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**A STRATEGIC FRAMEWORK AND TOOLBOX FOR
ACTION RESEARCH WITH SMALL
PRODUCERS IN VALUE CHAINS**

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Abstract

The paper presents a strategic and practical guide for how to design and implement action research in value chains in a way that integrates poverty, environmental and gender concerns. The focus is on small producers in developing countries and other weak chain actors such as small trading and processing firms.

The toolbox guides the design and implementation of action research projects by presenting a step by step approach describing in detail (and with comprehensive checklists) what to do, questions to ask and issues to consider in each of the steps from the choice of overall research design, over participatory research and implementation of action, to evaluation, adjustment and exit. Reflections and decisions concerning effective action are assisted by a strategic framework for identifying ‘upgrading’ strategies potentially available for improving value chain participation for small producers, with the ultimate purpose of increasing the rewards and/or reducing the risks from participation.

The step-wise approach is further aided by a comprehensive evaluation of specific action research methods, which first of all helps to select the specific research methods most suitable for the purpose and conditions of a particular action research project. A hypothetical example based on a real-world situation, shows how the toolbox might be applied in practice in its entirety, while real-world examples illustrate the most common upgrading strategies pursued by smallholders.

I. Introduction

I.1 BACKGROUND AND OBJECTIVES

This paper is based on the results of a study undertaken to develop a practical guide or toolbox to help design and implement action research in value chains in a way that integrates poverty, environmental and gender concerns.¹ Action research puts emphasis on strategic and ‘political’ approaches to achieving sustained improvements for disadvantaged groups. The toolbox builds on a conceptual framework with the same thematic foci developed in another paper (Bolwig et al. 2008) prepared in conjunction with the present one. The objective of the study was to operationalize the conceptual framework by developing strategies and tools for the design, preparation and execution of action research projects for the promotion of positive changes in value chain participation for a target group of weak chain actors (such as smallholder farmers or artisan fishers). The toolbox has four main elements: 1) a discussion of the types of ‘upgrading’ strategies potentially available for improving value chain participation for small producers, 2) an evaluation of action research methods, 3) a series of seven steps needed to design and implement the action research, and 4) checklists of things to do and questions to ask in each step.

The choice of tools for a specific action research project is not predetermined but will depend on several factors: the overall research design, the nature of the research questions addressed, availability of existing data, the chain actors involved, the kind of change in conditions envisaged to result, and the research skills and finance available. Thus the toolbox contains a suite of different tools and methods that may be drawn upon depending on the situation at hand, while still following its overall principles and approach.

The toolbox as well as the conceptual framework (Bolwig et al. 2008) form part of the Rural Poverty and Environment (RPE) specific programme initiative by the International Development Research Centre (IDRC), which aims to support participatory action-learning research, policy and institutional innovations and reforms. As part of the RPE initiative, the Overseas Development Institute and IDRC developed a research agenda that supports poor, rural households engaging more successfully with global economic processes. An outcome of this earlier work is a research theme that aims to ‘integrate poverty and environmental concerns into value chain analysis’.

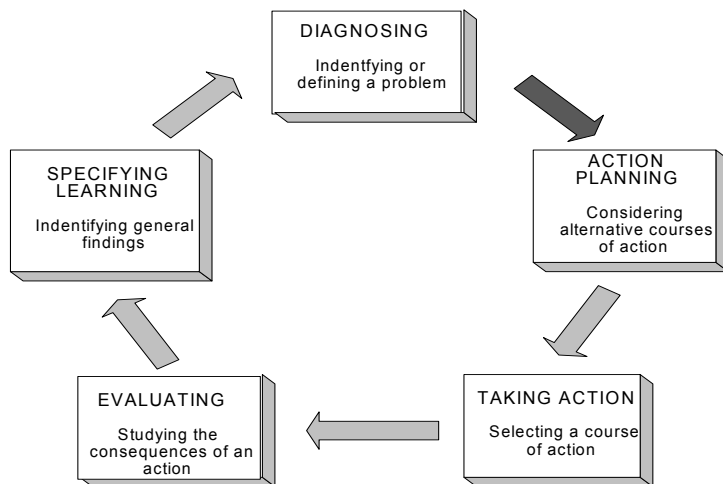
¹ The study was funded through a research grant from the Rural Poverty and Environment programme initiative of the International Development Research Centre (IDRC). The grant was administered by the Overseas Development Institute, London.

Research projects under this theme include two methodological studies (the toolbox and the conceptual framework) plus seven action research projects on natural resource-based value chains and the rural poor in disadvantaged regions in Africa and Asia.

1.2 ACTION RESEARCH IN BRIEF

Action research is known by many other names, including participatory research and collaborative inquiry. Several attributes separate action research from other types of research. One is its focus on turning the people involved into co-researchers, with the underlying assumption that people learn best, and more willingly apply what they have learned, when they do it themselves. Action research moreover stresses the importance of co-learning as a primary aspect of the research process. It also has a social dimension – the research takes place in real-world situations, and aims at solving perceived and specific problems. Finally, the initiating researchers, unlike in other disciplines, make no attempt to remain objective, but openly acknowledge their bias to the other participants (O'Brien 2001).

Figure 1.1 An action research model



Source: Adapted from Susman (1983)

Action research aims at restructuring the research process from a linear process into a cyclical one. Practical issues are typically addressed through cycles of action and reflection, in which the outcomes of each cycle are checked against plans and intentions (Reason 2006). Each cycle goes through a range of steps. Susman (1983) distinguishes five phases to be conducted within each

research cycle (Figure 1.1): diagnosing, action planning, taking action, evaluating, and specifying learning.

Initially, a problem is identified and data is collected for a more detailed diagnosis. This is followed by a collective postulation of several possible solutions, from which a single plan of action emerges and is implemented. Data on the results of the intervention are collected and analyzed, and the findings are interpreted in light of how successful the action has been. At this point, the problem is re-assessed and another cycle begins (O'Brien 2001).

1.3 RESEARCH QUESTIONS

The development of the toolbox was guided by the following research questions:

1. What value chain strategies are likely to be the most effective for reducing poverty and gender inequality and for addressing environmental concerns?
2. In a context of increasing demands on producers from buyers what strategies are likely to be the most effective for maintaining or increasing the competitiveness of small producers and of producers in disadvantaged areas?
3. Given that poverty may also be caused by adverse incorporation in value chains (and not only by exclusion), how do we assess whether the action research should be targeted at the continued participation in a value chain or whether it should focus on options for opting out (accessing alternative markets)?
4. Which stakeholders and downstream actors should the action research engage or link up with to best promote the action objectives of the target group?
5. What kinds of research methods and tools can be used to best achieve change? This question has two main elements: a) Identification of suitable tools, mainly of the participatory appraisal type, that are suitable for the first diagnostic phase of the action research and for the evaluation and learning phases. These tools are well described in the literature but in action research they have mainly been applied to improve worker conditions. b) Identification of the range of business, organisational and technological strategies available to small producers in the 'action planning' and 'taking action' phases of action research (cf. 2). This set of instruments is not well developed in a value chain context. Addressing this part of the question will therefore involve analysing the experiences of practitioners intervening in agro-food value chains.
6. How is the action research process evaluated and documented? This question refers to the need to develop tools to monitor and evaluate the actual impact 'on the ground' as well as to evaluate the research process.

1.4 METHODS

Methods for ‘action planning’ and ‘taking action’ are not well described in a value chain context, especially in the case of small producers. Some lessons can be learned from documented action research among workers, particularly regarding organising workers and linking them up with activists and consumer markets in the North (Mather 2004; McCormick & Schmitz 2001; Hurley et al. 2003). However, strategies suitable for small producers will in many ways be different from those applicable to workers. The development of a toolbox for ‘action planning’ and ‘taking action’ for small producers therefore must draw on two main types of experiences: value chain studies and manuals that have *not* applied action research (e.g. KIT et al. 2006; Herr et al. 2006; Kaplinsky & Morris 2000; Van den Berg et al. not dated; Mayoux 2003) and interventions among and with smallholders that in most cases did *not* have an explicit value chain approach (e.g. Swanson et al. 1997; Salomon & Letty 2006; Leach & Wallwork 2003; Smucker et al. 2007).

We developed the toolbox mainly by drawing on the practical experiences of people who have intervened in ‘real-world’ value chains with the aim of improving benefits for (and together with) producers and workers in developing countries. We did this, first, by developing a set of generic action research tools drawing on existing literature and our own research experiences. The second step was a face-to-face interaction with South African researchers and practitioners during a workshop in Cape Town in October 2007.

The purpose of the workshop was to refine the conceptual framework (Bolwig et al. 2008) and the toolbox through discussions and a simulation exercise (applying the toolbox to real-world situations) with researchers and practitioners familiar with value chain development, environmental management and poverty reduction in South Africa. During the workshop the action research tools and procedures were evaluated and pre-tested based on participants’ experiences, leading to the identification of major methodological issues and the refinement of the methods, steps and checklists of the toolbox. The cases discussed included: worker conditions in the wine sector of the Western Cape, exports of natural products from Southern Africa, restructuring of a beef value chain to the benefit of small producers, development of Fairtrade standards for South Africa, the development of pro-poor tourism through a Corporate Social Responsibility strategy of South Africa’s largest tour/hotel operator, and restructuring of a fisheries value chain.

The third step was a workshop in Cairo in December 2008 where the toolbox was discussed by four research teams that were in the process of developing action research proposals (pigeon pea

in Uganda, Pangasius in Vietnam, bay leaf in Nepal and India, and octopus eco-labelling in Senegal).²

In line with this interactive approach, the methodology is illustrated by examples of real-world value chains (mainly agro-food export chains originating from Africa) as well as by a hypothetical example of how the toolbox could be applied to one of the research projects discussed in Cairo.

1.5 THE TOOLBOX IN BRIEF

The purpose of the toolbox is to guide the research team through the design of the action research as well as to ensure that the necessary competences and skills are built to implement and sustain the action and the research. The toolbox for conducting value chain action research with small producers has four main elements:

- A strategic framework for understanding and identifying the types of strategies potentially available for improving value chain participation for small producers with the aim of increasing rewards or reducing risks (named ‘upgrading’ strategies). The framework outlines the types of changes that small producers can make relative to their present ‘position’ in the value chain, and contains two main components: (1) *Strengthened value chain coordination* (improved linkages) around the production node, achieved either through vertical integration (one actor undertaking multiple chain activities) or through increased contractualisation (longer-term and more complex economic relationships between chain actors); (2) *specific forms of upgrading* that improve performance within the production node, such as improving product quality, increasing volume, complying with standards, etc. We emphasize that strengthened coordination is a common means for achieving many of the specific forms of upgrading in the second component, and a given upgrading strategy will often include elements from both components.
- While Bolwig et al. (2008) discuss the conceptual basis of the framework, the toolbox illustrates the ‘upgrading’ strategies with real-world examples.
- An evaluation of specific action research methods in terms of their participatory potential, their resource requirements, and their usefulness in the different stages (steps) of the action

² The workshop was titled *IDRC Inception Workshop on Integrating Poverty And Environmental Concerns Into Value Chain Analysis – Analysis, Action And Collaboration* and held in Cairo, 3 – 6 December 2007.

research. The methods include ‘traditional’ and participatory research methods, value chain analysis, environmental analysis, poverty analysis, gender analysis, methods to support ‘political’ action in value chains, and methods for managing the action research process and for building competences. Annex 1 in Riisgaard *et al* (2008) presents manuals on many of these methods.

- A ‘walk through’ and discussion of the 7 steps involved in the design and execution of a value chain action research project, including the components and methods applicable to each one. The steps are:
 1. Choice of overall research design
 2. Identification and engagement of the target group
 3. Integration of poverty, environment and gender issues
 4. Value chain analysis
 5. Choice of upgrading strategy
 6. Implementation of research and action
 7. Evaluation and adjustment (or exit)
- Checklist of things to do, questions to ask and issues to consider in each of the 7 steps. This tool will help ensure that all the crucial elements in each step of the research are addressed in a systematic and coherent way.

1.6 LIMITATIONS AND STRUCTURE OF THE PAPER

While the toolbox has a broad application, it was prepared specifically in support of the ‘IDRC-RPE’ action research projects mentioned in Section 1.1. This, as well as the usual resource constraints, has influenced the focus and scope of the toolbox. It focuses on small producers in developing countries but is also relevant to other disadvantaged chain actors such as developing-country traders and processors. It is equally applicable to value chains serving national, regional and international markets; the fact that many of the examples in the paper are from global value chains in part reflects the experience of the authors and in part the focus of most value chain literature. The specific ‘project’ context of the toolbox also meant that it was designed based on the assumption that an action research team is in place to guide the action process. The toolbox therefore focuses on what kind of changes could benefit small producers, and how a project should be designed to best achieve these changes, and not so much on how the changes are carried out in detail. In other words, the toolbox offers a generic framework focused on design-

ing a particular kind of action research, while the decisions on how to invoke the desired changes during research implementation must be made by the action research team together with private sector partners, drawing on own and external resources.

The remainder of the paper is structured according to the four main elements of the toolbox, with the checklists presented under each appropriate step. The different strategies and tools are illustrated by real-life examples and in Section 5 we present a hypothetical example of how the toolbox could be applied in practice. Section 6 concludes the toolbox.

2. Value chain upgrading for small producers

In this section we discuss the strategic implications of the conceptual framework developed in Bolwig et al. (2008). Whilst the latter lists four types change in value chain ‘position’³, action research is concerned with those that represent a desirable change for the target group: inclusion into a value chain (under favourable terms), continued participation under/with improved terms/rewards (repositioning within the chain), and voluntary exit from the chain. All three strategies fall into the broad definition of ‘upgrading’ stated in Bolwig et al. (2008) as ‘a positive or desirable change in chain participation that enhances rewards and/or reduces the exposure to risks’. Rewards and risks are understood not only in financial terms but also in relation to the environment, poverty alleviation and gender equity.

Small producers can improve their participation in a value chain (‘upgrade’) in many different ways. The nature of this improvement may be described according to two broad dimensions: forms of coordination and forms of upgrading. Accordingly, our strategic framework for upgrading has two main components. The first concerns options for *strengthening value chain coordination around the production node* of the value chain, either through vertical integration (one actor undertaking multiple chain activities) or through increased contractualisation (longer-term and more complex economic relationships between chain actors, in this case between producers and buyers

³ These are: inclusion into the value chain, continued participation under new terms, exclusion of participants, and non participation (see Section 4 in Bolwig et al. 2008).

or among producers), or through combinations of both.⁴ Forward vertical integration moreover entails that the producer adds value to the product. The second component concerns different *forms of upgrading in the production node*, such as improving product quality, increasing volume, complying with standards, etc. A given upgrading strategy will often contain elements of both components. We emphasize that strengthened coordination, especially through contractualisation, is a common and often powerful means of achieving many of the forms of upgrading belonging to the second component.

2.1 STRENGTHENING VALUE CHAIN COORDINATION AROUND THE PRODUCTION NODE

The ‘market’ form of coordination

Small producers are typically linked with other chain actors, notably the immediate buyers of their products, through repeated or spot market-type transactions where price is the dominant or only coordination mechanism. These ‘market’ linkages have some common characteristics, which tend to reduce rewards and/or increase market risks for small producers, and which tend to reduce the performance of the value chain as a whole:

- sales of small volumes (high marketing costs per unit);
- high uncertainty of price (which is negotiated at each exchange);
- sales to many and different buyers (moral hazard problems, poor opportunities for acquiring reliable market information from buyers, poor opportunities for accessing finance and other support from buyers);
- poorly specified quality grades and standards and lack of means of quality control (moral hazard problems, no/low rewards for quality);
- lack of traceability, which is a precondition for certification to food safety and sustainability standards.

In the framework developed by Gereffi et al. (2005) (see Bolwig et al. 2008), the ‘market’ form of coordination (governance in their vocabulary) is characterised by low informational complexity, ease of codification of information, and high supplier capabilities. Yet the latter is clearly not a characteristic of small producers in developing countries. Furthermore, informational complexity

⁴ A *node* is the point in a value chain where a product is exchanged or goes through a major transformation or processing. A *segment* is a large ‘vertical chunk’ of a value chain, for example from the production point to export, or from import to retail.

tends to be higher for high value products and it significantly increases with certification to food safety or sustainability standards. All this suggests that upgrading for small producers in many cases will depend on the development of other (and stronger) forms of coordination between the production node and other chain nodes. Alternatively, or often additionally, the capabilities of small producers need significant strengthening (competence building).

Based on the Gereffi et al. (2005) framework, we identify two alternative forms of coordination to the dominant market one: vertical integration ('hierarchy') and contractualisation (between 'market' and 'hierarchy', encompassing 'modular', 'relational' and 'captive'). In brief, vertical integration is when an actor performs several functions in the value chain, while contractualisation refers to the use of contracts as a mediator of exchange between chain actors, as opposed to spot-market transactions (see below). Increasing the level of contractualisation or vertical integration in a value chain segment normally improves the coordination of chain activities, which in turn can enhance overall chain performance in terms of cost, quality, volume, etc. (see Box 2.1 for a definition of coordination). The latter means that other chain actors, including those outside the node or segment in question (e.g., retailers), may benefit from the coordination efforts of a given chain actor (e.g., producers) and therefore even actively support them. This is an important basis on which weak actors in their pursuit of upgrading may create strategic alliances ('linking up') with more powerful chain actors – usually further downstream (see Section 4.6. – 'identify promising action points where change can be stimulated').

Box 2.1. A definition of value chain coordination

We define coordination as “effort or measures designed to make players within a market system act in a common or complementary way or toward a common goal. This may also require effort designed to prevent players from pursuing contrary paths or goals” Poulton et al. (2004: 521). Coordination may be among actors in the same or in different positions in the chain (e.g. among producers or between producers and buyers). The need to protect investments in specific assets, such as coffee trees or processing equipment, creates a need for stronger and more complex forms of market coordination than the neoclassical ideal of spot market transactions in perfectly competitive markets.

In cases where small producers are vertically integrated, or where they significantly influence the terms of their contracts with buyers (or input/service providers), we say that they are involved in the coordination of their value chain node or segment (the latter applies if they undertake several functions in several nodes).

Level of contractualisation

The concept of 'contractualisation' as used here has two dimensions, vertical and horizontal.

(1) Vertical contractualisation represents a move away from spot or repeated market-type inter-firm links to an increasing use of contracts as a mediator of exchange between chain actors, where ‘contract’ is defined broadly as a binding agreement between two or more parties for performing, or refraining from performing, some specified act(s). A contract in this sense is not limited to legally enforceable agreements and ‘sanctions’ for breaking contracts are often in the form of lost economic opportunities in the future. Contracts can also vary in respect of their time frame and how binding they are. Small producers may enter into longer term agreements with buyers (various forms of sales contracts) to achieve greater security of market as well as benefits such as better access to market information, services and inputs. Sales contracts may also help reduce price risks as well as marketing costs, and they may yield higher average rewards through price premia. Additionally, the dynamic effects on rewards through increased output and quality can be considerable. But contracts also involve higher performance requirements – e.g. in respect of quality, volume, timing of supply and certification – which require new skills and more resources.

(2) Horizontal contractualisation describes agreements *among* producers (or among other actors in the same position of the chain) to cooperate over input provision, marketing (e.g. bulking produce for sale, identification of buyers), certification, crop insurance or other forms of collective action performed to reduce costs, increase revenues or reduce individual risks. Collective action among small producers is frequently a precondition for increasing contractualisation vis-à-vis buyers and it can be an important source of bargaining power.⁵ It can be argued that this kind of collective action constitutes a separate form of coordination, but to keep the framework simple we include it as an aspect of ‘contractualisation’ although this use of the term is unconventional.

Vertical integration (number of functions undertaken)

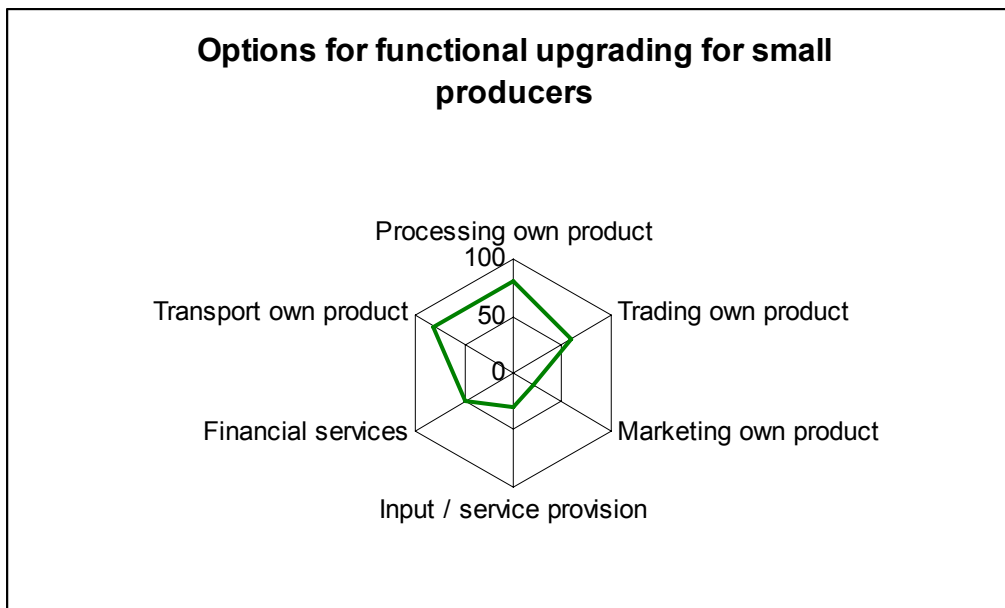
Vertical integration refers to a situation when an actor performs more than one function in the value chain, i.e. when the small producer aside primary production also performs ‘downstream’ activities related to her product, such as grading, processing, and/or bulking and transporting the produce for wholesaling (instead of selling it individually at the farm gate or from the fishing

⁵ For example, small farmers often sell their crop in a raw, un-graded state, individually, in small quantities, and to different buyers. This leaves little room for price negotiation and few options for agreeing on future sales. From this position they may form a group and start building longer term relationships with a particular buyer with whom they have shared interests.

boat).⁶ Producers may also get involved in functions further ‘upstream’ in the chain, i.e. the provision of services, input or finance. In all these cases is vertical integration achieved through *functional upgrading*. Figure 2.1 shows common forms of functional upgrading available to small producers – processing, transportation, input provision, etc – through which they may add value to their product (forward integration, e.g. processing) or improve performance in the production node (backward integration, e.g. input provision). The thick line within the radar diagram illustrates relative degrees of functional upgrading for a given target group of producers as a result of an intervention (and over a given time period). The diagram can also be used strategically to illustrate (and prioritize) the desired changes from an intervention.

We note that functional upgrading may also lead a producer to abandon production to focus on any of the new functions, which may give higher rewards or involve lower risk. In this case, the level of vertical integration is reduced.

Figure 2.1 Functional upgrading options for small producers



⁶ A value chain is understood as the flow of activities and processes involved in taking a product to the market. ‘Upstream’ refers to the direction of production, whereas ‘downstream’ refers to the direction of marketing and retail.

The 'forms of coordination' matrix

Figure 2.2 shows the possible 'positions' of small producers with respect to forms of value chain coordination, with the level of vertical integration (number of functions undertaken) placed along the vertical axis and the level of contractualisation (with other chain actors or among themselves) on the horizontal axis. If we assume that each dimension can take on two values (more/less or high/low), then this results in four possible positions, with a fifth position being outside the matrix (non participation).

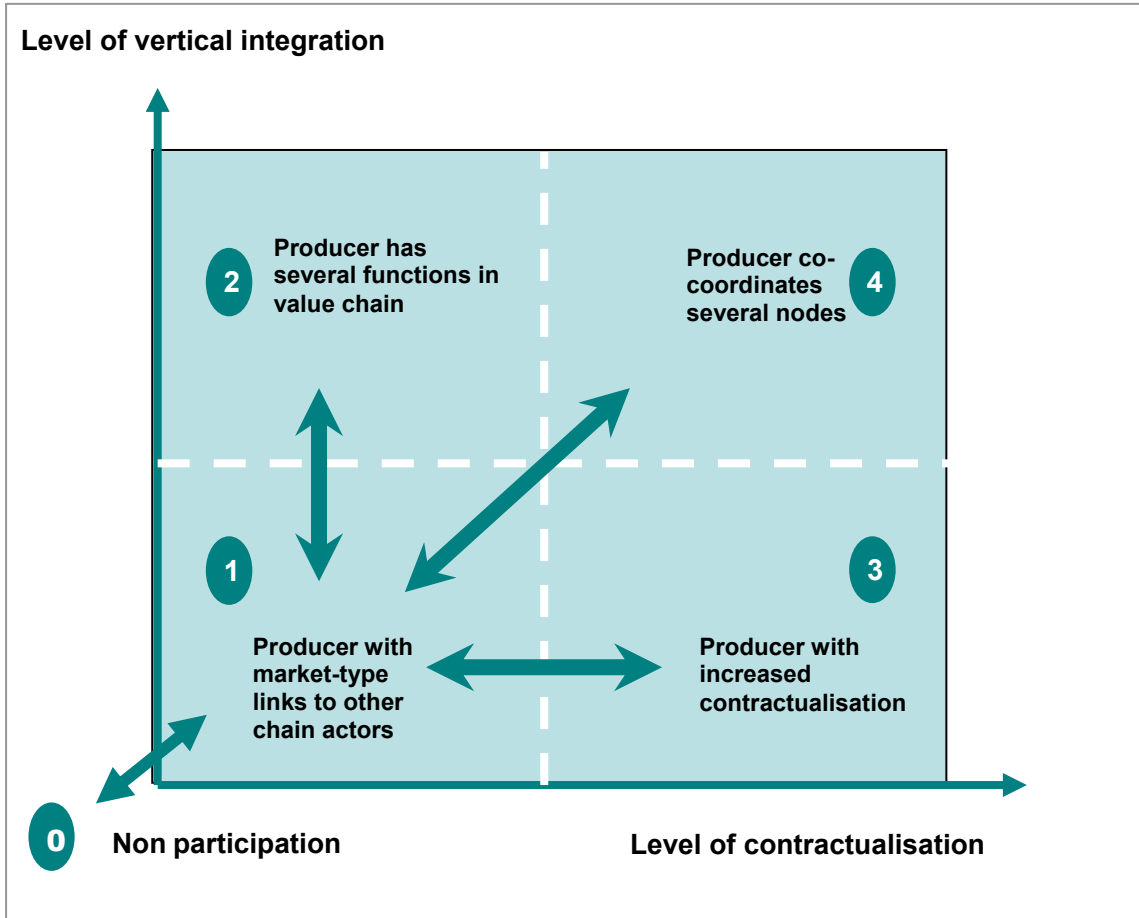
Moving in the matrix – major coordination strategies

Moving between the five positions in Figure 2.2 (the two-way arrows) gives rise to eight major 'coordination strategies' that small producers may pursue (supported by action research) with the purpose of achieving functional upgrading or other forms of upgrading (see later).

1. Entering the chain (0→1)
2. Adding value by taking on more functions (1→2)
3. Increasing contractualisation (1→3)
4. Co-coordinating a chain segment (1→4)
5. Concentrating on fewer functions (2→1)
6. Reducing 'downstream' contractualisation (3→1)
7. Simultaneously reducing contractualisation and number of functions (4→1)
8. Voluntary exit from the chain (1→0)

Small producers tend to start out by being positioned in the first quadrant (or outside the chain) and their options for vertical integration are normally quite limited in scope. For this reason the list does not include moves between 2↔4 and 3↔4.

Figure 2.2 Strategies for strengthening value chain coordination around the production node ⁷



⁷ The figure was inspired by a matrix representing forms of chain participation by small-scale farmers presented in KIT, Faida MaLi and IRR (2006).

Farmer example of moving in the matrix:

A farmer undertaking only production and selling as an individual in the open market starts off at the bottom left corner of the matrix. He then begins grading his product into different qualities. This moves him a little upwards in the matrix (because he adds an activity). He also moves a little to the right because selling in different grades slightly changes the terms on which he interacts with buyers (although he still sells in the open market to shifting traders passing his farm gate). But the farmer remains within the general area of ‘producer only with market-type links’ (quadrant 1) due to the relatively minor changes in function and contractualisation. If the same farmer later starts processing and packaging his product he will move into quadrant 2. If he and his fellow farmers now decide to organize as a group and start negotiate deals with buyers, either seasonal or longer-term sales agreements, this will move them into quadrant 3 (increased contractualisation, implying stronger coordination of activities in the production node). A combination of vertical (more functions) and horizontal (more contractualisation) movements would move the farmer into quadrant 4 (implying co-ordination of the production node plus another or several other nodes). For example, if a farmer group starts processing their produce.

Fisher example of moving in the matrix:

A group of small fishers may start their own artisanal processing operations or engage in the provision of gear and repair services to other fishers, both of which would move them from quadrant 1 into quadrant 2. If the fishers enter into agreements with buyers that involve the provision by the latter of inputs (e.g., ice and containers that allow the fishers to better store their fish on the boat), this would move them into quadrant 3. The same move applies if the fishers form a group to better manage the fish resource or to pool their catch for bulk selling. Fishers might also form a marketing group and at the same time start primary processing of their produce (e.g. deep frying or smoking). This would move them into quadrant 4.

The list of strategies is not meant as exhaustive or as prescribing what is best. Many combinations and movements are possible and in real life actors might make a range of moves back and fourth – not just one. For example, a farmer may move from 1 to 3 through forming a cooperative with other farmers and undertaking joint marketing, and then move from 3 to 4 through organizing a joint processing or export operation.

Different positions in the matrix are connected to different rewards, but also involve different levels of risks and performance requirements. The latter in turn require different competences and resources. Hence, moving up/down or left/right in the matrix cannot *a priori* be assumed to be better or worse for an actor: it depends on chain characteristics, on the actor’s capability in relation to the new performance requirements, and on his preference for rewards versus risks (partly depending on his asset status). The major coordination strategies listed here thus also include so called ‘downgrading’ i.e. downwards or left movement in the matrix (see Bolwig et al. 2008 for a discussion of different notions of upgrading).

In general, though, upwards or right movements are typically associated with greater returns and higher risks, but it may also be desirable to move to the left or downwards in the matrix. Importantly, the rewards and risks associated with different positions may change over time, implying a need for regular reviews of one's coordination and upgrading strategies.

It is obviously often difficult to move from one quadrant into another, especially for weak actors. New competences and investments, or other kinds of networks, are needed. But the actor may also meet resistance from other chain actors who may see their position threatened, their rewards reduced, or their risks increased. For example, exporters may resist producers' attempts to negotiate longer-term supply contracts (as it involves higher risks for them) or local traders may actively oppose farmers who decide to bypass them by bulking and transporting their produce and selling it directly to wholesalers. (Even if upgrading increases overall chain performance – and hence the total value created – it may redistribute rewards and risks to the (perceived or real) disadvantage of particular actors who will then seek to prevent it.) This element of competition and potential conflict underlines the importance of linking up to more powerful actors further downstream in the chain (or outside the chain) whose interests may be served by the strategy. For small producers, due to their low capabilities and weak structural position in the value chain, right-movements are likely to depend on some form of collective action.

Cross-cutting strategies

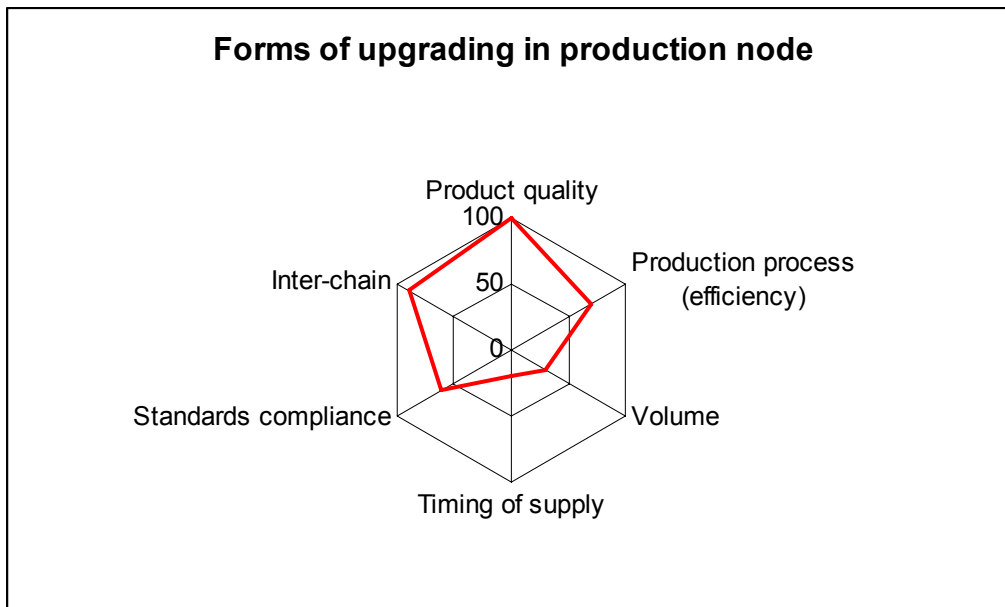
The eight coordination strategies represent situations where small producers are the targets for 'upgrading' and co-researchers in the action research. These strategies also start from a particular position in the model. But action research may also support strategies that are 'cross cutting' in the sense that they have broader aims (society-wise or value chain-wise) and involve other chain actors than small producers as co-researchers and co-beneficiaries. Regulation, for example, whether private or public, can constrain or enhance the room of manoeuvre for contractualisation and functional upgrading. Regulation can also place boundaries on what an actor can and cannot do (e.g., if you have a license to fish one species, you cannot fish another).

Consequently, in some situations the preferred action strategy could be to change existing regulations. In other situations a strategy could be to implement changes in the downstream direction of the value chain starting from (and initiated by) a particular lead company (Corporate Social Responsibility strategies). Finally, it may be necessary to develop an entirely new value chain or value chain strand. (Box 2.5-2.7 present examples of cross cutting strategies). Cross-cutting strategies may also be applied to promote desired forms of upgrading in the production node – e.g., quality improvements – which are likely to improve overall chain performance (see below).

2.2 FORMS OF UPGRADING IN THE PRODUCTION NODE

Our second component of upgrading concerns different *forms of upgrading in the production node*. The most common of these are illustrated in Figure 2.3 and include improving product quality, improving the efficiency of the production process, increasing volume, improving the timing of supply, complying with standards, and inter-chain (or inter-strand) upgrading. The latter involves applying competences obtained in one value chain to enter a new value chain (or strand of a chain), while exiting the first chain or participating in both chains (or strands of chains). The thick line within the diagram illustrates relative degrees of either form of upgrading for a given target group of producers as a result of an intervention (and over a given time period). It can also be used strategically to illustrate (and prioritize) the desired changes in the production node.

Figure 2.3 Forms of upgrading in the production node



The mentioned forms of upgrading in the production node will often be employed in combinations and be mutually reinforcing. Complying with standards might for example lead to improved quality and improved efficiency in the production process. Additionally, strengthened coordination, especially through contractualisation, is a common and often powerful means of achieving many of the mentioned forms of upgrading. In relation to the “forms of coordination” matrix in Figure 2.2, the forms of upgrading entail strategies where the target group is positioned in the lower part of the diagram (quadrant one and three) and focuses on increasing the productivity of existing production activities or otherwise increase rewards or reduce risks in production. This

also includes ‘defensive’ strategies devised to retain the position of the target group in the chain (e.g. responding to lower prices through cost reductions or to increased quality demands through skill development).

2.3. REWARDS, TRADE-OFFS, CONFLICTS AND RISKS

Different upgrading strategies (combining forms of coordination and forms of upgrading) have different implications for poverty and the environment and they involve different gender issues (Bolwig et al. (2008) discuss different dimensions of poverty, the environment and gender). In most cases, upgrading will be pursued primarily to improve the economic welfare of the target group (raised cash income, greater income stability, reduced food insecurity, increased returns to labour, etc) depending on its priorities (see Section 4.4).

But upgrading may also benefit the environment or non-chain actors. For example, a group of farmers may shift from conventional to certified organic farming (inter-strand upgrading), which yields environmental and employment benefits to their community in addition their own raised income. In many cases, upgrading will involve trade-offs between rewards and risks, or between poverty reduction and environmental sustainability. Upgrading can also entail social conflict as the changes in risks and rewards will be distributed unevenly between actors differentiated by wealth, gender, geographical location or some other factor.

Risk is a particularly important consideration when conducting action research among the rural poor. In this regard we note that most upgrading strategies will significantly affect the economic risks that actors in different positions in the chain are exposed to. Small producers typically have few assets to withstand the effects of risks, and at the same time have little influence over key risk factors such as price cuts, cancellation of orders, moral hazard problems among buyers (cheating), new food safety legislation, and new and more demanding quality standards. These risks are often transmitted from downstream actors to producers through exporters, who are also exposed to them.

Reducing the exposure to risk of weak actors and thereby avoiding forced chain exit and the loss of critical livelihood assets is thus often as important as increasing the rewards from chain participation. An important objective of action research should therefore be to reduce exposure to such risks. This may be done via improvements in weak actors’ terms of chain participation (e.g. developing Codes of Conduct for buyers) or through risk management mechanisms suitable for smallholders. Furthermore, any action research strategy should include careful analyses of the livelihood risks associated with different upgrading strategies as well as of risks related to

environment and gender. And before any strategy is implemented, there should be a participatory assessment of the ability and willingness of the target group to bear the identified risks.⁸

2.4 ILLUSTRATIONS OF COORDINATION STRATEGIES

Each of the eight major coordination strategies is elaborated on below through the examples of small farmers and artisanal fishers, which also illustrate different forms of upgrading. Several strategies are also illustrated through real life examples presented in Box 2.2 – 2.4, while the cross cutting strategies are illustrated in Box 2.5 – 2.7.

1) Entering the chain (0→1)

In this type of strategy the objective of the action research is to enable the target group to become part of a value chain or (strand of a chain) that it has not hitherto participated in. For example, a group of female food farmers may want to start growing cashew nuts for export. Or a group of male labourers employed on fishing boats supplying export processing factories may want to use their savings to start their own fishing enterprises (become boat owners) targeted at the regional market. As these examples show, strategies of this type can take on various forms, such as: enabling the target group to overcome entry barriers, changing existing regulation that sets specific barriers to entry, or creating a new value chain (strand) in which the target group can participate on terms that improve benefits and/or reduce risks.

2) Adding value by taking on more functions (1→2)

This set of strategies involves the target group taking on more functions, typically by engaging in primary processing, input supply or transport services. Farmers may move into joint processing and marketing in order to add value to their crops. Fishers may shortcut middlemen and transport the product directly to processing factories, start their own artisanal processing operation, or engage in the provision of gear and repair services to fellow fishers.

Box 2.2 Calamari from South Africa (Strategy 2)

Before the late 1980s ski-boats were used to catch calamari for export, with processing and freezing taking place on shore. From the late 1980s onwards, driven mainly by demand from Europe, the number of boat operators decreased as the share of large ‘freezer boats’ increased to 96 per cent by 2004. Freezer boats were introduced mainly by new entrants or former fish processors,

⁸ The toolbox is generic and it is therefore not possible to examine in detail the specific risks associated with each form of coordination and upgrading. We do however recognize the importance of future work specifying possible risks associated with different dimensions of poverty, gender and the environment.

but by very few of the original ski-boat owners. With freezer boats the calamari are now frozen upon being caught out at sea, which improves the quality of the catch: quick freezing makes the calamari turn to a chocolate colour, a trait that is highly desired by European high-end consumers (mainly in Spain and Italy). In this process, on-shore processors have been cut out of the chain as the freezer boat owners catch, freeze and export the calamari directly to European importers and other end-market buyers (Mather 2007).

This case illustrates how new and resourceful entrants (and a few of the original ski-boat operators) used a 'responsive' strategy to access a more lucrative market, but in the process several chain actors located in-between fishers and the importers were cut out, and a lot of the original (and smaller) ski-boat owners were excluded. As a result of the new technology as well as the shorter value chain, the fishers that remain now fetch much higher prices.

3) Increasing contractualisation (1→3)

Here the target group starts to engage with new/other chain actors or alters the terms of an existing economic relationship. This will typically take the form of collective organisation or entering into longer term and more complex commercial relationships with down- or up-stream chain actors (e.g., through sales contracts, contracts for input provision or services, or interlocking contracts where receipt of inputs or services depends on fulfilling a sales agreement with the same trader). Farmers may build long term alliances with buyers that are centred on shared interests and/or form groups to strengthen their bargaining position towards buyers. Fishers may enter into contractual agreements with buyers that allow them to better store their fish on the boat (through access to ice and special containers) and/or form groups to better manage the fish resource or to pool output for bulk selling.

Box 2.3 Organic certification through contract farming in Uganda (strategies 2 and 3)

The *Kawacom Organic and Utz Arabica Project* operates on the northern slopes of Mt Elgon in eastern Uganda. Coffee production and procurement is organized in a contract farming-type out-grower scheme where an exporter procures organic coffee directly from a large number of individual smallholders. The exporter, Kawacom, pays for the organic group certification of the farmers and manages the internal control system (ICS) required for this certification. Kawacom is a subsidiary of an international trading house, Ecom. Ecom controls large parts of the value chain strand for organic coffee originating in this project: from a detailed specification of the production practices that the contracted farmers must comply with, to the wholesale of green coffee in the major consuming regions.

The farmers were registered with Kawacom and certified to organics in 2000-2001. In 2003 they were also Utz certified. There were no barriers to certification except being located within the designated project area. As a result, most coffee farmers in the area were certified. In 2006 Kawacom had registered 3613 organic farmers. Before certification the farmers sold their coffee in the open market and previously they had sold to a large cooperative union, which disintegrated during the 1990s. The farmers generally agreed that registration with Kawacom had significantly improved the security of the market as well as raised producer prices (Gibbon & Bolwig 2007; Bolwig & Odeke 2007).

The case is an example of *increased contractualisation* with buyers (Strategy 3) associated with higher performance requirements (farmers must adopt organic practices and meet minimum physical quality standards) and better or more stable prices. This has in turn induced and enabled farmers to improve on existing production activities (see forms of upgrading in Figure 2.2) as well as to *increase the level of on-farm processing* (Strategy 2). The grower contract issued to the farmers by Kawacom obliges the latter to pay an organic premium if the coffee is ‘of suitable quality’. The size of the premium is not specified, but the organic buying price is communicated daily to the growers. The latter moreover receive training in organic methods and good agricultural practices and Kawacom pays the costs of the annual third-party certification. In return, farmers are required to follow certain production and on-farm processing practices. Although top-down in nature, the ‘upgrading strategy’ just described has had positive productivity and income effects at the farm level. A comparison with non-certified farmers in a neighbouring county showed that organic farmers harvested more coffee, experienced higher yields, received higher average prices, and earned higher coffee revenues than did the conventional farmers.

4) Co-coordinating a chain segment (1→4)

This is a combination of strategy 2 and 3: the target group gets more closely involved with other chain actors *and* take on more functions; as a result it gets involved in the coordination of its own chain segment. For example, farmers form a cooperative and create direct marketing linkages with an importer via fair trade certification. Fishers may also form a group and start primary processing of their produce.

Box 2.4 Rooibos tea, South Africa: co-coordinating a chain segment (Strategy 4)

Cootze and Cootze (C & C) is a South African company involved in fair trade with a large German buyer that deals in different types of herbal and organic teas from all over the world. The company was formed by a group of small tea farmers who used to operate individually, selling semi-processed tea at low prices to various intermediaries who sold it on to buyers in Europe and the USA without adding much value. C & C negotiated a contract (stipulating price, quantity, quality etc) with the German buyer and then started to collect and buy fresh tea leaves from small and scattered producers (including the company share holders) in the Elandsbay area of the Western Cape Province. The tea is processed and packed at their factory before exported directly to the German buyer. Aside Fair trade, the factory has been certified to environmental and health and safety standards. If more tea is processed than necessary to fill the export orders it is sold in the local retail market (Cootze Farm 2007). This case shows how collective action among small producers paved the way for increased processing (‘vertical integration’) and direct export (‘increased contractualisation’). The producers thus achieved a status of co-coordinators of the value chain, while adding more value through certification. In the process, traders and processors were cut out, but small producers gained in the form of higher and more stable prices. There are also likely to have been local employment benefits as more processing now takes places locally.

5) Concentrating on fewer activities (2→1)

Here the target group sheds some activities to focus on other core activities, which they find yield higher net returns or imply lower risks. This will typically take the form of so-called ‘functional

downgrading' where processing or other downstream functions are given up to focus on core (production) activities up-stream. Farmers may focus on fewer or simpler products while increasing volume or quality, or give up processing to focus on production. Fishers may abandon artisanal processing of lower value species and instead sell fresh fish directly to traders at the landing site (thus moving into another strand of the value chain where rewards are higher in the production node).

6) Reducing 'downstream' contractualisation (3→1)

Here the target group disengages from other chain actors. This can take the form of breaking off a very demanding or binding contractual agreement, and instead either sell in the 'open market' or enter into a new contract better suited to its capacity. The strategy can also involve disengaging from dysfunctional collective organizations. For example, a farmer group has agreed to sell a large proportion of the members' produce to one buyer for a pre-determined price against receiving certain inputs for free or 'at cost'. But this makes the farmers vulnerable to price squeezes or low orders from that buyer. They may therefore decide to break the contract and sell in the open market, thereby losing some services and inputs but gaining through higher average prices (enabling them to buy the services and inputs elsewhere). Likewise, a group of fishers may decide to dissolve a processing cooperative that is very costly to run, poorly managed or too inflexible to respond effectively to market changes.

7) Simultaneously reducing contractualisation and number of functions (4→1)

This is a combination of strategy 5 and 6. The target group disengages from other chain actors and at the same time sheds some functions. This will typically take the form of ending a contractual agreement with a downstream actor, or dissolving a collective organization, while at the same time abandoning an up-stream activity. The strategy also means giving up the ability to coordinate a chain segment in order to concentrate on core activities. For example, a farmer group has experimented with primary processing, but has not been able to make the operation profitable so it decides to dissolve itself and abandon processing. Instead they focus their individual efforts on producing higher quality primary products in larger quantities.

8) Voluntary exit from the chain (1→0)

This strategy is relevant when the target group does not obtain sufficient rewards (or if risks are too high) from participation in a value chain compared to what may be achieved from alternative occupations (e.g. as plantation workers) or value chains. For example, farmers may find that it is beneficial to give up coffee production (due to falling prices) and instead start producing vanilla for export. Likewise, fishers may find that the returns from supplying Tilapia to the export pro-

cessing factories are too low and therefore decide to fish other species for artisanal processing (for local and regional markets).

Crosscutting strategies

Box 2.5-2.7 illustrate examples of ‘cross cutting’ strategies. They represent real-world cases of: changes in regulation affecting an entire value chain strand (organic fresh fruits and vegetables), pro-poor changes in value chain governance resulting from the adoption of Corporate Social Responsibility policies by a lead firm, and the creation of an entirely new value chain strand (for natural products).

Box 2.5 Changing regulation

In situations where the rules governing relations inside the value chain are set by actors outside the chain, such as government legislation or private standards (e.g. Fair Trade or organics), the best action point could be these ‘sites’ of regulation, and upgrading strategies could then involve action aimed at these sites.

An illustrative example is the recent proposal by the UK Soil Association to ban the certification of fresh organic produce imported by air. The proposed ban (or partial ban) would if implemented significantly reduce market access to the UK for operators using airfreight. The world’s poorer countries (such as Kenya and Ghana) account for around 79% of organic foods that are exported by air to the UK and a ban would mean that most operators in these countries would be forced to either convert to conventional farming (with associated losses in environmental, employment and income benefits) or exit the value chain altogether. In this light the most viable action strategy for the involved producers and sympathetic international organizations was to lobby against the proposed ban in order to enable the producers to retain their position in the value chain (Gibbon *et al*, 2007). This example shows how regulatory changes (public or private) can significantly affect the possibilities of small producers of moving within (or in or out of) a value chain and for retaining their position in a chain.

Box 2.6 Pro-poor change in chain governance through Corporate Social Responsibility (CSR) policies

A project with Spier Holdings (tourism, wine and golf) was initiated in 2002 as part of the ‘Pro-Poor Tourism Pilot Programme Southern Africa’ with the aim of implementing alterations in the supply chain of Spier to promote poverty reduction and environmental objectives. After a thorough analysis of the supply chain, business cases were developed for a range of changes to be implemented. This included establishing a labour intensive and black economic empowered (more than 25% black ownership) micro laundry resulting in both local pro-poor benefits and cost savings for Spier (Haysom, Forthcoming).

The case is an example of a CSR approach, which normally has serious limitations in range and effect. Nevertheless, in certain situations it can be a viable strategy whereby changes are implemented in the up-stream end of the value chain by a lead firm, which improve the access to and benefits from the value chain of small producers or service providers (suppliers). (The lead firm may adopt the CSR policy as a progressive move or as a reaction to a campaign).

Actors pursuing CSR-type strategies can use the model in Figure 2.1 to think strategically about how they engage small producers in the supply chain and how changes in procurement policies might enable the latter to upgrade and increase rewards (or reduce risks).

Box 2.7. Creation of new value chains or value chain strands

The Southern African Natural Products Trade Association (PhytoTrade) is a non-profit trade association that has engineered new value chains, or new strands of a value chain, for sustainable and ethical export of natural cosmetic and food ingredients (e.g. marula fruit pulp and baobab oil) that are wild harvested by poor rural people. PhytoTrade is not directly part of the value chains they create, but the organisation facilitates their development. It also to a large extent sets the rules governing relations between chain actors by setting the qualification criteria for participation (Welford presentation 25.10.07).

The example shows how a new value chain can be developed to the benefit of small producers as well as of other chain actors. PhytoTrade had as its action strategy to develop a value chain with specific characteristics instead of intervening in existing chains. Such a strategy is relevant in situations where there is no commercial outlet for a product or where the conditions of participation in existing strands are unattractive or exclusionary for small producers. The latter is what motivated the Fairtrade movement and the creation of alternative (fair trade) value chain strands.

When the strategy is to design a new value chain (value chain strand), the model in Figure 2.1 can be used to compare the conditions of participation (e.g. the contractual terms) of small producers in alternative chains, for example a conventional versus a 'sustainable' value chain strand, and the upgrading options they present for small producers.

3. Evaluation of methods for action research in value chains

Action research in value chains needs to apply a range of specific research methods or tools. This section contains an evaluation of the most important among these tools, grouped into the following categories: 'traditional' research methods (literature review, sample surveys, key informant interviews), value chain analysis, environmental analysis, poverty analysis (including analyses of inequality, vulnerability and exclusion/marginality), gender analysis, participatory research methods, communication methods, methods for competence building, methods for managing the action research process, and last but not least, 'political' action methods. The categories are not meant to be mutually exclusive; participatory methods for example are used as part of many of the others listed.

The evaluation is presented in Table 3.1. We first list the tools by the above categories and describe the main characteristics of each tool when applied to value chain research. We then assess how demanding it is to apply the method in terms of research finance and specialised skills. In the next columns we assess the suitability of each tool in relation to the stage (the steps) in the action research process. We finally evaluate the potential for stakeholder (including target group) participation in the action research when using the tool.

Table 3.1 Evaluation of methods for action research in value chains⁹

Method	Main characteristics	Resource demands (very high, high, medium, low)		Suitability for action research steps	Potential for target group participation
		Financial	Specialised skills		
<i>Traditional research methods</i>					
<i>Literature review</i>	Surveying relevant literature while identifying relevant issues and knowledge gaps. Accessing literature is difficult in some developing countries.	Low	Medium	1,2,3,4	Zero
<i>Key informant interviews</i>	Typically semi-structured interviews with chain actors, community members, and other knowledgeable individuals. Individual as opposed to group interviews are suitable for research among traders and firms.	Low	Low	1,2,3,4,6	High
<i>Sample surveys</i>	Formal survey using a structured questionnaire; sampling of respondents; statistical data analysis.	Very high	High	3,4	Low
<i>Value chain analysis</i>					
<i>Tracking value chains</i>	A clear picture of the value chain or strand in question might not be available at the outset of research. Different methods can be used to obtain information about the chain that the target group supplies such as strategic trade interviews, internet searches or contacting trade associations and export promotion boards. (Hurley et al. 2003, McCormick & Schmitz 2001)	Low	Low	1,4,6	High

⁹ The research report "A Toolbox for Action Research with Small Producers in Value Chains" submitted to the Overseas Development Institute on 25th of March 2008 contains an extensive Annex with 'how to do' manuals on many of the research methods evaluated in this table (Riisgaard et al. 2008)". The Annex may be obtained from the authors of this paper.

Method	Main characteristics	Resource demands (very high, high, medium, low)		Suitability for action research steps	Potential for target group participation
		Financial	Specialised skills		
<i>Mapping and diagramming value chains</i>	A clear visual representation in maps and diagrams enables information to be accessible even to disadvantaged value chain actors. The diagrams and maps can be continually updated and refined as part of an ongoing learning process. Specifically, visualisations may be made of nodes, actors, linkages, product and income flows, networks, and impacts of interventions and trends. The tools include flow and linkage diagrams (including Venn diagramming to identify actors and their relationships) and maps showing e.g. gender composition in activities, or changes in land use or biodiversity richness e.g. through participatory analysis of aerial photographs). Coverage ranges from entire value chain to detailed maps singling out specific parts (nodes or segments) of the chain (McCormick & Schmitz 2001).	Low	Low	1,4,6	High
<i>Develop and analyse enterprise budgets (Inputs, outputs, costs, and margins along the value chain.)</i>	An enterprise budget is an economic representation of an activity, be it the production, processing or marketing of a product. It is a relatively simple tool, which makes it ideal when working with communities and small producers. If well used, an enterprise budget can also be very powerful in identifying opportunities and constraints of economic activities. The objectives of an enterprise budget are to: <ul style="list-style-type: none"> • Describe an economic activity through the simple representation of its inputs and outputs. • Determine important inputs and examine efficiency questions of the key outputs and inputs. • Compare the economic profitability and efficiency of different actors in the value chains (this requires that data have been collected from different actors in the value chain). • Assess if changes from one form of economic activity to another are profitable and attractive (see Step 5 on ex-ante evaluation of upgrading strategies). (Marshall et al. 2006)	Medium	High	4, 5, 7	High

Method	Main characteristics	Resource demands (very high, high, medium, low)		Suitability for action research steps	Potential for target group participation
		Financial	Specialised skills		
<i>Environmental analysis</i>					
<i>Environmental impact analysis ('light')</i>	<p>Assessment of changes in land use, nutrient balances, natural resource management, and use and exposure to toxics related to value chain processes. Focus on access to and management/use of land and other natural resources by different actors using farm/field visit interviews, focus groups, and participatory mapping and characterisation (matrix scoring and ranking, trend and change analysis) (Barton et al. 1997).</p> <p>Simple inventories of inputs and outputs of nutrients will be used to assess degree of nutrient mining or nutrient losses to environment.</p> <p>Checklists of use of agro-ecological methods will be used to assess farmers' practices vis-à-vis reducing soil erosion, preserving soil fertility and biodiversity and reducing needs for pesticides.</p>	Medium	Medium	3, 6	High
<i>Life Cycle Assessments ('light')</i>	<p>Screening LCAs using relatively simple matrices of questions relating to the use of resources and handling of wastes in each step in the product chain.</p> <p>Simplified methods building on selected indicators and existing Life Cycle Inventories and LCAs in existing databases containing standard values for impacts related to different production types and means of transportation (Wenzel et al. 2001; www.lcafood.dk).</p>	Low	Medium	3, 6	Medium
<i>Poverty analysis (including analysis of livelihood, inequality, vulnerability and exclusion/marginality)</i>					
<i>Livelihood analysis</i>	<p>Focus is on understanding the capital assets at a community, group or household level by examining each of the major five asset portfolios including: human capital (the skills and capacities available or lacking); physical capital (the infrastructure available or at hand that will aid in an activity such as a processing machine); natural capital (assess the natural resources available, such as fruits productivity either from natural forests or planted); social capital (the networks available within a community, this can also be access to political decision makers), and; financial capital (the financial resources at hand) (Scoones 1998, Raintree 2005).</p>	Medium	Medium	3	Very high

Method	Main characteristics	Resource demands (very high, high, medium, low)		Suitability for action research steps	Potential for target group participation
		Financial	Specialised skills		
<i>Assessing inequality, vulnerability and marginalisation</i>	Social mapping in order to assess vulnerable and marginal groups within a community. This is done by identifying 2-3 key informants who know the target community or target group very well. The key informants are then asked to draw a map indicating every household in the target group/village/community. Each household is then identified by a code given to it on the map, indicating the degree of wealth on some agreed criteria by the key informant group. The map provides a diagram and illustration to be used in assessing wealth and poverty issues in the target community going down to the individuals within a household. This can be used in conjunction with other PRA techniques such as wealth ranking. Codes can be given for each household identified on the map to indicate vulnerability, exclusion and marginalisation and then the interview process can be detailed with regard to why and how. Given the sensitivity of this method, it is always better to do it with fewer individuals (maximum 5) (Action Aid International not dated; Chikaura not dated).	Low	Medium	3	High
<i>Gender analysis</i>					
<i>Gender analysis</i>	Systematic gathering and examination of information on gender differences and social relations using sex-disaggregated data and participatory methods. Different frameworks exist and are suitable for different situations e.g. Rapid Gender Analysis, the FAO Framework and Gender Analysis Matrix (Lilja et al. 2001; Vainio-Mattila 2001; McCormick & Schmitz 2001).	Medium	Medium	All	Very high
<i>Participatory research methods</i>					
<i>Group interaction</i>	These can be casual or random encounter; focus or specialist; representative or structured for diversity; community / neighbourhood; or formal. Group interactions can employ mapping and diagramming to further cross-checking and reminding. Group interactions might also use the elaboration of <i>Activity Profiles</i> that examines the gender-based division of labour for productive and reproductive activities, or <i>Resources Profiles</i> that examines the resources women and men each utilize to carry out their activities and the benefits they derive from them (Chambers 2006).	Low	Medium	All	Very high

Method	Main characteristics	Resource demands (very high, high, medium, low)		Suitability for action research steps	Potential for target group participation
		Financial	Specialised skills		
<i>Focus group discussions</i>	Semi-structured interviews or discussions with a group of informants facilitated by a moderator who focuses the discussion, employing methods such as ranking and elaboration of resource and activity profiles. Used to examine both social and environmental issues. Various methods exist for ordering and analysing the data. Focus group interviews are not suitable for research among traders and firms.	Medium	High	2 – 7	Very high
<i>Scenario workshop</i>	Participants are presented with several different scenarios or visions of the future. They are asked to critically assess the viability and relevance of all the elements of each scenario. They can choose one particular vision or combine elements of several futures and derive their own unique vision(s). An important task is to devise an action proposal which can be implemented to achieve their chosen vision (Andersen & Jaeger 1999).	Medium	High	5, 6	Very high
<i>Search conference</i>	A search conference is carried out in groups of relevant stakeholders who meet under social island conditions for 2-3 days. First factors operating in the wider contextual environment are discussed (factors producing the meta-problems and likely to affect the future). Content is contributed entirely by the members - staffs are facilitators only. The material is discussed in small groups and in plenary. The group next examines its own organizational setting or settings against this wider background and then constructs a picture of a desirable future. Only then is consideration given to action steps (O'Brien 2001).	High	High	5, 6	Very high
<i>Participatory mapping and diagramming</i>	This involves constructing, on the ground or on paper, maps or models. There are many types of maps: resource maps of catchments, villages, forests, fields, farms, home gardens; social maps of residential areas of a village; wealth rankings and household assets surveys on social maps etc. Venn diagrams involve the use of circles of paper or card to represent people, groups, and institutions. These are arranged to represent real linkages and distance between individuals and institutions (UNEP undated).	Low	Medium	3 – 6	Very high

Method	Main characteristics	Resource demands (very high, high, medium, low)		Suitability for action research steps	Potential for target group participation
		Financial	Specialised skills		
<i>Participatory evaluations</i>	Involving the target group and other stakeholders in developing an evaluation process ensures that all aspects of concern to them are covered. The results of the evaluation exercise should enable recommendations on whether to change the objectives of the initiative, change the strategy, change activities or continue all or some. Both specific activities and the objectives of the action project are considered, with the objective of learning what worked (and why) and what was not successful (and the reasons for that) (Barton et al. 1997).	Medium	Medium	3 – 6 but mainly 7	Very high
Competence building					
<i>Participatory learning methods</i>	Farmer Field Schools: groups of farmers learn together through joint problem analysis, learning and problem solving. All activities are done in the farmers' own fields. Other methods include, Farmer-to-Farmer Promoters, Show Case Examples, and Participatory Innovation Development (KIT et al. 2006; Ramos 1998).	Medium to High	High	6	Very High
<i>Class-room type training</i>	This is used to access special skills and knowledge not held by local people. Classroom-type training is a many-dimensional learning process where methods such as group dynamics and role plays can fruitfully be used (Kievelitz & Forster 2001).	Medium	High	6	Very High
<i>'On-the-job' training</i>	Here training is done on the farmers own fields.	Medium	Medium to High	6	Very High
'Political action' methods					
<i>Advocacy/ Campaigning</i>	A campaign is a specific plan of action that is developed and implemented around an identified issue. A campaign should be designed to achieve particular outcomes, be concrete and achievable, have a defined timeframe and specify the activities to be undertaken (Leach & Wallwork 2003; Mather 2004).	Medium to Very High	Medium to High	6	Very High
<i>Negotiation</i>	There are many approaches to negotiation (e.g. distributive, integrative, accommodative and avoidance). The integrative negotiation approach enables stakeholders to develop new or at least partly shared problem definitions and cognition as part of a creative learning process (Leach & Wallwork 2003).	Low	Medium	5, 6	Very High
<i>Organising</i>	This refers to different collective forms such as farmer groups, cooperatives or associations (KIT et al. 2006).	Medium	Medium	6	Very High

Method	Main characteristics	Resource demands (very high, high, medium, low)		Suitability for action research steps	Potential for target group participation
		Financial	Specialised skills		
Action research 'management'					
<i>Facilitating action research</i>	The outside researcher's role is to implement the action research in a manner that produces a mutually agreeable outcome for all participants, with the process being maintained by them afterwards. To accomplish this, it may be necessary to adopt many different roles at various stages of the process, including those of planner, leader, catalyser, facilitator, teacher or observer (O'Brien 2001).	Medium	High	All	NA
<i>Assembling an action research team</i>	Researchers can be found in many places, such as research organisations, NGOs with experience in research and smallholder organisations. Or you can assemble a research team whose skills compliment each other and where everyone will learn new skills. (McCormick & Schmitz, 2001)	Low	Medium	1, 2	Medium
<i>Developing a concrete plan of action</i>	There are many ways of doing this with the target group using different group dynamics (see e.g. Mather 2004).	Medium	Medium	5	Very High
<i>Coordinating multi-group research</i>	Working within a group can be challenging and conflictual. It is helpful to be as clear as possible before the research begins about matters such as leadership, individual and group responsibilities, communication, deadlines and outputs. This makes it easier to resolve issues quickly and avoid creating tensions within the group (Hurley et al. 2003).	Low	Medium	All	NA
<i>Evaluation and adjustment</i>	When an evaluation is completed a meeting should be held to discuss results and decide on follow-up. The meeting should gather all relevant stakeholders. Based on the evaluation decisions are made on whether and how to change the objectives of the initiative, the strategy or specific activities (Mather 2004).	Medium	Medium	7	Very High
Communication methods					
<i>Sharing research results</i>	This concerns for example how to present information on the value chain (e.g. the structure of the chain, how this affects smallholders and what actions they could take). For dissemination maps and diagrams are very useful. The sharing may take the conventional forms of a research report or policy brief, but action research often uses more creative ways of bringing the results to those who need the information through e.g. workshops, dramas or videos (McCormick & Schmitz 2001).	Low to High	Medium	3, 4 and mainly 6 & 7	High

4. The 7 steps of action research in value chains

4.1 OVERVIEW OF COMPONENTS AND METHODS FOR EACH STEP

The third element of the toolbox is a stepwise approach to the design and execution of a value chain action research project. The approach involves seven steps outlined in Table 4.1 below. For each step we describe its main components as well as the research methods applicable to each step (see Section 3). Annex 1 in Riisgaard et al. (2008) presents ‘how to do’ manuals on most of the research methods listed here.

Table 4.1 A stepwise approach to action research in value chains

Action research step	Main components of step (Sections 4.2 – 4.8)	Action research methods (Section 3)
1) Choice of overall research design	<ul style="list-style-type: none"> • Identify major issues to be addressed • Choose value chain type and geographical focus • Choose type of value chain analysis 	<i>Literature review, Key informant interviews, Tracking value chains, Mapping and diagramming value chains, Gender analysis, Group interaction, Assembling an action research team</i>
2) Identification and engagement of the target group (setting boundaries of the research)	<ul style="list-style-type: none"> • Define and select the target group. This involves identifying those that will <i>not</i> be part of the research (but that might expect to be). • Identify local organisations with whom to work • Agree on action research process and define roles and responsibilities • Agree on level of ambition and time frame • Consider local ‘political’ issues arising from choice of target group and how to deal with them 	<i>Literature review, Key informant interviews, Gender analysis, Group interaction, Focus group discussions, Assembling an action research team</i>

Action research step	Main components of step (Sections 4.2 – 4.8)	Action research methods (Section 3)
3) Address poverty, environment and gender issues (horizontal aspects of the value chain)	<ul style="list-style-type: none"> • Conduct participatory and ‘gendered’ problem identification and prioritisation • Place the prioritised problems in the broader context of the value chain 	<i>Literature review, Key informant interviews, Sample surveys, Environmental impact analysis, Life Cycle Assessments, Gender analysis, Assessing inequality, vulnerability and marginalisation, Group interaction, Focus group discussions, Participatory mapping and diagramming, Livelihood analysis</i>
4) Conduct value chain analysis (vertical aspects of the value chain)	<ul style="list-style-type: none"> • Analyse and map the value chain (and its relevant strands) • Identify the position of the target group within the chain • Identify the performance requirements, risks and rewards pertaining to the target group • Quantify key elements of the value chain in each relevant node (incl. assessment of competitiveness of target group in end market) • Relate the problems identified in Step 3 to the detailed value chain analysis. → Eliminate problems that cannot be addressed through a value chain approach and prioritize problems to address in the action research 	<i>Literature review, Key informant interviews, Sample surveys, Tracking value chains, Mapping and diagramming value chains, Gender analysis, Group interaction, Focus group discussions, Search conference, Participatory Mapping and diagramming, Enterprise budgets, Trading costs and margins estimation</i>
5) Choice of upgrading strategy	<ul style="list-style-type: none"> • Formulate promising upgrading strategies for ex-ante evaluation and select one ‘best bet’ strategy. This includes considerations of suitable <i>forms of coordination</i> and <i>forms of upgrading</i>. • Identify promising ‘action points’ where change can be stimulated • Mobilise political and economic resources from external sources • Establish a baseline for ex-post evaluation of the action research. Focus on indicators that are directly relevant to the selected upgrading strategy and to the problems prioritised in Step 4. 	<i>Ex-ante evaluation, Gender analysis, Group interaction, Focus group discussions, Scenario workshop, Search conference, Participatory mapping and diagramming, Negotiation</i>

Action research step	Main components of step (Sections 4.2 – 4.8)	Action research methods (Section 3)
6) Implementation of research and action (support activities)	<ul style="list-style-type: none"> • Develop a concrete plan of action • Implement research and strategy through support activities such as: collecting and analysing data, building competences, mobilising resources, organising and creating alliances • Collect, analyse and disseminate information (research and documentation) 	<i>Developing a concrete plan of action, Key informant interviews, Tracking value chains, Mapping and diagramming value chains, Environmental impact analysis, Life Cycle Assessments, Gender analysis, Group interaction, Focus group discussions, Scenario workshop, Participatory Mapping and diagramming, Sharing research results, Participatory learning methods, Class-room type training, 'On-the-job' training, Advocacy/ Campaigning, Negotiation,</i>
7) Evaluation and adjustment (or exit)	<ul style="list-style-type: none"> • Evaluate the results of the action research (ex-post). Distinguish between the 'ultimate' impact on horizontal aspects and the immediate outcomes of the research (attribution of impact of the research is much easier in the latter compared to the former). • Formulate new/adjusted strategy and start new cycle of action research OR • End the action research (exit) 	<i>Ex-post evaluation, Gender analysis, Group interaction, Focus group discussions, Participatory evaluations, Evaluation and adjustment,</i>

The seven steps are sequenced in a logical progression but in practice there will be iterations back and forth between steps as new insights are gained, misconceptions discovered and ideas discarded. Hence it is important to plan for these uncertainties in terms of project time and resources. Since the methodology is designed for action research with small producers, the approach assumes that the starting point of the research is a particular value chain setting and that one then goes on to identify the target group and the issues to address. But the starting point of a project may also be an identified target group, a geographical area, or a specific environmental or poverty issue. In such cases one would start with step 2 followed by step 1 and 3 (or 3 and 1). In general the sequence of step 1, 2 and 3 can be adjusted to fit with the particular development context of the action research project. Step 1 will typically be a necessary part of a funding proposal.

The step-wise approach makes no assumptions about the time frame of the action research. Yet feed back received from practitioners suggest that two years is the minimum time needed to com-

plete a meaningful action research cycle and that often a longer period will be needed to make significant impact. Their comments also made clear that devising and implementing meaningful and effective strategies often requires in-depth knowledge of the local economic and political conditions as well as of the value chain in question. Hence action research is likely to be more successful where previous research and ‘development’ activities have generated such knowledge.

The following sections constitute a detailed and practical ‘walk through’ of the central components of each of the 7 steps, as listed in Table 4.1. For most components we have developed a checklist of things to do, questions to ask, and issues to consider. These checklists (recognised by the symbol) are the fourth element of the toolbox and will help ensure that the important elements of each step are addressed in a systematic and coherent way. It should be noted that the checklists are generic and that not all parts will be relevant or necessary in a concrete action research project.

4.2 STEP 1 – CHOICE OF OVERALL RESEARCH DESIGN

The first step of the action research project is to decide on the overall design of the research. This work will normally be done as part of the preparation of a research proposal and is not much different from a conventional research project. A thorough literature review supplemented by key informant interviews and perhaps a short stakeholder consultation will be the main methods applied at this stage. It is important to note that a good understanding of the issues and local context must be gained at this stage before commitments are made to a particular target group. The main components of Step 1 are:

- ✓ *Identify major issues to be addressed*
- ✓ *Choose value chain type and geographical focus*
- ✓ *Choose the value chain research design*

Identify major issues to be addressed

The first basic choice to be made in designing the research is to make a rough analysis and prioritisation of the kinds of issues or impacts that the research will address. Applying this first coarse filter or focusing is necessary because value chain dynamics have a range of implications for poverty, gender equity and the environment and it is only possible to seriously address a few of them. Value chain dynamics may also cause changes in technology and institutions with indirect socioeconomic and environmental management effects. Problem identification and prioritisation will involve key informant interviews and a literature review, and should be guided by the checklists in Step 3 (used selectively). The results of this exercise will inform the formulation of the

research questions. At a later stage (Step 3), once the target group has been identified, this first diagnostic will be revised and nuanced with the full participation of the target group.

☑ Choose type of value chain analysis

The second component of the overall research design concerns the type of value chain analysis performed as part of the basis for choosing an appropriate value chain or strands of the same value chain for the action research.

Comparing different value chains (different products or product groups) is relevant if the target group is not currently part of any value chain or if we want to compare different options. Value chain dynamics for different products or sub-sectors can have very different outcomes for poverty, gender, employment and the environment. This is because of variations in factors such as initial social patterns of production (e.g. number and location of producers), terms of incorporation, performance requirements, and levels of risk in production and trade (see Bolwig et al. 2008).

Comparing different 'strands' of the same value chain. Strands may differ because of: different product characteristics e.g. specialty coffee; a different institutional configuration, e.g. the presence of an auction; or a different end-market or origin of production. This type of analysis is mainly relevant for larger firms or cooperatives capable of switching between strands. It is also relevant for action research aiming at product upgrading and/or upgrading through certification of smallholders. Two distinct research approaches may be identified within this type: (a) comparative analysis of 'mainstream' strands of a value chain and strands for niche products (e.g. mainstream coffee vs. certified organic; mainstream tourism vs. eco-tourism); (b) comparative analysis of export-oriented value chain strands and strands that supply regional or domestic urban markets.

☑ Choose value chain type and geographical focus

The third component concerns selecting a type of value chain for which there are good prospects for improving participation for small producers through action research (the analyses of the previous component will feed into this one). In Bolwig et al. (2008) we argued that action research is likely to be more successful if undertaken in more tightly coordinated value chains, as opposed to market-based chains. This is because in the former type the product is traceable upstream to specific producers (or other upstream actors) and this enables the action researchers to identify and engage with actors (e.g. retailers and consumer groups) further downstream with which the target group is linked through trade. This is opposed to the market-based chains (e.g. based on auctions) where trade flows are anonymous, making it difficult or impossible to establish downstream linkages. These differences in overall chain governance may be examined through value chain mapping (see Step 4 and the checklist below). Other important factors to consider in the

selection of an appropriate value chain are market demand, formal trade barriers, and performance requirements in the upstream end of the value chain (see checklist below). These in turn affect the feasibility of, and potential risks and rewards from, upgrading strategies. Finally we need to select the geographical focus of the research. The questions below will help make these choices.

- *Overall chain structure and governance*
 - What is the overall chain structure, including: different strands, key segments, nodes and actors; flows of products, information and finance; and product transformations and value added?
 - What is the position of small producers within the chain in relation to the above elements?
 - What are the major forms of coordination in the chain? Is coordination predominantly market-based, contractual or through vertical integration? Is the product traceable along the entire chain? Where is traceability 'lost'?
 - Who are the most powerful actors in the chain and through what means do they 'drive' the chain (i.e., set the conditions of participation and determine the functional division of labour along the chain)?
- *Market demand potential*
 - How large and how robust are the markets targeted?
 - What is the scale of demand (domestic, regional or international)?
 - How have the markets developed in recent years and what are the future prospects, in terms of price trends and demand growth (demographic trends and income elasticities may be used as indicators for future demand growth in regional and domestic markets)?
- *Formal barriers to trade*
 - What major trade policies in importing countries (tariffs, quotas, rules of origin) facilitate or constrain access and competitiveness for the product and producing country in question?
 - Can such barriers be overcome through chain development, or are they prohibitive or outside the influence of chain actors and policy makers in developing countries?
- *Performance requirements (including standards)*
 - What are the production and processing attributes of the product demanded? Will small producers be able to adhere to these in terms of technology and resources?
 - What requirements are there to auditing and documentation of production, processing and handling practices? Are meeting these requirements within the reach of small producers?

- What are the perishability attributes (affecting requirements to market nearness, handling and transportation infrastructure, level of supply chain management, marketing risks)?
- What quality and sustainability standards are critical for shaping these product attributes?
- *Geographical focus*
 - From which area(s) will the target group of the research be selected?
 - Where are small producers already involved in the selected value chain?
 - Where are local conditions favourable for the entry of small producers into the value chain?

4.3 STEP 2 – IDENTIFICATION AND ENGAGEMENT OF TARGET GROUP

The second step identifies the subjects of the research (the target group) and the local organisations with whom to work and considers the ‘political’ issues that may arise from these choices. The research team (now including the target group) also starts planning the action research process and agrees on roles and responsibilities and the time frame and level of ambition of the project.

- ✓ *Define and select the target group*
- ✓ *Identify local organisations with whom to work*
- ✓ *Agree on action research process and define roles and responsibilities*
- ✓ *Agree on level of ambition and time frame*
- ✓ *Consider local ‘political’ issues arising from choice of target group and how to deal with them*

Identification and engagement of target group

- *Target group selection*
 - Whom in the value chain should be engaged with as the target group, i.e. whose interests will the research principally serve?
 - The governance structure of the value chain in question has implications for the options open to different chain actors. Therefore the chain analysis performed in Step 1 should be used to inform decisions of which actors are selected as the target group.
 - What local organisations exist through which the target group may be engaged in the research?

- *Consequences of target group selection*
 - The definition and selection of a target group excludes other actors from participation. Consider how your selection (exclusion) feeds into local mechanisms of power, inequality and inclusion / exclusion.
- *Action research process (preliminary considerations)*
 - How many action research cycles (of research, action and adjustment) should be done, on what timescale, and on what balance between a controlled versus a creative process?
 - How is the target group (and other local people) best involved as investigators (e.g. observing, interviewing, documenting, evaluating) and agents of change?
 - How much may be achieved under given resource and time constraints, and given the type of value chain studied and the position of the target group within this chain?
 - Given the time and financial limits of the action research, how can the researchers 'hand over' the action process to the stakeholders involved in a way that ensures sustainability?
 - Relatedly, what kinds of knowledge and skills should the target group and local organisations acquire during the research process (and which will remain in the 'domain' of researchers and other external participants in the research)?

4.4 STEP 3 – ADDRESSING POVERTY, ENVIRONMENTAL AND GENDER ISSUES

- ✓ *Conduct participatory and 'gendered' problem identification and prioritisation*
- ✓ *Place the prioritised problems in the broader context of the value chain*

The upgrading of small producers, and value chain dynamics in general, may have a range of implications for poverty, the environment and gender equity but they may also cause changes in technology and institutions with indirect socioeconomic and environmental management effects. The third step involves specifying which dimensions of poverty and environmental management that the action research will address as well as identifying relevant gender issues. A more detailed gender analysis can advisably be conducted by using a gender analysis guide (see e.g. Lilja et al. 2001, Vainio-Mattila 2001, McCormick and Schmitz 2001).

The following checklists (for poverty, environment and gender respectively) assure identification and analysis of the main problems experienced by the target group that arise from their engagement (or lack of) in value chains. It is important to note here that these are generic lists of issues that one might consider but that only some of the dimensions/questions will be relevant in a

given project. There is thus a need for the action research team to be selective to ensure practicality, but in a participatory way.

Understanding poverty, inequality and livelihood issues

Following the conceptual framework developed in Bolwig et al. (2008), issues of poverty are addressed at individual, household and community levels. Note that this is a generic list of questions and not all will apply to a given project.

The individual level

- What is the race, gender, 'ethnic', language, or cast profile of the target group? Does this relate to their position in the value chain? Or the terms of their incorporation?
- Which attributes (skills, assets, gender, ethnicity, location, age, etc.) are decisive for chain participation and what is the implication for different social groups?
- What are the opportunities they may benefit from and risks they are exposed to? How predictable or insecure is their income? What are the physical and health risks involved in their work?
- Of particular interest are risks that increase the vulnerability of poor producers. How does participation in the value chain affect the *sensitivity* and *resilience* of the systems that underpin their livelihoods, and how does participation affect *risk* (the probability of shocks or negative changes)?
- What are the alternatives open to the producers? Can they exit easily from participation in this value chain, or are they thoroughly dependent on it?
- Will land use changes associated with chain participation result in displacement of local people?

Understanding household dynamics and livelihood strategies

- What is the household structure and composition?
- What are the key livelihood activities that the household depend on? Households often develop a broad portfolio of activities that insure them against risk and help them deal with seasonality.
- What are the key resources ('capitals') on which they depend? These include financial resources (landholdings, savings etc) but also access to natural resources, human capital (health, skills, education, labour), physical infrastructure and the nature of social relations.
- What are the synergies between the activities? Livelihood activity portfolios are significant not only because they mitigate risk and seasonality, but also because they combine and complement one another in key ways (e.g. cash from one source can be used to subsidise or smooth expenditure in another economic activity).

- What are the arrangements around care work and household reproductive labour? Pay attention to the ways in which arrangements around care work allow people to be economically active, or prevent them.
- What are the intra-household synergies, transfers and exchanges? Who gets what in exchange for what? Who commands most of the resources within the household and who is marginalised? How does age and gender play into these arrangements? (e.g. female household members' status within the household is affected by changes in the nature or terms of their employment).
- How do household (and individuals) plug into broader systems of social relationships (e.g., practices of reciprocal exchange, local institutions, kinship networks and care chains)? Who benefits from these systems and who does not?

Community Level

- Who controls key productive resources e.g. land, water, access to employment? Do they form a recognisable social group? What is their composition?
- Who controls local political power and patronage – and how? Does this link to institutions that have an impact on value chain governance? Is local farmer organisation, for instance, closely linked to membership of particular parties or powerful groups?
- Do relationships between social groups typically take the form of conflict, antagonism, dependency or co-operation and alliance? How are conflicts handled? Are they handled violently or through negotiations? Are there formal legal processes whereby conflicts can be handled?
- What characterises local employer – employee relationships? Who work for whom? In what activities or sectors are labour most commonly hired? What are the conditions of employment? Who are excluded from employment opportunities?

Checklist for identifying relevant gender issues

Several gender issues have already been touched upon above. In addition we recommend employing a more detailed gender analysis tool such as the ones provided in McCormick and Schmitz (2001); Lilja et al. (2001) or Vainio-Mattila (2001). For a brief checklist see below:

- Ensure that data collected is sex-aggregated and use participatory methods while making sure to identify and include female stakeholders.
- Systematically gather and examine information on gender differences and social relations in order to identify, understand and redress inequities based on gender.
- What roles do men and women play in the sector and in the locality concerned relative to value chain participation?

- What are the incentives and barriers for value chain participation for men and woman respectively?
- How does the Activity Profiles (the gender-based division of labour for productive and reproductive activities, answering the question “what activities do women and men do”?) relate to value chain participation (or non participation) and the rewards and risks associated?
- How does Resource Profiles (what resources do women and men have to work with? And who needs what?) relate to value chain participation, rewards and risks
- Do mechanisms of power and inequality differ between men and women? If so does this relate to value chain participation (or non participation) and the rewards and risks associated?

Identifying local environmental issues

General assessment

The first step in the environmental impact assessment (EIA) at farm level is to assess which potential environmental impacts may be linked with the particular farming (aquaculture) systems in focus and under the specific local agro-ecological conditions. This involves asking the following set of questions:

- What are the environmental risks linked with farming in the area? If the farmed landscape consists of hillsides, soil erosion may be an issue and this should be assessed visually and discussed with local stakeholders. Is deforestation of natural vegetation happening due to pressure for land or for firewood?
- Is non-cultivated land (wetlands, forest, communal grazing) being converted into agricultural land? Do some people depend on collection of natural products (NTFP) in the forest or other non-cultivated biotopes in the area?
- Did land use or farming systems change significantly over the last 10 years? Are any major crops given up by most farmers, new crops introduced and taken up to a large extent, are there more or fewer livestock now compared with 10 years ago? Did grazing patterns change (communal grazing increased or stopped, herding vs. tethering vs. zero grazing of ruminants)?
- Are water bodies (small lakes, ponds, streams) being used for irrigation and/or to water livestock? If so, do humans depend on the same water resource for drinking and cooking?

Below are listed specific issues relating to crop/livestock farming, aquaculture and wild harvesting of common pool resources (fisheries and non-timber forest products).

Crop and livestock farming

- What is the resource endowment of the farmers for the product (value chain) concerned, in terms of land acreage and slope, soil fertility, land structures (terraces, infiltration ditches, diversion channels etc), water reservoirs, farm trees, hedges and small biotopes?
- What are the farmers' use of resources and external input for the product concerned: fertiliser, feed concentrates, mulch material and manure? Which products leave the farm?
- Are the nutrient balances positive or negative (nutrient surplus vs. mining, depletion)?
- What percentage of the area is treated with chemical herbicides respectively insecticides? Which frequency/ how many times per season? What type of equipment is used?
- What is the pattern of land use for the product concerned, in terms of the location of fields/pastures on major landscape elements (lowlands, uplands, steep slopes, plains, forests and other biodiversity, etc)? How is land use currently changing in relation to these landscape elements (participatory land use/cover analysis)?
- Which agro-ecological techniques do farmers apply (for example: contour cropping, intercropping, mulching, composting, agro-forestry, multipurpose trees, etc)?
- What is the nature and extent of *planned diversity* (the degree to which the farming systems attempts to interact with biodiversity for preventive pest control and in this way indirectly contributes to biodiversity)? In terms of indicators such as the number of cultivated species grown per acre, the use of intercrops, trap crops, etc.

Fish farming (aquaculture)

- What is the resource endowment of the aquaculturalists for the product concerned, in terms of water access, pond acreage, fish stock, etc?
- What are the aquaculturalists' resource and external input use: fish stock, water sources, fish feeds, antibiotics and other medicines, etc? Which products leave the fish farm (fish harvest)? What is the extent and sources of pollution of downstream water or lands (from discharged nutrients, feed residues, residues from antibiotic and other medicines, etc)?
- What are the patterns of land and water use for the fish product concerned, in terms of the location of fish ponds in the landscape, and in relation to the sourcing/discharge of water from/to natural water ways? How are land use and water use currently changing in relation to these elements?
- Which aquacultural techniques are applied (for example: feeding and breeding techniques, medicine treatment, etc)?

Wild harvesting of common pool resources

Below are issues that will need to be addressed when dealing with resources that are held in common by many users, i.e. natural resources such as water-bodies, fisheries, forest products etc:

- As a general rule, property rights to common pool resources should be based on providing appropriate incentives for users to promote conservation through rights, rules and responsibilities.
- What proportion of the product is being harvested from the wild and what proportion is being cultivated, and how do these proportions change? (This will have social impacts as harvesters tend to differ from cultivators.)
- Sustainability of harvesting techniques: is the individual plant being killed by harvesting? Is the viability of the plant population being affected? Are other species affected by harvesting this product?
- Subtractability: this refers to a situation where each user's exploitation of the resource results in fewer resources being available to other users. This makes it difficult to jointly regulate the harvesting or collection of these resources.
- Definition of property rights around common pool resources implies two major management issues: a need to regulate access to resources in order to handle exclusion problems, and; a need to regulate the level of exploitation among authorized users to deal with the subtractability problem mentioned above.

☑ Identifying global environmental issues

There purpose of this checklist is to assess whether there are significant impacts on the environment from any of the process stages (from “farm to fork”) and to assess the overall emissions of green house gasses along the product chain. The farm to fork inventory is primarily established by consideration of material, energy, chemicals and other resources used in the different steps of the chain using a structured approach such as the MECO (materials, energy, chemicals, other) method (Wenzel et al. 2001)¹⁰. Start by drawing a diagram of the whole product chain, from the source of main inputs to the farm, over processing and packaging to storage and retail, and including the different transport forms involved and the approximated distances.

¹⁰ Instead of making a detailed inventory followed by a detailed assessment, as done in a conventional LCA, one undertakes a screening of the most significant environmental impacts. This is achieved by combining the inventory and assessment of ‘materials, energy, chemicals, other’ at various stages (material, manufacturing, use and disposal) in the product cycle.

The main questions are then as follows:

- Which resource demanding inputs are used in the different steps and how much?
- What are the farm processes, which require inputs and energy (farm level info from above)?
- What is the energy source for cultivation (diesel, petrol, livestock traction)? How much is used per year and – if possible breakdown for the particular cash crop?
- What is the energy source for local processing of crops (fuel oil, diesel, petrol, gas, electricity or other fossil fuels vs. solar power, livestock traction)?
- Are there any livestock keeping, manure use and composting practices which may lead to emissions of methane and nitrous oxides (farm level info from above)?
- Does the production or farming practices involved lead to changes in land use, which accelerate carbon emissions (deforestation, increased cultivation of grasslands or organic soils) or increase carbon sequestration (reforestation, agro-forestry, increased grasslands etc.). Use info from the land use analysis described above.
- Is there any industrial processing or packaging involved in the product chain? If so, which chemicals are used to clean or treat products? What is the energy source for this (fuel oil, diesel, petrol, gas, electricity or other fossil fuels vs. solar power, livestock traction etc.)?
- What are the transport forms between farmer and processing or packaging facility (truck, ship, airfreight)?
- What are the transport forms for long distance hauling (truck, ship, airfreight)?
- What packaging material is used and how much? (plastic, metal foil, several wrappings etc)

Use scheme for LCA-light to organise qualitative inventory on resource use in different steps of production chain (MECO method). Then discuss which part of the chain involves most resources, energy and chemicals. What are the possibilities to reduce these hot spots? How does the scheme look for competing products? If possible and necessary, try to quantify the most important aspects (for example the energy use and green house gas emissions) using tables in the literature and databases such as www.lcafood.dk. Compare with retail chain's targets or similar products. Remember that comparisons with results from other studies should be done with care since methodological differences can compromise comparability. A difference should be at least 50% before counting as significant.

4.5 STEP 4 – VALUE CHAIN MAPPING AND ANALYSIS

In this step we are concerned with the vertical aspects of the value chain. The analyses performed here have three main purposes: 1) to acquire a thorough understanding of the selected value

chain and its relevant strands as the basis for formulating a set of promising upgrading strategies for the target group (Step 5); 2) to focus the research by specifying which among the problems or issues identified in Step 3 that can realistically be addressed through these upgrading strategies; 3) to generate qualitative and quantitative indicators for monitoring and evaluating changes in the value chain occurring during (and maybe as a result of) the action research. Step 4 has the following components:

- ✓ *Analyse and map the value chain (and its relevant strands)*
- ✓ *Identify the position of the target group within the chain*
- ✓ *Identify the performance requirements, risks and rewards pertaining to the target group*
- ✓ *Quantify key elements of the value chain in each relevant node – prices, costs, revenues, margins, weight losses, volumes traded, number producers/traders involved, workers employed, etc.*
- ✓ *Relate the problems identified in Step 3 to the detailed value chain analysis performed in the present step (4). Then eliminate the problems that cannot be addressed through a value chain approach and prioritize the problems to address in the action research*

☑ Value chain mapping and analysis (including target group position, performance requirements, and risk and rewards)

- Identification of the overall chain structure, including: different strands, key segments, nodes and actors; flows of products, information and finance; and product transformations and value added. Typical nodes in natural resource-based value chains are: primary production (service provision), primary trading or processing (domestic agents for service providers), exporting (wholesaling for domestic/regional chains), importing (foreign agents for service providers), retailing, and consumption. Selected issues are graphically illustrated.
- What is the role of private and public standards?
- What formal trade barriers exist? What major trade policies in importing countries (tariffs, quotas, rules of origin) facilitate or constrain access and competitiveness for the product and producing country in question?
- What is the structure of rewards along the chain?
- Which are the ‘sites’ and sources of risk along the chain? (What are the major risks and who bears them?)
- What is the functional division of labour and their changing dynamics?
- Who are the most powerful actors in the chain (lead firms and other major actors) and what is their functional position? Through what means do they ‘drive’ the chain (i.e., set the conditions of participation and determine the functional division of labour along the chain)?

- What is the function and position of the target group within the chain (in relation to the above elements)? What is the nature of their business/trading relationship ('contract') with their immediate buyers?
- How is the segment, within which the target group is located, coordinated (in respect of major forms of coordination – market, vertical integration, 'contracts')?
 - What contractual arrangements or other concrete commercial linkages exist between the target group and downstream actors? What is the content of these arrangements?
- What are the performance requirements within the node of the target group?
 - What are the production and processing attributes (affecting technology, compatibility with other livelihood enterprises, environmental impact, and production risks)?
 - What requirements are there to auditing and documentation of production, processing and handling practices? Are meeting these requirements within reach of small producers?
 - What are the perishability attributes (affecting requirements to market nearness, handling and transportation infrastructure, level of supply chain management, marketing risks)?
 - What quality and sustainability standards are critical for shaping these product attributes?
- What are the risks and rewards within the node of the target group?

Quantification of key elements of the value chain in each relevant node

A quantitative assessment of key elements in the value chain should be performed as part of the value chain analysis, at least for the node of the target group and for the next node downstream. This information will be used to assess the attractiveness of alternative upgrading strategies, to evaluate the competitiveness of the target group in the end market, and to generate qualitative and quantitative indicators for monitoring and evaluating changes in the value chain occurring during (and maybe as a result of) the action research.

The specific elements included in the quantitative value chain assessment will depend on the specific characteristics of the value chain, but should typically include, for each node in chain: prices; cost of production/processing/trade (by major item); revenues and margins earned; volume produced/processed/traded; number producers/processors/traders involved, and; number of workers employed. For each activity type, the following elements could be included in the assessment:

- **Production:** prices received, volume sold (by grade); cost of production (costing family labour if possible); labour inputs (by major activity); gross and net margins; farm gate price (and % of retail price); number of producers involved; number of workers employed; gender division of labour (more/less time spent by men/women).
- **Processing:** costs; buying and selling prices (and % of retail price); weight loss; quality after processing; capacity utilisation; gross and net margins; number of processors involved; number of workers employed; wages earned; gender balance in ownership and employment.
- **Trading (several nodes may apply):** purchase and selling prices (and % of retail price), costs (storage, transportation, taxes and bribes, labour, losses), gross and net margins, number of operators in the market and their market shares; number of workers employed; wages earned; gender balance in ownership and employment.

4.6 STEP 5 – CHOICE OF UPGRADING STRATEGY

This crucial step of the action research builds on all the previous ones, and in case of repeated research cycles, on an ex-post evaluation of implementation (Step 7). The main components are:

- ✓ *Formulate promising upgrading strategies for ex-ante evaluation and select one 'best bet' strategy*
- ✓ *Identify promising 'action points' where change can be stimulated*
- ✓ *Mobilise political and economic resources from external sources*
- ✓ *Establish a baseline for ex-post evaluation of the action research*

Formulate and select a 'best bet' upgrading strategy for small producers

- Formulate a few (3-4) promising upgrading strategies (see Section 2) deemed effective for addressing the problems identified in Step 4. Then characterise each strategy in respect of:
 - Expected changes in *forms of chain coordination* around the production node (see Figure 2.2).
 - Expected changes in *forms of upgrading* (functional, process, product, volume, etc. – see Figure 2.1 and 2.3), and in this regard, expected changes in performance (quality, volume, stability and timing of delivery, production costs, and certification).
 - Expected changes in the economic / business incentives of key actors, particularly of the target group and their immediate buyers.
 - The stability of new or modified business relationships ('contracts') envisaged to results from the strategy. What would prevent either party from ending the relationship or

changing its terms? What are the threats that might prevent buyers or processors doing business with the target group?

- Expected changes in the rewards (e.g. prices/salaries and their stability) and risks of chain participation.
- The ‘action points’ and linkages where (through which) the desired changes can be stimulated (see checklist below).
- Perform an *ex-ante* evaluation of each strategy (see checklist below)
- Based on the evaluation, compare the strategies (e.g. through participatory scoring) and select one ‘best bet’ strategy for implementation in the action research
- Draw up a ‘plan of action’ for how to implement the selected strategy: what needs to be done, when, where, and with whom?
- Chose a relevant action research cycle.

Identify promising ‘action points’ where change can be stimulated

A central part of action research with small producers is to identify ‘action points’ (or ‘entry points’ or ‘pressure points’) where change can be stimulated. In Bolwig et al. (2008) action points are defined ‘as organisations, institutions, private or public regulatory frameworks, the media and other ‘sites’ where what goes on inside value chains can be modified or regulated. An action point also has a temporal dimension and may be thought of as a moment or period where there is an opportunity for change or leverage in a particular place in the chain’. Identifying suitable action points involves asking questions such as: Where inside or outside the chain are the most ‘appropriate’ action points, given the choice of upgrading strategy and the resources available to the research? For how long will this action point be available (e.g. if a policy process)? How do we access it?

Examples of action points are:

- An identified chain actor (e.g. a potential buyer).
- An organisational form (e.g. a coop, a producer group, a contract farming scheme).
- A partner external to the value chain who can help the target group put pressure on individuals or organisations whose policies or practices the action research wants to change – i.e. downstream chain actors, government agencies (e.g. the Forestry Department) or standard setting bodies (e.g. Marine Stewardship Council). The partner may form part of the action research team and could be an NGO, an industry association, a UN agency, etc. (see Step 6)
- A standard (that will be modified and/or certified to) or a standard setting body
- A regulatory framework (e.g. for the management of common pool resources)

- A market institution (e.g. a system for group bulking and storing, for product grading, or for accessing price information; an auction; an interlocking contract – e.g. providing seasonal credit against a crop buying agreement).
- Identification of a new market for the existing product
- The passing of a new policy or regulation.

The activities and analyses useful for identifying action points include:

- Value chain mapping and analysis (Step 4)
- Institutional mapping (see Table 3.1)
- Review of private and public standards applying to the chain (Step 4)

Mobilise political and economic resources from external sources

Stimulating change in an action point will often require political leverage and financial and human resources well beyond the capacity of the target group itself. Identifying and mobilising such political and economic resources from external sources is therefore a necessary element in upgrading for small producers. Doing so will often involve the creation of new linkages or alliances (or improving existing ones) between the target group and stronger chain actors (downstream actors such as exporters, importers or retailers). The value chain mapping in Step 4 will help identifying these actors. Likewise, linkages or networks must be created between the target group and stakeholders (individuals and organisations) who are not part of the chain but may nevertheless wish to support its upgrading efforts. They include input suppliers, law makers, advocacy groups and other NGOs, consumer groups, bilateral and multilateral donors, international organisations (e.g., FAO, IFAD, ITC), trade and industry associations, and standard setting bodies. Mapping of the networks and institutional environment of the target group will help identify them (see Table 3.1). Questions that may help linking up with the right individuals and organisations include: Which local and international stakeholders and downstream actors are most important to engage with? What are their main interests and strategies and what constraints and opportunities do they present for action? How do we approach them?

Ex-ante evaluation of proposed strategies

Ability to address priority issues (poverty, gender and environment)

- What benefits are expected from the strategy?
- To what extent will these benefits help address the poverty, environment and/or gender issues identified as a priority in Step 4?

- Who will benefit the most and who the least? In terms of major socio-economic groups (gender, household size, size of production unit, ethnicity), geographical divisions (agro-ecological zone, fishing area, distance to buyers), and organizational systems (cooperative vs. farmer group vs. individual farmers), where relevant.

Losers, risks and negative effects

- What financial, environmental, health and other risks will the strategy expose the actors to? For example loss of income, assets or jobs, health risks, personal security and resource degradation. What are the likely causes of each type of risk (e.g. price instability, unreliable buyers, yield fluctuations due to pests or weather, theft, unsafe equipment, corrupt officials, open access resource management, job insecurity, etc). Focus this risk assessment on the risks and the causes that may be addressed by the action research (given the choice of value chain and the resources available).
- What social groups will be most exposed to these risks (the asset poor, the women, the landless, etc.)? Will the target group generally be able to bear these risks? Who will be most vulnerable to them?
- Will the strategy reduce incomes (or other livelihood elements) for some?
- Are all members of the target group able to bear the (labour or monetary) costs associated with the upgrading strategy? Do they all possess the necessary assets?
- Will the strategy lead to the marginalisation or exclusion of certain groups (who and why)? Will it lead to the displacement of non participants from agricultural or communal land?

Feasibility

- How long will it take to achieve the desired changes?
- How much will it cost?
- What are the major risks of failure?
- How do the expected costs and risks compare to the expected benefits?
- Is it possible to mobilise the 'political' and financial resources needed to implement the strategy within the time frame of the research?
- Does the upgrading strategy go against the interests of other chain actors? Is it realistic to overcome the resistance expected as a result of such conflict of interests?
- For how long will the identified action points be 'available'. Does this conflict with the time frame of the research?
- Will the upgrading strategy oppose local economic or political interests (of non-participants)? Is it realistic to overcome the resistance arising from such conflict of interests?
- Will the target group and other research team members be able to acquire the competences necessary for a timely implementation of the strategy?

- What individual and collective investments are required (land, equipment, labour, training, etc.)?

☑ Establish a baseline for ex-post evaluation of the action research

Establishing a baseline for later evaluation of the action research involves selecting both qualitative and quantitative indicators (environmental, economic and social) for evaluating the ultimate ‘horizontal’ impacts as well as the immediate outcomes of the research. Since impacts will be much more difficult and expensive to measure and attribute to the research than outcomes, it is important to carefully select a few impact indicators and to make sure that outcome indicators are also adequately covered. The selected indicators should focus specifically on the selected upgrading strategy and on the stated objectives of the action research. They should also take account of likely risks and possible negative effects of the action research. In line with the strategic framework (Section 2), the baseline could be structured as follows:

1. Outcome indicators to assess the implementation of the selected upgrading strategy (strategies) during the action research
 - Forms of coordination achieved (Section 2.1, Figure 2.2), including:
 - Level of vertical integration (including functional upgrading, Figure 2.1):
 - Type and degree of ‘vertical’ contractualisation
 - Type and degree of ‘horizontal’ contractualisation (collective action)
 - Specific forms of upgrading achieved in production node (Figure 2.3)
 - Competences acquired by the target group in relation to coordination and upgrading
 - Changes in productive assets of relevance to the upgrading strategy
2. Impact indicators to assess changes in poverty (and its various dimensions), gender equity and environment during (and as a result of) the action research period, for the target group and for non participants (if relevant)

Much of the information needed to establish a baseline and to develop the outcome and impact indicators were collected in Step 3 and 4. For illustrative purposes, Annex 1 presents a preliminary list of common baseline indicators for the seven action research projects carried out under the RPE research theme ‘integrate poverty and environmental concerns into value chain analysis’.

4.7 STEP 6 – IMPLEMENTATION OF RESEARCH AND ACTION

When a strategy has been decided upon and a baseline established, the team is ready to implement the actual action and research. This involves five types of ‘support’ activities:

- ✓ *Develop a concrete plan of action*
- ✓ *Mobilise resources (funding and ‘in-kind’ support)*
- ✓ *Build competences*
- ✓ *Organising and creating chain linkages and external alliances*
- ✓ *Collect, analyse and disseminate information (research and documentation)*

Developing a concrete plan of action

The general issues to be considered when developing a plan of action with the target group are:

- What other actors need to be included in the action research (e.g. buyers)?
- What competences need to be built in the target group?
- What is the time table for implementation?

See e.g. McCormick and Schmitz (2001) or Mather (2004) for suggestions on how to develop a concrete action plan.

Building competences

The action research team should obviously be composed in such a way that it holds many of the competencies necessary to carry out the action research. It is nevertheless likely that additional skills and forms of knowledge need to be acquired or existing ones strengthened and updated. Building and strengthening local competences is important for the sustainability of the impact of the action research in the longer term. Hence there is a need to consider which competences respectively the target group and the involved local organisations should possess at the end of the research. This depends on the nature of the action research as well as on the currently level of education and skills.

The general areas where competencies might be added or strengthened are:

- Technical knowledge and innovation – agronomy, fisheries, aquaculture, processing.
- Quality management
- Regulation – standards, certifications, licenses, auditing procedures.

- Business skills – develop and implement a business plan, negotiate and write a contract, estimate costs and prices, accounting.
- Organization – how to organize and run a producer group, coop, group certification scheme.
- How to acquire market and value chain information – identifying buyers, consumer demands, etc.
- How to obtain and manage finance – loans, grants, saving schemes
- Training on gender issues
- How to plan and implement a campaign (advocacy)
- Communication and networking
- Evaluation and dissemination

Competences can be built through different methods, notably participatory learning methods, class room-type training and ‘on-the-job’ training. Participatory learning methods include farmer field schools, show case examples and farmer to farmer promoters.

Organising and creating linkages and external alliances

The research team (including the target group) needs to engage with other chain actors to improve the conditions of chain participation for the target group. In many cases the success of a project will critically depend on identifying one or a few able and reliable private-sector partners (typically downstream chain actors) with whom the target group can enter into a business relationship (‘contractualisation’). For small producers, the most important partner will often be an in-country trading company (exporter or wholesaler), a retailer or a processor, and in some cases producers may (also) want to link up directly with importers or retailers abroad. The critical role played by private sector partners in most action research projects targeted at small producers means that it is important to thoroughly screen and evaluate potential business partners. Note that whilst certification agencies, NGOs, community based organisations, industry associations and other external actors do not qualify as private-sector partners (they do not directly handle the product), their involvement may be important for accessing suitable private-sector partners and they may help negotiate favourable contractual terms with them.

Linkages or networks must also be built between the target group and stakeholders not directly involved in the chain but who have an interest in improving the conditions for the target group, e.g. input suppliers, local politicians, or Northern consumer groups. These may be identified through asking the following questions:

- What linkages are the most critical to establish to achieve the desired outcome?

- Which local and international stakeholders and downstream actors are most important to engage with?
- What are their main interests and strategies and what constraints and opportunities does that impose/offer on/for action?

Research and documentation

The 'research' part of action research in value chains is essentially about collecting and analysing information on the changes that occur during, and as a result of, the action research, i.e. the implementation of upgrading strategies. Of particular interest are:

- changes in value chain participation for the target group;
- changes in relevant aspects of poverty, gender and environmental management for the target group, including unintended changes and risks;
- changes in the capacity of the target to sustain the upgrading strategy (or engage in new strategies) after the end of the action research (the sustainability issue);
- changes in value chain participation and human welfare experienced by other local social groups (directly or indirectly) affected by the action research;
- changes in the ability of the target group to respond to the dynamics of the market.

The entire action research process, from choice of value chain and target group to development and implementation of action strategy feeds into a sharing of results. The sharing may take the conventional forms of a research report or policy brief, but in action research sharing of results also serves the purpose of broadening the action effects. Thus it is part of the action process and it can be an advantage to employ more creative ways of bringing the results to those who need the information in addition to carefully documenting and evaluating the action research process for future research purposes. A workshop or community meeting with plenty of time for reaction and feedback is one effective form of sharing. The action researchers, both professionals and those from the target group, explain the results, preferably using charts and pictures. The group then discusses the input and how they can use it, either in small groups or in a large plenary session. The experiences from the action research should also be generalised and shared in formats such as books and articles suitable for communication to a larger audience.

For further reading about these more generic aspects of action research, see: McNiff, J. and J. Whitehead. 2002. *Action Research: Principles and Practice*. Second Edition. Routledge: London and New York. The leading journal on action research is *Action Research* (Sage Publications, <http://arj.sagepub.com>). See, for example, Volume 1 (2003).

Planning for flexibility in the action research

Action research in value chains is unlikely to be a straightforward process and some flexibility should therefore be built into the research process from the start. Firstly, the research team must create buffers (time, money and skills) that will allow it to respond to strategic changes. For example, if lessons suggest that a certain intervention will not be successful – or may even be damaging – there should be a plan B, a small cash reserve, and identification of additional sources of knowledge required to implement the plan B intervention. Secondly, the research must be designed in such a way that it is responsive to ongoing lessons. Therefore, although plans and plan Bs should be set, it will not always be possible to schedule a specified number of action research cycles.

4.8 STEP 7 – EVALUATION AND ADJUSTMENT (OR EXIT)

- ✓ *Evaluate the results of the action research (ex-post)*
- ✓ *Formulate new/adjusted strategy and start new cycle of action research OR*
- ✓ *End the action research (exit)*

At the end of the first action research cycle an evaluation of the results of the intervention is performed. In the case a new action research cycle is decided upon, the evaluation is used to adjust the upgrading strategy and the way it is implemented. In case the team decides to end the action research after the first cycle, the evaluation can be used to guide interventions later on in the same chain or to inform other action research projects.

Hence the evaluation should come up with both specific and general conclusions and recommendations. The evaluation should capture the major outcomes and impacts of the action research, but also analyse the process of doing action research, i.e. the action research methods applied, the participation of stakeholders, the division of roles and responsibilities, etc. The evaluation draws on the baseline information gathered and the analyses performed in Step 3 and Step 4 as well as the outcome and impact baseline indicators developed in Step 5 (see Annex 1).

Ex-post evaluation

Basic features of the action

- Background and objectives of the action research
- Basic approach (value chain, target group, strategy, plan of action, activities, time period).
- Key individuals and organisations involved, and donor support.
- In relation to the action research process, what methods were applied? How did they work?

- To what extent did the action research methods applied include the target group and other stakeholders as participants?
- How was the division of roles and responsibilities among the researchers, target group and other involved stakeholders?
- Cost of intervention (major cost items)
- Conflicts encountered along the way.
- The kind of documentation produced during the action research.
- The role of the persons interviewed during the evaluation.

'Hard' achievements (poverty, environment, gender, upgrading elements)

- What were the major benefits or achievements, in terms of changes in poverty status (income and resources, livelihood strategy, employment, vulnerability and risk, inequality), the environment (local and global dimensions) and gender equity?
- How were these benefits distributed among major socio-economic groupings (gender, household size, size of production unit, ethnicity), geographical divisions (agro-ecological zone, fishing area, distance to buyers), and organisational type (farmer group, coop, contract farmer)?
- What changes occurred in relevant 'upgrading strategy' elements (contractualisation, functions undertaken, type of product sold, cost of production and marketing, level and stability of price, volume and stability of output, quality, certification, lead time)?
- Were the asset holdings of the target group increased or depleted? What physical investments were made in the areas of production, processing, quality control, handling, etc? Which investments were collective and which were individual?

'Soft' achievements

- Improved market knowledge (value chain, quality standards, consumer demand)
- Negotiation and advocacy competences.
- Technical competences (production, processing, handling, etc.)
- Organisational competences and levels of trust.
- Gender awareness, self-esteem, sense of ownership/engagement in the value chain.

Losers, risks and negative effects

- Have there been any losers from the interventions? Have they been marginalised or excluded? How? Have their rewards decreased or could they not deliver?
- Is the target group worse off now than before the intervention?

Factors of success and failure

- What were the critical 'success' factors (if relevant)?
- What were the main causes of failure (if relevant)?

- What kinds of investments (physical, cash, labour, network) were critical for the success?
- How were the interests of the target group negotiated? By whom and with whom? Was it effective?
- What alliances and linkages with other chain actors were created or strengthened? Which were crucial for success? Where did weak linkages contribute to failure?
- What made downstream buyers accept (or resist) the upgrading efforts of the target group?
- What external networks were drawn upon? How important was networks in the North (consumer groups, NGOs, the media) relative to local networks? What other actors could have been included?
- What role did local/national government play? What role could it have played? What was the role of community-based organizations, local cooperatives, beach-management units?
- How did regulation affect the action research?
- How was collective action among the target group stimulated? Was it effective?
- What competences were built in the target group? Which were most critical for success? Where did weak competences contribute to failure?

5. Example of how the toolbox could be applied

In the following we present a hypothetical example illustrating how the toolbox could be applied to a specific action research project. The example is inspired by a research proposal on action research with pigeon pea producers in northern Uganda presented at the ODI/IDRC workshop in Cairo in December 2007 and is designed as a stylised account of an imaginary, completed two-year research project.

In the post-conflict situation of northern Uganda, the increased commercialisation of non-perishable food staples was identified as a suitable strategy for increasing household cash income for internally displaced persons (IDPs) returning to their villages. Products of this type may serve food security as well as cash income purposes. They are relatively less demanding than perishable, high-value or export crops in terms of farm investments, external inputs and marketing infrastructure, which make them suitable for a post-conflict area. Food staples in Uganda experience high demand growth and the prospects for increased regional exports are promising.

A preliminary investigation showed that the promotion of pigeon pea was a particularly promising strategy for northern Uganda for a variety of reasons: it would contribute to improving

household nutrition, it is suitable for both poor and less-poor households (including returning IDPs); it fits into existing cropping patterns; it would have low risk of production and post-harvest losses, it would respond to high urban demand growth, and it would present opportunities for local value addition (and associated employment) through processing into *dhal* (split peas) that could substitute for imports.¹¹ At the start of the action research, however, pigeon pea was produced mainly for subsistence in low volumes by geographically scattered households. The marketed surplus was likewise low and variable and rarely reached beyond the nearest town. The quality was generally low and variable. Retailing was performed either by the producer herself in the local market place or via one or two traders in cases where the marketing chain extended to larger towns.

Step 1)

- ✓ *Identify major issues to be addressed:* 1) The volume of pigeon pea sold by farmers in northern Uganda is low, variable and geographically scattered; 2) The pigeon pea market in northern Uganda is local in extent and weakly coordinated (marketing entails high transportation and transactions costs, contributing to low and variable farm gate prices); 3) The quality of pigeon pea presently produced in northern Uganda does not satisfy consumer demand in the national markets (whether for whole or split peas); 4) increased commercialization of pigeon pea could lead to increased child nutrition in the producing households.
- ✓ *Choose the value chain research design:* A comparison was made between the pigeon pea value chain strand serving the 'mainstream' national market for whole peas (spot market type), and the strand serving the national niche market for the higher-value split peas (*dhal*) (coordinated market type, dominated by a few importers/wholesalers).
- ✓ *Choose value chain type and geographical focus:* Based on the above comparison, and given the low initial production and post-harvest handling capabilities of farmers in northern Uganda, it was decided first to focus the action research on the 'whole peas mainstream market' value chain strand and to move into the more demanding 'split peas niche market' only when farmers had gained more experience and capacity in commercial pigeon pea production. It was decided that the research should initially target Lira district as this is the district in northern Uganda that is most accessible to wholesalers and where there is a relatively high concentration of pigeon pea production. (While other parts of northern Uganda may be in more need

¹¹ Pigeon peas are both a food crop (dried peas, flour, or green vegetable peas) and a forage/cover crop. The dried peas may be sprouted briefly, then cooked, for a flavour different from the green or dried peas. In India, split pigeon peas (*toor dal*) are one of the most popular pulses. Pigeon peas are nutritionally important, as they contain high levels of protein and important amino acids. In combination with cereals, pigeon peas make a well-balanced human food.

of economic development, targeting a relatively favoured area within the region would reduce the risk of failure and hence improve the likelihood that lessons could be learned useful for later up-scaling into less favoured areas.)

Step 2)

- ✓ *Define and select the target group:* Smallholder farmers in six communities in Dokolo County in Lira district were selected as the initial producer target group. These communities were selected because they already hosted active producer organisations (POs) or community-based organisations (CBOs) that could be built on, because they were already familiar with pigeon pea farming, and because they were served by all-season roads. It was also decided to target both male and female producers. A preliminary livelihood mapping was conducted to establish the relevance and suitability of market-oriented pigeon pea production for these farmers. This included an assessment of the degree of competition for labour and land resources between pigeon pea and important food security crops. As the key private-sector partner to the action research a Kenyan-owned grain/pulse trading company was identified (Tomil Agricultural Trading Ltd), which had operated in Uganda since the early 1990s. At the outset, Tomil expressed willingness to offer the target group of smallholder farmers supply contracts for pigeon pea on a group basis. These ‘contracts’ would involve limited training in agronomic techniques as well as input provision (especially improved seeds) ‘at cost’. In the medium term, Tomil also pledged to establish a split peas (*dhala*) processing plant in Lira to substitute for imports from Tanzania. Due to its critical role in the action research, Tomil also participated in selecting the producer target group. Several meetings were held between Tomil and the PO/CBO leaders before both parties committed in principle to the action research.
- ✓ *Identify local organisations with whom to work:* The entry point to the target group were existing local Pos or CBOs as it was not deemed feasible or desirable to try and establish new organisations during the research. The organisations were identified through interviews with key informants in the region. A larger group of stakeholders to the research was also established, including local government, the National Agricultural Research Organisations (NARO, which was also commissioned by the research to give technical advice on production and processing and to deliver an improved, short-maturing variety of pigeon pea), the Uganda Grain Traders Association, NatureUganda (an NGO concerned with farming and biodiversity) and donor-funded development programmes operating in the region.
- ✓ *Agree on action research process and define roles and responsibilities:* Meetings were held with the target group of farmers, Tomil Ltd and the stakeholder group where objectives, possible action and time frames were discussed. An ‘action research project committee’ was formed with representatives from these groups.

- ✓ *Consider local 'political' issues arising from choice of target group and how to deal with them:* The mapping of local livelihoods and power relationships revealed that the targeted communities included a small group of landless or near-landless households who might be affected by the action research, either in their capacity as hired labour in pigeon pea farming and trading, or because the commercialisation of pigeon pea farming might further limit their access to agricultural land. It was decided to include these people as a secondary target group in the sense that improving their livelihoods became a secondary research objective.

Step 3)

- ✓ *Conduct participatory and 'gendered' problem identification and prioritisation:* Three human welfare problems at the *household level* were prioritised by the target group: 1) cash flow problems early in the year when children start a new school year (resulting in drop outs or delayed start); 2) lack of savings or credit to pay for medical bills (resulting in prolonged sickness, low labour productivity, low vaccination rates and high child mortality), 3) protein deficiency among children in poor households (which might be exacerbated by increased market orientation of pigeon pea production). The *gendered* nature of the control over and use of household cash income on food, health and children's education was also examined. At the *community level*, it was revealed that there was very unequal access to agricultural land, which was partly related to the history of displacement and resettlement and partly to recent land investments by a few wealthy migrant workers. This pattern was reflected in large inter-household differences in food security and in the dependence on off-farm employment.

Step 4)

- ✓ *Analyse and map the value chain (and its relevant strands):* Value chain mapping was done through several separate participatory exercises: with the target group of producers, with small traders and local retailers in Lira district, with the private-sector partner (Tomil Ltd) and with retailers in Kampala. These analyses concerned chain actors and nodes, product flows, prices, grades and standards, storage, costs incurred at each node, prices, margins, risks, etc. Separate mapping was done for the 'whole peas' and 'split peas' strands.
- ✓ *Identify the performance requirements, risks and rewards pertaining to the target group:* The research first examined current market demands with respect to quality and volume in the 'whole peas' strand (the only one the target group participated in) as well as the production risks, costs and revenues experienced by the target group. The research also assessed the capacity to comply with local and urban-market quality standards by the target group and by Tomil Ltd, and it identified the most important instances of and reasons for non compliance in each case. Secondly, based on the value chain analysis conducted earlier and on further consultations with Tomil, the performance requirements faced by the target group in two future scenarios

were discussed: 1) participation in the ‘split peas’ value chain strand through direct sales to Tomil, and 2) participation in the ‘whole peas’ strand through direct sales to Tomil. In both scenarios the producers had to collectively assemble (pool) and store the produce at central collection points in order to reduce Tomil’s procurement costs.

- ✓ *Relate the problems identified in Step 3 to the detailed value chain analysis performed in the present step (4). Then eliminate the problems that cannot be addressed through a value chain approach and prioritize the problems to address in the action research:* Among the human welfare problems identified in Step 3, and in light of the value chain analysis, it was decided that improved participation in the pigeon pea value chain would be most suitable for addressing the cash flow problem related to paying for children’s schooling. As the second priority and in the medium term, it was decided to address the (less regular but often more severe) problem of paying for medical expenses by setting up savings groups once the pigeon pea POs were functioning well. The problem of child malnutrition was found to be too difficult to deal with given the limited resources and short time frame. It was decided instead to monitor how pigeon pea commercialisation impacted on food consumption in the target group households. Finally, while the action research could not address the fundamental inequalities in land ownership, it was decided to closely monitor if and how the research might exacerbate them (and in such cases introduce mitigating measures).

Step 5)

- ✓ *Formulate promising upgrading strategies for ex-ante evaluation and select one ‘best bet’ strategy:* After several ex-ante evaluations, a two-phased upgrading strategy was chosen:
 - *Establish a system of direct sales by POs to Tomil Ltd of pigeon pea for national ‘whole peas’ urban markets.* The main elements are: establish a pigeon pea POs in each target community, build/renovate community storage facilities, negotiate supply contracts between Tomil and each PO, organise collective assembly and storage of the produce by PO members, establish a transparent system of record keeping, quality control and payment acceptable to both the POs and to Tomil.
 - *Production and sale of improved pigeon pea varieties suitable for processing into split peas (dhal).* This strategy builds on the previous one, but involves additional changes in crop management and input use (particularly the use of improved, short maturing seeds). For the private-sector partner (Tomil), it involves setting up his own *dhal* processing plant in Lira district but processing may also be done in rented premises.

An important element in both strategies is improving the capacity of PO members to ‘manage’ the increased cash income from pigeon pea in a way that focuses on solving the

cash flow problems related to children's schooling and paying for medical expenses. For example through PO-based savings groups dedicated to these purposes.

- ✓ *Identify promising 'action points' where change can be stimulated (including 'linking up')*. Three main action points were identified: 1) producer organizations (the chosen form of collective action in storage and marketing for the producers); 2) a wholesaler to whom the POs can directly sell their produce (the primary target of 'linking up'), and in the second phase of the action; 3) a 'split peas' (*dbal*) processor (the secondary 'linking up' target). The research also engaged with national and international research organisations for accessing improved pigeon pea varieties suitable for *dbal* processing and for providing training in the production and handling of these varieties.
- ✓ *Establish a baseline for ex-post evaluation of the action research*: We selected quantitative indicators on: agricultural land use for food and cash crops (proxy for environmental impact); land ownership (in relation to the issue of inequality); volume, cost and revenue from pigeon pea production; other cash crop income; child nutrition; household savings and credit; household expenditures on children's schooling, health and food; use of hired farm labour; and farm labour wage rates. Focus group discussions were conducted on issues related to the earning, control and use of household cash income by men and women. The value chain analysis in Step 4 gave baseline information on volumes, costs and margins at the different nodes in the two value strands.

Step 6)

- ✓ *Develop a concrete plan of action*. A plan of action was drawn up based on the previous steps and after consultation with the action research project committee. As the main co-researchers were identified two representatives from each PO, two Tomil employees (focusing on marketing, quality, and processing), and a researcher from NARO (focusing on agronomy, storage and inputs).
- ✓ *Mobilise resources (funding and 'in-kind' support)*. Aside the IDRC base funding, some farm implements and inputs were acquired through the Uganda National Agricultural Advisory Services (NAADS) through its Integrated Support for Farmer Groups (ISFG) revolving funds scheme (<http://www.naads.or.ug/>). Additional resources for the training of PO members were obtained from the Danish Refugee Council that operates a Farmer Field School programme in the region.
- ✓ *Build competences*. The research team organised training of PO representatives and Tomil employees in the following areas: research skills (including data collection and management, enterprise budgets, value chain mapping, market analysis); business skills (contract negotiation and management), and; how to organise and manage a PO. All PO members received training in pigeon pea agronomy, storage and marketing. Part of the training was done

through the Farmer Field Schools. While most training was participatory in nature, external resource persons with special knowledge were often engaged as facilitators and/or trainers.

- ✓ *Organising and creating chain linkages and external alliances.* In the first year of the research, one producer organisation was established in each of the six target communities, consisting of 12-18 members, mostly male farmers. In the second year, the number of POs and communities were increased, and a few were discontinued due to low performance. Some POs had to exclude members due to low performance in order to ensure the viability of the group as a whole. A higher share of female farmers was achieved in the second year. As expected, the key linkage created was that between the POs and the wholesaler (Tomil). Supply contracts were negotiated between each PO and Tomil, which specified the volume and quality to be supplied by the PO, the services to be rendered by Tomil to the POs, and procedures for the collection of the produce, quality control, price setting (prices were negotiated before each new season) and payment. The content of these contracts were adjusted several times during the first two years. Because the production capacity increased significantly in the second year, Tomil was no longer capable of buying all the produce offered on sale. This prompted some of the POs to negotiate an agreement with another buyer who was exporting pigeon pea to southern Sudan and Rwanda. The second upgrading strategy involving the production and processing of 'split peas' varieties could not be implemented within the first two years of the research, but a proposal was prepared for how to implement this strategy in a second research phase.
- ✓ *Collect, analyse and disseminate information (research and documentation).* Throughout the two-year action research period, information relevant to the research objectives and the selected upgrading strategies was collected and analysed. Data was collected partly by the research team, partly by the PO groups and partly by the wholesaler (Tomil), depending on the nature of the outcome/activity/process measured and the skills needed to collect the data. Data analysis was performed using participatory methods (involving all co-researchers) as well as more demanding analytical methods (mainly by professional researchers). In all cases the analyses were discussed regularly by the action research committee and communicated at community meetings. The action research team had the overall responsibility for data analysis, management and reporting.

Step 7)

- ✓ *Evaluate the results of the action research (ex-post).* An evaluation was performed after two years. It focused on the outcomes and impacts of the first upgrading strategy. In relation to this strategy, all the elements identified in Step 5 were implemented, although there were still important issues to be resolved, especially regarding variable pea quality delivered by producers and the sometimes very small orders placed by Tomil compared to the volume harvested by the POs.

In relation to the ability of the research to help resolve the human welfare problems prioritised in Step 4 (i.e., the impact), then positive changes were observed in respect of: stability and size of pigeon pea revenues (due to both higher volume and better and more stable prices), and; increased expenditure on children's schooling (due to higher and more timely pigeon pea revenues, and to the enhanced control over the use of these revenues by women). Pigeon pea commercialisation had also increased the demand for hired labour by the target group, which had benefited the 'secondary' target group of landless and near-landless through improved wages and higher employment rates. These changes were observed through a comparison of the relevant indicators (see Step 5) before and after the research, combined with focus group discussions at the start and at the end of the project.

- ✓ *Formulate new/adjusted strategy and start new cycle of action research.* The evaluation also examined the reasons why the second upgrading strategy was not implemented during the first two years. This information was used to develop a funding proposal for a second research cycle that focused on this strategy while also addressing weaknesses in the first strategy.

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7.2 WEB PORTALS FOR VALUE CHAIN RESEARCH

Global Value Chains: <http://www.globalvaluechains.org/index.html> (including a list of more than 300 GVC studies)

http://www.globalvaluechains.org/form_search_publications.php?sort=Date&like=&exact=&col=&log=&iter=0)

Inter-agency Website for the Exchange of Information on Value Chains, Linkages and Service Markets. http://www.bdsknowledge.org/dyn/bds/bdssearch.home?p_lang=en

KIT (Royal Tropical Institute, Amsterdam) information portal on Value Chains for Development. http://portals.kit.nl/Value_Chains_for_Development

Making Markets Work Better for the Poor: www.markets4poor.org/

Regoverning Markets Programme. Case studies and methodologies. www.Regoverningmarkets.org

lidt svært at se her hvad der er web link så kan det ikke bare hede:

KIT (Royal Tropical Institute, Amsterdam) information portal on Value Chains for Development. <http://portals.kit.nl/smartsite.shtml?pid=12505>

Annex I. Example of Baseline Indicators

This Annex presents a preliminary list of generic baseline indicators (see Section 4.6) common to the seven action research projects carried out under the RPE research theme ‘integrate poverty and environmental concerns into value chain analysis’.

I) OUTCOME INDICATORS TO ASSESS THE IMPLEMENTATION OF THE SELECTED UPGRADING STRATEGY (STRATEGIES) DURING THE ACTION RESEARCH

Small producers can improve their participation in a value chain (‘upgrade’) in many different ways. The nature of this improvement may be described according to two broad dimensions, *forms of coordination* and *forms of upgrading* (see Toolbox, Section 2). Each project must develop (mainly qualitative) indicators to be able to describe how it has affected each dimension. The indicators must be tuned into and relevant to the selected upgrading strategy

Forms of coordination achieved (Toolbox, Section 2.1, Figure 2.2)

- *Level of vertical integration (including functional upgrading - Figure 2.1):*
 - Which and how many functions are carried out by the target group, before and after the action research?
 - Has backward or forward integration taken place?
 - Who undertook these functions before (or are they new functions)?
 - What forms of value addition have been achieved and how much value has been added (compared to before)?
- *‘Vertical’ contractualisation.* How has the commercial relationship between the target group and its buyer(s) changed? In terms of (not all will apply):
 - Number of buyers
 - Type of buyers (type and size of firm, how close to end market)
 - Number of times sold to the same buyer (stability of market outlet)
 - Size of orders from each buyer (and in total)
 - Use of written sales contracts (if relevant)
 - Stability or predictability of the price received
 - Knowledge of quality demands and other buyer requirements
 - The extent to which the target group can meet the demands of their buyers (volume, quality, timing etc)

- Buyer ‘satisfaction’ with the target group (one could make a small survey before and after the research, if feasible)
- *Collective action* (*‘horizontal’ contractualisation*).
 - Number of producer groups established (or strengthened if pre-existing)
 - Number of small producers in each group (and in total)
 - Stability of group
 - Volume of product produced/sold/processed/transported by the group (and relative to the volume produced/sold/processed/transported individually by the group members)

Specific forms of upgrading achieved in production node (Figure 2.3)

- What forms of upgrading were achieved (quality, process, standards compliance, volume, timing of supply, inter-chain, ...)
- In which sequence?
- Which were most important for increasing rewards (economic, environment)?
- Which were most important for reducing risks?
- Which were most difficult or costly to achieve?

Competences acquired by the target group in relation to coordination and upgrading

Changes in productive assets of relevance to the upgrading strategy

2) IMPACT INDICATORS: ASSESSMENT OF CHANGE IN INCOME, EMPLOYMENT, POVERTY, GENDER EQUITY AND ENVIRONMENT DURING THE ACTION RESEARCH PERIOD

Income and employment: Changes in

- Monetary income (household level, local currency per year)
- Income ‘in kind’ (if relevant)
- Number of participants in value chain
- Number of people employed in value chain activities (or in directly related activities)

Poverty: Change in

- Number of poor people participating in value chain
- Monetary income of the poor (household level, local currency per year)

- Income 'in kind' (if relevant) of the poor
- Income stability for the poor (qualitative, based on more detailed criteria)
- Food security for the poor (qualitative, based on more detailed criteria)

Gender equity: Change in:

- Number of female participants (absolute and relative to male)
- Women's control of monetary income from chain
- Gender division of labour in chain activities (type of work done by women)
- Number of women employed in value chain activities or in directly related activities (absolute and relative to number of men employed)

Environment: Change in:

- Quantity of natural resources (e.g. through volume, hectare, etc.)
- Quantified level of pollution or waste
- Fossil energy use (or energy efficiency, if feasible)
- Green house gas emissions (if feasible)
- Impacts on human health