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Jana Herold

Agricultural value chains in development cooperation  
Analyses and Recommendations

AVE-Study 23b/2020

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**Agricultural value chains in development  
cooperation**

Analyses and recommendations

**AVE-Study 23b/2020**

**Ways out of extreme poverty, vulnerability and food insecurity**

Universität Duisburg-Essen  
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## Project Background

Against the background that the number of extremely poor people in many developing countries is not declining despite considerable efforts, the Institute for Development and Peace (INEF) at the University of Duisburg-Essen conducted a four-year research project entitled "Ways out of extreme poverty, vulnerability and food insecurity". The aim of the project was to develop recommendations for German official development cooperation with regard to improving target group reach and sustainable living situations for extremely poor, vulnerable and food-insecure populations groups. The research focused on analysing projects that mainly work within the following topics: (i) access to land and tenure security, (ii) value chains and (iii) social security. Participation, socio-cultural factors and gender aspects were always taken into account as cross-cutting issues. In the focus countries Benin, Burkina Faso, Cambodia, Ethiopia and Kenya, *good practice projects* were identified for the above-mentioned priority topics and, in a second step, their effectiveness was examined on site.

Based on our fieldwork and research of the past four years, this article deals with the subject area of agricultural value chains as well as their effects and challenges, and derives recommendations for development cooperation from this. The vast majority of the poor and food-insecure in developing countries live in rural areas and are primarily dependent on agriculture. Participation in agricultural value chains thus makes an important contribution to poverty reduction and food security for these people.

## List of abbreviations

|         |  |
|---------|--|
| BMZ     | German Federal Ministry for Economic Cooperation and Development   |
| BRACED  | Building Resilience and Adaptation to Climate Extremes and Disasters   |
| CFS     | Committee on World Food Security   |
| CFS-RAI | Principles for Responsible Investment in Agriculture and Food Systems  |
| DEval   | German Institute for Development Evaluation  |
| FAO     | Food and Agriculture Organization of the United Nations  |
| GIZ     | German Corporation for International Cooperation   |
| IFAD    | International Fund for Agricultural Development  |
| INEF    | Institute for Development and Peace  |
| OECD    | Organisation for Economic Co-operation and Development   |
| PABSO   | Projet d'Aménagement des Bas-Fonds dans le Sud-Ouest et la Sissili (Project on irrigation measures in floodplains in the Sud-Ouest region and Sissili province)  |
| PAFASP  | Programme d'Appui aux Filières Agro-Sylvo-Pastorales (Programme to support agricultural value chains)  |
| PAIA-VO | Projet d'Appui aux Infrastructures Agricoles dans la Vallée de l'Ouémé (Project to support agricultural infrastructure in the Ouémé valley)                      |
| ProAgri | Promotion de l'Agriculture au Bénin  |
| ProCIVA | Projet Centres d'Interventions Vertes pour le secteur Agroalimentaire  |
| ProSOL  | Programme Protection et Réhabilitation des Sols pour améliorer la Sécurité Alimentaire (Programme for soil protection and soil rehabilitation for food security) |
| SDG     | Sustainable Development Goals  |

## Summary

The support of agricultural value chains has become an important approach in German and international development cooperation, not only to promote the economic development of a country but also to contribute to poverty reduction and food security by integrating smallholder farmers into value chains. In consequence, this approach can address a number of goals of the Agenda 2030 for sustainable development.

While promoting value chains has great potential to advance sustainable development, it can also have negative effects, particularly for poor and vulnerable population groups. In order for these population groups to be able to benefit from value chain support, they need targeted financial and technical support and bridging assistance. Therefore, the approach should primarily aim at poverty reduction, but also at improving food security, empowering women and sustainable natural resource management. The main challenges of the value chain approach are insufficient access to agricultural inputs, markets and agricultural credits and the lack of entrepreneurial know-how for market-oriented production.

Overall, the INEF research on agricultural value chains shows that their promotion should always start with primary production, as this is the basis for any further added value. However, the land use rights of the population eligible for support, especially women, should be clarified before any investment is made. Another critical point that any support for value chains should take into account is a country's physical infrastructure. It is necessary to connect both primary production and processing to markets.

The integration of smallholder farmers into value chains is particularly viable via primary production. In order to include resource-poor farmers into value chains as well, these should be actively supported at the beginning of the project, among other things through training in market-oriented production. Furthermore, access to financial services and bridging assistance as well as to agricultural inputs is of key importance, especially at the beginning of the growing season, and particularly when market-oriented production is started for the first time. Access to credits can be facilitated by organising in cooperatives. Furthermore, this form of organisation makes it possible to bundle resources and strengthen negotiating power vis-à-vis buyers. In order to ensure that smallholder farmers can continue to supply themselves with food, especially at the start of operations, a sole focus on cash crops should be avoided and instead healthy staple foods should also be promoted.

To support sustainable production, the support of value chains should always include natural resource management measures. This can increase productivity and, compared to previous practice, at the same time achieve a more ecologically sustainable cultivation of the land. In this context, secured land use rights, especially for women, provide additional incentives for farmers to invest in their fields.

The studies also show that the processing of local agricultural products and commercially harvested products offers income-generating activities especially for women. In this context, locally adapted partial mechanisation is important in order to increase production efficiency without displacing women from further processing.

# 1. Background: initial situation and challenges

## The concept of value chains

The concept of value chains encompasses the various activities and processes that contribute to the value creation of a product. These begin with extraction and production and the inputs required to bring a product through the various processing stages to the end customer via trade. In the agricultural sector, the value chain usually starts on the field and ends with the buyer of the final product. It includes various state and private sector actors. Activities include soil preparation, sowing, ripening and subsequent harvesting of crops, storage and processing, marketing and sales activities and, finally, consumption by the end consumer (Jaffee et al. 2010).

A value chain is usually subdivided into further value chains. Depending on the processing possibilities of the crop, a value chain splits up into further sub-chains during processing and can thus represent a very complex construct.

In the last two decades, the support of value chains, especially in the agricultural sector, has become an important approach in international development cooperation, both to promote market-based development of the private sector and to increase the competitiveness of the agricultural sector as such. By focusing on the agricultural sector and rural areas, this approach has increasingly been used as an instrument for poverty reduction, as poverty is mainly concentrated in rural areas. In doing so, particularly smallholder farmers have been supposed to benefit from poverty reduction and improved food security through integration into agricultural value chains (FAO 2017).

The concept of smallholder farmers is deliberately not defined in this paper, as there is no universal definition of this concept and small-scale agriculture varies according to country and way of production. For example, measured by the area of farming land, smallholder farmers in Brazil would be considered large-scale, commercial farmers in West African countries. Instead of defining small-scale agriculture based on farm size, the concept of *family farming* is a more suitable reference, which is defined by the FAO (2019) as follows:

“Family farming includes all family-based agricultural activities. [...] Family farming is agricultural, forestry, fisheries, pastoral and aquaculture production managed and operated by a family and is predominantly reliant on family labour, including both women’s and men’s.”

The importance of small-scale farming is also emphasised by the United Nations Decade of Family Farming 2019-2028, which calls for small-scale farming to be placed at the heart of the Agenda 2030 (Sustainable Development Goals, SDGs) (FAO / IFAD 2019).

The value chain approach can be used to address different SDGs. While the support of value chains is primarily aimed at economic development (Goal 8) and poverty reduction (Goal 1) and increasingly also at improving food security (Goals 2 and 3), other goals of the Agenda 2030 can also be addressed. For instance, through the active involvement of women (Goal 5), the promotion of decent working conditions (Goal 8) or the promotion of natural resource management measures in agriculture (Goals 13 and 15). Hence, the approach offers great potential to promote and advance sustainable development in line with the Agenda 2030.

The Principles for Responsible Investment in Agriculture and Food Systems (CFS-RAI) also assign a central role to the agricultural sector in the fight against food insecurity and poverty



(CFS 2014). These voluntary principles have been developed by the members of the Committee on World Food Security (CFS) in a multi-stakeholder process. They contain ten principles that should be taken into account in public and private investments in agriculture.<sup>1</sup> Investments by and in small farmers play a key role in this. Strengthening their ability to make investments is therefore of particular importance.

The importance of involving smallholder farmers in value chains and thus in economic cycles is also underpinned by the declaration on strengthening the rights of smallholder farmers adopted by the United Nations in November 2018 (United Nations 2018). However, the Federal Republic of Germany abstained in the vote, which is contrary to its commitment to promoting small-scale agriculture.

Initially, the support of value chains was aimed at cash crops<sup>2</sup> such as coffee, cocoa or cotton. However, since the food price crisis of 2008, value chains of staple foods have been increasingly promoted (see e.g. GIZ 2017). In addition, qualitative nutritional aspects have come more into focus in recent years, which has led to the promotion of particularly nutritious basic foods (nutrition-sensitive value chains) (CFS 2016).

In francophone African countries, agricultural conception was often oriented towards individual value chains (*filières*) as early as the 1960s (Mitchel et al. 2009). In the two focus countries of the research project Benin and Burkina Faso, a variety of strategies and policies for the development of different agricultural value chains can be found even today, e.g. for shea nuts, rice, sesame or soya.

German development cooperation has been supporting agricultural value chains since about 2004 and for some years specifically through the special initiative EINEWELT ohne Hunger (One World without Hunger) of the German Federal Ministry for Economic Cooperation and Development (BMZ). This is done, for example, by promoting so-called green innovation centres. These aim to support agricultural innovations in order to improve the local food supply, among other things by increasing production and productivity and other measures (BMZ 2015). In a first comprehensive study, the German Institute for Development Evaluation (DEval) assessed the value chain activities of German development cooperation (Kaplan et al. 2016). In this study, the value chain approach was evaluated overall as a suitable strategy for German development cooperation to contribute to poverty reduction and food security.

However, the assessment of the concrete effects of value chains is not without controversy. While the support of value chains has great potential to advance sustainable development in line with the Agenda 2030, it can also have negative effects and impair the benefits for the poorest and most vulnerable population groups (Humphrey / Navas-Alemán 2010). This can take place, for example, through exploitative working conditions along a value chain or through barriers that systematically exclude resource-poor producers from the value chain. The latter is mainly due to the fact that "participation in a value chain is contingent upon having a minimum level of resources" (Kaplan et al. 2016: xi). Therefore, the approach of

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<sup>1</sup> In addition, there is the OECD-FAO Guidance for Responsible Agricultural Value Chains, which is aimed specifically at companies that are active in agricultural value chains. This guide calls on companies to address risks and negative impacts along their value chains and to take appropriate countermeasures to prevent them (OECD / FAO 2016).

<sup>2</sup> Cash crops are products that are primarily cultivated with the aim of (profitably) reselling them. They include for instance coffee or cocoa.

promoting agricultural value chains is not directly addressed to extremely poor and vulnerable population groups.

**Who are the target groups of value chain promotion?**

The OECD distinguishes between five different types of *Rural Worlds*: large, internationally competitive agricultural enterprises (*Rural World 1*); farmers who produce for the market and their own consumption and are mostly traditional landowners belonging to the local elite (*Rural World 2*); subsistence farmers (*Rural World 3*); landless households that are predominantly active in the agricultural sector (*Rural World 4*); and chronically poor households that are often no longer economically active (*Rural World 5*) (OECD 2006).

Against the background of this typology, promotion of value chains should be directed primarily at households in Rural Worlds 3 and 4. Subsistence farmers can be particularly supported through integration into primary production. On the other hand, landless households can benefit from value chain support through income-generating activities in processing, but also as unskilled workers in the fields. However, this is not an automatism. In order to successfully integrate these population groups into value chains, they need to be actively supported with measures specifically tailored to their needs, in particular through financial and technical assistance.

Consequently, the promotion of value chains is not directly addressed to households in Rural World 5. In order to reach these households as well, social security systems are an important instrument for poverty reduction, which can complement programmes promoting agricultural value chains (Bliss 2020a).

Overall, the support of value chains faces many challenges. These start with the agricultural inputs, which are often not available in sufficient quantities and not available for all producers (on time and in an affordable form), thus affecting primary production.

Due to low production volumes, primarily market-oriented production is often only weakly pronounced among smallholders. These types of farmers focus above all on producing food for their own consumption and sell their crops only when money is needed or market only little surpluses. In the context of promoting value chains, a rethinking among producers is therefore required in order to resolve conflicts of objectives in farmers' thinking and action between subsistence and market production.

Another problem is the increasing lack of work force for field cultivation. In many countries, the planting period at the beginning of the rainy season is very short. This means that the fields have to be tilled in a short period of time, which requires high labour inputs. Due to the increasing migration from rural areas, especially of the younger generation, there is often a lack of potential workers for the cultivation of the fields. Therefore, fields can often only be partially or extensively cultivated.

On the part of the national governments in the countries concerned, considerable deficits in the provision of the necessary infrastructure and services can limit the positive effects of value chains. For example, a poorly developed road system prevents or significantly impairs access to markets, while an unstable (or often non-existent) electricity and water supply poses problems particularly for the processing industries. A further obstacle is the often very difficult access to financial services. However, (small) loans are particularly important in order to pre-finance production, storage as well as equipment.

In contrast to domestic value chains, the promotion of global value chains poses additional challenges, such as specific requirements regarding working and production conditions as well as product quality and a multitude of regulations and certification labels, which also vary according to the country or region.

## 2. Goals, effects and approaches

The value chain approach is generally aimed at promoting the economic development of a country and more specifically at poverty reduction and food security. Against this background and in accordance with the described principles of the CFS-RAI, a number of goals emerge which should be taken into account when promoting agricultural value chains.

### **Goal 1: Direct value chain promotion primarily at poverty reduction**

Effects in terms of poverty reduction can be achieved by generating and increasing income through productivity gains, improvements in market access and the creation of jobs in production and processing. In the medium and long term, the support of agricultural value chains should broaden the economic cycles in rural areas in order to create jobs outside agriculture and thus contribute to rural development in general. An increase in agricultural and thus economic development can also strengthen the countries' long-term position in the international context.

In order to achieve this goal, it is important, on the one hand, not only to focus value chain promotion on the economic potential or the economic added value. Rather, particular attention should be paid to how bottlenecks can be eliminated so that extremely poor and vulnerable population groups can benefit from value chain promotion. Poor smallholders, for example, need a different kind of support than experienced market farmers. Therefore, bottlenecks should not only be identified, but actively bridged by financial and technical support and advice to enable these population groups to produce at all or in a more market-oriented manner.

On the other hand, by creating jobs beyond primary production, the promotion of value chains can also counteract the increasing migration from rural areas, particularly of the young population. Therefore, value chain promotion should also explicitly address the rural youth and actively involve them (see e.g. IFAD 2019). To this end, making rural areas generally more attractive is of central importance, for instance by expanding electrification and improving the physical and social infrastructure.

### **Goal 2: Improve food security in quantitative and qualitative terms**

Positive effects on food security should be achieved, on the one hand, through increased domestic production (improved food availability) and/or increased income (improved economic access to food). Higher production levels can also increase the national availability of food and thus contribute to food security at country level. On the other hand, the qualitative improvement of nutrition can be supported by promoting particularly healthy and nutritious food. However, this should always go along with accompanying measures that sensitise participants to the importance of a healthy and diversified diet and include socio-culturally appropriate suggestions for the preparation of (newly introduced) cultivated products.

These courses of action show that tensions can arise between the support of smallholder farmers vis-à-vis larger agricultural producers and the private sector when addressing these first two goals. Moreover, the promotion of cash crops over staple foods must also be carefully considered in advance.

### **Goal 3: Promote gender equality and empowerment of women**

Income increases for women can be achieved by integrating them much more strongly into value chains. On the one hand, this can be done within primary production by promoting

access to land, agricultural inputs and training. On the other hand, processing can create jobs in particular for women, since they are traditionally mostly responsible for processing agricultural products. Therefore, they often have knowledge, practical know-how and networks on which to build during further processing. Thus, there is little need to turn to men or have them take over the processing of local agricultural products. However, effects in terms of real empowerment of women can only be achieved if women are also able to freely dispose of their income and can benefit directly from it (see Bliss 2020b). Accordingly, development cooperation can determine the role and possible empowerment effects of and on women already at the early stages of project planning and in monitoring and evaluation frameworks, anchored by indicators.

#### **Goal 4: Promote resource-saving and climate-friendly production**

As climate change gathers pace, ecologically sustainable production is more important than ever. Positive ecological effects can be achieved, for example, through the sustainable management of natural resources, the reduction of losses in primary production and the processing sector. In this way, sustainable yields and income can be ensured. However, resource savings are also possible by working in cooperatives or other forms of organisation, e.g. by jointly purchasing inputs or using equipment or storage space. The latter is particularly important in order to reduce post-harvest losses due to lack of storage facilities as well as to achieve higher revenues. Yet, sustainable land management and the establishment of cooperatives require long-term advice and support.

#### **Goal 5: Locally adapted mechanisation**

Locally adapted mechanisation is important in order to facilitate work and increase productivity. However, extremely high levels of mechanisation often lead to the displacement of women from agricultural cultivation and processing. Mechanisation in production and processing should therefore be carried out in moderation and in a locally adapted and gender-sensitive manner.

#### **Goal 6: Ensure decent working conditions**

In order to achieve appropriate working and production conditions as well as fair remuneration, a high degree of transparency is required in all activities along the value chain. To ensure this, various certification labels have been established in recent decades specifically for export products, such as *Ecocert* or *Fairtrade*. These certifications require regular audits along the value chain, which must be institutionally established in a sustainable manner. Complementarily, appropriate working and production conditions should likewise be demanded for domestic products.

### **Further requirements and approaches**

Ultimately, support of value chains should always be based on a thorough analysis of all upstream and downstream operations of the promoted product. For instance, the consideration of seed producers and processing companies or trade is important to be able to assess the overall performance of the value chains and identify bottlenecks. In addition to access to land, the existence of potential sales markets is another basic requirement for any value chain promotion. If these conditions are met, appropriate intervention can be made in individual sub-areas, with the initial focus on primary production. However, only arable areas should be supported, i.e. areas where the cultivation of the corresponding crop is possible

from an environmental point of view. Besides taking the groundwater level into account, the people in the relevant water catchment areas who use the watercourses must also be considered.

### 3. Suggestions for implementation based on empirical findings

In the following, a number of project examples in value chain promotion are presented which have successfully put into practice one or more of the above-mentioned goals and approaches in different contexts. These are based on field research through focus group discussions, household surveys and interviews with stakeholders. In addition, they also take into account discussions with development cooperation experts during the course of the research project, literature research and our own practical experience.

#### 3.1 Effective poverty reduction (Goal 1)

##### **Good Practice 1: Integration of smallholder farmers in agricultural value chains through training**

Primary production in particular offers the opportunity to integrate smallholder farmers into value chains and to allow them to benefit from income increases, thus helping to reduce poverty. Yet, it should be noted that smallholder farms growing over time often require longer-term support.

The INEF research on various agricultural value chains in Benin and Burkina Faso has shown that support should always start with primary production, i.e. 'in the field' (Bliss 2019a; Herold 2019a). The quality of primary production is crucial for the quality and added value of the resulting products.

However, the integration of small-scale agriculture into value chains is not an automatic process, as it is mainly characterised by subsistence farming. This means that smallholder farmers produce agricultural products primarily for their own consumption and usually little or no quantities beyond subsistence level and for resale on the market. In order to avoid a situation in which only large agricultural producers benefit from value chain support, smallholder farmers should be actively supported, particularly at the beginning of a project.

This can be done, among other things, through education and training to improve the quantity and quality of production as well as the storage and sale of products, for example through so-called *Farmer Field Schools*.

In Benin, the project to support agricultural infrastructure in the valley of the river Ouémé (*Projet d'Appui aux Infrastructures Agricoles dans la Vallée de l'Ouémé, PAIA-VO*) together with farming cooperatives built an irrigation infrastructure for the cultivation of maize, rice and vegetables. Under the project, smallholder farmers received, among other things, training in agricultural production, processing and marketing. These measures have enabled the farmers to harvest currently two crops a year (compared with only one harvest before the start of the project) and to grow vegetables all year round. To develop the rice value chain, female smallholder farmers were specifically trained in further processing (husking and parboiling methods). This enabled them to engage in additional income-generating activities (Gaesing / Agbobatinkpo-Dahoun 2019).

Besides the technical support mentioned above, it is also important to establish an understanding of production as a long-term investment. Therefore, entrepreneurship should generally be addressed in every part of the value chain. In Burkina Faso, the mango value chain was supported by a World Bank programme to support agricultural value chains (*Programme d'Appui aux Filières Agro-Sylvo-Pastorales, PAFASP*). In addition to supporting

mango processing, PAFASP also invested in primary production by providing financial assistance to farmers to improve the maintenance of their mango plantations and the quality of production as well as to establish new plantations. However, it was of fundamental importance that the farmers did not (any longer) regard mango plantations as a quick source of money, but were able to recognize that constant care and maintenance of their mango plantations determine the quality of the harvest, its sale and, hence, the long-term existence of mango producers on the market (Herold 2019a).

### **Good Practice 2: Organisation of smallholder farmers in cooperatives**

The organisation of smallholder farmers in cooperatives or similar structures offers a number of advantages. For example, farming cooperatives in Burkina Faso organise centralised collection of their products at village level, as transport to the market is more difficult and expensive for individual farmers due to poorly constructed roads. Furthermore, agricultural equipment can be purchased and used jointly in farming cooperatives, for example for transporting the harvest from the field to community warehouses or to the customers and markets. This also contributes to saving resources (Goal 4). During the INEF field research, smallholder farmers also mentioned that their bargaining power vis-à-vis buyers had improved because of the organisation in cooperatives (Herold 2019b).

### **Good Practice 3: Improving access to financial services and agricultural inputs**

While microcredits of around EUR 50 to 500 are generally relatively easy to obtain in most African and Asian countries, small loans remain difficult to access in agriculture. Moreover, in the event of high inflation, which is reflected in extremely high interest rates, these can usually be used for short trading transactions only.

However, reliable access to small loans is essential from different points of view. On the one hand, this can secure or at least facilitate the supply of equipment. For example, smallholder farmers can use small loans to pre-finance seeds and other agricultural inputs in order to enable market-oriented production (Hennecke et al. 2017; Hennecke et al. 2018). On the other hand, medium-sized producers and smallholder farmers can use loans to employ auxiliary workers in the fields during the growing season. This enables them to cultivate their fields entirely, more intensively and in an even more resource-conserving manner, and to create additional jobs.

Furthermore, loans give the producers the opportunity to bridge the period immediately after the harvest in order to sell their products at higher prices a few months later. For the latter, however, safe storage facilities are necessary, which also help to reduce post-harvest losses. In addition, a stable sales market should exist or develop so that the smallholder farmers are able to sell their products after bridging the period immediately after harvesting. For these purposes, small loans are necessary, with a loan amount between EUR 500 and 5,000, possibly up to EUR 20,000 (e.g. for the purchase of a tugboat), depending on the individual situation.

In order to increase access to financial services, the project to promote agriculture (*Promotion de l'Agriculture au Bénin*, ProAgri) and the Green Innovation Centres in the agro-food sector (*Projet Centres d'Interventions Vertes pour le secteur Agroalimentaire*, ProCIVA) in Benin have brought together all members of the value chains with financial service providers. However, comprehensive implementation is still lacking across the board, which means that access to financial services currently remains problematic, especially for individuals (Bliss 2019a).



**Good Practice 4: Additional provision of infrastructure and public services (roads, electricity and water)**

Adequate transport infrastructure plays a key role for (stable) markets for agricultural products. Especially in rural areas, though, the road system is mostly poorly developed and many villages are difficult to access, especially in the rainy season. Accordingly, many smallholder farmers find it difficult to reach markets at all. In order to support the rice value chain, the project for Flood Plain Management in the South-West region and the province of Sissili (*Projet d'Aménagement des Bas-Fonds dans le Sud-Ouest et la Sissili*, PABSO) in Burkina Faso not only valorised rice cultivation areas but also built access roads and warehouses to better connect the villages to markets (Herold 2019c).

In order to create conditions that are more conducive to production and business, governments should also improve access to financial services, the provision of the necessary technical infrastructure and a reliable electricity and water supply, if necessary with the support of development cooperation.

### **3.2 Improving food security (Goal 2)**

**Good Practice 5: Promotion of nutritionally rich foods, taking into account socio-cultural factors in eating habits**

If smallholder farmers are to be integrated into value chains with the aim of poverty reduction, a pure focus on cash crops should be avoided. In order to cultivate cash crops for sale, the producers need bridging aid, especially at the beginning of the growing season, as they cannot provide themselves with basic foodstuffs without the food that they cultivate for their own consumption. Therefore, it is particularly important for poverty reduction to promote value chains of staple foods or at least they should continue to be part of small-scale agriculture if cash crops are promoted.

With regard to the qualitative aspects of food security, the production of nutritionally rich foods for both domestic use and local markets should be encouraged. However, it should be noted that the cultivation of such products does not automatically lead to their consumption. Socio-cultural aspects play a special role here. Awareness-raising measures relating to healthy eating as well as cooking demonstrations with the newly grown products can help to integrate new foods into the diet of smallholder farmers (Bliss 2019b, Herold 2019b). However, these measures alone are not a panacea, as there are firmly established food taboos in certain cultures, such as the idea that children should not eat eggs. There is still a great need for research on how to encourage people to integrate healthy food into their diet and, where appropriate, to break through unhealthy food taboos.

Moreover, the findings of INEF field research on mango drying in Burkina Faso show that, even with products that are primarily export-oriented, the domestic market can also represent a potential sales market and contribute to food security. In Burkina Faso, the consumption of dried mangoes is generally not anchored in the dietary habits of the population, as they usually eat fresh mangoes during the mango season. Thereupon, one entrepreneur invested in particularly attractive packaging for her dried mangoes that helped her to increase sales on the domestic market (Herold 2019a).

### 3.3 Gender equality and empowerment of women (Goal 3)

#### **Good Practice 6: Promotion of secured land and land use rights especially for women in connection with resource-friendly production (Goal 4)**

The INEF studies further show that in order for farmers to be willing to make long-term investments in arable land, the corresponding land or land use rights must be secured, especially for women. In this way, farmers are more willing to invest in sustainable resource management. For example, in the programme *Soil Protection and Rehabilitation of Degraded Soil for Food Security (ProSOL)* in Benin it was shown that the project measures enabled the women to make their fields fertile again. However, some women from one ethnic group complained that after soil fertility had been restored, their husbands or older sons had taken these fields away from them and given them inferior fields for cultivation instead. Projects should therefore take into account how men and women in the villages deal with aspects of this kind and, where appropriate, protect women from such practices (Gaesing 2018b).

### 3.4 Resource-efficient and climate-friendly production (Goal 4)

#### **Good Practice 7: Promotion of natural resource management in conjunction with the development of cooperative structures**

Due to the importance of primary production, care and maintenance of the fields and tree plantations, e.g. through soil and water conservation measures, are particularly important to ensure fertile soils as the basis for production and thus sustainable yields. Smallholder farmers should therefore be offered training in the necessary cultivation techniques in order to achieve sustainable soil protection and thereby increase productivity.

For example, the *Multi-dimensional food and nutrition security in Amhara* project in Ethiopia has enabled farmers to increase their yields through land use change and more sustainable management to the extent that they now produce three harvests a year (compared with one harvest before the project began). Furthermore, they market the barley they cultivate to a brewery via a well-organised cooperative. The example shows that sustainable resource management is an important basis for the development of agricultural value chains (Gaesing 2018a).

### 3.5 Locally adapted mechanisation (Goal 5)

#### **Good Practice 8: Support for mechanised processing in connection with the empowerment of women (Goal 3), the improvement of qualitative nutrition (Goal 2) and the promotion of natural resource management (Goal 4)**

As soon as primary production has become stable, further processing can and should be increasingly encouraged. The project *Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED)*, implemented in Burkina Faso, aimed at improving the resilience of vulnerable people to climate extremes and disasters. The main areas of intervention included the development of the necessary infrastructure for market-oriented agricultural production and support for soil protection through natural resource management techniques. Among other things, BRACED promoted the resumption of cassava cultivation. Only after the cassava production was stable did BRACED support further processing with a processing plant, which is operated by a women's cooperative. In addition, the participants were shown new ways of preparing cassava through cooking workshops. As a result, they have integrated these tubers

into their diet more strongly. Overall, the promotion of market-oriented cultivation of cassava and other crops has improved food security for the participants in terms of both quantity and quality. In addition, income diversification and sustainable resource management have strengthened the resilience of project participants to increasing extreme weather events (Herold 2019b).

**Good Practice 9: Partial mechanisation of processing in connection with the promotion of women (Goal 3)**

In Burkina Faso, the collection of shea nuts has traditionally been in the hands of women, who are increasingly organising themselves in cooperatives in order to be able to harvest and process larger quantities through more efficient organisation. The shea nut value chain is also supported by partially mechanised processing plants in which women's cooperatives process the shea nuts into shea butter and other products. On the one hand, this partial mechanisation has significantly decreased workload for the women and increased the efficiency of production. On the other hand, women's work is not completely replaced by machines, allowing them to continue to participate in the manufacturing process and create added value, which ultimately leads to higher incomes (Gaesing / Herold 2019).

### **3.6 Adequate working conditions (Goal 6)**

**Good Practice 10: Fair working conditions in connection with job creation for women (Goal 3)**

The export of certified agricultural products can represent an additional enhancement of farm production and thus of value creation. Furthermore, it can promote transparency with regard to working conditions. In Burkina Faso, mango-drying companies were supported in certifying their organically grown and processed mango products as organic and often as fair trade products. Among other things, this ensures that employees receive a fair wage. In addition, support for these farms has created jobs, especially for women, as they are traditionally involved in processing (Herold 2019a). This also applies to the processing of shea nuts in Burkina Faso. One of the processing plants mentioned in *Good Practice 9* has been certified since 2011 by the international label *Ecocert Equitable*. In this plant, women's cooperatives produce exclusively certified organic shea butter, which enables them to achieve higher sales prices than with conventionally produced shea butter (Gaesing / Herold 2019).

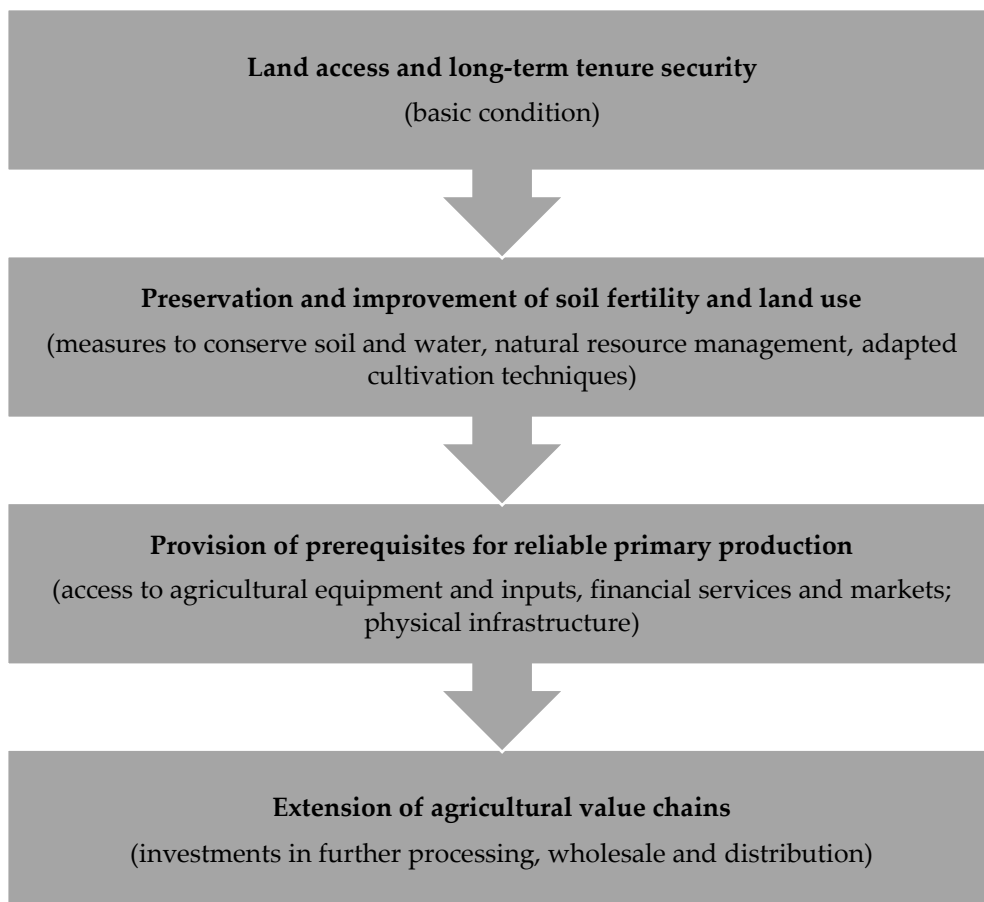
Overall, support and guidance are particularly important for export-oriented products, especially for small businesses. There are a large number of different certifications, which often vary from country to country and are associated with relatively high costs.

## 4. Conclusion

The promotion of agricultural value chains represents an important approach to favour sustainable development. The approach is aimed primarily at rural areas, i.e. those areas that are usually particularly affected by poverty and food insecurity. Consequently, promoting agricultural value chains has the potential to contribute to poverty reduction and improve food security.

The INEF research shows that value chain promotion should always start in the field and follow a series of steps (Fig. 1). To begin with, it is important to clarify access to land before investment is made. If access to land is secured in the long term, soil and water conservation measures, natural resource management and appropriate cultivation techniques should be applied in order to sustainably increase soil fertility. These measures can increase yields and thus enable or improve market-oriented production. At the same time, access to agricultural inputs and financial services should be promoted and basic physical infrastructure should be established to ensure access to markets. Only when these prerequisites have been created and reliable primary production is ensured, should investments be made in further processing in order to continuously expand the value added along the value chain. Gender aspects must be taken into account throughout all activities in order to ultimately enable inclusive growth.

**Figure 1: Steps towards building resilience of smallholder farmers**



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