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Introducing value chains

ZAHINA GROWS PINEAPPLES ON part of her 3 ha farm in Bagamoyo district in the Coast Region in eastern Tanzania. She plants shoots on her farm at the beginning of the rainy season, and applies a spoonful of fertilizer near each plant. She weeds her field a few weeks after planting to make sure that weeds do not smother the young plants. She watches anxiously as the flowers appear and then the fruits begin to swell in the centre of the spiky crown of leaves. When the fruit is ready for harvest, she hires several young men in the neighbourhood to harvest the fruit by hand and carry it to the road. The young men load Zahina's fruit onto a lorry owned by the producers' association she is a member of. The lorry takes the fruit to the association's grading station, where it is weighed, graded, sorted and packed into boxes for shipment. The association pays Zahina for her produce – enough to buy several sacks of maize for her family.

Simone is a Brazilian tourist staying at a beach resort on the island of Zanzibar. Each morning, the hotel serves its guests with fresh pineapple for breakfast. Simone does not know it, but the fruit she is eating this morning was grown by Zahina. The previous day, the hotel received a consignment of fruit from its supplier in town. The supplier buys from a trader who has a contract with Zahina's association for a regular supply of fresh pineapples.

Zahina and Simone* are at opposite ends of a value chain. Between them is a long chain of activities: planting, pest and disease control, harvesting, sorting, grading, packaging, transport, shipping and storage. Each of these activities has to be carried out in the right way, at the right time. If not, the pineapples will not be in tip-top condition when they arrive at the hotel, and the hotel manager will cancel the contract with the supplier and arrange to serve mangoes or watermelon instead.

* Zahina and Simone are hypothetical. Except where stated, everyone else named in this book is real.

Each of the links in the chain involves a different set of actors: input suppliers, farmers such as Zahina, labourers who harvest the crop, the association's workers who sort and pack it, the trader who buys the fruit and sells it to the hotel's supplier, the shipping firm that ferries it across to the island, the supplier who brings a van load of fresh produce to the hotel each day, and the hotel's management and staff who prepare breakfast each morning for the hotel guests.

Supply chains

We are all part of a supply chain. In fact, as consumers, we are all part of innumerable chains – of fruit and vegetables, grains and oils, textiles and cosmetics – that stretch from the producers in far-flung corners of the globe, all the way to our kitchens, dinner tables, wardrobes and bathrooms. At one end are the producers – the farmers who grow the crops and raise the animals. At the other end are consumers, who eat, drink and wear the final products. In the middle are hundreds and thousands of individuals and firms, each performing one small step in the chain: transporting, processing, storing, selling, buying, packaging, checking, monitoring, making decisions. Other players also have a key role: the banks that provide loans and arrange payments, the government that sets regulations and determines policy, information brokers who keep the market players informed about prices and quantities, and so on.

At each stage in the chain, the value of the product goes up. The same pineapple that Zahina sold for €0.10 may cost the hotel €2.00 or more in Zanzibar. The value of the product goes up because the product becomes more convenient for the consumer – after all, Simone does not want to have to travel to Bagamoyo just to eat pineapple for breakfast. The product may also be transformed or processed in various ways: the pineapple may be peeled and sliced, diced and canned, or turned into jam, cakes or juice, before it is consumed.

The same is true for other crops. For example, if a farmer dries and husks her maize, she will be able to sell it at a higher price than maize that is still on the cob. If she grinds it to make flour, she can sell it at a still higher price. This processing may help preserve the product (enabling her to sell it at a later date when the price is higher), make the product more attractive for the buyer (sorted, graded produce fetches a higher price than ungraded), or enable her to sell to a different buyer (a baker rather than a miller).

Costs are also incurred at each stage in the chain. Zahina has to buy fertilizer and pay the young men who harvest her pineapples. The producers' association has to employ staff and pay for its operations. The trader has to cover the costs of transport, crating, shipping and storage. The supplier in Zanzibar has to pay for its office and staff costs, as well as the salary of the van driver who delivers the pineapples to the hotel. The hotel must pay salaries of the restaurant staff who peel the fruit and serve it to Simone for breakfast.

Losses also occur: despite all the best efforts of everyone in the chain, some of the fruit may spoil before it is sold. And each actor in the chain must also cover

their risks and make a profit – otherwise they would not want to be involved in the pineapple business.

Some people benefit more than others from being part of a supply chain. Individuals and firms can grow rich if they can exploit advantages in the chain. For example, a trader who has the only truck in an area can buy from farmers at rock-bottom prices, then sell at a high mark-up in the nearby town. Supermarkets or processors are often powerful players that can dictate terms to their suppliers and force down prices.

Farmers are often at a disadvantage in such chains. Many farmers grow crops or raise animals on an individual basis, so they have little bargaining power vis-a-vis traders or input suppliers. They often lack market information – so they may not know how much their produce is really worth, and how much more they might earn if they were to transport it to the nearby town rather than sell to the trader who arrives at the farm gate in a truck. They are often involved only in producing the crop or animal, and not in processing it to add value. They lack an understanding of the market: they do not know who the other players in the market are, what happens to their produce after they sell it, or what types of products consumers want. They do not control the terms on which they participate in the chain.

This is particularly true for smallholder farmers in Africa. They often live in remote areas, far from good roads and markets. The physical environment may be difficult: rainfall may be erratic, soils poor, and crops and livestock may be attacked by pests and diseases. Rural areas in Africa are poorly served by infrastructure such as electricity and telecommunications. Smallholder farmers usually lack the capital to invest in irrigation, equipment, inputs or marketing. They have limited access to information about prices, quality standards and other market-related information. All these factors make it especially difficult for African farmers to benefit from the chains they are involved in.

But it does not have to be so. Smallholder farmers in Africa can benefit from their supply chains in several different ways. They can do more of the activities in the chain – for example, they may process their product before selling it. And they can take more control over the management of the chain itself – for example, by negotiating better prices and terms of trade, seeking new markets, and controlling product quality.

Supply chains vs value chains

One of the key differences between Zahina and millions of other farmers around the world is that she and other members of her producers' association are part of a value chain.

Other farmers grow their produce and sell it to the highest bidder – or more often, at a pitifully low price to a single trader who comes by with a lorry at harvest time. They grow the same crops as everyone else in their area, they all plant and

Complex chains

Many chains are much more complex than the pineapple example at the beginning of this chapter. Pineapples themselves can end up in various different forms: sliced or diced in cans, as juice in bottles, or in cakes and jam. A product such as vanilla may be sold to consumers as dried beans or as powder, and in bulk as powder to ice cream makers, bakers, chocolatiers and confectioners. Paprika may be sold fresh or dried, or as an ingredient in a thousand different types of packaged food, from chilli sauce to dried soup. So rather than single lines, chains may in fact look more like a tree with many branches – with each branch representing a particular end-product.

These complex chains offer a multitude of choice to farmers. They may choose to supply a specific market segment, and produce the crop or animal that is tailored to that segment. They may also try to process their produce to add value to it: they may dry chillies rather than selling them fresh, or they may make shea butter rather than selling the unprocessed nuts.

Farmers need to understand the players in the chain and the requirements of the different branches so they can supply the product which that branch requires. That will increase their bargaining power in the chain, and improve the price they get for their product.

Export vs local consumption

The example at the beginning of this chapter is of an African farmer who is part of a value chain that ends in a luxury hotel in another part of the same country. The hotel pays a premium price for a reliable, high-quality product. Such value chains are still a small part of the total market in Africa.

Exports are increasingly important for African farmers as Africa becomes integrated into the world trading system. Africa is increasingly supplying farm produce to foreign markets: cut flowers grown in Kenya are flown daily to Amsterdam's flower auctions; Ethiopia and Kenya export large numbers of cattle, sheep and goats to the Middle East; farmers in Mali and Burkina Faso produce shea butter that is sent to Senegal and Côte d'Ivoire, as well as to the chocolate and cosmetic industries in Europe.

Consumers in developed countries like to buy produce that appears in top condition: fruits must be free of blemishes; vegetables must have a uniform size, shape and colour; produce must be fresh and attractively packaged.

In addition, developed countries impose stringent quality standards on imported produce. The produce must pass phytosanitary hurdles, be free of pesticide residues, have no disease and mould, and so on. It must be traceable to its origin. If a single consignment of produce violates these requirements, importing firms may refuse to buy from that supplier, and the importing country may ban imports of that type of produce from an entire exporting country.

But most chains are more local in scope. The Kenyan farmer who supplies vegetables to the local Uchumi supermarket has a much shorter chain. The Malian farmer who sells her tomatoes at the village market is also part of a chain: one that links her with her friends and neighbours, who are also her customers.

These local chains are usually a lot less stringent than export markets. It is possible to sell produce on the local market that cannot be exported. Quality is lower, and so are prices.

But consumers in Africa's cities are becoming fussier. The customer in a Nairobi supermarket may be as choosy as one in Paris or New York. This poses new challenges, as well as new opportunities, for Africa's farmers. They are ideally placed to supply local high-quality markets. The question is, how can they upgrade their product and activities so they can do so?

harvest at the same time, and they all have to sell at rock-bottom prices. They do not check what specialist crops the market might want, and if they have a permanent relationship with a trader, it is based on mutual suspicion rather than trust. The farmers might sign a contract with a buyer to supply produce at a certain price – but they readily sell to another buyer who offers a higher price at harvest time. The original buyer is understandably reluctant to deal with people who break agreements so readily. This **supply chain** functions – but not very well: the farmers make little money and have no incentive to improve their product, and the traders face a great deal of risk and can buy only low-quality produce.

Zahina and her friends are different. Their association has negotiated a deal with a trader who buys a certain amount of high-quality fruit each week. The trader in turn has a contract with the hotel's supplier. This is a **value chain**: each of the actors in this chain is prepared to invest in the chain, and to support the other actors, to make sure that it functions smoothly. This makes sense for them all: all of them benefit from having a smooth supply of top-quality fruit arriving on Simone's breakfast table.

This book describes how intermediary organizations can work with farmers' groups and other actors to convert supply chains into value chains.

Strategies for chain development with small-scale farmers

The day-to-day work of supporting the integration of small-scale farmers into supply chains is very practical: it may involve identifying a buyer, solving a quality problem, or improving packaging. But behind these practicalities are more strategic issues. How should the supply chain be designed? Who should do what task? Who should have what skills and capacities? Where should the power lie? What should organizational and institutional arrangements look like?

This section presents a model to help you think about this in a strategic way. It presents a framework that distinguishes four basic forms of small-scale farmer participation in supply chains. Each of these roles requires different intervention strategies by the intermediary organization.

Small-scale farmers can participate in value chains in many different ways. These types of participation can be summarized into two broad dimensions:

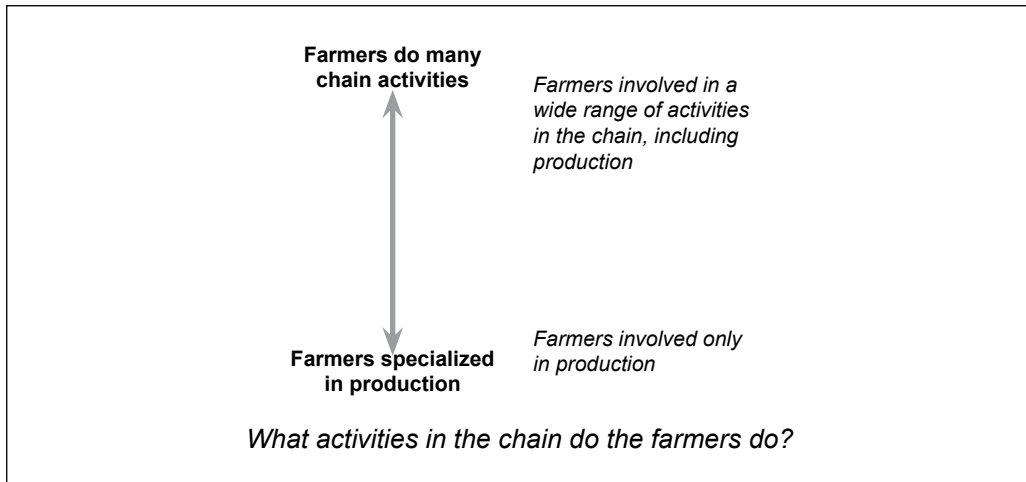
- The types of activities that farmers undertake in the chain
- The involvement of the farmer in the management of the chain.

Activities farmers undertake in the chain

Farmers may concern themselves only with production: they prepare the land, plant the seeds, apply fertilizer, control pests and weeds, and harvest the crop when it is mature. But they may also be involved in other activities – for example,

procuring inputs, drying their crop, sorting and grading, processing, transporting and trading. These are the **chain activities**. Being involved in various activities in the chain is known as **vertical integration**.

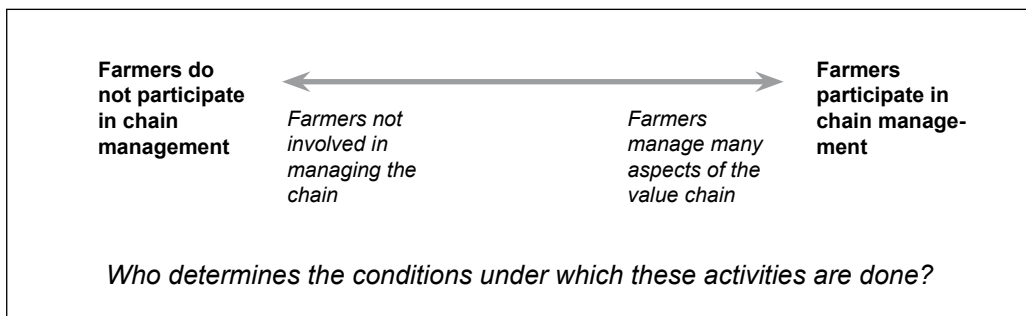
We can plot farmers' level of involvement in the chain on a line (see the figure below).

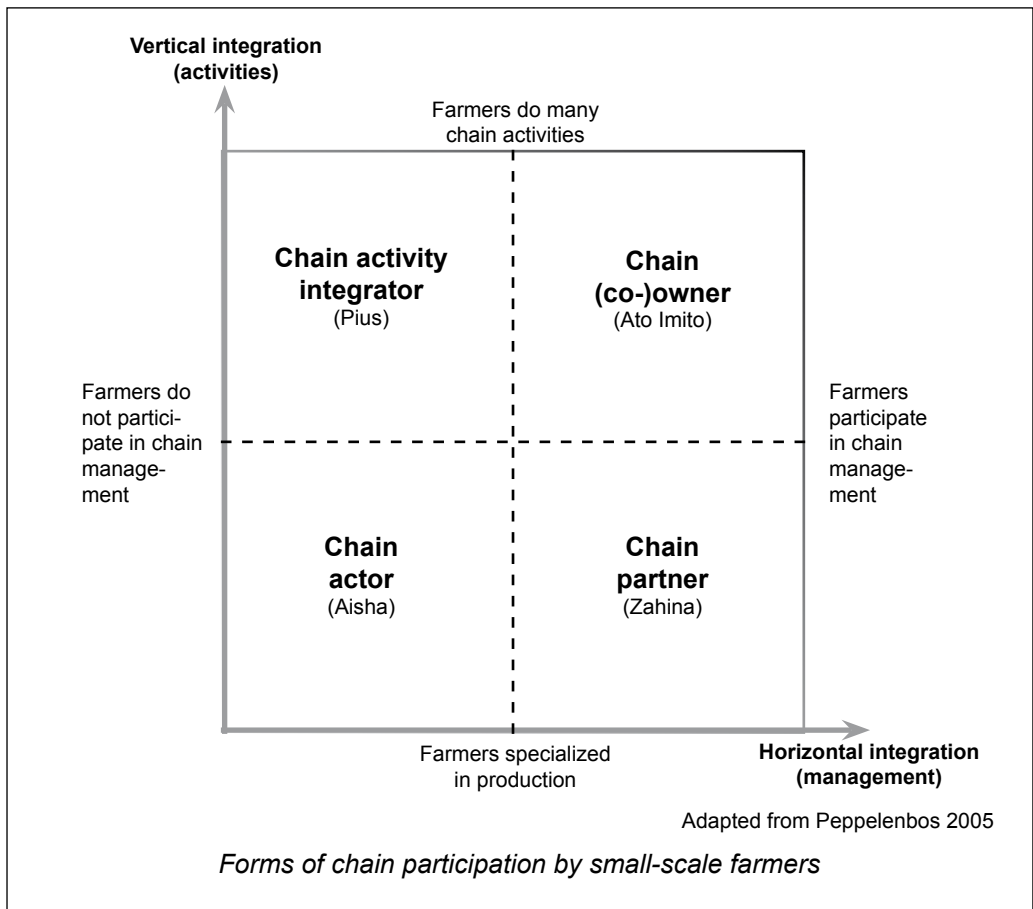


Farmers' involvement in chain management

Farmers may be excluded from any decision making about issues that affect them – even over what crops they grow or what animals they raise. Someone else may make these decisions – then inform the farmers. Or the farmers may have a high degree of control over management: they may be able to decide how much they sell, to whom and at what price. They may control the terms of payment, the definition of grades and standards, the targeting of consumers, the management of innovation, and so on. We can think of these aspects as **chain management**.

We can also plot farmers' degree of involvement in the management of the chain on a line (see the figure below).





If we combine these two diagrams we get a matrix (see the figure above). Farmers may be located anywhere on this matrix. Here are some examples:

- **Aisha*** keeps a herd of goats in arid northern Kenya. Every few months, she sells a few goats to a trader who visits her village. The trader dictates the price he pays, and she has no choice but to accept. We call her a **chain actor**, because she engages only in farming and has no influence over the management of the chain. Farmers in conventional contract farming schemes are also chain actors.
- **Pius** grows maize on his small farm in western Kenya. He harvests and dries his grain, then mills it into flour before selling it a trader who visits his village after harvest. We call Pius a **chain activity integrator** because he has moved from farming into other activities in the chain, yet without exerting more influence on the management of the chain. Chain activity integrators may be organized into groups (such as marketing coops) to buy inputs, process or market produce, but they have no managerial control over the chain because they are not involved in quality management, consumer targeting, or proactive innovation.

*Aisha, Pius and Zahina (next page) are not their real names.

- **Zahina** grows pineapples in coastal Tanzania. She sells her fruit to the farmer association but does not do any processing or grading. Through the association, she has some control over the price she receives. The association has negotiated a contract to supply luxury hotels in Zanzibar. We call Zahina a **chain partner**, because she specializes in farming and – through the association – exerts influence over the management of the chain. Chain partners have a long-term chain partnership with traders, processors or retailers. They may be organized for technological innovation and institutional dialogue in the chain (as in farmer business schools, page 31), but they are involved only in production, and not in further processing of their produce.
- **Ato Imito** is a member of the Kaffa Forest Coffee Union (page 133). He harvests coffee, removes the pulp, dries the beans and then delivers them to the Union to be graded and packaged them for export from Ethiopia to Germany. The Union has negotiated to supply several importers with high-quality beans, and has created its own brand that fetches premium prices on the German market. We call this association and its members **chain co-owners**, because they have moved upstream in the chain, increasing both their activities and their influence. Chain co-owners are organized in business cooperatives that develop new products and reach the end-consumer.

About the matrix

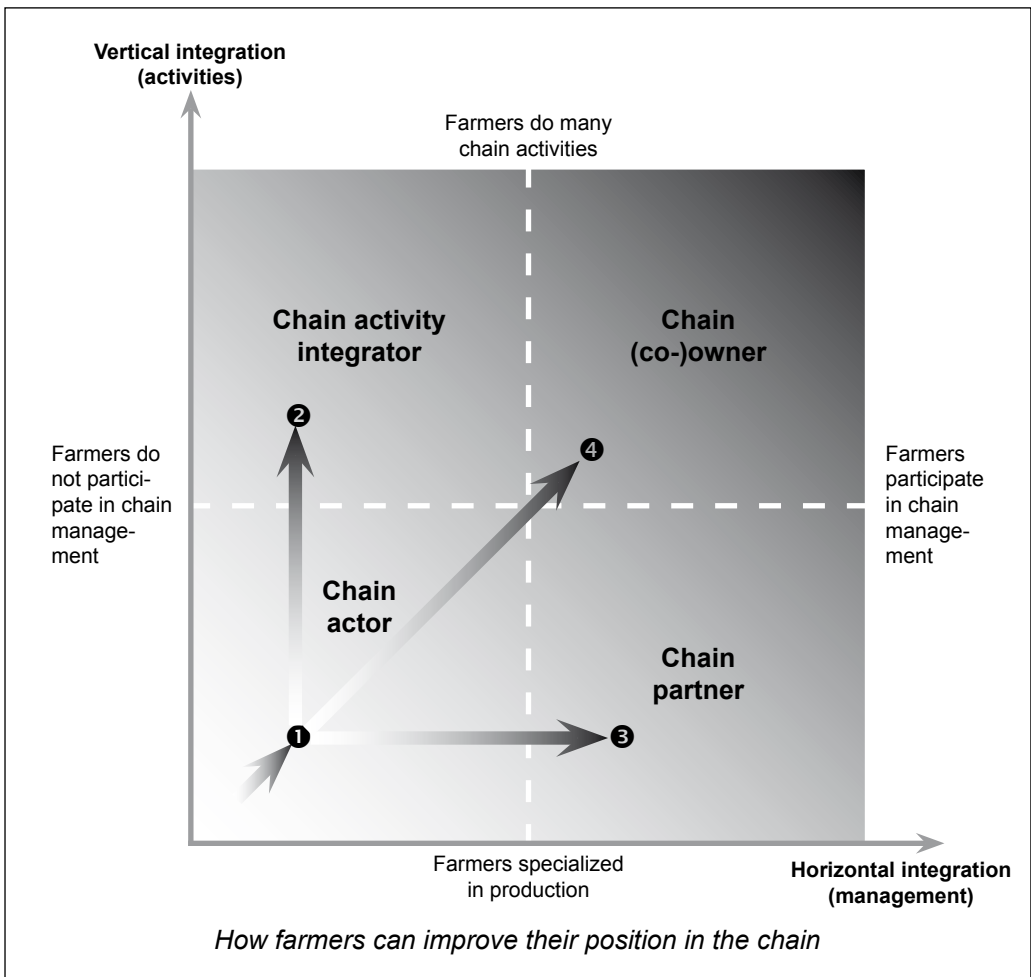
The matrix on the previous page is about the position of the farmer within the chain. The two dimensions refer to the chain: who does what in the chain, and who determines how things are done in the chain? Against this wider chain analysis, we focus on the position of the farmer – for he or she forms our target group.

The matrix is a tool for strategic thinking about chain development. It is useful for making sense of reality quickly and sharply. But reality itself is far more complex than a simple model with four boxes. To do justice to this complexity, we can think of the matrix as a continuum. The four quadrants are vague, blurred areas, and a farmer can be located anywhere within the large grey rectangle (see the figure on the next page).

For example, a farmer may start off at the bottom left corner of the rectangle. He begins grading his product. Doing so moves him a little upwards in the rectangle, so increasing his vertical integration (because he adds an activity). He also moves a little to the right, reflecting greater chain management (because he improves quality management). But he remains within the area of the chain actor ❶.

If the same farmer later starts processing and packaging his product, he may move into the activity integrator segment ❷. Or he and his neighbours may organize as a group and negotiate deals with traders, input suppliers and credit agencies, and may start working with the local research institute to test new technologies. This would move them into the chain partner quadrant ❸.

A combination of vertical (more activities) and horizontal (more management) movements would push the farmers into the chain co-ownership quadrant ❹.



It can be difficult for farmers to move from one quadrant into another. There may be considerable resistance from other players in the chain. Traders may see their position threatened if farmers take more control over the chain management (see the box on the next page). Established processors may be reluctant to see farmers taking on such a role. The authorities may wittingly or unwittingly prevent value chains from emerging (see the box on page 23). It can take a long time for farmers to move from being chain actors to co-owners.

It is also possible to move to the left or downwards in the matrix. For example, a farmer group that gives up processing to focus on production would move downwards (since they perform fewer chain activities). A farmers' association that disbands might move to the left (since it has given up some management functions). These movements may be detrimental to the group, and they may be forced on it – for example as a result of falling prices, a drought, or new taxes. Or they may be desirable and a result of a conscious decision – for example, if the group sees that they can make more money by giving up an inefficient processing operation.

How *rumbesa* harms Karatu District's onion growers

Karatu District in Tanzania is a popular destination for tourists: it is home of the famous Ngorongoro Crater with its teeming wildlife. But Karatu's people do not depend just on tourists. The district is also one of the biggest producers of fresh onions in the country. The Mangola plain in the Rift Valley is where most of these onions are produced. Farmers grow various varieties, attracting traders from different parts of Tanzania and from neighbouring countries.

During the harvest season, traders bring lorries into the villages to buy directly from the growers. The onions are packed and sold in bags, rather than being weighed and sold by the kilogram. The farmers are forced to over-fill the bags: a bag intended to hold 100 kg is sewn together with an extra half bag to bring the total volume almost 1.5 times that. There is even a word for this practice: *rumbesa*, which means "in excess".

Understandably, the farmers are unhappy with this unfair practice. They are being cheated, but they cannot do much to stop it – not yet! Their incomes depend on these onions. If they store them for a long time, the losses will be even higher. And the farmers need to sell immediately at harvest so they can pay for their immediate family needs.



Rumbesa works to the advantage of the traders. They get almost half as many onions again for the same price. They take the produce Dar es Salaam, Arusha and Nairobi and sell it for a good price.

Many farmers have tried taking their onions to Dar es Salaam to sell in Kariakoo Market and other wholesale markets. But the marketing system is "closed": only middlemen called "*dalali*" (brokers) can sell. The farmers can only hand over their onions to a *dalali*, who decides what price to sell at. The farmers cannot meet the end buyer, let alone negotiate. The *dalali* have formed a sort of cartel with the traders who buy from the villages. Others cannot penetrate easily.

The *rumbesa* system is used to measure almost all crops that can be transported in bags, especially bulky produce such as cabbages, carrots, potatoes, and most grains and legumes.

Initial efforts by government ministries to address this problem through policy formulation and strategy setting are yet to bear fruit.

Local levies hamper development

During the 1998/99 growing season, one Tanzanian investor got involved in oil crops in northern Tanzania. He had done a feasibility analysis and gained insight into this business. With the help of an experienced market linkage facilitator, his company contracted smallholders to produce safflower seeds to supply his oil mill. This was a trial year for the company, and the first time the farmers had grown the crop. Smallholders in the district had not grown safflower commercially before.

The company invested up front: it provided the farmers with good seed and ploughed their fields. The farmers agreed that the company would deduct the loan from the crop sales at the end of the season.

The facilitator helped the farmers organize collection centres for the crop at the end of the season. The company sent lorries to pick up the crop and bring it to the factory in Arusha, about 300 km away.

But then the local government stepped in. The authorities set up checkpoints on the road leading out of the district town. Officials inspected each lorry, and the drivers had to declare how many bags of safflower seed the vehicle carried. They sometimes even had to offload the bags to count them. They then had to pay a levy of TSh 300 (€0.21) per bag before they could continue. This levy increased the cost of the safflower by 4% per bag. A series of checkpoints along the road stopped each lorry, scrutinizing its travel documents, and certified that the levy had been paid.

This exercise caused unnecessary delays on the road and meant unexpected expenditures for the company. It was a surprise for the facilitator, company and farmers alike – safflower was not on the list of crops grown in the district (since it was being planted for the first time), so no crop levies had been announced. The authorities did not inform the investor about the levy, even though the company had informed officials beforehand about its intended investment.

The investor was discouraged and almost pulled out. The facilitator helped the company lobby the district authorities to reduce the levy on safflower during the following season. But the company was unable to continue with the pre-financing arrangements for the farmers, and the whole chain collapsed.

By imposing unannounced levies, the local authority had killed off an important investment. It would have been better to announce the levies beforehand so the investor, farmers and market facilitator would have better information about the costs of production and transport.

Where is best position for farmers?

One danger with a matrix like this is that readers may think that the ideal position for farmers is as a chain co-owner. That is not necessarily true.

For example, hundreds of farmers in Spain, Portugal and Italy grow tomatoes for processing companies. They earn a good living doing so. In Ghana, small-scale growers who produce pineapples under contract for Tongu Gold Farm (page 34) earn much more than they could before. They have all the conditions they need for sustained entrepreneurial growth. Through crop specialization and a secure market outlet the farmers may generate a high income – even though they are “mere” chain actors.

Supply chains and subsistence farming

Are subsistence farmers part of a supply chain?

Almost always, yes. The vast majority of subsistence farmers also grow crops or raise animals for sale. Even in the most remote areas, many subsistence farmers are connected to markets, selling small amounts of cash crops in a local village market or to a trader who comes and visits the farmer to buy.

- They may sell surplus that they cannot consume themselves: for example, a farmer may sell a few bags of maize to pay for the next season's inputs; a family may sell eggs or milk to help cover household expenses.
- They may grow crops specifically for cash: Malian farmers often grow cotton to sell as well as food crops for subsistence.
- They may have to sell part of their staple crop to pay off debts, and then buy back their own grain later at higher prices.
- They may process some of their produce and sell it to their neighbours. For example, women in Zimbabwe make beer from maize to sell as well as to drink at home.

Selling their products makes these farmers part of a value chain. The chain may be very short – they may sell directly to the consumer. But it is still a chain. And the type of analysis described in this book can still be used.

In their situation the question often is how they can improve their performance as a chain actor. They may be able to increase the quality or volume of their output, or improve their farm management, to their incomes and improve their livelihood. This is a necessary first step before any other type of chain development may take place.

So the best chain position for the farmer depends on the specific situation, and may change over time. As farmers evolve from chain actors into chain owners, they add “economic rent” to their business (they increase their share of benefits), increase their control over the chain, and protect themselves better from competition. But this brings with it greater risks and responsibilities, which the farmers should be able and willing to bear. The costs may outweigh the benefits.

Intervention strategies

Intermediary organizations can help farmers to get integrated into the chain, to improve as chain actors, or to move onto another form of chain development – partner, activity integrator, or co-owner. The matrix shows that pro-farmer chain development is a two-dimensional process. To improve the position of the farmer in the chain, we can either work on chain activities or on chain management, or on both at the same time.

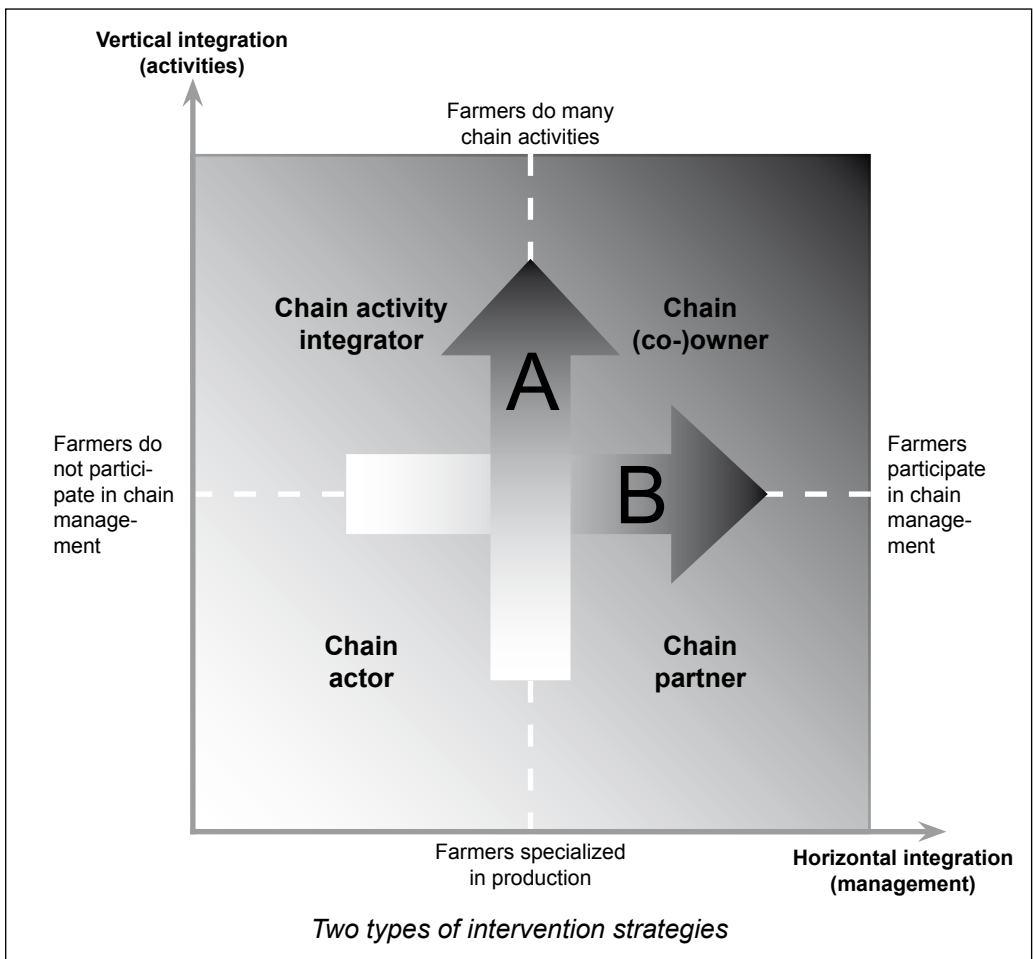
Vertical integration

One type of intervention is vertical integration (arrow A in the figure on the next page). This tries to increase the number of chain activities the farmer undertakes

– from farming into processing, transport, and trading. Vertical integration seems the preferred strategy of farmers. They like to “shorten the chain” by cutting out traders or other intermediary agents. They think that adding activities to their businesses will provide them a lot of added value and extra income.

This, however, is not always true. Adding activities also means adding costs and risks. More importantly, it requires a new set of assets and skills. Some of these are:

- **Technology** Identifying and using appropriate technologies for the value-adding activities (grading, processing, transport, etc.). These technologies must be well maintained and be kept updated. Technological innovation is a permanent concern.
- **Finance** Securing access to (a) credit or investment in facilities for processing, marketing and distribution, and (b) working capital to run the operations. Reserves must be built up for future investments. Profits must be divided in a rational way between the farmers and the cooperative they are members of. Profits should be paid in accordance with the performance or contribution of each member.



- **Human resources** Building up managerial competence and appropriate human resources to operate these facilities – for example, a specialized marketing manager or quality control staff.
- **Organization** Making sure that the farmer organization has the organizational discipline to get involved in joint value-adding activities. Farmer-members should adhere to quality standards, delivery procedures, obligations to sell their produce, etc.

Chain management

The return to investments in vertical integration may be disappointing unless due attention is also given to the second dimension of chain development: involving the farmer in chain management (arrow B in the figure on the previous page). Some aspects are the following:

Information management Knowledge is power. Often the farmers are in a disadvantaged information position. They have no information about the performance of their own organization, let alone of the market. By contrast, companies downstream in the chain tend to have elaborate information systems. For example, supermarkets register the daily buying behaviour of their customers, while processing companies register the yields, volumes and prices of major crops. The more information someone manages, the better he or she can manage a company, and the higher are the returns. To improve the position of the farmers in the chain, their management of information has to improve. Some elements of information management are:

- **Record-keeping** of the use of labour and farm inputs. This is necessary to give a proper understanding of the costs involved, to base farm management decisions upon information, and to build the ability to negotiate the price of the product.
- **Traceability** This means keeping records to guarantee the buyer on the source of the product and the inputs that were used.
- **Market information** This involves knowing about prices and trends in the market so that the farmers can bargain with potential buyers.

Quality management Quality management assures that both the product and the production processes satisfy the consumer. It assures that the farm product can find its way into the market. Quality can be a unique selling-point, through which one group of farmers differentiate themselves from other suppliers. Quality increases the attractiveness of farmers as business partners, hence, their bargaining power. Some aspects are the following:

- **Grading** of the product into homogeneous quality grades, each with a different price, each for a different market segment.
- Implementation of **quality control systems** at critical points in the production system. These make sure that the farmers are on top of the product – that quality is controlled.

- Implementation of **quality certification schemes** that are demanded in the market, such as GAP (Good Agricultural Practices), Food Safety Certification, EurepGAP (quality management system of European Union supermarkets), etc.

Innovation management Often innovation is steered from above. New technologies are brought to the farmers by extension officers from contracting companies or the public sector. The farmers are passive recipients of ready-made technological solutions. But it can also be the other way around. Farmers have detailed knowledge of what works best in their fields. They can share these experiences among each other, identify best practices, start experimenting, etc. They can make study trips to large-scale farmers, research institutes and experimentation centres. In this way, formal scientific knowledge will be combined with practical knowledge from the ground. This will not only boost innovation in the chain, but also make the farmers more attractive business partners.

Chain cooperation Cooperation with other chain actors is a skill in itself. Often chain relations are marked by distrust. The farmers and traders fight over the price; the farmers may swindle the traders by putting low-quality produce at the bottom of the crates, and the traders may swindle the farmers by using inappropriate weights and measures. This situation is bad for all. That is why it is important to seek cooperation along the chain. Some elements are the following:

- **Chain vision** Chain cooperation starts with the recognition that the chain actors depend on one another for their business performance. A good chain has synergetic, complementary relations between specialized chain segments. This chain vision can be built up by taking the farmers (or other chain segments) on excursions to companies up and downstream in the chain, and showing them the reality along the chain. For example, this will show them that poor quality at the beginning of the chain multiplies into great losses elsewhere in the chain. A bad tomato which is transported to the city is a loss of money. This loss may lower the price paid for a good tomato. Hence it is better not sell the bad tomato and get better price for the good one.
- **Trust building** Once there is recognition of mutual dependency between two chain segments, then there is a scope for a dialogue around shared interests. Initially the dialogue is focused on trust building, exchanging information and creating shared visions. Later, the dialogue may result in joint action plans to improve the chain to the benefit of all.
- **Joint action plans** In dialogue with each other, the chain actors can identify ambitions (e.g., the development of a new product, or improvement of quality) that they may want to undertake together. Or they may identify problems that they may want to tackle (e.g., the loss of produce during transport). For such problems or ambitions they can draft a joint action plan, in which each of the parties undertakes certain actions.
- **Negotiation** In such dialogue the parties can also structure their negotiations about the transaction conditions (price, quality standards, payment procedures, etc.).

Marketing intelligence This involves making sure that the product finds its way into the market. Production processes must be tailored to market demands. There must be knowledge of what the consumer wants. Products should be produced, designed and packaged to attract the preference of the consumer.

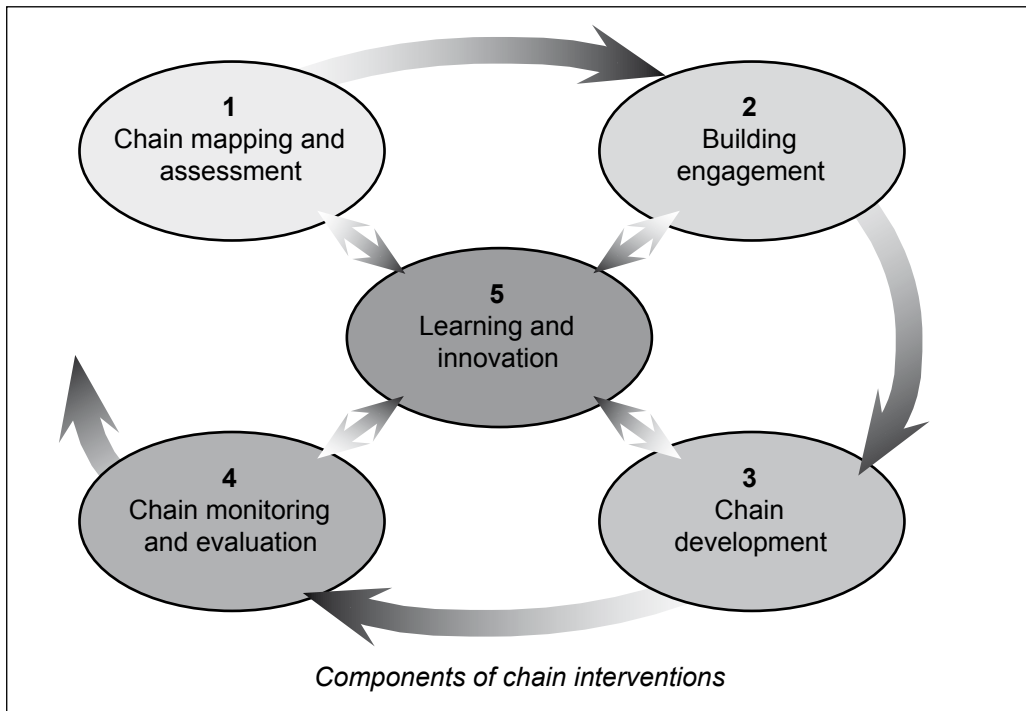
Components of chain interventions

The case studies in Chapters 3–6 present experiences with implementing these two types of chain interventions. These interventions fall into five components or phases (see the figure below).

1 Chain assessment

The first thing to do is to analyse the situation and the goals. This includes:

- Assessing the farmers, their organization, livelihoods, skills, assets and ambitions.
- Mapping the different actors in the chain, and profiling each of them.
- Analysing the market, trends, prices, comparative advantages, competitors, etc.
- Reviewing the business environment, analysing stakeholders and the policy environment.



2 Building engagement

Any intervention requires engagement from and between farmers, other actors in the chain and the wider (policy) environment. Some elements are:

- Identifying common and conflicting issues.
- Identifying chain leaders and facilitators.
- Strengthening linkages and building trust among chain actors.
- Developing a joint chain strategy.
- Learning by doing joint projects and through platform meetings.

3 Chain development

Farmers and their organizations may improve their position in the chain in several different ways:

- **Process upgrading** This means producing the same product more efficiently – perhaps by using new technologies or management methods. For example, farmers may grow more by switching varieties or applying fertilizer; they may reduce pest attacks and save costs through integrated pest management rather than spraying; they may husk maize more quickly using a machine rather than by hand; or they may invest in build new grain bins to improve storage. Farmers can also improve their links with other actors in the chain – for example, they can sign contracts with input suppliers or processors.
- **Product upgrading** Farmers can improve their product in various ways. For example, they may plant a new variety that has more desirable characteristics; or they may stop using agrochemicals and apply for certification so they can sell their produce as “organic”.
- **Functional or intra-chain upgrading** Farmers can take on new activities in the chain, either upstream or downstream, or change the mix of activities they undertake. For example, they may start grading and sorting their produce; they may bulk it to make pick-up more convenient for buyers; or they may process it (drying, milling, etc.) to improve its value or increase its storage life.
- **Chain or inter-chain upgrading** Farmers can also set out on a new value chain: they can start growing a new crop, keep a new species of livestock, or start a new enterprise such as dairying or agrotourism. They may be completely new to these activities, or they may transfer their skills and experience from their existing enterprises.

The first of these, process upgrading, is vital if farmers are to increase their income and participate in wider markets than at present. The farmers must be able to produce enough output, at the right time to interest a buyer; they must have the links with the buyer so they can sell it at all.

But while process upgrading is necessary to boost farmer’s incomes, it is unlikely by itself to give them a larger slice of the cake – a bigger share of the income from

the value chain. They can do this only by introducing new products or improving existing products (product upgrading), by changing the mix of activities in the chain (functional upgrading), or by getting involved in a new value chain (chain upgrading).

But this is not easy. Small-scale producers are likely to run into powerful interests that hamper their progress (see the boxes on pages 22 and 23). Other interests – traders, processors, larger-scale producers – may be reluctant to help small-scale farmers take a slice of their own profitable businesses. This means that farmers' organizations and intermediary organizations must analyse the value chain carefully (see page 28) before deciding what action to take.

In many instances, indeed, other players in the chain may actually welcome the small-scale farmers' involvement, for example if they increase the volume of produce that can be processed, so making factories more efficient (see the example of cashew in Mozambique, page 47).

4 Monitoring and evaluation

Monitoring and evaluation are vital for the farmers and their organizations, and for intermediary organizations that assist them. Here are some indicators to watch:

Within the supply chain

- **Production cost** How much does it cost to produce the output?
- **Yield** How much does the crop (or livestock) produce per unit area (or per unit of a key input such as labour)?
- **Gross margin or profitability** How much money do the farmers make after deducting their costs?
- **Distribution of benefits** How are the benefits distributed between the farmers and the organization, and among the farmers?
- **Improvements in products and efficiencies** In what way are these achieved: through process, product, functional or chain upgrading? (see page 29).

In the market

- **Market penetration** What percentage of the market do the farmers serve?
- **Sales volume** How much produce do they sell?
- **Sales value** How much money does it bring in?
- **Product differentiation** What range of products do they supply?

Livelihoods

To judge the effects of the chain on livelihoods, check the effects on different groups in the community: men and women, different ethnic groups, and poor vs better-off people.

- **Role of income from chain** How big a role does income from the chain play in the farmers' overall livelihoods? What do they use the extra money for?
- **Diversification of income sources** Does the chain add to the farmers' income sources, or are they over-reliant on a single source?
- **Income stability** Does the chain give the farmers income throughout the year?
- **Employment** What has been the impact on employment?
- **Economic participation** Do the farmers participate in the local economy more? E.g., do they buy and sell more in the local market?

5 Learning and innovation

Learning and innovation are at the heart of interventions in chains. Both farmers' organizations and intermediary organizations must be able to learn from the situation and adjust their approach accordingly.

Two examples of interesting innovations:

- **"Farmer business schools"** are an approach pioneered by FAO. This builds upon the "farmer field school" approach that supports farmers to learn about and innovate in their production systems. Farmer business schools support farmers to be market-oriented, start business planning, and improve their market information systems (see page 155).
- **"Chain platforms"**, piloted by KIT, bring various stakeholders or actors in a chain together so they can discuss issues in the chain and develop ways to improve it (see page 173).

