/>

binding trade agreements are all based on the overarching principle of non-discrimination between members and therefore provide transparency and predictability in the international trade arena. Based on this principle, all members enjoy the same market access conditions through WTO agreements (exceptions are regional trade agreements (RTAs) and preferential trade agreements (PTAs)). Due to a great progress in tariff liberalization in general but stalled negotiations on the liberalization on particular product lines, there is limited prospect for further reduction of tariffs on WTO level. Hence, policy space for countries to secure greater market access on WTO level is quite limited.

Regional trade agreements

Countries seeking greater tariff liberalization can engage in Regional trade agreements (RTA). RTAs are agreements between two or more countries, which can be founded in accordance with WTO regulations, provided that these agreements liberalize (substantially) all trade beyond WTO commitments and in a reciprocal manner. RTAs offer the greatest degree of policy space in the international trade regime, as states can negotiate RTAs even on a bilateral basis. In February 2016, 267 RTAs were in force, which means that almost all countries engage in concluding RTAs to achieve more favorable market access conditions for their businesses. RTAs can take many forms. Many countries enter into bilateral free trade agreements e.g. with a neighboring country, abolishing all customs duties on products from this particular partner country. Other RTAs span whole regions, creating free trade areas with several countries. Countries forming a free trade area might even harmonize their external tariffs to create a Customs Union and liberalize intra-regional trade in services, including labor and capital to create a common market. Regional free trade areas can provide favorable conditions for economic integration and regional value chains in particular, while maintaining higher customs duties for products from third countries. RTAs are therefore a useful policy instrument to create an environment for scaling up infant industries in a region and creating economies of scale, while being able to protect these industries from competition from the world market – ideally temporarily.

In addition to RTAs, WTO law provides for greater tariff liberalization in the form of PTAs. PTAs are unilateral trade preferences granted by industrialized countries to developing countries and LDCs e.g. in the form of an exemption of import duties on specific goods (example: EU General System of Preferences). As PTAs are unilateral instruments, there is almost no policy space for negotiations for developing countries.

Trade Facilitation

Tariff barriers are not the only barriers to trade that inflict costs on traders. Due to the great reduction in tariffs, the greatest costs in the process of exchanging goods and services across borders are caused by non-tariff measures (NTMs). NTMs are policy measures other than ordinary custom tariffs that have the potential to affect the international trade in goods.

Box 0.8: Concept – Trade facilitation


Transparency + Harmonisation + Simplification = Trade Facilitation

Source: own compilation and Global Program Trade Policy, GIZ

NTMs for example include regulations concerning which products are allowed to enter a market in order to ensure consumer protection. Nevertheless, NTMs in developing countries also often constitute lengthy customs clearance processes, requirements for a great amount of paper documents and fees and charges. Moreover, divergent transport regulations, varying quality and safety standards or requirements among neighboring countries can also constitute obstacles in the course of trade. Resulting time delays at borders as well as costs for acquiring the necessary documents and certificates amount to large transaction costs. Trade Facilitation measures aim at eliminating these procedural obstacles and consequently reducing the costs of exporting and importing. In order to achieve this goal, Trade Facilitation measures simplify and harmonize trade procedures and inherently increase transparency for all actors.

The need for trade facilitation is also recognized on international level. In 2013 the WTO membership adopted the Trade Facilitation Agreement, which requires members to implement various measures that expedite the movement, release and clearance of goods. Hence, trade facilitation deals with implementing regulations at the national level to ease trade.

The area of customs clearance is at the core of trade facilitation since inefficient customs processes, especially in developing countries, often inflict large costs on traders. There are a number of policies that countries can put in place to reduce trade barriers. To increase transparency for traders, countries should publish information related to import and export procedures in a non-discriminatory and easily accessible manner e.g. on the internet or making this information accessible at enquiry points. Another important aspect with regard to simplifying relevant procedures is to reduce the amount of forms to be submitted and introduce pre-arrival processing of formalities, which means that traders can hand in relevant information before they arrive at border crossings. Risk management can be reformed in order to develop more efficient goods inspection mechanisms. To ease trade with major trading partners, customs procedures and document requirements should be harmonized between countries.

In addition to the area of customs, trade facilitation also covers policy areas relating to exporting goods such as quality and safety standards or requirements as well as transport. An important prerequisite for trade is that exported goods meet the quality and safety standards or requirements of international markets. Acquiring conformance certificates for potential export markets is time consuming, costly and sometimes not possible due to fundamental lack of the respective institutions in the country or diverging requirements. Harmonizing quality and safety standards or requirements, especially in regional contexts, can reduce obstacles to trade and therefore promote intra-regional trade. The transport of goods is another issue area that is targeted by trade facilitation measures, as insufficient transport infrastructure as well as complex transport regulations and road harassment often constitute obstacles

for traders in developing countries. Trade facilitation measures can harmonize transport regulations such as axle weight restrictions and vehicle dimension limits between neighboring countries and put in place transparent road user charge systems that prevent harassment and corruption at checkpoints. In addition to transparent, simplified and harmonized transport policies countries need to invest in transport infrastructure such as roads, border posts and harbors to expedite the transport of goods to and across the border.

Box 0.9 presents an example for regional free trade and trade facilitation by using RTA and eliminating custom duties on regional trade.

Box 0.9: Case – Regional trade agreement of ECOWAS:

ECOWAS: An example of regional free trade and successful trade facilitation

The Economy of West African States (ECOWAS) is a regional group of fifteen West African countries: Benin, Burkina Faso, Cape Verde, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. These 15 countries founded a regional trade agreement in form of a free trade area in order to promote economic integration in the region. Hence, trade between these countries follows the rules and regulations of the Agreement that allow for duty-free exchange of goods within the region. In contrast, trade relations with third countries outside the free trade area follow the terms of the World Trade Organization (WTO), which implies customs duties.

In addition to eliminating customs duties on regional trade, ECOWAS aims to expedite the movement of goods through implementing Trade Facilitation measures within the region. The ECOWAS Trade Liberalization Scheme (ETLS) is the main ECOWAS operational tool for facilitating the West Africa region as a Free Trade Area. The ETLS ensures that goods can be circulated freely without the payment of customs duties and includes measures aimed at facilitating trade by reducing red tape and bureaucracy.

Source: ECOWAS Commission²²²

Development programs in export-oriented value chains find guidelines and helpful information in the “Toolbox Trade” published by GIZ and described in Box 0.10. The toolbox deals with most trade-related issues that value chain programs face.

Box 0.10: Tool – Toolbox Trade

The Toolbox is geared towards practitioners that are involved in project planning and implementation of trade-related projects. It provides guidelines, project examples, useful links and plenty of other information regarding various phases of a typical project in the area of trade.

You can register via GIZ Global Campus 21 (GIZ staff is registered automatically). After your registration you can reach the Toolbox directly via this link: <https://gc21.giz.de/ibt/var/app/wp342P/2239/>

Please don't hesitate to contact Mamadou Diarrassouba if you have any questions or comments: mamadou.diarrassouba@giz.de

Source: *Toolbox Trade*, <https://gc21.giz.de/ibt/var/app/wp342P/2239/>

²²² ECOWAS Commission: <http://www.etls.ecowas.int/>

10.3 Environmental policies

An uncontrolled process of economic growth almost inevitably causes environmental damage. A green value chain includes identifying and minimizing the negative effects of a VC's activities on the environment, but also the larger environmental impacts, such as climate change and resource scarcity. For VC programs it is important to address these issues as companies and therefore value chain development may depend on the availability of scarce resources. For example, producing good quality timber from forests without ensuring re-growth of trees will lead to depletion of forest resources and raw materials for the enterprise (GIZ, 2015a). Consumer awareness of social and environmental standards is on the rise. The demand for products fulfilling these requirements increases. Hence including the environment is not only a matter of doing business in an environmentally responsible manner: We also have an economic interest in avoiding environmental problems²²³.

Environmental policies address environmental problems by influencing the behavior from firms and individuals through regulation, market and prices. The aim is to put incentives in place that discourage actors to pollute or overuse resources and/or promotes environmentally friendly actions. Some examples are the introduction of subsidies that promote sustainable agriculture practices, a tax on carbon emissions or the setting of emission ceilings for air pollutants.

Box 0.1 summarizes and categorizes some of the most common environmental policy instruments.

Box 0.1: Concept – Classification of environmental policy instruments

	Market-based	Regulatory	Voluntary
Examples	Fees Charges User Taxes Tax Exemptions Tradable Permits Subsidies Revenue Sharing Payment for Ecosystem Services	Laws Regulations Fines Liability for Damages Prohibitions Permissions	Standards Codes of Conduct Labeling Certification Roundtables Alliances
		Planning Instruments	
		Development Plans Sector Programs Intersectoral Planning	

Source: own compilation

²²³ ILO, 2015

10.3.1. Environmental regulation by ‘command and control’

Regulatory instruments, also called command-and-control instruments, define the legal framework for the use of a particular resource by means of laws, regulations, prohibitions and permissions. Enforcement mechanisms such as the use of fines, sanctions and other forms of penalties in case of non-compliance complement these instruments. Regulatory measures are commonly used to prevent certain behaviors, such as the emission of carbon, pollution, deforestation and overexploitation of resources (mining, forest, water). Command-and-control instruments give the regulator (mostly the government) the ability to respond quickly and decisively to activities which do not abide by the set standards. But applying them for value chain development may imply constraints. They involve a high expense regarding their enforcement as monitoring and controlling is required continuously. These expenses may increase according to the complexity of the system of rules applied. Standards under the CAC approach may put directly restraints on pollution, but as it is like a "one-size-fits-all" approach it does not address varying performance of polluters. This distorts the incentive it offers polluters to comply with environment standards and ignores the efficiency principle. An alternative would be incentive based regulation which can be broadly categorized as market-based instruments.

Planning tools can also be seen as a specific sub-set of regulation measures. Governments use planning to devise regulation strategies or change the behavior of agents for instance with the help of development plans, sector programs, integrated ecosystem management plans, protected area planning or strategic environmental assessments (GIZ, 2015).

10.3.2. Market-based environmental policy instruments

Market-based instruments comprise all price related and regulatory measures that encourage users and firms to act environment-friendly by using prices and market incentives. Examples are taxes, user fees, subsidies, compensations as well as tradable rights and licenses.

Market-based instruments work under the assumption through the incorporation of environmental costs or benefits in the economic calculations, i.e. the internalization of externalities, the motivations or incentives of particular user groups towards more environmentally friendly actions can be changed. An example of internalization of costs is the definition of taxes or charges to pollution, in accordance with the polluter pays principle. By making polluters carry damage costs originated by their pollution they will have less incentive to pollute and might be more willing to find alternative solutions. Furthermore, an example of how subsidies can be used to promote environmentally sound agricultural practices is given in Box 0.2.

Box 0.2: Case – Compensation scheme to preserve agro-biodiversity**The Cultural Landscape Program in Brandenburg and Berlin**

The Cultural Landscape Program of Brandenburg and Berlin aims to promote environmentally sound agricultural practices and to conserve the cultural landscape. Part of the two states' joint rural development plan, it has been financed since 2007 by EAFRD. It includes three funding areas: (i) environmentally sound management of grassland, (ii) environmentally friendly agriculture and horticulture, and (iii) conservation of agrobiodiversity. Approximately one-fifth of the farmland in the two states receives subsidies under the program.

To promote agrobiodiversity, the program subsidizes the keeping of endangered local livestock breeds that are particularly suited to environmentally friendly management. Supported breeds currently include the German Saddleback pig, the German Meat Merino and East Prussian Skudde sheep breeds, the German Black Pied cattle, and the Rhenish-German Cold-Blood horse. Stock-keepers receive subsidies for the animals they raise: €25 per sheep, and €80 for a litter of piglets. In crops, the program supports the cultivation of endangered types of cereals that are typical of the region but are no longer competitive or recognized by the Federal Plant Variety Office. These include 26 varieties of wheat, 19 of oats, eight of barley, and seven of rye. Farmers who cultivate these varieties can claim an annual subsidy of €150 per hectare for up to 20 hectares per variety and farm. The Association for the Preservation and Restoration of Crops (VERN) was founded to avoid conflicts with seed laws. Seed is multiplied and exchanged within this association on a non-commercial basis.

Source: GIZ, 2014

Another form of internalization is the retribution or compensation for the benefits derived from a sustainable use of the resources. Instruments such as Payments for Ecosystem Services (PES) address this issue by compensating the service “providers” for providing benefits to the service “users”. A typical example of a PES scheme is the payment for clean water services from communities downstream to communities upstream, as a retribution for the implementation of sustainable land management practices.

Box 0.3 displays a successful example for the implementation of PES for ecosystem services in the North-West of Vietnam.

Box 0.3: Case –Payment for Forest Ecosystem Services Vietnam**Payment for Forest Ecosystem Services in the North-West of Vietnam**

For many years, only the use value of timber production has been taken into account, while forest value related to its protective, ecological and social benefits (indirect use values) have not been addressed. The decline of forest ecosystems is considered as one of the main factors leading to ecosystem degradation, loss of natural capital and climate change in Vietnam in particular and worldwide in general. Findings from research on forest ecosystem services have indicated that forest services account 80%-90% of the total forest value, depending on different forest types. Given this circumstance, a financial mechanism on payment for forest ecosystem services (PES) has become an alternative to safeguard sustainable financial sources to protect forest.

In Son La province in Vietnam some 397,000 ha of the total 500,000 ha of the province's forests were brought into the payment scheme, with water regulation and soil protection being the main ecological services targeted. Three buyers were identified, including two state-owned hydropower plants and one water supply company. Payment levels for each company were calculated on the basis of the total annual commercial water/electricity productivity. The forest area under the payment scheme in Son La was already allocated to more than 50,000 forest owners in the early 2000s, mainly local households. It was agreed and regulated that service provider will receive 90% of the calculated amount and the remaining 10% will be for management costs. The total revenue derived from the PES in 2009 was 63 billion VND (around US \$3.5 million), with an average payment per hectare of forest of 397,000 VND (US \$21) (Pham 2009).

Source: Pham, 2009

Moreover market-based instruments are also used for allocating and distributing funds for conservation and sustainable management of the natural resources, for example through the establishment of conservation funds and markets for water, carbon and biodiversity.

10.3.3. Voluntary regulations

Voluntary instruments are commonly used as a complement to regulatory and market-based instruments and particularly when stricter forms of regulation or market-based solutions are not easily enforceable. Voluntary environmental agreements, roundtables and stakeholder initiatives can help to create alliances between producers within one sector, fostering the implementation of environmentally friendly measures and voluntary standards. They can also have a positive effect in balancing the power relationships among different stakeholders to call for accountability and compliance.

Generally business and/or individual consumers engage in voluntary markets for reasons of philanthropy, risk management, and/or in preparation for their participation in regulatory markets (Ecosystem Marketplace, 2015). Instruments such as labeling, environmental reporting and environmental education are commonly used to raise awareness and provide governments, producers and consumers information for better decision making.

A successful example for a long-term financial mechanism for voluntary conservation agreements in the Ecuadorian Chocó is given in Box 0.4.

Box 0.4: Case – “Gran Reserva Chachi” Project:

Long-term financing of conservation agreements in the Ecuadorian Chocó

In 2004, German development cooperation and Conservation International initiated the “Gran Reserva Chachi” project with the aim of providing compensation to the Chachi communities for voluntarily conserving part of their territories. An innovative set of conservation agreements and the cost of not using the forest were established with the collaboration of the communities. These agreements integrate the needs of community development with biodiversity conservation.

Under these voluntary agreements the Chachi indigenous communities received financial support in exchange for an ongoing commitment to preserve 7,200 hectares of key forest areas within their territories, called the “Gran Reserva Chachi”. This support included a yearly direct compensation of US\$ 5 per hectare and an additional financial support to cover salaries of community reserve rangers. In addition to the financial support, the project has delivered technical assistance to the communities for the production and selling of agroforestry products such as cocoa, and contributed to the training of rangers to monitor the conservation areas.

The conservation agreements provided clear benefits in terms of biodiversity conservation, maintaining high-diversity forests intact and extend protection to forest areas adjacent to the Reserve. In addition the situation of the community improved as they retained permanent rights to their forests and their resources, they derive income from the forest without destroying it as well as generated additional income from managing the forest. As the incentives have been used for health, education, productive activities, infrastructure and communal funds the development of the community improved as well.

Source: Speiser et al., 2009

10.4 Social policies

Global value chains have long focused on economic upgrading (Gereffi, 2005). But from a development perspective, not only economic upgrading is important for the development of a country, but also the social dimension (Bernhardt & Milberg, 2011). The social dimension of a value chain includes a wide array of issues, like equity, equality, access to resources and benefits, participation, inclusiveness of disadvantaged or marginalized societal groups, decent work conditions, and the social impact of the value chain on the surrounding communities and society at large (GIZ, 2015a). From this perspective, social policy and labour market policy are essential for value chain development as they can support both economic upgrading, for example by education and skills development of the workforce, and social upgrading, for example by policies that ensure better paid jobs, better living conditions and social cohesion.

10.4.1. Labor policy

In general terms, social policies are understood as a means to prevent social risks, to enable societies to resolve social problems, to balance the results of social problems and to secure and enhance the living conditions of individuals or groups. Hence social policy instruments are important tools to support the inclusive development of value chain and therefore the development of a country contributing to reducing poverty and inequality as well as contributing to economic growth and social peace. National social policy can address work related fields such as labour protection, social insurance, labour market policy, it can address group oriented fields such as youth policy, old age policy, family policy, social assistance (also accounts under work related fields), and it can address other fields such as housing policy, asset policy and educational policy (Lampert and Althammer, 2004).

The employment situation and the associated income opportunities of a country depend on the number and quality of jobs offered, on the demand for labour and on the way in which employment relationships are established. Labour market policy (LMP) tries to directly influence these determining employment parameters, i.e. by targeted interventions aimed at protecting existing and creating new jobs (Mummert, 2014a). LMP is usually subdivided in (i) regulatory labour market policy, (ii) active labour market policy and (iii) passive labour market policy. Regulatory labour market policy provides a legal framework for employers and job-seekers, e.g. with regard to working conditions, recruitment and layoff of employees or minimum wages. Passive labour market policy aims at securing the subsistence costs during unemployment (e.g. through unemployment insurance or severance payments) and active labour market policy addresses inefficiencies in the matching process with the objective of reintegrating the unemployed into the labour market and facilitating the transition from one job to the next (see below).

Decent work

One internationally agreed concept that summarizes different goals of social policy and labor market policy is the concept of Decent Work that is described in Box 0.1.

Box 0.1: Case – The Concept of Decent Work

Decent work is defined by the ILO and endorsed by the international community as productive work for women and men in conditions of freedom, equity, security and human dignity.

The Decent Work Agenda focuses on four pillars:

- (1) Employment creation
- (2) Social protection
- (3) Rights at work
- (4) Social dialogue

Improving work conditions can lead to greater productivity and, in effect, increased income and job creation. Selecting value chains for improving job quality can take on several different aspects, including some of the more common issues like occupational health and safety (OHS), freedom of association, and absence of child or forced labour, but may also include others such as social protection, contract security, collective bargaining, discrimination, and working time. All aspects of decent work are mutually supportive. Taking decent work principles into account when selecting a value chain is imperative to achieving potential social impact and sustainable economic development. For example, the potential for improving working conditions in the value chain may be one important selection criteria. Depending on the specific situation, high or low compliance with labour standards, different instruments need to be applied for value chain development.

Source: GLZ, 2015a

Social policies provide a range of different instruments. They range from regulatory instruments, such as international conventions, national laws and regulations concerning labour and social protection, market-based instruments such as salary subsidies to employers for employing long-term unemployed persons or labour market services and voluntary instruments such as certifications, codes of conduct or corporate social responsibility. In social policy regulatory instruments play an important role as they are aiming at providing protection to workers or they are providing certain entitlements. From this perspective, “government regulation is required because only the state has the authority and legitimacy to enforce labour legislation and promote/protect citizenship rights” (Locke, 2013). However, in many developing and transitioning countries the majority of the workforce is working in the informal sector, where the influence of government regulation is limited. For example, social protection schemes, like employment injury insurance, unemployment or health insurances, are often linked to formal employment and contributions based on the salary. These potential challenges should be taken into account when designing such policies. At the same time, voluntary and market-based instruments can also support improving working conditions and labour standards in global supply chains. This is most effective when they are integrated in a coherent system of policies. In cases where the enforcement of government is weak, these instruments might be a helpful alternative.

The International Labour Standards of the ILO

International labour standards can be categorized as regulatory instruments. They are legal instruments drawn up by ILO constituents either in the form of conventions or recommendations. International conventions, such as the Freedom of Association and Protection of Rights to Organise Convention, the Equal Remuneration Convention, the Labour Inspection Convention, the Employment Policy Convention, the Social Security (Minimum Standards) Convention, or the Promotional Framework for Occupational Safety and Health Convention, are legally binding international treaties which may be ratified by member states. Recommendations are non-binding guidelines, which in many cases supplement a convention by providing more details. In a number of countries international treaties apply automatically at national

level. In other countries the conventions serve as guidance for adapting national legislation and policies (ILO, 2014). The international legal framework on international labour standards provides orientation for realizing decent work principles.

In order to ensure the translation of regulatory instruments, such as international labour standards, into practice, enforcement mechanisms such as the use of fines, sanctions and other forms of penalties in case of non-compliance are put in place. One example is the system of labour inspection that is set up to monitor and enforce the implementation of national labour laws and regulations. Some countries apply fines in case of non-compliance, other countries tie compliance to issuing certain licenses. In countries where governance structures are rather weak, the enforcement power of labour inspection is limited. As this is the case in a number of countries where international companies are sourcing from, recently, voluntary auditing mechanisms are increasingly used to assess the compliance of the contracted companies with certain (labour) standards. Those initiatives can also be regarded as part of the buyer's code of conduct or corporate social responsibility. While they may be an alternative mechanism where labour inspection systems are not working well, they can also be quite a burden to supplying companies when each buyer applies their own auditing procedure. For those voluntary auditing systems there are no enforcement mechanisms available but economic incentives. Another means of ensuring compliance with labour laws and regulations can be illustrated by the example of Cambodia where the government made it mandatory for all exporting garment factories to participate in the Better Factories Cambodia (BFC) program administered by ILO. Between 2001 and 2004 this assessment mechanism was tied to an innovative trade agreement between the Royal Government of Cambodia and the United States. It used an incentive for improving labour conditions in garment factories linking them to increase the quota for Cambodian garment exports to the US (ILO/IFC 2015).

Active labour market policy at national level

Active labour market policies (ALMP) address inefficiencies in the labour market (such as regional frictions between vacancies and jobseekers, mismatch due to discrepancies between competencies of job seekers and required skills or unemployment due to business cycle movements) with the objective of reintegrating the unemployed into the labour market. Hence, ALMP “actively” increase the employment probability of jobseekers and hence decrease aggregate unemployment. ALMP create incentives to influence the behaviour of companies and workers. They are typically classified into the following categories:

- Job search assistance and placement services,
- (Re-) training,
- Pprivate sector employment incentives such as wage subsidies, and (iv) public employment schemes.²²⁴

In general, the set of ALMP instruments is very heterogeneous with many deviations from country to country: Labor market policies often comprise instruments that aim at improving labour market transparency for better matching of labour demand and supply through placement services (public and private), information of job seekers (e.g. based on labour market information systems) and career counselling and orientation. The most common instruments in developing countries aim at increasing the employability of the workforce to the market

²²⁴ For an elaboration on the scope, effectiveness, financing and institutions of ALMP, see ILO 2008.

requirements through professional training and further education or vocational retraining. In order to preserve and create jobs or to facilitate the entry into working life approaches such as wage/salary subsidies, public works programs, incentives for new entrepreneurs or employment subsidies for certain groups can be applied²²⁵.

ALMP can actively enhance the social dimension of value chain development: (Re-)training alongside the value chain can increase the productivity of enterprises as well as raise the employability and – in the medium term – the individual income of employees. The involvement of micro- and small enterprises, chambers and association in training programs (e.g. by contributing to needs assessments, the design of curricula or training programs in cooperation with the enterprise) helps to strengthen the market orientation of the training services. Enterprises can furthermore contribute to and benefit from solid labor market information and be an active part of job search assistance and placement services.

10.4.2. Corporate codes of conduct and social responsibility

Voluntary instruments for social policies are rather limited with regard to sustainable improvements. Corporate codes of conduct and corporate social responsibility as well as certification are examples of voluntary instruments. While they can have positive effects on working conditions in supply chain factories, generally results of conducted studies on the effects of those instruments are mixed (Locke 2013).

Results remain unclear, whether they are sufficient for sustained improvements. Codes of conduct and corporate social responsibility are not legally binding and as such often do not have any enforcement mechanism. Codes offer guidelines, goals and objectives with regard to human rights, environmental, social and ethical requirements for suppliers. According to estimates of the World Bank, more than 1000 codes of conduct have been formulated by multinational firms (World Bank 2003). Similarly, corporate social responsibility programs are instruments used by corporate businesses to promote the sustainability of their businesses. Usually those programs respond to social and environmental concerns and can address a wide range of different issues, such as worker's rights, health and safety issues, environmental concerns, compensation, migrant labor issues, human rights, security arrangements, community engagement and ethical conduct. Another voluntary instrument is certification which is based on defined standards and which is usually granted by an independent third party/body. Standards are defined by ISO as "documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines or definitions, to ensure that materials, products, processes and services are fit for their purpose". For example, with regard to ensuring workers' health and safety along the value chain, safety certification schemes have become important instruments for international companies to ensure the performance and competencies of their suppliers. In recent years, voluntary certification schemes have gained substantial commercial value, as they give access to a certain market (European Agency for Safety and Health at Work 2012).

Box 0.2 presents the example of OHSAS 18001 and ISO 14001 certification in the Bangladeshi shipbuilding industry and reflects the outcomes of the certification process.

²²⁵ Mummert 2014a, ILO 2008b

Box 0.2: Case – Occupational safety in shipbuilding, Bangladesh**Supporting Healthy Workers, Healthy Communities, Healthy Business**

Shipbuilding is an important growth industry for Bangladesh and Western Marine in Chittagong is one of the country's leading shipyards, employing a large workforce. The nature of this work is inherently hazardous, and occupational health issues are a major concern.

In June 2009, a public-private partnership agreement was signed between GIZ and Western Marine aimed primarily at improving the health and fitness of the workforce. The partnership addresses the problem in two ways: (1) construction of an on-site shipyard clinic and (2) preventive measures. GIZ provided technical assistance and knowledge transfer on internationally accepted standards of occupational health and safety issues. Based on assessments of the risks a comprehensive occupational health and safety policy was developed and introduced, with extensive training of all staff, purchase of protective equipment, and the introduction of robust reporting and monitoring systems.

The most immediate and tangible result of this partnership has been that workplace accidents and injuries at Western Marine reduced dramatically by 99 % over a 15-month period, from 1,000 incidents a month in February 2011 to 10 in June 2012. This reduction in accidents has also led to greater productivity. With the opening of the company clinic, both the shipyard's workers and the surrounding community have better access to health care and health-seeking behaviour has improved. In August 2012, Western Marine was the first shipyard in Bangladesh to be awarded OHSAS 18001 and ISO 14001 certification, internationally recognised standards for occupational health and safety management systems. Western Marine has also recognised that investing in worker's safety and wellbeing has paid off, both in terms of fewer accidents and increased productivity, as well as in terms of opening new markets as a result of the international certification process that the company went through.

Source: GIZ, 2014

Further examples of voluntary agreements are given in the next tables. Box 0.3 refers to better job quality while Box 0.2 refers to better health condition. Both have a positive effect on the business as well as on the employee and therefore are able to foster the social dimension of VC development.

Box 0.3: Case – Promoting employment and job quality, Egypt**The National Employment Pact in Egypt**

The effects of unemployment and the precarious socio-economic situation on the Egyptian society coalesced into what we call the Arab Spring. Decent jobs and career opportunities are the key for a stable socio-political environment, and thus for economic welfare and stability. In this context, the National Employment Pact (NEP) was initiated in April 2011. It is an initiative of the Egyptian-German business community in collaboration with the German-Arab Chamber of Industry and Commerce (GACIC). It is supported by the GIZ on behalf of the German Federal Foreign Office (AA) and the Federal Ministry of International Cooperation and Development (BMZ). Patronage of the initiative is held by the German Embassy in Egypt.

Centered on the promotion of sustainable employment, the NEP is providing employment services, facilitating job matching and enhancing the quality of employment. In doing so, the NEP focuses on blue collar jobs – a job segment which has a high employment potential, but is often associated with inadequate working conditions and a low social prestige. Companies that cooperate with the NEP commit themselves to adhering to the decent work criteria of the International Labor Organization (ILO) in order to ensure fair and decent jobs to Egyptian youth. This includes offering work contracts, minimum wages, social insurance and safe and healthy work environments. Hence, the term "job quality" is a core constituent of the NEP.

Building on the success of the NEP to improve job quality, GIZ launched a Labor Market Access Program in January 2015, which focuses on the sustainable up-scaling of the NEP. By now, the initiative facilitated the access to a formal decent employment for over 5,200 young people. Another

5,100 young people have been provided vocational preparation courses for the formal sector. In Cairo area, there are now 3 employment centers managed by NEP. 40 employees have been trained and certified as employment service agents. To guarantee the scaling-up and the financial sustainability of NEP, new donors were acquired and the successful collaboration with a local employees association and a local NGO allowed the opening of two additional employment centres, which are empowered by the NEP but fully financed by the partner organizations.

Source: El Moaz, Maha (2013) and Labour Market Access Program

Box 0.4: Case – Employee wellbeing programs in Ghana

More than just good business: Employee wellbeing

In 2010 GIZ and its partners began to implement an expanded model of comprehensive HIV prevention under the title of Employee Wellbeing Program (EWP) in Ghana. In addition to a broad conception of health and safety at work, the model aims to strengthen relevant national systems that deliver health. The essential features are preventive health packages with periodic health screenings and vaccinations; Social protection and financial counselling (to access retirement schemes, or life, accident, property insurances) and debt counselling; Health insurance and treatment for staff members, their families and immediate communities.

In October 2010, a group of major companies operating in Ghana signed an agreement to cooperate in implementing EWPs in close collaboration with the Ministry of Health. The Strategic Employee Wellbeing Programme Alliance aims to sustainably improve the health status as well as the social and financial situation of the employees, their core families and members of the immediate communities of participating private partners.

The concept has not only been gaining acceptance among the staff of different partners, but there is evidence that 'word is getting around' among other employers in Ghana. The Alliance is a particular advance for Ghana's private sector, providing a powerful demonstration of structured engagement by forward-looking, successful enterprises in both employee health and corporate social responsibility.

All partners have now adopted Employee Wellbeing Policies which outline the principles and activities involved in their individual EWPs. A number of technical tools have also been created for activities such as cost-benefit analysis and monitoring and evaluation. The program thus has a systemic impact by raising health care standards and injecting greater resources into national health and social protection systems.

Source: GIZ, 2012

Resources

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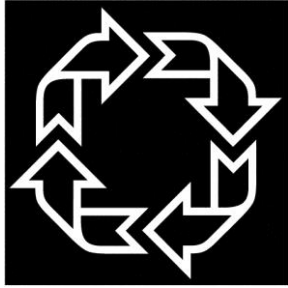
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Module 11

**Data management
and monitoring**

Contents

11.1 Introduction: Value chain information	267
11.1.1. The significance of numbers	267
11.1.2. Measuring the progress towards sustainability	269
11.2 Data collection and management	270
11.2.1. Value chain metrics: Parameters to describe chains	270
Economic parameters	270
Environmental parameters	271
Social parameters	272
11.2.2. Collecting and verifying quantitative data	273
Sources of value chain data	273
Documenting the data and the sources	274
Checking the reliability and consistency of the data set	276
11.2.3. Managing value chain information	279
11.3 Monitoring the development of value chains	281
11.3.1. Understanding the evolution of value chains	281
Value chain development means structural change	281
Processes of chain transformation	284
11.3.2. The impact of chain development programs	285
Formulating a results model	286
Impact pathways, planning matrices and indicators	289
Establishing the impact of chain development strategies	292
The OECD-DAC criteria applied to value chain projects	293
11.3.3. Using monitoring results	294
Organizational aspects of results-based monitoring	295
Program management and reporting	296
Continued learning	297
Resources	298

Module 11 Data Management and Monitoring

11.1 Introduction: Value chain information

This concluding module follows on from the selection of a value chain, and the analysis and strategic considerations in modules 1, 2 and 3 of the ValueLinks manual²²⁶. It does not present another value chain solution but generally applicable tools to master the data problem and generate a clear picture of the necessities as well as the achievements. In this sense, this module looks back on all preceding modules.

Value chain development needs data throughout the analysis, strategy, implementation and monitoring processes. The initial chain analysis and strategy formation begins as a qualitative analysis that we soon have to underpin with quantitative data. This starts by putting numbers into value chain maps and continues with quantifying the economic, environmental and social analyses. The value chain solutions need data as well. Analyzing business models and financial solutions are particularly data-intensive tasks²²⁷. Finally, project planners have to set quantitative baseline and target values for the indicators measuring achievement of objectives and outcomes. Thus, numbers are everywhere.

Producing numbers is a time-consuming and costly exercise. The results of chain analyses, strategic considerations and monitoring therefore need to be useful. The economics of information means that we should produce just enough data to prepare informed decisions and get operational. The data collection effort should concentrate on the information actually needed to conduct chain development. Obviously, information management has to assure a minimum level of data reliability at the same time.

The cost of data collection is justifiable if we consider the fact that greater transparency is a contribution to chain development in itself. The more stakeholders contribute to and have access to the same information, the greater is the information efficiency. An important point is that value chain actors collaborate to produce the required information and share it freely.

11.1.1. The significance of numbers

The basis for investment and development decisions is a realistic view on the facts — the actual conditions of the value chain. To establish the facts, we use both qualitative and quantitative types of information. Chain maps and the initial strategic considerations are qualitative information. Although these facts should be equally 'hard', they come by more easily than quantitative data. As support programs advance, chain leaders have to substantiate the value chain solutions by numbers. The methods to generate reliable quantitative information are of particular interest:

- *Value chain metrics*: Complementing the qualitative, structural information contained in value chain maps
- *Business metrics*: Financial analysis of business models and financing solutions at enterprise level

²²⁶ See the first volume of this manual

²²⁷ ValueLinks modules 5 and 8

- *Development metrics*: Parameters of program planning and indicators for program success

Analysts also need numbers to complete other tasks in value chain development, such as market studies, studies on food loss or calculations of environmental footprints of commodities.

Value chain metrics quantify the value chain map. These are the units and numbers, by which we determine the size and performance of a value chain. The units are the types of operators, jobs, tons of raw materials and products, area of land, monetary units etc. that we use to measure the size of the product flows, the productivity, turnover or market shares of operators in different channels and chain stages. Total value-added (volume of units sold in terminal markets times the retail price) probably is the most important metric for the size of the chain. Besides the basic numbers and the economic data, value chain descriptions also cover environmental and social parameters. These include, for example, the area and productivity of essential ecosystems, the intensity and efficiency of natural resource utilization, numbers of poor micro-entrepreneurs and homeworkers or the wages paid. Business metrics refer to the business model of an operator. Examples of the key metrics are the cost of production, cash flow, capacity utilization and profit. Finally, development metrics cover the achievement of development goals from the numbers of qualified people to employment rates and incomes of poverty groups. This module treats the first and the third type of metrics. The business metrics are covered elsewhere²²⁸.

Evidence-based public policy and development action have gained considerable importance with the series of ‘High Level Fora on Aid Effectiveness’ and the publications of the OECD on the topic²²⁹. In its guideline on “results-based decision making in development co-operation”, the OECD Development Assistance Committee (DAC) demands that “policies, strategies and thematic and country programs must be grounded on evidence of outcome”. Donors ask for concrete results that show factual evidence of the progress achieved. The private sector concept of “impact investment”²³⁰ is similar: It seeks social or environmental progress through financial investment and therefore explicitly demands a *measurable* social impact that investors can compare with the financial returns.

However, finding reliable data is a great challenge. National statistics are, if available at all, not always consistent and trustworthy. The internet provides countless studies and papers that use different metrics and don’t deliver a clear picture. Not many farmers know or are willing to share data on their cost of production, nor do the majority of transporters, traders or small-scale enterprises. Consequently, many chain development programs commission new studies to generate their own data used for the specific purposes of that program. This procedure is inefficient and still cannot guarantee that the data are accurate.

Many value chain programs have to deal with unreliable and inconsistent value chain data. Still, they need to produce fact sheets and generate clear reports. Some tools how to handle this situation and improve data collection and management follow in chapter 11.2.

²²⁸ The analysis of business models is covered in module 5, section 5.3.2, financial solutions in module 8, chapter 8.3.

²²⁹ www.oecd.org/development/effectiveness/

²³⁰ www.oecd.org/sti/ind/social-impact-investment.htm

11.1.2. Measuring the progress towards sustainability

We first use value chain data to map and quantify a value chain describing its present status. Chain maps always are the basis. In order to devise a strategy for chain development, we have to move from a static description to a dynamic view. Value chain developers have to be able to explain and predict the evolution of the value chain to plan and implement the right interventions. Beyond the descriptive model of the value chain, they have to design a process model that helps exploring the possible trajectories of the value chain into a sustainable future. Essentially, the task is to operationalize the idea of sustainable development and make the progress observable and measurable.

Modelling change processes is quite different from modelling value chain structure. The theory of change puts the value chain in the broader context identifying external factors driving development. It has to explain why and how structural change happens.

This is a challenge for two reasons. One is the limited and fragmentary evidence of change processes in the past. After all, value chain situations are always different. We cannot rely on repeating a development process that has taken place elsewhere, because the market situation and the intervening factors will not be the same. There simply is no single theory of value chain development. At best, we can build on typical patterns of socio-economic development.

To understand the mechanisms of change we have to construct our own theory of change for the value chain in question. The insights of multiple areas of expertise are welcome, from economics and social change to geography, just as any experience in other countries or earlier projects. We combine different approaches as long as they share the value chain concept as a common point of reference. The strategic considerations in module 3 include such partial theories.

Another challenge is the connection between theories of change and practical action. This is a communication problem. The formulation of a development model is meant to guide and facilitate action. Thus, the model should reduce the complexity to a manageable number of factors. Project planners have to present the theory of change in a form that decision makers can understand and refer to.

Managing the complexity is a matter of information economics as well. For one thing, it is clear that both businesses and their supporters have to base their decisions on reliable data. Providing incorrect or misleading information bears risks for operators. Chain projects have to be very careful. Only trained staff should do cost calculations. On the other hand, generating empirical value chain data is costly. As the available data often are inconsistent, much time and effort go into verifying and complementing them. But even this does not guarantee accuracy. We will always take decisions on value chain development under conditions of uncertainty – in most cases based on subjective judgement and estimates of the numbers.

Modelling chain development and program impact thus has to determine the right degree of detail. We build qualitative theories of change, complemented by quantitative value chain metrics wherever possible. Chapter 11.3 elaborates some methods for impact modelling to plan, monitor and evaluate chain development.

11.2 Data collection and management

The following chapter gives hints on how to generate and validate the numbers quantifying chain maps, informing the economic, environmental and social analyses, and measuring progress. The objective is to generate reliable data to carry out proper analyses and to follow up on value chain development.

Data collection and management proceeds as follows:

- Defining the metrics and parameters to be used
- Collecting and documenting the sources and the data
- Generating consistent data sets
- Managing and presenting value chain information

The description of a value chain is both in terms of qualitative, structural information and in terms of numbers. Value chain maps, the business model canvas, the basic strategic considerations and tools such as the SWOT analysis contain qualitative information in the first place. Other tools presuppose quantitative data, especially the analysis of business models and financing needs. In any case, practically all tools of the ValueLinks methodology become more meaningful with the use of measurable parameters. A conclusive value chain analysis has to be quantitative. Strategists and planners need to underpin their considerations with numbers.

Monitoring and evaluation also require measurable parameters. This particular field of application for empirical methods is the subject of the last chapter in this module.

11.2.1. Value chain metrics: Parameters to describe chains

‘Value chain metrics’ are parameters that measure the size and the performance of the value chain. Total value-added and/or the numbers of farms and enterprises measure the size of the value chain. Of equal importance is the size of poverty groups, the number of micro-entrepreneurs with or without access to services and finance and the number of cooperatives and their members.

Metrics also provide the yardstick by which to measure the economic, environmental and social performance of the chain. Environmental performance includes, for example, resources efficiency ratios and the land area affected by (un)sustainable practices. The economic and social performance metrics often build on business model calculations. The income of small enterprises is an interesting case, because it can refer to (a) the chain income, which is a part of the value captured by the operator, or (b) to the *total* income of the operator including other sources of revenue.

Value chain metrics provide the quantitative foundation for describing, planning and monitoring value chains. We treat the economic dimension first, followed by the environmental and social parameters.

Economic parameters

The main parameters of economic analysis are the market prices, the volume of produce, the value added and the value captured, the economic performance of the chain, the numbers and sizes of enterprises, their income and employment.

The following table presents important economic parameters, organized by general measures and measures of performance.

Box 11.2.1: Tool – Selected economic parameters

Group of parameters	Metrics
Prices	<ul style="list-style-type: none"> • Retail prices of final product(s) in terminal markets • Prices of intermediary products
Volumes and shares of different product variants	<ul style="list-style-type: none"> • Volumes (in tons or units) produced and sold at different stages of the chain, and in terminal markets • Market shares (in volume or value) in terminal markets • Market shares of certified and non-certified products
Value added	<ul style="list-style-type: none"> • Total value-added (prices * volumes) • Shares of different markets / market segments
Productivity parameters	<ul style="list-style-type: none"> • Yield/ production per ha, • Production per labor day • Production capacity per day or per year
Operators and business models	<ul style="list-style-type: none"> • Types and numbers of operators in the value chain • Size of businesses in turnover / year • Shares of different types of business models (in terms of value or volume) using different levels of technology
Technical ratios	<ul style="list-style-type: none"> • Transformation rates at processing in percent of raw material • Loss rates

Source: own compilation

An important subject is the assessment of chain efficiency that is closely related to the business metrics. This includes the technical ratios, the unit cost of production. The economic performance of a value chain can be “benchmarked”. This means we can compare the productivity parameters with those of competing chains in other countries or similar industries.

Environmental parameters

The second set of metrics complements the economic by environmental parameters. Most environmental parameters are performance metrics.

A good source is the different environmental indicator sets²³¹, which contain large numbers of criteria used in the environmental assessment of value chains. Many of these indicators are aggregate parameters that are composed of different metrics and sometimes require complex valuation procedures. Examples are tools such as the ‘Life Cycle Assessment’ or ecological ‘footprints’ of the final products.

The following table concentrates on just a few key metrics that can be used to inform environmental assessment tools.

²³¹ See chapter 2, section 2.4.5 on environmental valuation tools

Box 11.2.2: Tool – Selected environmental parameters

Group of parameters	Metrics
Resource efficiency	<ul style="list-style-type: none"> • Water efficiency: Cubic meters of water consumed per ton of product or per unit • Energy efficiency: KWh / kg of fossil fuel consumed per ton of product or per unit • Amount of material resources utilized per unit of produce • Volume of waste and emissions discharged per unit of product
Use of local ecosystems	<ul style="list-style-type: none"> • Deforestation / land use diverted to the chain commodity in hectare / year or as a percentage of total area • Biodiversity in the ecosystems used
Environmental hotspots	<ul style="list-style-type: none"> • Number and types of environmental impacts of the value chain and on the value chain • Number and severity of environmental hotspots
Green business models	<ul style="list-style-type: none"> • Number and shares of producers complying with a particular sustainability standard

Source: own compilation

The precise valuation of environmental cost is difficult: “The choice of methodology to carry out environmental assessment is a decision problem in itself for which no optimal solution exists”²³².

Social parameters

Value chain development seeks to support market-driven economic development that is inclusive of the poor and provides them with better income opportunities. Social parameters quantify and characterize groups affected by poverty and social exclusion in and around the value chain. These are the poor farmers, self-employed entrepreneurs, wagedworkers, and poor consumers as well as vulnerable women²³³.

First, we need to know the size of the groups – numbers of households and persons belonging to poverty groups identified in the value chain map.

A second set of parameters categorizes and assesses the status of these groups. It covers different dimensions of poverty – wealth criteria as well as non-monetary criteria. Economic welfare criteria include income and productive assets, other parameters measure the social status. The profile of poverty groups includes information on the average age, gender and ethnic origin – criteria that do not indicate poverty as such but provide important additional information. Often a combination of low scores on several social parameters reliably indicates poverty and helps to ascertain the initial identification of the groups.

The metrics to determine gender conditions are similar. One is the quantification the different vulnerable groups. Next come the parameters measuring the economic and social status of women.

²³² Springer-Heinze and Finkel, 2012

²³³ see chapter 2.3 on the social analysis, in the first volume of this manual

Box 11.2.3: Tool – Selected social and gender-related parameters

Group of parameters	Metrics
Size of poverty groups	<ul style="list-style-type: none"> • Number of households • Number of people
Income and economic status of poor producers	<ul style="list-style-type: none"> • Income of poor operators in \$ per month • Ownership of productive assets with secure property rights
Income and economic status of workers	<ul style="list-style-type: none"> • Wages in \$ per day, week or month • Total income in \$ per month
Livelihoods/ living conditions	<ul style="list-style-type: none"> • nutritional status (weight/age) • of articles satisfying basic needs consumed per week • education level • health status
Employment of low-skilled and poor people	<ul style="list-style-type: none"> • Number of jobs in the value chain • Number of jobs of external service providers

Source: own compilation

All parameters can become indicators for the development of the value chain. Measurable parameters thus are the foundation of results-based monitoring. We have to measure and update the figures periodically in order to detect positive or negative trends.

11.2.2. Collecting and verifying quantitative data

To describe the status and the evolution of the chain, we have to collect data on the key parameters and selected additional parameters. In many cases, there is an excess of data, though often contradictory, not compatible or outdated. Data collection implies sorting out the available data and organizing them according to the defined metrics.

Sources of value chain data

Obviously, planners and analysts have to capitalize on the existing secondary data first – the available value chain and subsector studies, national statistics and international trade data. For practically all value chains, analysts find studies and profiles on the internet, albeit of highly variable quality.

The studies on domestic value chains use national statistical institutes, information of the responsible government departments, the statistical unit of the central bank and data provided by the relevant business organizations as their main sources. Most likely, we find primary survey data in research reports and the studies commissioned by international development agencies and leading NGOs. FAO is by far the main source of data on all food agricultural value chains²³⁴.

Compared to the domestic chains, the data situation is much better in the global value chains, as several international organizations collect and analyse international trade data. The main sources are the OECD, UNCTAD, UNIDO and the WTO. UNCTAD has a global value chain dataset that maps the distribution of value-added in global trade across a range

²³⁴ See www.fao.org/statistics/databases/en/; www.fao.org/faostat/en/#data

of industries and countries²³⁵. OECD has a similar database²³⁶. Other sources are the stakeholder platforms created for sustainability standards, such as the Roundtable for Sustainable Palm Oil (RSPO.)

Apart from collecting the secondary data, development programs have an interest in generating own data on the target groups they are serving. The empirical research should use the following methods:

- Key informant interviews (e.g. with lead farmers, local businesses and traders, service providers or any subsector specialists)
- Focus group interviews (especially with groups of farmers and micro-entrepreneurs)
- Field visits and direct observations (e.g. observations on product quality and prices, the technical processes, transport conditions or the negotiation behavior value chain actors)

It is recommended to continue data collection as a sideline activity during program implementation and service provision.

Documenting the data and the sources

Finding accurate data and assigning values to value chain parameters is among the greatest challenges in value chain development. National statistical institutes normally do not structure their data by value chains.

Thus, the first step is to document all available data in a well-structured format. Producing a consistent value chain data set is the precondition for all following steps in value chain analysis, strategy formation and monitoring.

A simple tool is a table to collect all available data on a particular value chain in a database format such as the one shown below. The table in box 11.2.4 specifies types of parameters, their unit/metric, reference date, the source and an assessment of the reliability of the information. This includes identifying the original source of particular numbers that are quoted repeatedly in the literature. We can assess the reliability of data with several criteria. The first is certainly the methodological rigor of the survey or study that has produced it. FAO is the most reliable source of agricultural data.

Another criterion is the type of data, as will be explained in the next section.

The decisive idea is procedural: To improve on the data situation over time, all value chain actors, programs and projects should feed into a common database, which would be available and shared by all stakeholders. This helps to collect more information and saves money for the individual agencies. It also contributes to improving the common understanding of the value chain situation.

²³⁵ UNIDO, 2015, p.21; UNCTAD, 2013

²³⁶ www.oecd.org/industry/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.html

Box 11.2.4: Tool – Table collecting VC statistics, parameters and prices

Table summarizing statistical data, technical parameters and prices

Description	Metric	Data (years)	Source of information	Assessment of reliability
Whole value chain				
Volume of end product (S, C)	t		National statistics ?	
Retail price / end product (P)	\$ / t			
Value generated (C)	\$			
1. Primary production – statistical data S / parameters P / composed data C				
Farmers, type 1 (S)	number			Low
Farmers, type 2 (S)	number			Low
... per type of farmer				
Average Farm size (P)	ha			High
Cultivated area / farm (P)	ha			Medium
Yield of raw product (P)	t / ha		e.g. FAOSTAT	High – medium
Loss at farm (storage) (P)	%			High
Farm gate price /raw product	\$ / t			High
Farm production	t / year			
Produce actually sold	%			Low - medium

Description	Metric	Data (years)	Source of information	Assessment of reliability
2. Processing – statistical data S / parameters P / composed data C				
Number of processors (S)	number			High
Average capacity (P)	t / year			High
Volume of raw material purchased	t / year			Medium
Loss before/at processor (P)	%			Medium
Capacity use (P)	%			Medium
Transformation rate at processing (P)	%			High
Production / processor (C)	t			
Total production (C)	t			
price of intermediate product	\$			High
Value generated (C)	\$			

This table is a reference document. The format is flexible. Program managers and monitoring staff update the information regularly.

Checking the reliability and consistency of the data set

The table for data collection also has column in which analysts can note the likely reliability of the source. This is necessary because certain numbers often times keep reappearing in the relevant publications. It makes sense to trace the original source to check on the data quality, and not let oneself be deceived by the fact that it is quoted so frequently. To check the quality of data analysts compare the different sources. If discrepancies occur, they would select the number provided by the source with the highest level of reliability. At least, data triangulation allows determining the likely range.

One way forward is to classify types of metrics according to how their values are obtained.

*Single data**** : These data can be determined easily, because we only have to measure them once. For example, the capacity of a processing line in tons/day is given by the technical specifications. Where the numbers are small, e.g. only few (below 10) processing companies or wholesale traders exist, asking insiders will result in reliable information. We can easily know the companies by name. Although this kind of data may be readily available, we still have to check if they are correct.

*Measurable parameters****: A relatively simple investigation allows determining current market prices and many of the essential technical parameters. Small samples of productivity measurements in standard processes, market observations, small samples of products and prices already give plausible results. Analysts can triangulate information from few interview partners and use their own enquiries to validate information obtained from other sources and published documents.

*Derived parameters***: These parameters have to be calculated using some basic statistical figure. An example is production volumes. If we know the average farm size, yields and the on-farm storage losses from screening small samples, we can derive the marketable production by multiplying these parameters with the number of farms. The accuracy of the parameter depends on the reliability of the statistical figure. Derived parameters can rely on a small set of confirmed basis statistics.

*Statistical figures**: The basic metrics are the national statistics such as the size of the (rural and urban) population, total volume or value of produce exported or sold on domestic markets, cultivated area, number of farmers and enterprises or gross national product. To generate these numbers, we require surveys and regular data collection. By combining statistical figures, we can derive parameters such as the per capita consumption or the share of exports in total production. We can check the reliability of the underlying basic statistics by comparing such parameters with benchmarks in other countries.

The assumption is that the reliability of data depends (a) on the source of information and (b) on the ease of measurement. The following table presents some examples for parameters in each category of data.

Box 11.2.5: Concept/tool – classifying types of data

Type of data	Examples	Source
Single data ****	<ul style="list-style-type: none"> • Transformation rates • Capacity of machines • Yield / ha • Types of farms 	Own measurements, sampling
Measurable parameters ***	<ul style="list-style-type: none"> • No. of wholesale traders • No of markets • No. of (big) companies • (Average) farm size • Loss rates 	Obtained in interviews or through observation
Date derived from measurable parameters and one statistical figure **	<ul style="list-style-type: none"> • No. of (big) companies • Per capita consumption 	Secondary sources
Basic statistical figures *	<ul style="list-style-type: none"> - Number of farmers - Size of (rural) population - Cultivated area 	Secondary sources, Market and production surveys

Source: own concept

The ultimate objective is to produce a consistent set of value chain data based on the best available information. The emphasis is on the term 'consistency'. In fact, even the seemingly reliable data obtained in serious studies may contradict each other. For example, yield in tons per hectare, cultivated area in hectare and total production in tons obviously have to fit together. Nevertheless, the figures may not be consistent, if the data come from independent measurements. The contradictions only show when we connect them.

One method is to double check the figures by combining them in a spreadsheet. The idea is to *calculate* the aggregate figures building on the most reliable single data and measurable parameters. We start with the most reliable metrics and derive the value of the other parameters in the spreadsheet. This allows crosschecking all data and detecting contradictions in the data set. We can find out which numbers are most likely correct.

This is the procedure: Build a calculation spreadsheet that combines all relevant parameters. We put in the numbers for the most reliable single data and parameters leaving the cells of the doubtful metrics open. Instead, the spreadsheet calculates the missing figures. Thus, we calculate total production ourselves based on the more reliably measurable parameters of yield, farm size and area cultivated.

The following box shows the example of rice in Burkina Faso. The figures do not refer to a particular year but are model calculations that we can triangulate with the statistics of the government. The numbers to start with are the area (lowland and irrigated), yield, farm size, milling rates, and the number of production cycles per year. This allows calculating paddy production, the number of farmers and the volume of rice production. Note that there has to be at least one statistics to arrive at the totals. Instead of the area cultivated, we could also start with the number of farmers in case we can trust that figure more.

Box 11.2.6: Case – Spreadsheet to check and calculate data for rice in Burkina

	Area	Yield	Cycles	Paddy production	Farm size	Farmers	rice production
	ha	t/ha		t	ha	number	milling rate 60% t
irrigated	8650	5,0	1,8	77.850	0,8	10.813	46.710
Biz model 1 (RMG)	600	5,0	1,8	5.400	1,0		
Biz model 2	4050	5,0	1,8	36.450			
Biz model 3	4000	5,0	1,8	36.000			
lowland, improved	50000	2,5	1	125.000	0,35	142.857	75.000
Biz model 4 (local)		2,5					
Biz model 5		2,5					
Biz model 6		2,5					
Lowland, traditional	22750	1,75	1	39.813	0,175	130.000	23.888
upland	16500	1,25	1	20.625	0,55	30.000	12.375
Total	97900	2,69		263.288		313.670	157.973

Source: own calculations based on different sources

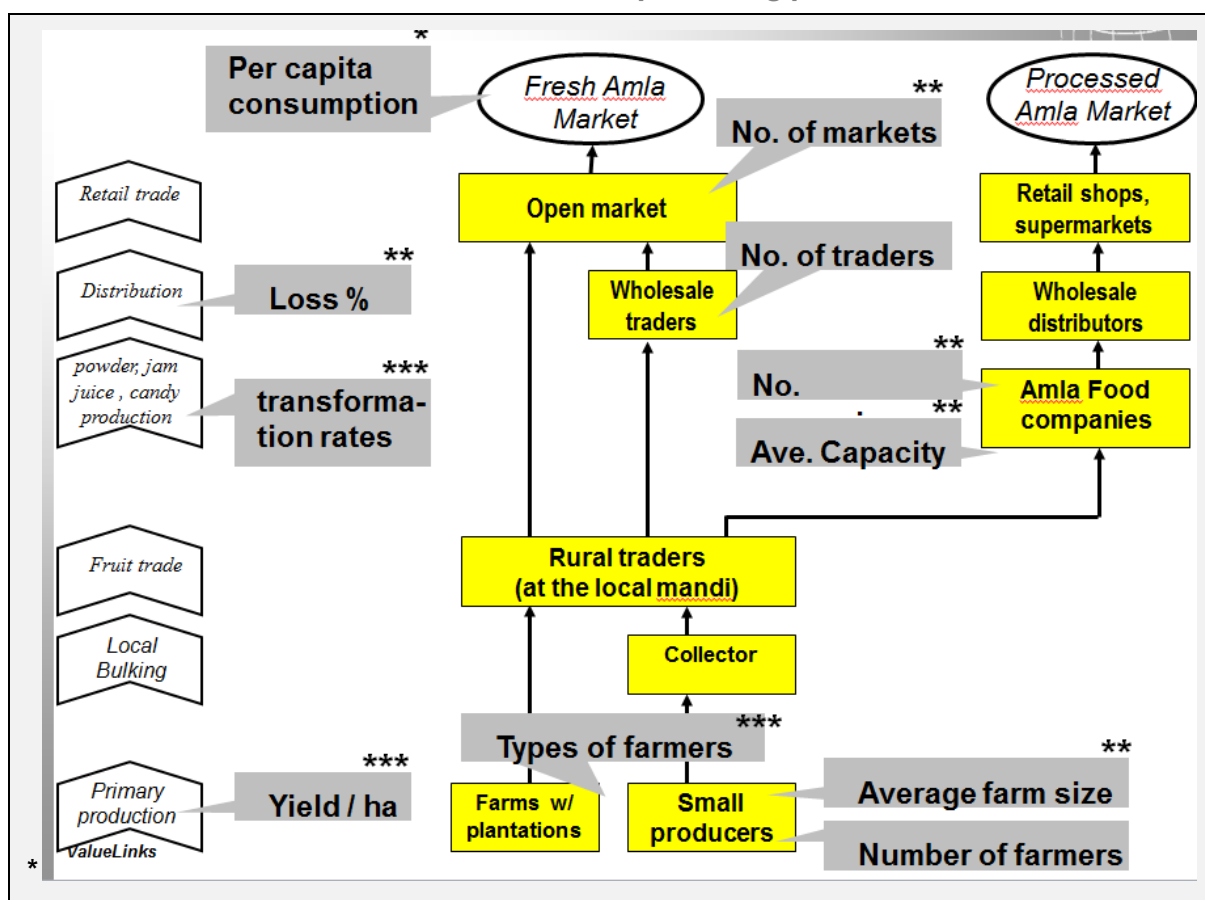
The principles of data reliability and validation apply to all types of metrics, including the environmental and social parameters. Checking the data reliability and consistency implies switching between the original data collection and the spreadsheet gradually improving and securing data quality.

However, despite all efforts in getting the numbers right, analysts have to accept the fact that many data remain to be rough estimates that can only be determined within a range.

In a last step, we can put the data into the value chain map. This is another possibility of data control, as the chain map is a widely understood reference. Box 11.2.6 presents the example of a value chain map that integrates and shows the place of the parameters²³⁷.

²³⁷ We have already used the Amla value chain map in module 2.

Box 11.2.7: Case – Quantified value chain map showing parameters



Source: own design

Certainly, value chain maps cannot and should not visualize *all* value chain parameters at once. Quantifying value chain maps follows the design principles for chain mapping laid out in module 2.

11.2.3. Managing value chain information

The management of value chain data takes place at different levels. The main one is the chain development projects funded by governments and international donors. Clearly, chain projects need their own data for management and reporting.

Gathering and processing information is costly and occupies qualified staff. Every project has to take a decision on the time and effort that should go into collecting and managing data. Generally, the sufficiency principle applies: The key is to generate only the necessary minimum of information, both in qualitative and quantitative terms. Another answer is to economize the effort by using the same information for several clients and different purposes.

The other level of data management is the stakeholder community of the value chain. It is highly inefficient if every value chain project invests in yet another value chain analysis for its own purposes. Commissioning additional chain studies and surveys is costly. As researchers and consultants tend to utilize differing concepts, definitions and metrics, their studies often are of limited use for tracing clear time series and detecting the trends. It remains difficult to assess the evolutionary path of the value chain.

A much more promising answer is to organize the collaboration of all stakeholders in a sub-sector or industry to create a shared web-based database that is accessible to all interested parties. The database should contain a collection of standardized data describing the current structure of the value chain and its sustainability status. Ideally, the database would build on the individual operators as the smallest element and trace the flow of produce from the primary producers to the end markets. The geographical reference of the operators would allow connecting the business processes to natural resources, and to the economic and legal framework conditions of the respective countries. If we had good data on the location of the primary producers, we could also easily relate to other databases such as the deforestation map of Global Forest Watch²³⁸.

A web-based value chain database would provide a reference for all stakeholders, both in terms of the metrics applied, as well as in terms of the information it contains. Collaborating partners would continuously feed in their data, so that everyone gets a detailed and real time picture of the chain. Depending on the outreach of the system and the quality of data, the database would be of great value for mobilizing collective action and targeted public support. Yet, so far, the data is still scattered across the internet. The accessible sources deliver a fragmented picture, each covering partial aspects, particular value chain stages, and regions only²³⁹.

In the times of social media and ‘big data’, one would assume that creating value chain databases should no longer be a problem. The international associations, platforms and roundtables on global commodities have every interest in providing a complete picture of the sustainability status. These are networks of great competence and centers of attraction. Indeed, we find interesting data on global commodities such as cocoa on the websites of the World Cocoa Foundation or the International Cocoa Organization (ICCO)²⁴⁰. The Roundtable on Sustainable Palm Oil (RSPO) has created PalmTrace, a traceability system for certified oil palm products that connects data across the supply chains²⁴¹. Another interesting project in this context is the “Blue Number Initiative” of the International Trade Center (ITC).

Hence, some networked IT solutions point to the right direction. However, a big constraint is the fact that the data of processing and trading companies obviously are proprietary. The big tech companies such as Facebook or Alphabet/Google certainly possess many data on value chains but these are not publicly available.

²³⁸ www.globalforestwatch.org/map/

²³⁹ This is not meant to question the great value of the available databases mentioned at the beginning of section 11.2.2.

²⁴⁰ www.worldcocoafoundation.org/about-cocoa/cocoa-market-statistics; www.icco.org/economy/the-world-cocoa-market.html

²⁴¹ www.rspo.org/palmtrace

11.3 Monitoring the development of value chains

In this chapter, we move from the static description of the value chain to its development over time. Monitoring follows up on the value chain structure and the economic, environmental and social parameters to understand how the value chain evolves. How much additional volume and value does the value chain generate? Does the number of operators move up or go down? Does the value chain map extend to new markets or marketing channels? Have operators changed their business models and their forms of cooperation? What happens to the environmental hot spots?

These and other, similar questions lead to observations of great interest to all stakeholders. They serve two purposes. First, every value chain actor and supporter has to have a clear picture of how the value chain evolves in order to set new objectives and take decisions. The regular update of the value chain analyses helps discovering the trends and detecting factors driving change. It provides strategic orientation and allows reviewing the general vision for the development of the value chain.

At a second level, every private and public lead actor has to account individually for its contributions to value chain development. Chain programs and projects have to complement the big picture of the value chain by information on the significance of their specific services. This is particularly important for public agencies and other 'impact investors' who seek to promote sustainable development.

There is a difference between monitoring change and monitoring impact: Monitoring the evolution of the value chain delivers a general picture of chain development; it does not yet speak to the impact of the different stakeholders on the process. Development programs have to explain how their interventions fit into the evolution of the value chain in order to establish that the change observed also is *their* result.

11.3.1. Understanding the evolution of value chains

Socio-economic change is difficult to anticipate and still more difficult to plan. ValueLinks understands value chains as self-organizing systems. The development is a result of an evolutionary process, not of deliberate design. All chain actors, public supporters in particular, have to tune in on the given momentum of the value chain. Following are some general observations on typical patterns of change that can help to understand the dynamic.

Value chain development means structural change

The development potential of a value chain essentially depends on two determining factors. The first is consumer demand. Market demand is the most important driving force because the final consumers stand for the value generated by the chain.

However, a value chain can only meet the consumer demand if it is competitive. The second factor is value chain structure. For production, not only land, water and other natural resources have to be available, operators also need to master the right technology, business linkages and services should be organized and the regulatory conditions and infrastructure adequate. If we leave aside the natural resources, the competitiveness of the value chain is mainly a matter of its economic structure. We can observe big differences between developing and advanced economies in this respect: The most productive chains derive their com-

petitiveness less from their natural resource endowment than from a sophisticated structure of technological and business cooperation.

Agribusiness is a good example. Satisfying the local demand for simple agricultural commodities in rural Africa does not need a well-developed value chain structure in terms of technology, organization or capital goods. Where 70% of the population is in farming, a relatively small surplus production will do, albeit at a very low level of productivity. This is already different when it comes to satisfying urban or export markets with the same goods. It not only takes more intensive production technology, but also the parallel investment into modern production and storage equipment and the coordination of the logistics to move large quantities of food.

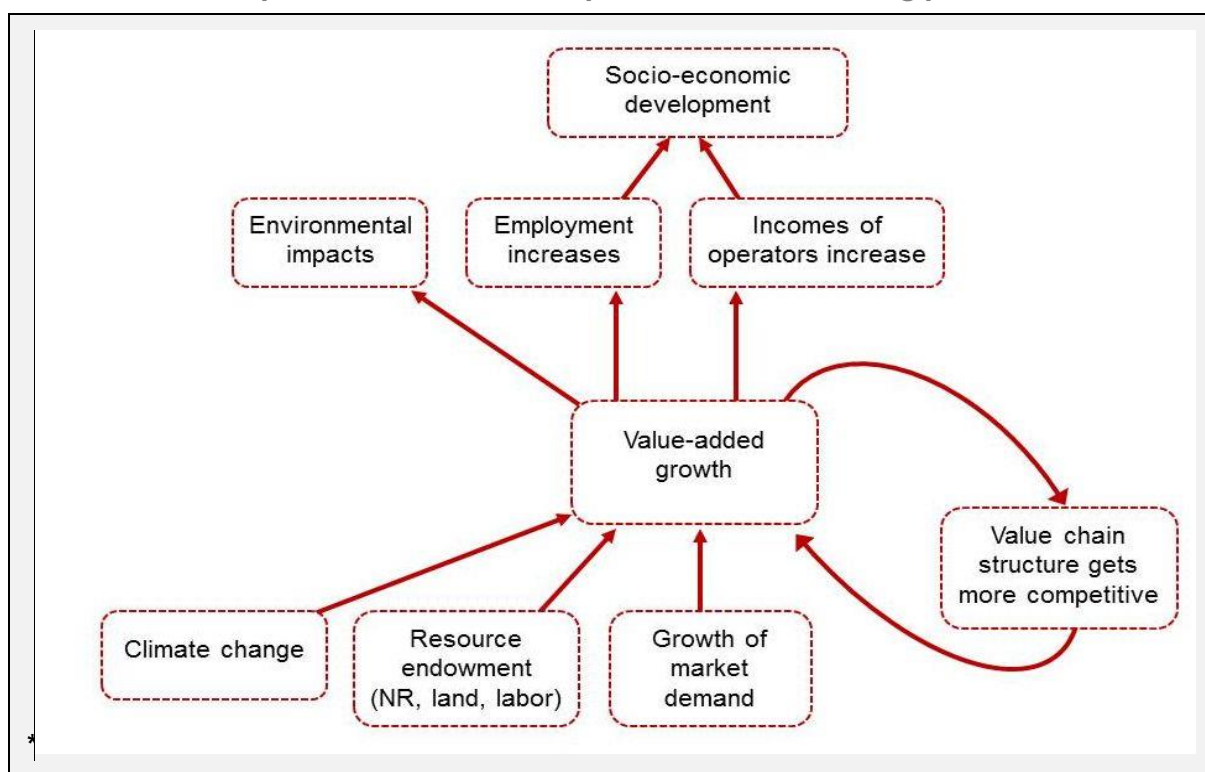
As value chain actors jointly build this structure, they can effectively react to the market demand. The self-interest of every operator is a sufficiently large incentive to invest and upgrade in a collaborative manner. To quote again the agribusiness example: An increasing demand for processed foods entails investment into new machinery. This translates into demand for equipment, for spare parts and mechanical services. Other operators see the opportunity to offer packaging material or to provide printing services. It is not necessary to plan that collaboration at the outset; it will emerge.

Beyond the individual value chain, economic structure refers to the complementary relations between different sectors of the economy, such as between agribusiness, transport and the chemical industry.

The key point is that structure develops in a self-reinforcing process. Besides the initial resource endowment (land, labor, natural resources) and the demand in consumer markets, the value chain structure determines the further development of the value chain. Once the value chain has entered on an evolutionary path, market forces can fully play out because the operators find the conditions to respond. Economic interests will lead private actors to demand the improvement of public infrastructure as well. In fact, the great majority of value chains are the result of processes dominated by market forces and business interests. External support or policy programs for chain development play a minor, rather supportive role.

The following scheme shows the role of value chain structure in a self-enforcing, evolutionary process of chain development.

Box 11.3.1: Concept – Value chain development as self-enforcing process



Source: own design

The maturity of value chain structure thus is an important indicator of value chain development. Following are some criteria analysts can use to assess it. The competitiveness of the value chain structure rests in its increasing differentiation:

- diversification of markets, technologies and products
- division of labor and development of complementary skills in and around the chain
- degree of integration and formalization of linkages between the operators,
- capabilities of lead companies

In a competitive value chain, enterprises continuously learn from each other and from the experience of the most advanced enterprises in the business.

The innovations forming the value chain structure build up gradually. When producers intensify their farming technology, this leads to follow-on innovations in the supply of inputs, e.g. in local storage systems or new short-term financing products. One innovation calls for the next. If one operator changes the business model, the conditions also change for other businesses. They will take the corresponding steps when they see the economic opportunity. Market forces drive this process.

Innovations that are more complex only work if several elements come together simultaneously. Some value chain solutions are systemic in nature. For example, for the introduction of tractors in agriculture to be a success, skilled tractor drivers and mechanics, fuel and spare parts, and a host of other things have to be available right away. The scale of operations has to be large enough to justify the financial investment. Agricultural mechanization is a shift from one stage to another that the operators involved can only achieve by cooperating closely. Innovations in food processing or manufacturing are similar.

As developing countries “move up the industrial ladder in the process of economic development, they also increase their scale of production because of the indivisibility of capital equipment. Their firms become larger and need a bigger market, which in turn necessitates correspondent changes in power, transportation, financial arrangements, and other soft infrastructure.”²⁴² Complex innovations require coordination between various enterprises and between private companies and government — in addition to an effective market mechanism²⁴³.

Therefore, a good value chain structure includes capacity for collective action and coordination as well. The creation of such institutions is an indicator of chain development.

Processes of chain transformation

If chain development means structural change, the question is what the causes and mechanisms of chain transformation are. Development theories posit that economic development follows discrete stages. ...

The concept of stages can be a useful tool for understanding value chain development, but the classification in a particular number of distinct stages appears somewhat arbitrary. The pathways of development are certainly more variable. Nevertheless, in the evolution of value chain structure we see two major turning points that fundamentally change the set-up and incentives for value chain development:

- the transition from a traditional, subsistence-oriented rural economy to market-driven value chains
- the transition from current value chains that do not account for their negative environmental and social effects to sustainable value chains

The first transition is the shift from a rural and agriculture-based base rural economy to an urban and industry-based economy²⁴⁴. This fundamental transformation has already taken place in many countries. It is the basis for a profound increase in labor productivity, per capita income and the creation of wage employment.

The typical pattern of change is the diversification “away from agriculture and the production of traditional goods into manufacturing and other modern activities”²⁴⁵. These include the integration into global value chains and higher value products. The main force is technical progress and the increase of agricultural productivity. “Productivity enhancements in agriculture allow for the progressive release of labor and capital towards more productive industries such as manufacturing and modern services”²⁴⁶. The shift of low-skilled labor from traditional agriculture to more productive processing and manufacturing industries boosts economic growth and enables people to move out of poverty.

The transition to a market-driven economy creates a “virtuous cycle” in the value chain, in which operators mutually reinforce each other’s progress. Enterprises spend their surplus income benefiting others in the chain and the enterprises in the local economy such as re-

²⁴² Lin, 2012, p.23

²⁴³ Lin, 2012

²⁴⁴ World Bank, 2015

²⁴⁵ Lin, 2012, p.3

²⁴⁶ UNCTAD, 2016, p.1

tailers and service providers. Agricultural development and industrialization go hand in hand. Once a value chain has entered a market-driven path, development will continue in a constant process of modernization and structural change. Without the transition to a diversified economy, the scope for overcoming poverty is very limited²⁴⁷.

The second great transformation has only started recently. Getting on a trajectory of sustainable growth is a much greater challenge because the economic incentives are weak in comparison to the rural-urban transformation. Despite the many efforts supporting the move to sustainable business practices, there are hardly any examples of value chains that have completed the transition.

The mechanisms of the second transformation are under discussion but the experience is still limited. Important fora include the 2030 agenda for sustainable development, studies such as the ESCAP study on “Transformations for Sustainable Development” in Asia and the Pacific²⁴⁸ or the debate on transformational change in the World Bank²⁴⁹.

It seems clear that the market demand for sustainable products and technological improvements will not be sufficient. The transformation towards sustainability requires the collective action of everyone in the business. It needs the concerted effort of innovative companies, consumers and government to provide incentives for sustainable development. Whereas the first transformation can mainly rely on market forces, the focus shifts to creating a consensus on a new regulatory framework for doing business that includes private as well as public rules.

11.3.2. The impact of chain development programs

It is not easy to show the impact of activities to promote value chain development in a context of dynamic markets and changing structures. Nevertheless, value chain programs have to conduct impact monitoring for two main reasons. One is that every program using tax money to promote economic development eventually has to show concrete results to the government and to the public.

Second, monitoring the change guides project steering and implementation and allows adjusting the strategy if necessary. Results-based monitoring is the decisive source of learning. Unless we get an idea of what actually works, there is no chance to devise effective strategies.

Monitoring has to answer the question whether a chain development program actually contributes to the evolution of the value chain. Observing the change process is one thing. Whether the changes have to do with the project outputs is another. Therefore, monitoring determines what parts of the chain are changing and which factors cause this to happen. It is important to keep the two aspects apart because the change observed is not necessarily an intended result of previous development action. To assess the impact of a chain project, we have to look at two aspects – change and causality:

- The change of the value chain
- The significance of the factors causing the changes

²⁴⁷ Lin, 2012

²⁴⁸ UN ESCAP, 2016

²⁴⁹ World Bank, 2015, 2016

We can argue that a development program has had an impact on the value chain if its own objectives and theories of change correspond to the change process observed in reality. Results monitoring assesses the progress towards the vision for value chain development and, more specifically, towards the objectives formulated in the specific development policy or program.

This chapter has specific relevance for the lead actors promoting value chain development. Private companies pursuing value chain initiatives mostly have narrowly defined objectives in line with their interest. For them, the question is whether they have met their objectives. Government entities and public development agencies often have a broader mandate and agenda. Here, the issue is whether the public money spent on policies, programs and projects²⁵⁰ actually has had the expected development impact. Value chain programs have to justify spending public resources and therefore have to make sure they achieve their objectives. Results monitoring is the management tool to make sure that a project stays on course.

The results-based monitoring of a value chain development project follows these steps:

1. Formulating a results model for the project
2. Defining the impact pathways, program plan and indicators of the project
3. Collecting the data, verifying impact hypotheses and establishing project impact
4. Using the results for accountability and learning

The first two steps are to formulate and operationalize the results model of a value chain program or project. The third step realizes the data collection and analysis tasks, followed by the fourth step, which leads on to the use of the information for program management. The organizational and managerial aspects of this process follow in the next section.

Formulating a results model

Results monitoring starts by anticipating the economic and social change a chain development program is supposed to generate. The general normative basis is the 2030 agenda for sustainable development. The results model explains how the project feeds into and supports the ongoing process(es) of chain development. It is a “theory of change” providing “a conceptual road map for how an organization expects to achieve its intended impact”²⁵¹. Theories of change are stories, the ‘impact narrative’ of a project.

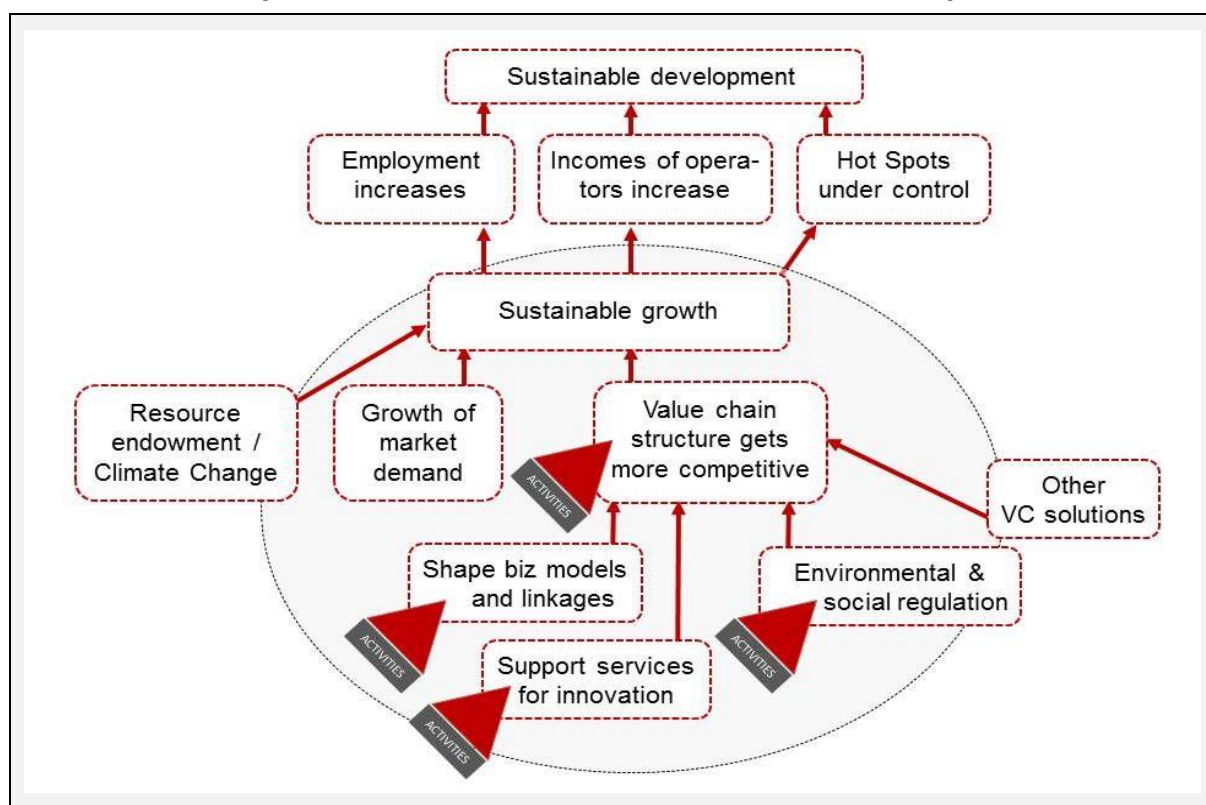
Analysts display the ‘theory of change’ in a results model. The discussion on the nature of value chain development in the previous section provides the basis.

Box 11.3.2 shows the diagram of a results model as a sequence of events leading from changes in business models and linkages, in the support services for innovation, in the environmental and social regulations, and other solutions to a the change in value chain structure that makes the value chain more competitive. This leads to sustainable growth, which in turn translates into employment, larger incomes of operators and greater control over the environmental hotspots. Remember that projects do not promote just any kind of value chains but only of those where economic growth provides poor micro-entrepreneurs the chance to capture part of the value added, and where poor unemployed poor can find a decent job.

²⁵⁰ The following considerations do not distinguish between programs and projects.

²⁵¹ <https://iris.thegiin.org/metric/4.0/OD6350>

Box 11.3.2: Concept – Generic results model for value chain development



Source: own design

The results model above builds on the given evolutionary dynamic of the value chain. The idea goes beyond tracing one particular pathway into the future. It conceptualizes the program activities not as the starting point of development, but as contributions to modify the ongoing change processes. The design of the results model locates the position of an external project at the points of leverage, where external programs can make a difference. As these can be different places, the model is different from the earlier linear impact models²⁵². The procedure to locate activities within the results model is more flexible, and it reflects our insights into the process of chain transformation and the role of external interventions:

- The change process is not linear and it never stops.
- Some factors influence each other in a circular process. Ideally, the value chain evolves in a virtuous cycle of improvements mutually reinforcing each other.
- The key change process is the development of value chain structure.
- The change is the result of many factors. External programs have neither influence on market forces nor on many of the socio-economic factors.
- The weight of external project outputs is smaller the more other factors intervene. Besides the project support, market demand, prices and a range of structural factors drive the increases in income.

Again, the scheme in box 11.3.2 is a generic model. Analysts have to apply and adjust it to fit the particular case of the value chain project in question. Every development project requires its own results model.

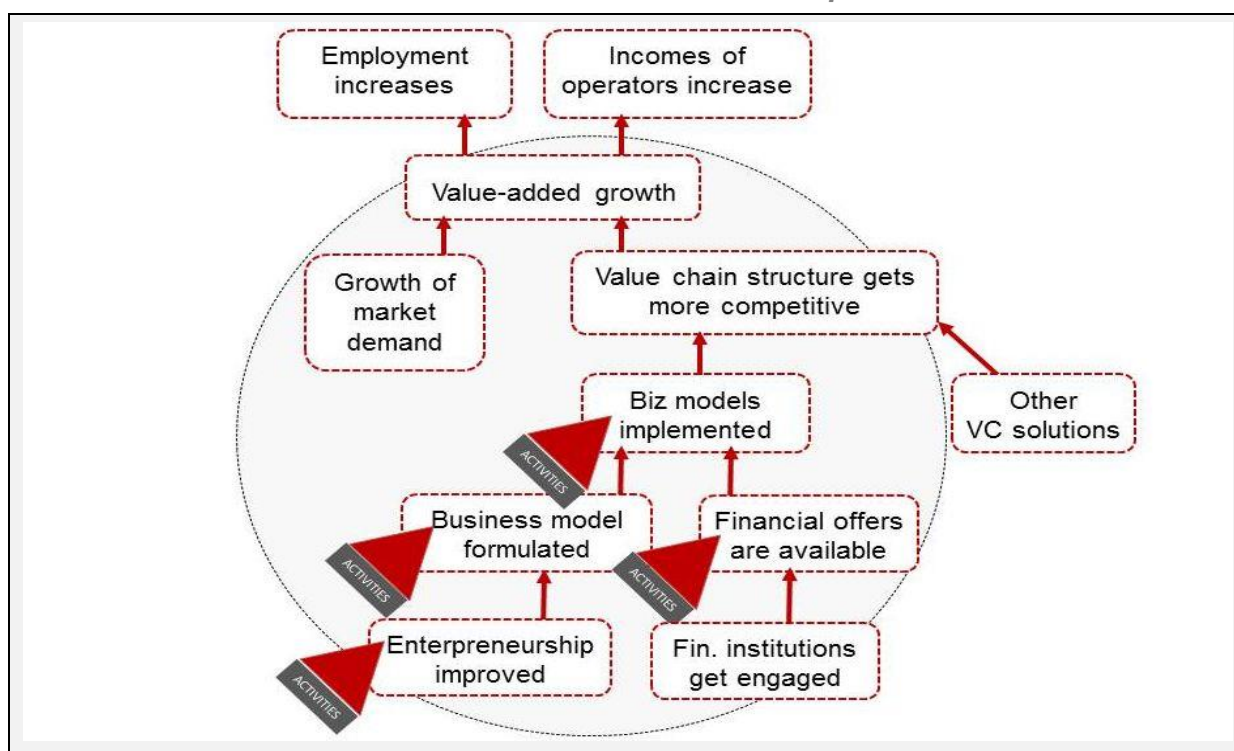
²⁵² GIZ results model, Gajo, 2014

The construction of a results model has to accord to the vision for the development of the value chain and the specific objectives of the program in question. Formulating the results model makes the implicit assumptions of the strategy explicit. The decisive point is to “reconstruct” the impact hypotheses of the initial value chain strategy. The hypotheses explain how the resources of a project are converted into the desired social and environmental results. Results models thus help clarifying the project strategy and are the basis for project planning and the subsequent monitoring and evaluation.

In addition to the existing project strategy, it is useful to consider the strategic considerations and generic strategic options laid out in ValueLinks in module 3²⁵³. Project managers can utilize the nine strategic options of ValueLinks to develop ideas about how their value chains are evolving. The strategic options correspond to general patterns connecting value chain solutions with the progress towards sustainability. Each covers specific aspects of value chain development. Another technique is to build the results model by reversing the chain strategy. Analysts would look for *all* factors driving the expected change, beyond the project outputs. Certainly, information provided by evaluations of previous chain projects provides the most valuable source of information²⁵⁴.

Box 11.3.3 presents a stylized example of a value chain project promoting specific technical and business model innovations, and the respective financing solutions.

Box 11.3.3: Case – A results model for business model improvement



Source: own design

²⁵³ See module 3 in the first volume of ValueLinks

²⁵⁴ DEval, 2016 Studie

Readers are advised not to take the results model in the box above as a blueprint for their own projects. In reality, the models of sustainable growth vary considerably. Do not copy the templates but construct a specific model for every value chain project at stake!

We have to be so realistic to admit that change is the result of factors that are endogenous to the value chain. We can explain many aspects of development only in hindsight. Part of the change may turn out not to be an impact of any development program but of other factors, or simply be an unintended consequence of a chain project. In addition, the time scale of value chain development is different from that of public support programs.

Lead actors in value chain development should therefore choose a sensible level of ambition: The question is what we can realistically achieve, if the ownership of the process is with the chain actors.

Logic models, planning matrices and indicators

The results model includes one or several pathways, the hypothetical sequence of events connecting project activities to the change process of the value chain. A conventional format to structure the link between the project and the intended objectives is a sequence proceeding from 'project activities' to 'outputs' to 'outcome' and on to direct and indirect 'impact'. This sequence implies causal linkages meaning that every step leads to the next in a series of 'if-then relationships'. The impact pathway is the 'logic model' of the project that converts the flow chart of the results model into a table, as shown below. The right column in the box below suggests typical project results in line with the preceding considerations.

Box 11.3.4: Tool/Concept – Generic logic model related to the value chain

<i>Stages</i>	<i>Levels of project results in value chain development</i>
Impact	Vision for chain development: Sustainable development
Outcome	Objective of the project , e.g. increased value-added
Output	Structural change of the value chain: Value chain solutions implemented,
Activities	External support activities / private and public investment

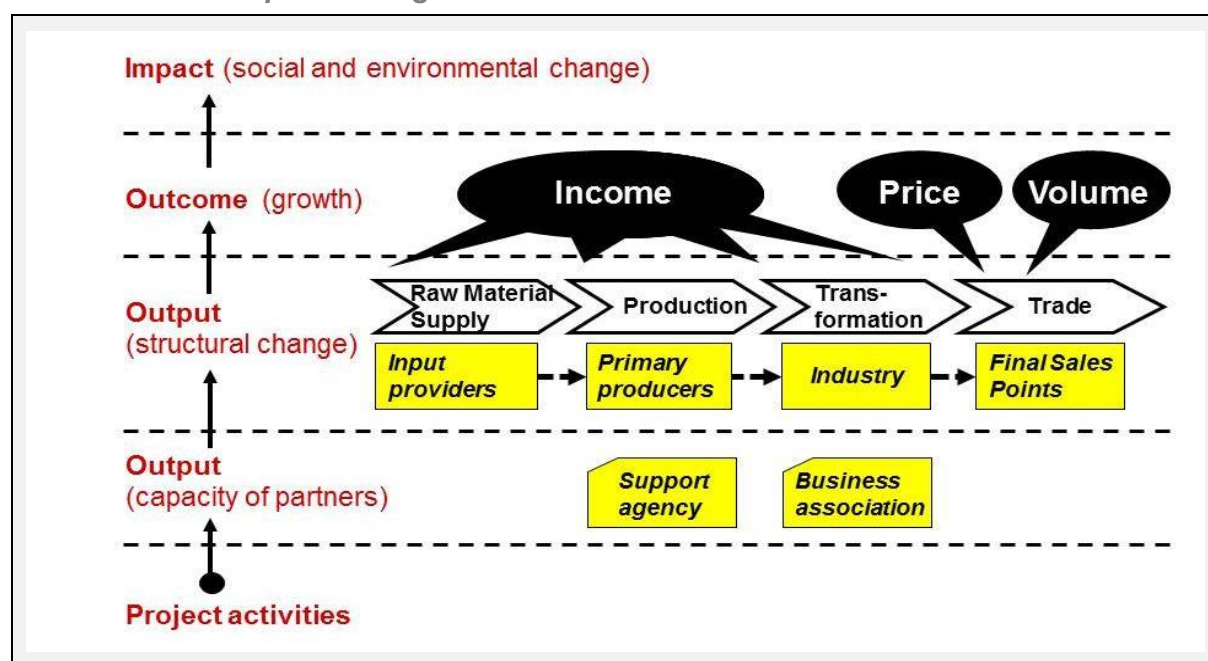
Source: own concept

The box shows a generic logic model project only. Value chain projects may look different. For example, we could take the individual value chain solutions as the outcome / objective level. In this case, the outputs would show a different kind of intermediate steps. If the project supports several solutions, a series of pathways form an inverted tree structure showing several parallel lines leading to the same desired impact with each output representing a separate field of action²⁵⁵. Another option is to extend the sequence to include intermediary steps, such as the 'use of outputs'.

²⁵⁵ See box 3.6.10 in module 3, page 259, for this type of scheme.

Applying the terminology of logic models to value chain development often delivers the picture shown in box 11.3.5. It shows a typical relationship between the project logic and the value chain in graphic form.

Box 11.3.5: Concept – The logic model related to the value chain



Source: own design

The wording of the steps is slightly different from the conventional terminology. Facilitation activities (project activities) induce a change in the behavior of chain supporters (first output), who deliver services to the enterprises and improve the chain structure by implementing a series of value chain solutions (second output). The project activities thus do not lead to the outputs directly but via the partners at meso level. The greater competitiveness translates into an increased value-added at the next level. The outcome corresponds to the immediate objective of the project, the growth in value-added. Social and environmental improvements are the further impact.

If we locate project output next to the value chain map, we can utilize the chain analyses to obtain the metrics against which to measure the ongoing change. The value chain parameters thus become output indicators. Value chain analyses are directly useful for results monitoring. The value chain map is the baseline, which planners can use to extrapolate the status quo of the value chain into a desired future state. During the chain development process, the business models become more efficient, the number of efficient operators goes up, business linkages are formalized, and chain supporters improve their services. Hence, we can organize the outputs according to value chain solutions.

Translating the results model into the linear sequence of the logic model also allows deriving an 'impact matrix' for the project. The matrix complements the sequence by indicators measuring achievement of project activities, outputs and objectives and by the assumptions²⁵⁶.

²⁵⁶ There are several similar concepts and terms such as 'planning matrix' or 'logical framework'. The correct development terminology is defined in the OECD DAC Glossary.

The following table presents a stylized impact matrix for a chain development project. The indicators and assumptions are just examples.

Box 11.3.6: Tool – A stylized impact matrix with typical wording

Stages	Indicators	Sources of verification	Assumptions
Impact Overall performance and sustainability of the value chain in (specified) markets is improved	<ul style="list-style-type: none"> • Average cost of production in (defined) business models down from (n \$) in year 1 to (n - x\$) in year x • Average resource efficiency in (defined) business models up from (n) tons/unit in year 1 to (n+x) tons/unit in year y 	Different sources of value chain data, Collaborative study of government and donor agencies, Statistics of subsector organization	n.a.
Outcome / Objective Value captured by (specified) chain operators goes up	<ul style="list-style-type: none"> • Value-added of the VC in defined channels and geographical regions moved up from (n \$) in year 1 to (n+x\$) in year 4 • Annual income of (specified) operators obtained from the VC moved up from (n \$) in year 1 to (n+x\$) in year 4 	Different sources of value chain data, Own survey data	Other programs and projects deliver the complementary results. r
Outputs Value chain solutions have been realized by (specified) chain actors in defined channels and geographical regions	<ul style="list-style-type: none"> • Public support agency offers (n) new services • Membership in cooperatives has moved up from (n) members in year 1 to (n+x) members in year 4 • Productivity of operators using improved technology goes up from (q/ha) in year 1 to (q/ha + y/ha) in year 4 	Different sources of value chain data, Sample studies of the project	<p>Initial economic framework conditions do not deteriorate</p> <p>Weak operators are able to realize the required business model change</p> <p>Financing solutions materialize</p>
Activities Facilitation and support activities of the chain project	<p>Such as...</p> <ul style="list-style-type: none"> • Provide information and advisory services • Identify technical innovations • Train staff of public agencies 	Project planning and accounting	Good cooperation relation established with partners willing to take over responsibility

Source: own concept using Deval, 2016

The structure and parameters of the value chain change over time. Monitoring reformulates some of them²⁵⁷ into indicators of the change process. Thus, the value chain parameters deliver the metrics defining the indicator values.

The formulation of objectives and indicators is supposed to follow the SMART criteria, which stand for **s**pecific, **m**easurable, **a**chievable, **r**elevant and **t**ime-bound. The output and outcome indicators measure the change of the selected parameters. They operationalize the objectives by stating a baseline and a target value.

Establishing the impact of chain development strategies

To measure change and project progress, monitoring generates two kinds of information:

- The changes of the value chain parameters
- The achievement of indicators for the achievement of the project output, outcomes and impact.

The change we are observing has different causes. The first is the internal dynamic of the value chain itself, the fact that operators react to consumer demand and business opportunities. As we argued earlier, we should only consider those changes as an impact of development action, where we can establish a clear connection between the changes observed with the intervention strategies and activities of the project.

We need both – the measurement of chain parameters *and* of the indicators in the results model. Monitoring has to demonstrate credibly that the logic of the program strategy fits the development process as it actually takes place.

Monitoring the *overall* value chain development, analysts take the initial value chain analysis as the reference and look for changes. Thus, it uses the same tools as the value chain analysis. This starts with updating the value chain map, which allows registering any relevant structural changes. These can be in the business processes, in the business models of operators, in the type of linkages or any other element. Monitoring also refers to the quantitative chain metrics. However, it is not necessary to repeat the value chain analysis completely. The task is to follow up on the important parameters and to detect major structural changes.

At the second level, monitoring follows up on the results model – the ‘theory of change’ of the project in question. Here, the first point is to measure the indicators contained in the impact matrix. The assessment goes hand in hand with the general update on the value chain parameters.

The interesting question is whether the actual change is in line with the expected development or whether there is any difference. Even if the value chain has evolved as expected, it is still useful to identify the drivers of change. To that end, we have to look at the initial impact hypotheses, i.e. the causal links between the activities, outputs, outcome and final impact.

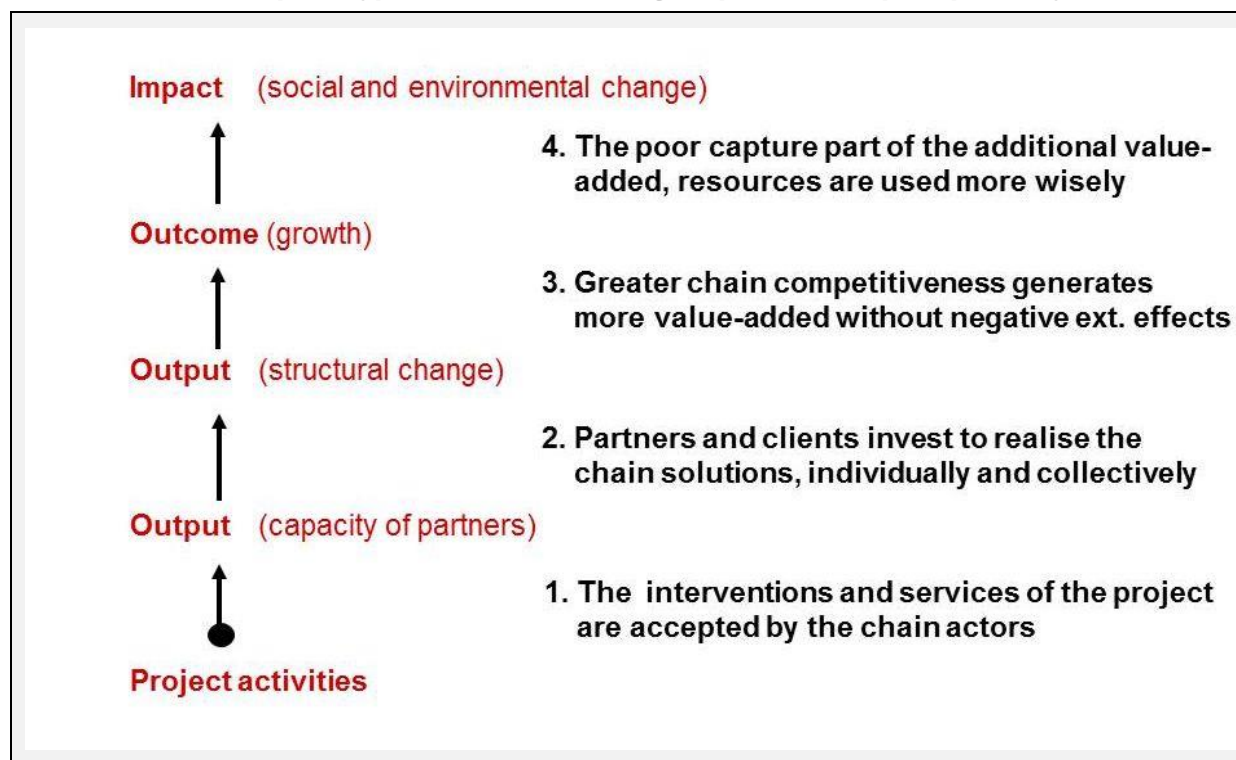
The partners and clients of the project should actually have used the services of the project to realize chain solutions. These solutions should have made a difference in chain development translating into an improvement of value chain competitiveness. To what extent is a greater value-added the result of increased competitiveness versus other intervening factors,

²⁵⁷ See the lists in section 11.2.1

such as the prices? And, finally, do poor producers and employees get a fair share of the higher chain income or benefit in other ways from the growth?

The next box shows the connection between impact hypotheses and the steps in the impact matrix. Again, these are generic statements, Any specific case would look different.

Box 11.3.7: Concept – Hypotheses connecting steps in the impact pathway



Source: own design

We go through the impact hypotheses and collect additional information at the different points of the impact pathway(s) to verify the extent to which they actually have worked. Whereas the logic model explains the steps towards a specific objective, monitoring the impact hypotheses follows the opposite logic tracing the factors explaining the observed change. The idea is to find out which mechanisms have actually caused the change. This kind of reasoning is the foundation for learning from the project experience. A critical assessment is essential even if it stays at the level of “educated guesses”.

In addition, monitoring should observe economic and social developments outside the results model. Whether or not enterprises are able to realize the potential depends to large extent on the business environment and the political and legal framework in the country. Monitoring the conditions of doing business allows identifying external factors that may not have come to mind during the strategy formation. This concerns any unplanned effects as well.

The OECD-DAC criteria applied to value chain projects

Impact is just one of the five OECD-DAC criteria to evaluate project success, which also embrace relevance, effectiveness, efficiency and sustainability. Common practice in development cooperation demands that monitoring and evaluation assesses all criteria. The methodology is open. Here is a series of lead questions:

Relevance:

- Is market development the right answer to the situation of the target groups?
- Does the program strategy respond to a growing market demand, the competitive advantages and the current structure of the value chain?
- Is it in line with national political priorities?

Effectiveness:

- What structural changes can we observe in the value chain?
- Does the program reach its objectives?
- Do the impact hypotheses hold true?
- Does the program pursue a systemic approach in which the design of solutions includes a perspective on the development of the chain at large?

Impact:

- What is the wider impact beyond the growth of value-added and chain income?
- In particular, what are the contributions to poverty alleviation, food security, gender equity and the sustainability of resource use?
- To what extent does the program support the sustainability transformation of the value chain?

Efficiency:

- Do the interventions complement ongoing private and public investment and that of other development programs?
- Has the project mobilized additional funds from private lead companies and/or private business associations?
- What amount of resources has the project spent per beneficiary reached?

Sustainability:

- Are the value chain solutions economically viable?
- Can they survive in the absence of free external support and public subsidies?
- Are there any new negative environmental impacts or social problems?

These questions are not only relevant at the end of a project. Project managers should ask them during the implementation already.

11.3.3. Using monitoring results

The immediate use of monitoring results is to account for the use of funds vis-a-vis the funding institution funds. Results-based monitoring shows to what extent the project is achieving its objectives. The monitoring information enters reports and provides the foundation for external project evaluations.

At the same time, monitoring serves the very purpose of the project. Project managers use the results to steer the project; funders want to oversee the progress and take decisions. This may mean reallocating project funds to those chain solutions that yield the best results. The keyword is learning: Monitoring closes the cycle between from strategy formation to project planning and implementation, back to renewed strategic considerations. Only by closing the cycle, we can hope to become more effective over time and achieve lasting success.

Organizational aspects of results-based monitoring

Results-based monitoring is an essential management function. Project leaders should take a participatory approach to organizing the process. This implies using stakeholder meetings not only to collect data but also to enhance the information flow and the transparency of chain development in general.

To assure that monitoring does not consume too many resources, project manager should organize it as efficiently as possible. The first consideration here is cost. There is an upper limit to the cost of monitoring. A general recommendation says that the expenditures for results-based monitoring should be in the order of 4% of the total project budget. Depending on the scale of the project, the share should not exceed 6%.

Box 11.3.9 shows a real example, the cost calculation for results monitoring in the case of an SME promotion program in Vietnam. The budget amounts to about 5% of the total annual budget of the program.

Box 11.3.8: Case – Cost of monitoring in an SME promotion program, Vietnam

<i>Personnel costs</i>	30,000 €
1 Program M&E Advisor (share of 70 percent)	(running cost per year)
5 Advisors of Program Components (share of 5 percent)	
4 local staff in provinces (share of 5 percent)	
<i>Baseline and follow-up studies</i>	80,000 €
Fruit & Vegetable Baseline Study	(in first and last year of the four-year program phase)
Rattan Baseline Study	
Catfish Baseline Study	
Domestic Investment Baseline Report	
<i>Other indirect costs</i>	1,000 €
Costs of documentation & communication etc.	(running cost per year)
<i>Total monitoring costs</i>	51,000 €
	average cost per year

Source: GIZ Vietnam, 2007

Given the narrow budget restrictions, the monitoring task has to be organized as efficiently as possible. Designing an efficient results monitoring system for value chain projects should observe the following principles:

- The formulation of indicators should take the initial value chain analyses as a baseline. To the extent possible, indicators should use existing sources of information.
- Sharing tasks: Monitoring is the common task of external support projects and the value chain actors, who should be involved in the monitoring effort from the start. The records of collaborating firms and partner organizations are a source of data.

- Bundling of monitoring tasks across value chains: While it is indispensable establishing separate results models for all value chains covered by a development program, the monitoring tasks at output and outcome level can sometimes be combined. For example, access to microfinance and other services may be relevant in different value chains.
- Collaboration with other agencies working for in the same subsector: Several donors investing in parallel need the same or very similar information on the upgrading process and the value added created. Hence, value chain development is an ideal opportunity for conducting collaborative monitoring involving different development agencies.

Value chain development is not a stable target. Hence, it may not always be possible to specify precise objectives, at least at the beginning of a project and under conditions of weak economic structure and unpredictable market change. Both planning and monitoring become difficult and, above all, costly.

One way of dealing with this condition is to link promotion activities with monitoring directly. For example, monitoring staff can use business meetings and stakeholder workshops to verify the results framework and collect data. Workshops and meetings serve a double purpose, strengthening the awareness and capacity of chain operators on one side, and generating information on the other.

Similarly, strengthening the management capacity of collaborating partner can be combined with using their planning and monitoring capacity. In the case of companies and business associations the information generated to manage business operations would also be made available for the purpose of results monitoring. The support organizations and public service providers have to perform an information function anyway. Strengthening their capacity includes collaborating in regular monitoring as well.

Program management and reporting

Results monitoring is an instrument of project management. It has to be built into a management cycle that starts by clarifying the information needs of managers, and ends with the use of the information to perform management tasks and take decisions. The management needs ultimately determine which level of the results framework to focus on and which monitoring tools to use.

There are several uses of monitoring data for project management. Monitoring feeds into

- Short-term operational management
- Strategic management, and
- Reporting

Short-term management mainly needs information about the use of outputs. The information generated here is used to improve the delivery of services to partners. Other instruments are activity and financial monitoring.

Strategic Monitoring needs information about the different levels of the results framework so as to update impact hypotheses and adjust the project strategy if necessary. Of particular relevance is the monitoring of upgrading outcome. In a dynamic environment, project managers have to make sure the upgrading vision is realistic and the project keeps track.

The preparation of reports taps into all monitoring data telling the story of the project. It uses the results framework to show the ongoing change at each level. Accounting for funds received uses monitoring data of the impact level.

Finally, project managers and decision makers in economic development should use monitoring information to prepare evaluations, compare the different project approaches and learn for the future.

Continued learning

Capacity development is one of the five success factors in the “Capacity Works” framework for project management²⁵⁸. Results-based monitoring is an important tool to promote the capacity of the value chain actors.

It is less the staff of external development programs than the chain operators and regular support services providers that should learn from the implementation experience. More than anything else their capacity counts for the continued upgrading and innovation of the chain. Every program should therefore create the appropriate learning space. The best learning opportunity is the comparison between the initial analysis of a constraint or need, the design of a solution and the result obtained. It is essential that the chain actors have an active role in the reasoning, decision-making and action processes. To foster learning, the cycle has to be closed.

Another learning space is given by the existing steering mechanisms of the program²⁵⁹ and the different multi-stakeholder platforms and associations with which the program collaborates. Value chain programs start by bringing the business community together to agree on collective action. They should meet again to jointly review the progress in advancing their agenda and continue the vision for chain development. If this happens, we can regard the value chain project a success. It shows, once again, how essential the institutions for collective action are.

Learning is not only important for the business communities in particular value chains and development programs but for the value chain approach as a whole. There is still a long way to go before we fully understand the mechanisms by which the value chains of today make the move to a sustainable world. However, our experience is still limited when it comes to processes of transformation towards sustainability.

²⁵⁸ See module 4, which is structured accordingly.

²⁵⁹ See chapter 4.4 on steering value chain development

Resources

Literature

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