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Potentials of Agrarian Cluster Development for Improving Smallholder’s Income –
a case study from the SAGCOT initiative in Tanzania

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List of Abbreviations

CEFA	Chrisian-based Italian NGO
DFID	Depratment for International Development (British Agency)
DSM	Dar es Salaam
ESRF	Economic and Social Research Foundation
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
ITC	International Trade Center
MDGs	Millenium Development Goals
MNC	Multinational Corporation
MoU	Memorandum of Understanding
NGO	Non-Governmental organization
NjoLiFA	Njombe Livestock Farmers Association
NMF	Njombe Milk Factory
OECD	Organization for Economic Co-operation and Development
PLAAS	Institute for Poverty, Land and Agriculture Studies
PPP	Public-Private Partnership
SAGCOT	Southern agricultural Growth Corridor of Tanzania
SDGs	Sustainable Development Goals
SRESA	Strategic Regional Environmental and Social Assessment
SUA	Sokoine Univerity of Agriculture
TANZAM	Tanzania – Zambia Highway
TAZARA	Tanzania – Zambia Railway
TSh	Tanzanian Shillings (Currency: 1 € = 2.310 TSh (Nov 2016))
UNDP	United Nations Development Program
URT	United Republic of Tanzania
USAID	United States Agency for International Development
Uyole ARI	Uyole Agriculture Research Institut

1 Introduction

The rural population in Africa counts more than 500 million people today, of which 80 percent are considered by the World Bank to live below the poverty line (Debrat 2011: xiii). Enhancing the productivity of smallholder production is argued to be the most effective strategy to reduce rural poverty (Salami et al. 2010: 14, World Bank 2008: 14). Further, there is the need to address emerging challenges such as climate change adaptation and the issue of food security in countries with high population growth and urbanization rates.

Like the turn from the millennium development goals (MDGs) to the sustainable development goals (SDGs), development paradigm and concepts are constantly adjusting to the contemporary understanding of related issues. Recently, the idea of cluster development, coming originally from another economic context, is nowaday a widely applied instrument in different regional development programs and has also entered agricultural projects and various countries in the Global South.

In 2010, the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) has been introduced to be a new flagship development project, which builds on the concept of cluster development. While involving many different stakeholders and inviting investors, it addresses the modernization of smallholders' agriculture. However, as a public-private-partnership (PPP), thus involving also multinational corporations (MNCs) as large investors, it has received various criticisms by organizations (Misereor 2015, Oxfam 2014), which argue that this strategy can further endanger the livelihood and the rights of smallholders.

As the program is still emerging and the coverage of scientific studies about the realization or its effects on small-scale farmers are few, the aim of this thesis is to provide an insight into the implementation process of projects under the umbrella of SAGCOT. The work will answer the following questions:

1) What cluster-related structures can be identified within the projects?
2) How do these structures contribute to the program’s goal of income improvement for smallholders and what challenges remain?

Further, this paper provides another current example of a cluster initiative from the African continent and presents/explores how cluster development can be discussed in this regional context. Being an empiric work, it answers the questions from a bottom-up perspective and includes the perception of smallholders.

Starting with a conceptual overview of clusters and cluster initiatives (Ch 2), a background chapter introduces the region of study and country-specific challenges, that make agricultural programs still a central topic in Tanzania and may also affect the given project (Ch 3). After describing the methods for interviewing and analysis (Ch 4), the two cases, a public potato project (5.1) and a dairy contract scheme (5.2) will be introduced. Chapter 6 analyses the cluster-associated structures within these projects and the final chapter discusses their possible contribution to the goal of income improvement of smallholder farmers when participating in this program (Ch 7).

2 Conceptional background: potentials of cluster-based development in agriculture

The following chapter provides an overview of different studies dealing with clusters and related concepts. After more than 20 years of intensive research, there is no clear definition for a ‚cluster', so that some authors regard this concept as „fuzzy" (Duranton 2011: 5) or even „chaotic" (Wolman & Hincapie 2015: 135) and the understanding differs throughout the literature (Ketels 2013: 250). Recently, the term has been used inflationary by various stakeholders with different intentions – especially politics and transnational institutions. Since this work will analyze an initiative involving cluster development and employs an analytic framework for cluster structures, the term needs to be introduced for both contexts (2.1). Being not the most typical concept to investigate the agricultural sector, the benefits of using this perspective are discussed (2.2), followed by findings from cluster research conducted in Africa (2.3). Then, a suitable framework for analysis will be introduced for the upcoming analysis (2.4). Finally, research findings relating to characteristics of clusters which have an impact on the income development of smallholder will be presented in order to have a basis for the final discussion (2.5).

2.1 The idea of cluster and cluster initiative – general definitions

1920 Marshall already observed agglomerations of related firms that benefited from their co-locations in various ways (KETELS 2013: 250). However, the concept of „cluster" became popular in the 1980s, when fast emerging business regions obtained a leading position in their sector and have caught the attention of various researchers

(e.g. most famous the Silicon Valley in California, but also Tiruppur in south India). Today, PORTER is most cited for providing a general definition (PORTER 2000: 15):

> *"geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate."*

This definition integrates the two widely accepted criteria that are required to speak not just of an agglomeration or production network, but also of a cluster: geographic concentration and immaterial exchange of knowledge and experiences (DANNENBERG & KULKE 2005: 292, WOLMAN & HINCAPIE 2015: 136). Agglomerations lead to economies of scale, such as minimizing costs for transportation, accessing markets and other interactions (PORTER 2000: 21). They also enable the use of commonalities or synergies, such as collective marketing (PORTER 2000: 22). A specialized region may develop a strong pull by obtaining a certain reputation so that vendors or more specialized suppliers are attracted (ibid). Moreover, geographic proximity fosters interactions between all types of actors, thus enables the flow of information, especially the share of tacit knowledge, which requires mostly personal contact and trusting relationship (ibid.). The geographic scope of a cluster does often not exceed a region. Theoretically, it should be limited "to the distance over which informational, transactional, incentive and other efficiencies occur" (PORTER 2000: 16).

With the observation of "naturally" emerged clusters and a grown scientific understanding, a variety of related policy models came up and influenced the way of thinking in businesses and politics. Cluster initiatives are generally "efforts by government – alone or in collaboration with companies or universities – that aimed at enhancing the competitiveness of clusters" and boost the economic development or of a certain sector in a region (KETELS 2013: 250). Usually, they target areas, which lack behind in the development of innovative and more efficient business structures, compared to regions with similar potentials and endowments (DIYAMETT & KOMBA 2008: 6). Here again, PORTER has contributed to the attractiveness of this theoretical concept also for policy makers and businesses, by demonstrating the competitive advantages that companies would obtain (AOYAMA et al. 2011: 90, Wolman & Hincapie 2015: 140). He also suggests strategies, such as the "constructive dialog about new mechanism for business-government collaborations" (PORTER 2000: 30). More concrete actions for

governments and coordinating institutions, recommended by The World Bank are (ZENG 2008: 8f.):

- defining and enforcing sectoral policies, regulations, and standards
- creating a special agency or organization, that promotes, coordinates and facilitates the cluster development process
- additional services may include training and capacity management, provision of infrastructure (energy, transport, IT, and storages), and technological support
- mapping production chains and identifying common interests that help to define regional-specific strategies

Although, cluster policies are already widely employed and recommended by leading institutes as a strategy for local economic development, still they have been hardly examined or even evaluated in their actual benefits (DURANTON 2011: 3). On the one hand, cluster policies are discussed, from a theoretical perspective, to overcome coordination failures, which may occur when individual stakeholders decide upon the direct benefits for their own business and may not consider collective actions and resulting synergies (KETELS 2013: 256). Moreover, cluster policies address information asymmetries or even market failures, by „subzidiz[ing] activities that are underprovided“ (ibid.).

On the other hand, DURANTON argues, that cluster initiatives which intend to lower complex deficits, such as market failures, often tackle these issues not at the real root of the problem and may not be effective or even create distortions (DURANTON 2011: 4). He questions that spontaneously developed, successful structures of leading industrial districts cannot be just copied into another environment (ibid.: 40), or even set up from scratch (ITC 2005: 14). Additionally, he points out the risk, that such policies can be strongly influenced by special interests and power regimes, such as large companies and strong lobbies (DURANTON 2011: 26).

2.2 Cluster-related concepts for agricultural and rural development

While originally the cluster concept has been developed according to studies about knowledge-intensive industries and service sectors, situated usually in economic "centers," the sector of agriculture, being an important economic activity in rural areas, has been rather neglected (GÁLVEZ-NOGALES 2010: x). With the ongoing mechanization and the extension of research fields, such as agronomy or biotechnology, agriculture has undergone transformations in many parts of the world, being integrated into new

innovative processes and large production networks (DANNENBERG & KULKE 2014: 121, ELLY & SILAYO 2013: 556). Moreover, the sector has been exposed to globalization and market liberalization, which enhances the competition for producers, especially farmers (ZENG 2008: 10, DANNENBERG & KULKE 2015: 4). Clustering is regarded as a strategy to improve the competitiveness by strengthening local cooperations and focusing on productions with the highest potential ("regions are specifing", BATTERMANN et al. 156, ITC 2005: 7)

Within a diverse landscape of rural development programs, some large-scale agricultural programs (e.g. SAGCOT) target vast regions in the form of growth corridors, which are usually along existing trunk infrastructure and traditional trade routes (DE CLEENE 2013: 76). Within this corridor, programs, like SAGCOT, may focus initially on the development of cluster regions to concentrate investment actions (ibid. 80). Usually, these focus regions mark areas where a higher potential for value chain developments is seen that can provide the economic basis for the development (THEUS & ZENG 2012: 397). In particular for structural weak and rural regions, the focus on a single value chain might be too narrow (ibid.). Thus, bundling the economic volume and resources of multiple productions and service actors enhances the potential to increase performance substantially (DANNENBERG & KULKE 2015: 6).

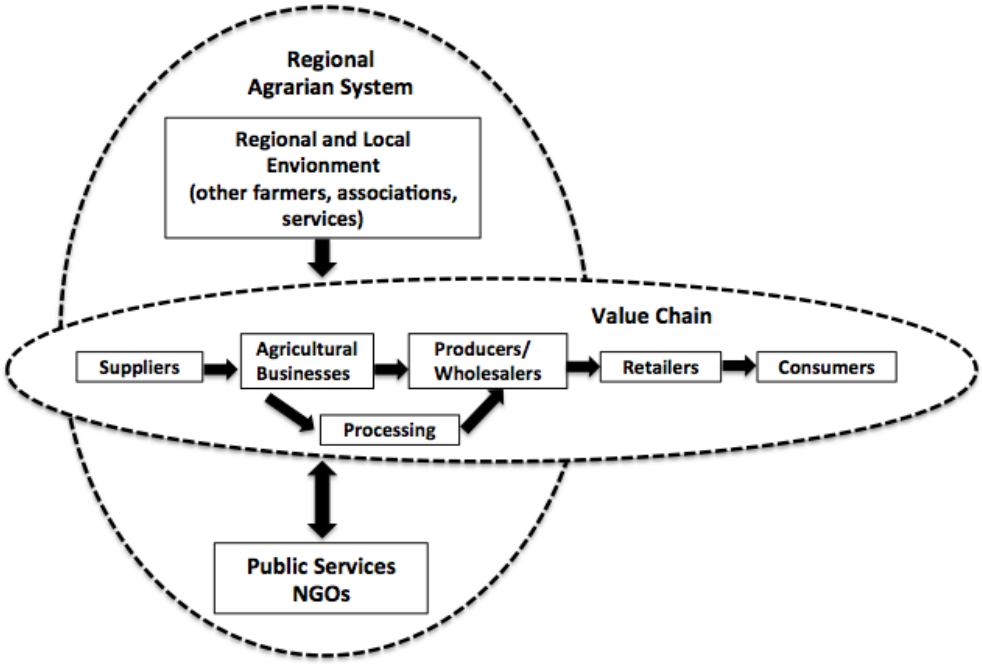


Figure 1: Connection between the regional agrarian system and the value chain (DANNENBERG & KULKE 2015: 6)

While the chain perspective is used in many agricultural studies, recently more and more attention is paid to network-like approaches that also regard horizontal linkages (BATTERMANN et al. 2013: 160). Also for the analysis within this thesis, the cluster concept provides some significant advantages over chain approaches. A value chain is defined to map all the different actors that are involved in the production process of a single commodity up to the end-consumer, and explain coordination structures of trade and power relation within that sector (DANNENBERG & KULKE 2014: 122). Within the horticultural value chain, farmers are supported by preliminary units, such as input suppliers, and downstream units, e.g. wholesalers and value-adding facilities (DANNENBERG & NDURU 2015: 18). The cluster approach expands the examination of related actors also to horizontal linkages, such as private and public services (for finance, training) and to the surrounding context (Fig. 1). For the given question of income improvement and commercialization of agriculture, the farmer's role within the value chain is as important as services and knowledge exchange that distribute awareness of improved technologies, provide training and other information.

2.3 Taking the concept to the global south: cluster development programs in Africa

So far, the African continent has been only of limited interest within cluster studies (DANNENBERG & NDURU 2015: 17). Yet, first African cluster initiatives have started in the 2000s and Tanzania launched the "Eight Cluster Initiative" in 2006 (DIYAMETT & KOMBA 2008: 1). In the Global South, cluster formation takes place in a different environment, which may lead to different research results, compared to North America or Europe where this research field was initiated.

MCCORMICK (1999) is considered as a "pioneer" of investigating clusters in Africa (GÁLVEZ-NOGALES 2010: 51). By examining six industrial clusters from the continent, she highlighted four main potentials of clustering to "overcome or ease some obstacles to industrialization" (MCCORMICK 1999: 1533):

- improving market access
- facilitating technological upgrading and encouraging the adaptation of new products and process ideas
- enabling firms to efficiently use limited resources (e.g. borrowing/sharing machines)

- promoting joint actions: increasing the power of small- and medium-scale producers to deal with constraints and uncertainties (ibid. 1545)

Empirically she could hardly find really successful cluster structures and points out, that most African clusters still differ largely in their appearance “from associated features in literature“ (ibid. 1544). She categorizes them in different stages of the developing process: she concluded on most “clusters“ as “groundwork clusters“ and identified two already with a tendency to “industrialization“ (1999: 1547). However, the concept was helpful to identify supportive structures in early cluster development.

Different from her article, reports by transnational institutions, such as the World Bank (ZENG 2008, THENG & ZENG 2012) and the FAO (GÁLVEZ-NOGALES 2010), approach the topic from a political perspective. They have recently been dealing quite intensively with clusters in Africa, especially as they are promoting it as a developing tool. A variety of publications focuses on describing the region-specific challenges and presenting some concrete actions, that involve national governments, but also foreign partners (GÁLVEZ-NOGALES 2010: xi, THEUS & ZENG 2012: 397, 404). ZENG has conducted a detailed research covering 11 African enterprise clusters from various sectors. He summarized the major factors that lead to the formation of these clusters, as natural endowments, proximity to major local markets, infrastructure, sources of skilled laborers and entrepreneurs with experience, that can be easily upgraded within cluster development processes (2008: 2-4).

On the other hand, African clusters are challenged by some typical constraints. First, the prevalence of small-scale firms and producers that usually have limited access to capital, knowledge, and technology to enhance their efficiency and innovative capacity by their own resources (ZENG 2008: 10). Second, linkages between businesses, public bodies, and research institutions are usually weak. The support by the government and institutions are often evaluated as insufficient but is argued to be crucial for successful cluster initiatives, as a critical mass of reforms, infrastructure investments, and skill-building is required for obtaining agglomeration economies and capacity building (ibid.: 11, DE CLEENE 2013: 78). Third, since many countries are often producing low-value products and being usually connected to the global market, unadvantageous price development and growing external pressure can hinder the development (ZENG 2008: 10, GÁLVEZ-NOGALES 2010: 11).

The World Bank suggests as supportive actions for sustain clusters initiatives that these should be holistically designed and combine public and private actors, since

their roles in African economies have already become „increasingly blurred“ and need to be coordinated properly (THEUS & ZENG 2012: 397). They argue, that a cluster initiative is often successful, when it receives the commitment of leading or emerging companies that support the process with investment volumes, however, they should share and commit themselves to the shared vision of the initiative (THEUS & ZENG 2012: 402, DIYAMETT & KOMBA 2008: 8). Their participation usually also signalizes, that the cluster creates new commercial prospects and efficiencies (ITC 2005: 7). It would also bring in multiple competences and knowledge. However, the government has to put much effort in providing a legal framework and quality assurance mechanism for the different domestic and foreign stakeholders to meet common and desired goals (ZENG 2008: 13). Further risks are seen when the cluster development depends on private maybe even foreign companies. The detailed study by the Institute for Poverty, Land and Agriculture Studies (PLAAS) points out a variety of risks that goes in particular with contract relation of smallholders between companies. Farmers may experience loss in autonomy, or forms of exploitation (PLAAS 2013: 17). New vulnerabilities are created, especially linked to the new production practices that can fail, or the contracts can be quit, while the farmer often carries the financial risks (ibid.).

2.4 Framework for analysis

To identify most relevant characteristics related to the concept of clusters in a rural context, the bottom-up framework by BATTERMANN et al. provides a suitable scheme to organize the interview data. Similar to the data here, it was developed it for a case study in Lower Saxony, Germany, to identify and evaluate cluster structures in agriculture (BATTERMANN et al. 2013: 156). The framework, was made for survey-based and qualitative data which contain the perception of various actors inside the study area and therefore evaluates these structures from a bottom perspective (ibid. 162).

The first part (Fig. 2, upper row) considers the geographic and social settings, which have an influence on the development of network structures and the flow of information. The last part provides the topic-specific focus, here income development (Fig. 2), which has been altered from the original framework.

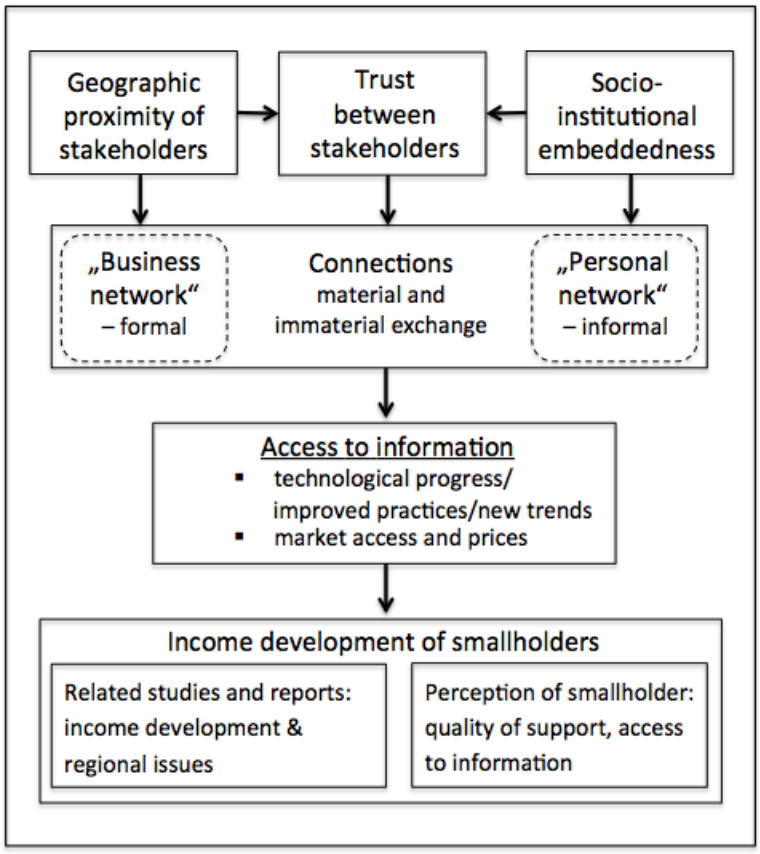


Figure 2: Framework for analysis (modified and translated, according to BATTERMANN et al. 2013: 163)

These criteria are also regarded as relevant for the given regional context by other authors: Geographic proximity is the central aspect in almost all cluster definitions (BATTERMANN et al. 2013: 167). MCCORMICK (1999) sees it even more important in rural areas of the Global South, where infrastructure and information system appear still to be weaker and face-to-face interactions culturally more preferred (1532). Reaching the farmers is also necessary for building trustful relationships. For mutual interactions, "trust is paramount" (ITC 2005: 22) which relates to a row of perceived social circumstances and qualities of relations, such as open communication, awareness of mutual benefits and willingness to cooperate (DIYAMETT & KOMBA 2008: 7). However, these are factors that need to be developed over time (GÁLVEZ-NOGALES 2010: 63). As each cluster is set in a unique surrounding, the socio-institutional embeddedness sums up many different influences on cluster development by politics, institutions and the socio-cultural environment (AOYAMA et al. 2011: 174). The establishment of network linkages and “intensive interactions“ between a variety of public and private actors are core criteria for the development of clusters (BATTERMANN et al. 2013: 156). These interactions can be in the form of material exchange, like the supply of input and machines, or immaterial exchange, such as knowledge transfer (DANNENBERG & KULKE 2005: 293). A special focus will be laid upon the access to information, related to markets and technological progress, which are usually acquired by research institutions and are difficult for smallholders to access on their own (ELLY & SILAYO 2013: 548). All these aspects may be considered in the final discussion chapter

about the potentials for smallholder's income enhancement (Ch 7). As this thesis surveys the implementation from a micro-perspective, there is the question of what is known about such developing initiatives to reach individual smallholders and in particular to improve the income of those individual participants.

2.5 How policies can affect smallholder's income

The term ‚income' is not always used in household or development studies. Some relate to a more holistic approach such as livelihood or well-being (Gálvez-Nogales 2010). These concepts are quite complex and deal not only with the financial income but also with health, human capital (e.g. education), environmental assets and access to resources. To narrow the thematic focus, this work will concentrate its discussion on the financial income but also on cost reductions. Three major factors that influence income development and that can be related to the program's strategy are found during the literature review. These will provide the basis for the final discussion.

1) Being usually the initiator, governments, and public institutions have a major role in setting up the coordination and the framework of the cluster Initiative, influencing already how far smallholders are considered in the objectives and within single instruments (ZENG 2008: 9, DURANTON 2011: 5)

- They decide about volume and type of public investments. Yet not all policy tools significantly enhance the income of the poorer population. JONASSON et al. (2012) tested the benefits of agricultural policies by applying an economic model for simulating effects on household income. They consider public investments, that reduce transaction costs, e.g. for transportation or marketing, as most effective to increase profits or the access to information, whereas subsidies on inputs have demonstrated only little impact (ibid: 6, 19).
- Ayenew et al. (2016) have identified poor road infrastructure as a significant factor that hampers the access to inputs, markets, and information and affects income-generating activities negatively (18).
- Public interventions can improve value chains within clusters and public services can strengthen the role of farmers (ITC 2005: 7, PLAAS 2013: 18, 44).

2) More controversially discussed especially by development institutions (ActionAid 2015, Misereor 2015, DFID 2015) is the role of large transnational or profit-maximizing businesses in such programs (see Ch 2.3). However, the World Bank among others points out the potentials of business involvement in small-scale agriculture and PPPs.

Small-scale farmers can be empowered in different ways: they can be included in new business activities, especially high-value markets, and they can avoid bargaining and marketing transactions (NARROD et al. 2009: 10). Private actors with a social and responsible mindset may bring in other dynamics than public services that are often centralized, unresponsive to farmers need or lacking resources (POULTON & MACARTNEY 2011: 101)

3) MARKELOVA et al. (2009) regard the opportunity for smallholders to participate successfully in the market as an important factor for income development. The profit of sales is usually impeded in developing countries, by a range of market imperfections, barriers and a fast changing market situation (1, 6). Collective actions within producer groups are suggested as a practical solution for improving, for instance, the bargaining position of smallholders (ibid.: 2).

With only two cases and few interviews within those, this study can not cover the variation among different participants. The smallholder household survey of Tanzania (ANDERSON et al. 2016) reveals that there are significant differences in land holdings, capital reserves, family size, education and farming experiences (14f.). Each household has a different access to income opportunities, the capability to deal with additional costs or the resistance to shocks (JONASSON et al. 2012: 3, 7f., 18). Hence, the conclusion drawn here, based on interview data, have a very limited validity.

3 Regional Background: Tanzania and SAGCOT– the quest for Agricultural change

"We are committed to commercialise agriculture whilst creating income opportunities for smallholder farmers and properly manage our natural resources. As a government we are inviting investment partners under the SAGCOT initiative who are committed to our inclusive and sustainable investment principles"

– Hon. Christopher Chiza, Tanz.
Minister for Agriculture, Food Security and Cooperatives. (SAGCOT 2015a: 1)

3.1 Tanzania's agriculture: between economic development, inefficient markets, and experimenting politics

Agriculture plays a central role in Tanzania's economy. With about 75% of the rural population depending on agriculture, Tanzania is one of the sub-Saharan states with the highest employment rate in the agricultural sector (ELLY & SILAYO 2013: 548, United Republic of Tanzania (URT) 2013a: 19, FAO 2014: 13), contributing 31.5% of the GDP (World Bank Open Data 2014). In the country's southern corridor 95% of the cultivated area are farmed by smallholders for subsistence or selling locally (URT 2013b: 20). Most farmers cultivate between 1 and 2 hectares (COULSON & DIYAMETT 2012: 5) and rely on hand-driven tools, like the hoe (MWONGERA et al. 2014: 25). Irrigation and fertilizer application rates are comparatively low in Tanzania (FAO 2014: 15, SAGCOT 2011a: 28, JENKINS 2012: 7). In the survey by MWONGERA et al. less than 5% of the interviewed households used mechanized tools (2014: 14). This is seen critically, as many households have been affected by a falling land productivity, what is often explained by poor technology and irregular climatic conditions (COULSON & DIYAMETT 2012: 3, URT 2013a: 20).

Over the past ten years, Tanzania has been a net food exporter, with a growing export volume, yet has been facing challenges to meet the domestic demand and depends for certain commodities strongly on imports. In 2014, Tanzania has exported 1.46 billion US$ of horticultural products, which was 23% of the whole export volume (OEC, based on UN COMTRADE). Most exported cash crops are oil seeds, cashew nuts, coffee, tea and dried vegetables, which are mostly exported to Asia (65%), followed by Africa (20%) and Europe (3%) (OEC/UN COMTRADE). The value of the export has increased drastically by more than one billion US$ from 2004 (ibid.). However, Tanzania is not an export-oriented country like the neighbor Kenya, internationally known for vegetables and cut-flowers, where 2.42 billion (43% of the whole volume in 2014) are exported (ibid.). Concerning the most important national staple foods – maize, wheat and rice –, Tanzania was over the years of 2004-2014 on average a net importer (SAGCOT 2011b: 32). When the annual production is predicted to be low, the Ministry of Agriculture permits the import of a certain amounts (PLAAS 2013: 5, ESRF 2009: 28).

The domestic markets are regularly affected by two kinds of scarcities: regional and seasonal ones. Poor market access and weak transport and distribution systems that result in short marketing chains are seen as the main reason, rather than low

agriculture productivity (PLAAS 2013: 5). In the past, regions with surpluses, for instance, maize from Rukwa, were not supplied to other parts of Tanzania that have been affected by drought (ibid.).

Moreover, there are severe seasonal scarcities, as most farmers sell directly after the harvest at the lowest price during the year since most lack the possibility to store, which enforces also the price fluctuations of different commodities during the year (ELLY & SILAYO 2013: 555, SAGCOT 2011b: 14). Both kinds of scarcities impact also other agriculture productions, especially milk and meat, since they also depend on these commodities for livestock feed (KATJIUONGUA & NELGEN 2014: 29). This trade imbalance and the scarcities show that the markets are not saturated. Some experts see already sufficient potential for economic development when agrarian projects focus primarily on regional or domestic markets and value chains (DEBRAT 2011: xiv, DE CLEENE 2013: 75) before producing for foreign markets. Such programs need to address besides output enhancement, also the improvement of the existing market system and invest, for instance, in storage facilities (ESRF 2009: 25).

A growing domestic demand and changing food habits in the next years, provide new opportunities for income extension of rural smallholders. With a population growth rate of 3.1% (World Bank Open Data 2015a) the general demand for food crops continues to grow in Tanzania. Moreover, the consumer's preferences are expected to change, increasing the demand of higher valued products, such as potatoes, vegetable cooking oil, soya and livestock products (SAGCOT 2011b: 15, 40, 48). With a constant annual GDP growth between 5 and 8 % over the past 15 years, the living standard is rising in some Tanzanian households. Therefore, the demand for income elastic commodities, such as meat and dairy products has increased (ibid.). Moreover, there is a difference in rural-urban consumption of livestock and dairy products, which is twice as high in urban households (KATJIUONGUA & NELGEN 2014: x). The proportion of urban population has increased rapidly from 22.3% in 2000 to 31.6% in 2015 (World Bank Open Data 2015b) and provide an increasing opportunity for rural horticulture and livestock producers to produce for the growing urban demand (SAGCOT 2011b: 40,46).

Since the Arusha Declaration from 1967, the government of Tanzania has been prioritizing agriculture as the main sector that needs to be targeted for development, in order to reduce poverty, which is higher in rural areas. Since then, Tanzania has experimented with different policy models, from cooperative-based over centralized to

mostly unregulated markets (ESRF 2009: 23). After the government's independent strategy of „socialization of production" in the 1970ies did not meet the targets and the poverty rose, Tanzania opened the markets in the mid 1980ies and started with privatization on the recommendations by the World Bank (1998: 6). Until now, the sector of agriculture and connected research institutes continue with many difficulties (COULSON & DIYAMETT 2012: 3). Recently, external evaluation reports have criticized Tanzania's long history of weak and unfeasible development projects, which are seen from today's perspective as poorly designed and were not guided by reliable economic statistics (1998: 5). Smallholder support programs, in particular, usually had only a small impact and proved to be unsustainable after the initial funding phase was over (SAGCOT 2011a: 37). Until today, public services, like extension services, governmental offices that are advising farmers on a village level, are often lacking sufficient capacity and have little impact (URT 2013b: 20, ROOTHAERT & MUNHANJI 2009: 21).

Since national food insecurity and poverty are remaining the dominant challenges for the agricultural sector, while climatic conditions are changing more drastically (SAGCOT 2011a: 1), a transition from a „land-extensive, low-input subsistence agriculture to high-input, market-orientated production" (World Bank 1998: 6) has been suggested by development institutes. Recently, the government has been working on long-term strategies which aim mainly on opening the ground for more private investors and improving the environment for new businesses (URT 2013b: 24). In 2009 the national resolve '*Kilimo Kwanza*' (Swahili for 'agriculture first') provided a set of strategies and policy interventions, that draw the general political focus back to the agricultural sector (ibid.: 7). Since 2010, the Southern Agricultural Growth Corridor of Tanzania is promoted to be "*Kilimo Kwanza* in motion" (SAGCOT 2011a: 4) with a new concept: to include smallholders into commercial agriculture and sustainable development (URT 2013b: 7).

3.2 The Southern Agricultural Growth Corridor of Tanzania (SAGCOT)

The SAGCOT program was initiated in May 2010 by the Government of Tanzania at the World Economic Forum Africa Summit in Dar es Salaam. The idea is a new partnership and platform model to rapidly develop the agricultural sector in a social and ecological sustain manner (SAGCOT 2011a: 1). As a public-private partnership, it channels the financial and human resources of different stakeholders. Over the time of 20 years, a large acquired private investment volume of about 2.1 billion US$,

combined with 1 billion US$ of public „anchor“ investments, mainly for infrastructure improvements (roads, electricity, port of DSM, two airports, storage facilities, etc.) should modernize the agricultural sector (ibid. 7). According to the Blueprint, about 100,000 small-scale farmers are planned to be engaged directly in more profitable commercial farming on in total 350,000 hectares farmland through the Corridor (SAGCOT 2015a: 1). Commercial farming means in the program's context that the farming business is financially sustainable and crops and livestock products are sold into the market (SAGCOT 2011a: 19). It involves the use of modern horticulture practices, processing and marketing techniques and operates at an efficient level of scale (ibid.). Hence, also smallholder farming is supposed to be seen as a business, which can be improved in its profitability by linking smallholders to modern suppliers, agribusinesses for inputs, extension services, value adding facilities and providing a better access to regional and international markets (SAGCOT 2011a: 7, 37, 39). As example countries with successful transformation stories rendered by political incentives, the Investment Blueprint refers to Vietnam and Brazil (SAGCOT 2011a: 13, 24, 51, DE CLEENE 2013: 71).

Among the current 92 partners (status May 2016, sagcot.com), there are:

- the Government of Tanzania
- national and transnational private sector companies (e.g. Bayer Crop Science, Monsanto, Unilever, Yara)
- Farmers Associations (e.g. Tanzania Horticulture Association)
- development partners and Research Organizations (e.g. UNDP, USAID, Int. Centre for Tropical Agriculture, World Bank)

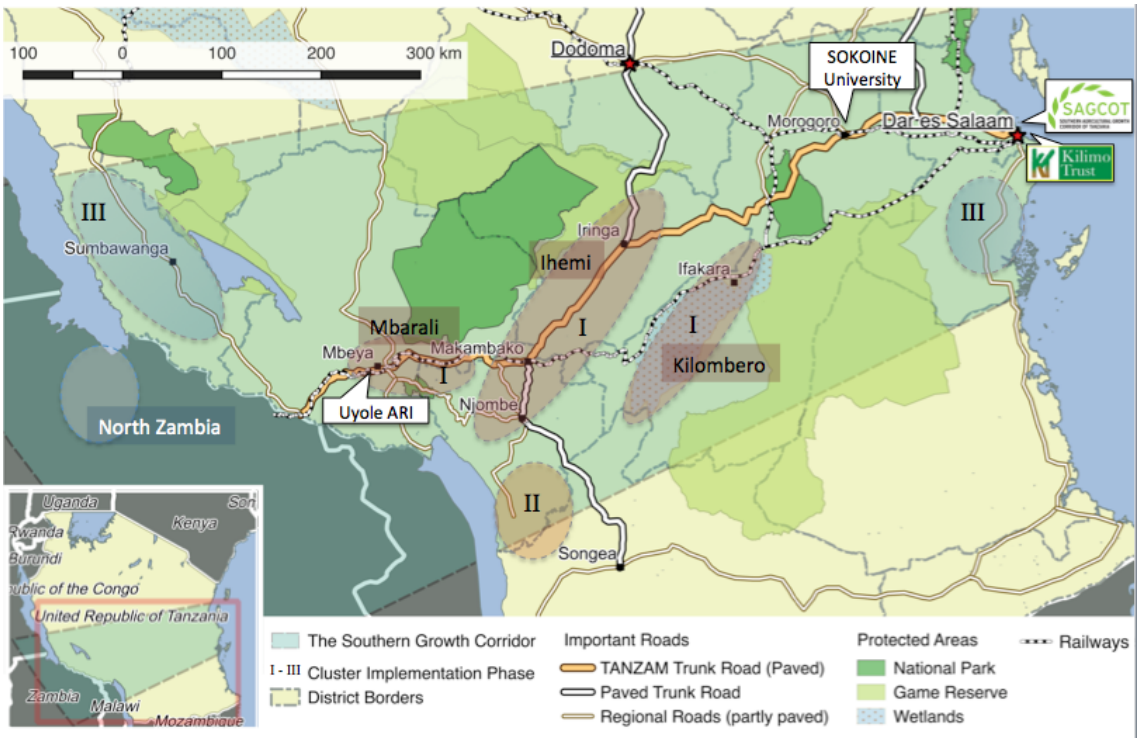
According to the objective of SAGCOT, these very different stakeholders need to share a "common vision, culture and a set of principles" (SAGCOT 2014), such as the willingness to work for the program's goals, engage in new partnerships and commit to find new solutions for constrains and financing challenges (JENKINS 2012: 8, SAGCOT 2011a: 39).

The 'SAGCOT Center Ltd.' has been established as an institutional body for main coordination work and has its main office in Dar es Salaam. Its tasks are to manage and expand partnerships, serve as "information hub," coordinate the development of the clusters, facilitate access to finance, and monitor the whole

progress. They also work closely with the government to minimize policy constrains (SAGCOT 2015b: 2).

Each single agriculture project, however, is run by the individual partner, who needs to be registered as a member of SAGCOT and may apply for financial support. Projects are ought to be approved, when they follow the program's objectives of sustainability, inclusiveness of smallholder, are socially acceptable and environmentally sensitive (SAGCOT 2011a: 33).

Concerning the concrete support for smallholder, SAGCOT intends to "increase linkages to commercial value chains and market opportunities" (SAGCOT 2015a: 3). Hence, it supports projects where farmers can improve access to higher quality inputs, technology, and agricultural practices or which contribute to the livelihoods of the farmers (ibid.). According to the project description by AgDevCo, an active investor, the Tanzanian projects have risen on average the annual income of a farmer by 69 US$ (AgDevCo Website).



Map 1: The SAGCOT Corridor and implementation phases of cluster regions (own design, 2016, clusters based on SAGCOT 2011a: 32, roads based on satelite images © Google 2016, protected areas according to openstreetmap.org)

SAGCOT operates in the "Southern Growth Corridor" which covers one-third of the country's area, extending from the borders to Zambia and Malawi in the southwest along the backbone infrastructure to Dar es Salaam – Tanzania's most important economic center (Map 1). Within this corridor, there are six project clusters, which have

been identified during the initial program's development phase as highly potential regions with some pre-existing backbone infrastructure and operating agri-business and commercial production schemes, which are promoted to potential investors. By focusing on such "cluster regions" that will be developed in three stages (Map 1), investments will have a larger impact, when they are spatially clustered (McCormick 1999: 1545, de Cleene 2013: 77.) Inside the project regions, single commodity-specific clusters are developed along the value chain involving, according to the programs model, a nucleus commercial farm with outgrower scheme, local communities, transport and logistic hubs, processing- and storage facilities and agricultural research stations (Figure 3). By concentrating on similar geographical areas, the value chain development and investments "result in strong synergies", reducing production and marketing costs (SAGCOT 2011a: 17).

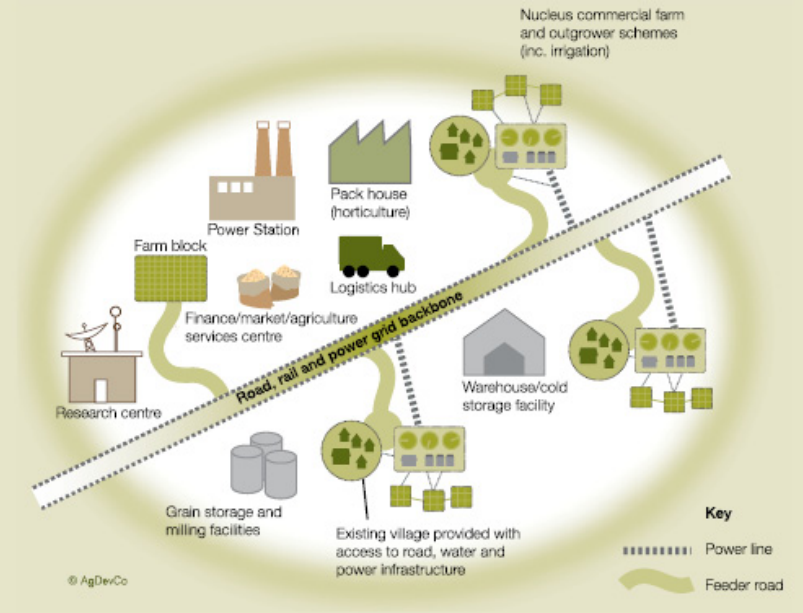


Figure 3: The cluster idea within SAGCOT (SAGCOT 2011a: 18)

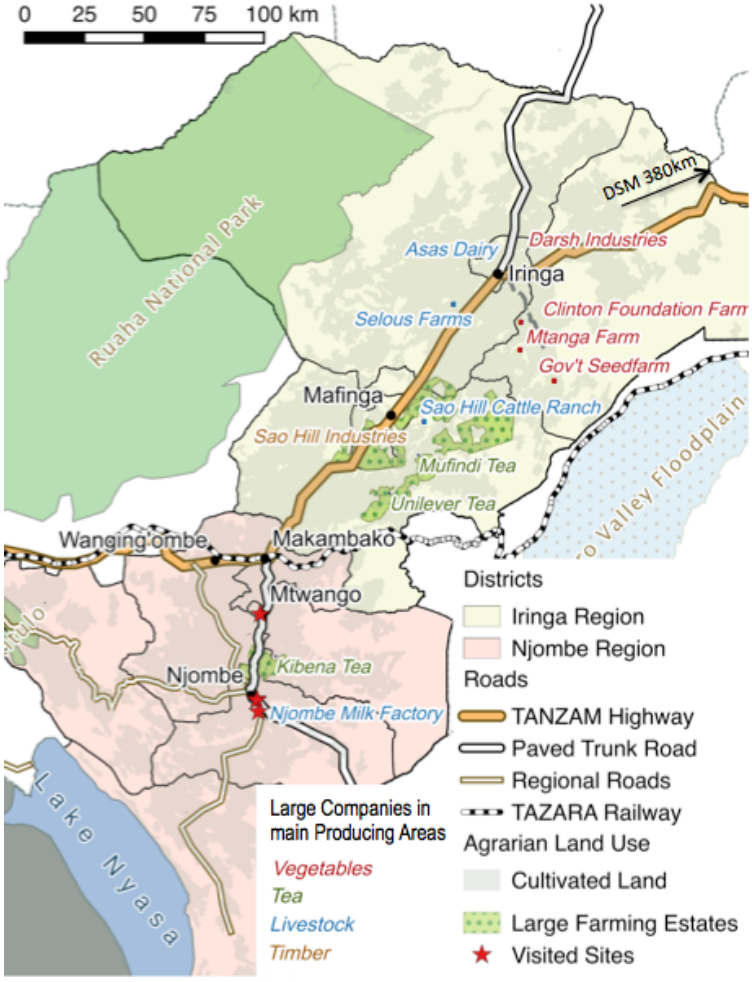
For this case study, the regional focus was laid on the Ihemi-cluster, as one of the "stage one" implementation areas (Map 1) with highest immediate potential, equipped with backbone infrastructure and many agro-related industries, and where „low-hanging fruits" have been identified and projects were already started in 2013.

3.3 Introduction to the study area: the "Ihemi-Cluster"

The "Ihemi-Cluster" is located in the Southern Highlands of Tanzania and includes Iringa Region and north-eastern parts of Njombe Region and expands with a total length of approximately 350 km mostly along the TANZAM Highway. A motor vehicle travels about 4.5 h via the TANZAM within these two districts. According to the National Census from 2012, 941,238 people lived in Iringa Region and 702,100 in Njombe Region resulting in an average population density of 30 inhabitants per square

km. 75% of the population are living in rural areas and for those over 80% is agriculture the major income activity (TNBS 2012). The regional capitals are Iringa (151,345 inhabitants) being 492 km from Dar es Salaam and Njombe (64,144 inhabitants) 710 km (TNBS 2012, TANROADS 2012).

Originally, the cluster marked only Iringa region but has been expanded by northern parts of Njombe District (SAGCOT 2016), where 2015 first project opportunities came up and a SAGCOT field office was founded in Njombe Town to coordinate a large public-lead potato project (See case 1, Ch. 5.1). A general office to intensify the regional work of SAGCOT Ltd., which is planned to open in 2016 in Iringa, has not yet been opened at the time of fieldwork.



Map 2: ‚Ihemi Cluster': Districts with agricultural production focuses (companies largely based on SAGCOT 2011a: 33, roads and farmin estates based on satelite images © Google 2016, land use data by AFRICOVER (FAO), 2002)

The Southern Highlands are a plateau region, with grasslands, tree-savannahs and montane forests. The altitude in this regions ranges from 260 m to 2850 m above sea level, making the climate and growing conditions diverse. The region can be divided into two agro-ecological zones. First, the Lowland Zone up to 1,400 m above sea level receives usually less annual rainfall (600 mm- 1,000 mm), has longer dry seasons, reaches higher temperatures (about 25°C), and most soils tend to have lower fertility (URT 2013a: 5). These conditions limit the ideal crops for rain-fed agriculture in most parts to maize, beans, and sunflowers (SAGCOT 2011b: 49, MWAKALINGA 2014: 52, Census of Agriculture 2012). The regions that are above 1,400 m above sea level receive

higher rainfall of around 1,300 mm, experiences mild to cold temperatures (in June below 10°C) and provides a mediums soil fertility which is also suitable for the cultivation of potato, coffee, tea and other vegetables (ibid.). Since over 90% is cultivated by smallholders, who apply usually rain-fed based mix farming (SAGCOT 2011b: 49, URT 2013b), the majority of farmers rely on one harvesting season per year (SHIKUKU et al. 2016: 39). As they rely mainly on natural conditions, farmers are vulnerable to seasonal rainfall variability (ibid.: 40, MWONGERA et al. 2014: 53)

The region is benefiting from two trunk roads, among them the TANZAM Highway which connects Iringa Region directly with Dar es Salaam, Mbeya and Zambia (Map 2). During the upcoming years, it will be modernized and repaved as part of an extensive infrastructure rehabilitation project. Another road links Njombe with TANZAM and the south of the country. All other roads, going off the trunk roads, are under regional administration, are predominantly unpaved and in bad condition (SHIKUKU et al. 2016: 40). The SAGCOT investment plan, addresses these in a last-mile infrastructure development plan, particularly when there are large production plants. Another transportation mode for passengers and goods is TAZARA Railway which crosses the region at the town of Makambako and provides transportation to Zambia and Dar es Salaam.

Regarding the agricultural production, the region is national-wide known for its tea farms, potato and tomato production (Census of Agriculture 2012). Some productions are large-scale, such as timber and tea (Map 2). SAGCOT builds in this cluster region also on existing companies and already settled investors, such as Unilever (tea), DARSH Industries (tomato), ASAS Dairies and the Clinton Foundation, that could be addressed to invest further in the region and extend smallholder inclusion (SAGCOT Ltd. Njombe). These are usually settled in the main growing area and form already concentrations of certain production and processing networks. Potatoes, maize, and tomatoes are typical regional smallholder crops and 90% of the national potato production come from the Southern Highlands (SAGCOT 2011b: 49).

Even though this region is better connected to road infrastructure than other areas in Tanzania, smallholders that organize themselves or in farmer's group face various challenges. Insufficient market systems, combined with the limited knowledge about marketing options and available farming inputs, challenge the income development of smallholder (SHIKUKU et al. 2016: 40). Regional markets to sell surpluses exist in the larger cities (Iringa, Mafinga, Makumbako, Njombe). Some towns

host also special commodity markets, however, the next public wholesale market for the region is located in Dar es Salaam. Due to the distance to this economically most important city, hosting also most head offices of organizations and institutions, farmer experience often information asymmetries (ESRF 2009: 35f., POULTON & MACARTNEY 2011: 98).

4 Methods

For this study, the internet was the most helpful source to acquire general program-related and current information about the SAGCOT initiative. However, after a closer look, the documents give only limited information about the practice of smallholder inclusion and potential benefits gained through this particular program: First, many documents related directly to SAGCOT, were coming from the SAGCOT Ltd. office or from directly involved partners, that are promoting this program or even look for new donors and investors. These documents describe at this early stage more the objectives and visions of the program, but cannot provide information about the actual implementation progress. Second, reports focusing on smallholder's were usually conducted by international organizations who are approaching this topic from a very critical perspective (Misereor 2015, Oxfam 2014, ActionAid 2015). They provide some smallholder cases and hint at important aspects, but they can hardly be evaluated in their reliability and present not a detailed picture of the realization processes. Third, SAGCOT or region-related reports, that contain aspects about smallholder and evaluate the implementation from a more diverse perspective (SHIKUKU et al. 2016, ROOTHAERT & MUHANJI 2009, KATJIOUNGUA & NELGEN 2014), could only provide some pieces to the answer and were difficult to interpret without knowing the broader context. As there is a general low internet coverage on topics in Tanzania, relevant information, such as smallholder concerns presented by farmer's organization, could not be acquired online. Moreover, requests via e-mail, Facebook or LinkedIn, were not responded to within the month of fieldwork.

In order to acquire a deeper understanding of the program, the inclusion of farmers and what they receive through this program, a field work was conducted in March 2016. As SAGCOT is almost a national-wide initiative and the projects are always set up differently by divers partners, the field work could only focus on two projects, that are presented in this work as two distinct cases. A case study is suitable for gaining information on current circumstances and obtaining „in-depth descriptions"

(YIN 2014: 4), when a „holistic and real-world perspective“ of a single project from different points of views and institutions is required (ibid.). The two cases were selected based on the accessibility to multiple interview partners, site visits and other data (ibid: 28). As it has been challenging to detect SAGCOT related projects, because of a generally low awareness among the population about this new program, there were not many options for suitable cases. Thus, cases and sampling of the interviewees were selected, due to very limited time resources of one month, by the „criterion of convenience“ (FLICK 2014: 175) leading eventually not to the most typical cases. However, the two project represent completely different project concepts and different insights. The farmers for the interviews were selected by the project coordinators and appeared to be their best examples. It is possible that other farmers or groups face more challenges or could not reach the same income.

The interviews were conducted with a semi-structured questionnaire that eenables some pre-structuring and obtains similar aspects in every interview, yet were asked in a flexible order during the site visits. As the results should reflect the perception of the participants, there has been besides concrete theory-driven questions also open questions, that left room for the farmer's own associations and opinion (FLICK 2014: 218).
The main questions of the interviews were:

- What kind of teaching and services have you received through the participation in the project?
- To what institutions do you have direct or indirect contact; how familiar are they with the local situation?
- How are you organized (as a farmers' group/as a coordination office)
- What benefits and challenges (concerning the program) do you see already today or in the future?
- Do you see potentials for income improvements?

The interview language, whether Swahili or English, was chosen according to communication skills of the interviewee. Experts usually prefer English, since this was the language of study, whereas farmers were more confident with Swahili. The interviews have been documented on the same day in the form of minutes of memory together with notes about the circumstances. Some field visits were accompanied by a native speaker who could assist in some translation issues.

The coding for the analytic processing and interpretation are based on the method of content analysis, as a way of „systematically describing the meaning of the qualitative data“ (SCHREIER 2014: 170) and reducing the content to relevant aspects (FLICK 2014: 429). After a first structuring of the interview data, a more precise research question was formulated and a suitable framework for analysis was chosen (see 2.5), that is capable of structuring the aspects mentioned in the interviews by defined categories and break down the question into single interpretation steps (MAYRING 1983: 48).

5 Empiric part: case presentation

5.1 Case 1: Irish potato project by SAGCOT Ltd. in Njombe

The Irish Potato project in Njombe Region is coordinated by a field office of SAGCOT Ltd. in Njombe Town and is an example for a public project. The project started in July 2015 but was originally planned to start in January 2015. When visiting the office and the head of the farming group in Mtwango during the first operating season in March 2016, the project consisted of 31 groups in 26 villages around Njombe that involved in total 537 smallholder farmers. The number did not reach nearly the target of 2,000 farmers that were planned for the initial year, due to a delayed start, which had different organizational reasons, involving bureaucratic and financing hurdles.

General objective of this project is the distribution of new optimized potato varieties, combined with teachings of adopted farming practices and the establishment of new cooperations. The reason for initiation is that there has been no improvement or adaptation in the potato sector since 1987. Intensive research and the discovery of four more resistant high-yield breeds, already common in Kenya and Uganda, are providing now new opportunities for potato farmers and the prospect of double yields. Moreover, research by Uyole Agriculture Research Institute (Uyole ARI) has shown, that various diseases affect the potato production in the region and the farmers apply their inputs not in an optimized way: Whereas most farmers usually spray pesticides 1-2 times per season, there have been seasons when up to 12 applications were seen as required, according to Uyole ARI. Hence, farmers are also receiving guidance on which inputs and what amounts to invest (SAGCOT Ltd. Njombe 2016: lines (ll.) 36f. (= field interview, see annex for further annotations).

The first steps in this project involved the opening of the field office in Njombe town, which has currently 5 employees and the training of the personnel in potato production. Then the staff visited farmers to spread awareness and enrolled interested farmers into training. Finally, a first field day with all participating farmers was conducted, which combined the purpose of a networking event, an additional training day and progress evaluation of the single farming groups, where they could be compared to each other.

Map 3: Main operation area and visited sites of the potato project (own design, 2016)

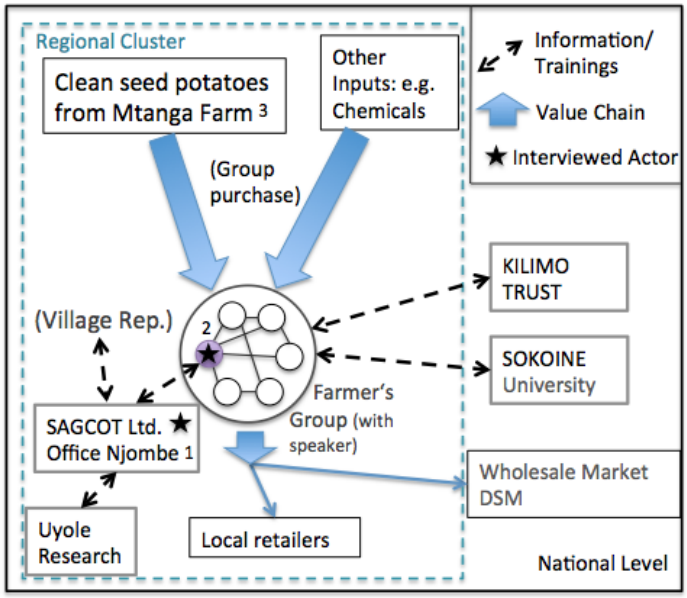


Figure 4: Value chain of potato project and and relevant network partners (own design, according to intervew data, March 2016)

Actors involved in this project network are on village level the smallholder farmers with at least one assigned speaker in each village, that communicate regularly with the project coordination office in Njombe (Fig. 4). The farmers operate as a group to make collective actions (buying inputs, organizing transportation and marketing), discuss topics and spread information more efficiently. The speaker of the group or the district officer in a community serves as a central contact person to whom the coordinators provide information regularly, such as weather forecasts, risks of diseases or insects. Other times the office collects updates about the situation in the project groups. Mtanga Farm in Iringa, which has been expanded as another SAGCOT project recently, supplies the farmers with new varieties of clean and certified seed potatoes. It is situated in a remote area in Kilolo District in Iringa, approx. 250km from Njombe (Map 3). A row of research institutions contribute specific and current knowledge: Uyole ARI and SUA on farming techniques and Kilimo Trust deals with economic topics, especially market analysis, and price developments.

During the time of visit, the forecasting of prices was the major concerns of the smallholder, since the yields were much higher and advice about good marketing opportunities were required (Potato Farmer 2016: ll. 25ff). Since most farmers sell locally in small amounts, there was the idea selling to the main market of Dar es Salaam. For this purpose, the group in Mtwango considers to organize a collective freight transport. Kilimo Trust visited the village to give first advice about potential markets and will inform when prices for the wholesale markets are estimated.

The coordinator sees the biggest challenges in the farmers' mindset, as it has been difficult to convince farmers to be opened to new farming techniques, as they were skeptical of new crop types (SAGCOT Ltd. Njombe 2016: ll. 50f). The farmers mentioned the challenge of acting stronger as a salesman and finding new ways of marketing. For this, they still see a lack of information and skills. Further, they questioned, why the main potato market is located in Dar es Salaam, although Njombe region is the largest producer of potatoes. They also complained about the measuring methods at the markets, which are mostly by volume in standardized bags instead of also weighting. The new potato variety is different in size, so that they are concerned about income losses (Potato Farmer 2016: l. 38).

5.2 Case 2: Njombe Milk Factory and contracted dairy farmers

The second case is a business-led project coordinated by a milk factory, which involves a large scheme of contracted dairy farmers. The factory was already built up by other donation programs and has been approved to be supported by SAGCOT at the beginning of 2016. The Njombe Milk Factory (NMF) produces fresh milk, yogurt and ten kinds of Italian cheese (Mozzarella, Bologna, etc.) in the south of Njombe Town. It has been founded in 2004 by the Italian NGO CEFA and was co-financed by the Italian Minister of Foreign Affairs and supported with processing knowledge by Granarolo. The factory is owned today by Granarolo, district council, church diocese and a farmers' association called NjoLiFA (Njombe Livestock Farmers Association), whose main office is next to the factory. NjoLiFA provides the farmers with direct information about the factory development, most importantly the explanation of the current price for milk. Currently, the factory is challenged by a low supply of milk which limits the scale of production. Despite having a sufficient outgrower scheme for producing potentially 10,000 liters of milk, the factory received in March about 3,500 – 4,000 liters daily, which is far below the processing capacity of 6,000 liters. This keeps the milk price low, which was in March 2016 at 600 TSh compared to possibly 1,000 TSh that farmers

would receive when selling directly to customers. Besides the payments, the farmers also benefit from the advisory and (partial) transportation services.

Therefore, the project update within SAGCOT is supposed to improve the income of the contract farmers by supporting the hay production for livestock forage with a tractor and a mowing machine and by providing additional teachings on hay making and milking. Sufficient feed during the dry season improves the milk supply, however cutting grass for storage is work-intensive. To start the project, the farmers will be encouraged to find about 10-20 acres of land for hay making in their farming groups or surrounding villages and get organized in regional hubs, which can be scheduled for using the machines collectively. NFM intends to motivate more farmers to provide their milk to the factory and continue with livestock keeping. Some farmers received their first calf by donation programs (e.g. by Heifer and USAID) to start with livestock keeping. For the acceptance to the SAGCOT program, the factory had to renew the wastewater treatment plant to fulfill the environmental standard.

Map 4: Main operation area and visited sites of the dairy project (own design, 2016)

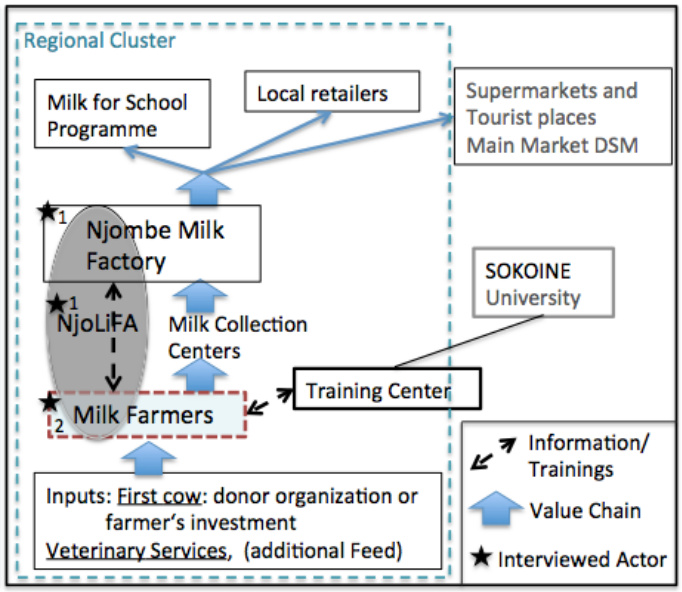


Fig. 5: Value chain of dairy project and relevant network partners (own design, according to interview data, March 2016)

The milk production is embedded into a stable network since NMF controls nearly the whole value chain (milk production, processing, and marketing segment) and cooperates with other institutions. Fresh milk and yogurt is sold to nearby districts and the Italian cheese products throughout the country, especially to tourist regions. To increase the local demand sustainably, NMF is engaged in a school program selling milk weekly to elementary school students and educating them about the nutritive value of dairy products. For providing additional advisory service on livestock keeping, governmental extension offices are generally in charge. SUA is also active in the

program for teaching programs about proper shelter, milking and the organization of a cooperative. They run a training house next to the dairy farmer that has been visited and are regularly active in the region. All actors prefer working with cooperatives or farmers groups, to reach many people and make the teaching sustainable.

The primary challenge mentioned in the interviews are the long distances to the villages of the farmers (up to 80 km) for the daily pick up service, also resulting in high production costs.

6 Analysis of cluster-related structures with focus on the case studies

6.1 Geographic proximity

Theoretically, the geographic proximity is the factor that eases the establishment of cluster structures and fosters material and immaterial exchange between partners (BATTERMANN et al. 2013: 160), by reducing the cost for interactions and transport (DIYAMETT & KOMBA 2008: 14). Although cluster initiatives try to concentrate the projects geographically, the maps in Chapter 5 has already demonstrated, that in the "Ihemi-Cluster" the production networks of a single commodity are rather scattered than agglomerated. Moreover, they reach into rural parts, that are challenged by bad infrastructure, causing higher transportation costs. For instance, the location of the seed farm and the central wholesale market in Dar es Salaam, were a concern of the potato farmer, who have already the advantage to be sited next to the highway. The milk factory even requires a daily transport system but has contracted farmers in three districts with distances up to 80 km (Factory Manager 2016: l. 22). They try to acquire contract farmers close to hubs, to minimize the effort and the transportation cost and will be also important for an optimized scheduling of the mowing machines (NjoLiFA 2016: ll.17, 57).

The two cases also made clear, that proximity cannot be just evaluated based on distance of a route but also of the traveling time and cost since the road conditions vary strongly in Tanzania. The way to the visited dairy farmer was approx. 7 km, yet it took 40 minutes and the vehicle close to getting damaged. Road conditions are also changing seasonally due to weather conditions. Being not connected to adequate road infrastructure can impair the access to services, especially when, for instance, urgent veterinary assistance is needed.

However, larger distances of partners may not always affect the quality of cooperation and can be perceived as close – as cognitive proximate (BATTERMANN et al. 2013: 160). The most obvious example is SUA, which is located outside the Ihemi-Cluster in Morogoro (300 km from Iringa). Nevertheless, most farmers are familiar with the staff, and some have received already training. With regular field visits over many years and interacting with different actors in Iringa and Njombe, they are seen as close-by partners, who have gained experience with the work of the local people in Njombe (Factory Manager 2016: l. 20). Also Kilimo Trust has traveled from Dar es Salaam to Njombe to introduce themselves personally and find out, what kind of information the farmers need and provide them now regularly with updates from Dar es Salaam (Potato Farmer 2016: l. 28).Bridging such a distance, however, is not always possible like that and requires other qualities associated with clusters, like trust.

6.2 Trust & social embeddedness

Trust building has been addressed as a critical point already in the SAGCOT Investment Blueprint (SAGCOT 2011a: 39) but it needs time to evolve. As seen in the potato project, it provides a challenge to those projects that are set up from scratch within a short time (MCCORMICK 1999: 1545). The coordinators were challenged during the first year to reach out to independent potato farmers and convince them of the project's benefits. Farmers approach projects, that teach new farming practices, often with initial skepticism, due to several reasons: First, their farming techniques are a part of their family tradition and they are confident, that their practices are also efficient and they usually know what yield they can expect (Farmer Ubaruku 2016: ll. 1, 4). Second, when asking for the reason of being skeptical, some farmers report about own bad experiences or shared news, where a promised outcome, was not reached. For instance, the use of hybrid seeds is different and yields drop when the seeds of the last harvest are reused, which is a common practice when there are little financial resources (ibis.: l. 5). Also, improved varieties may not be as popular due to taste and a different perception of quality by the consumer, thus maybe difficult for farmers to sell (MWAKALINGA 2014: 21). For the project coordinator, it has been tough to convince the farmers of the new potato variety and teach them adjusted farming techniques so that after the first season the planned number of participants could not be reached (SAGCOT Ltd. Njombe 2016: l. 7). The farmers' hesitation may also come from the uncertain outcome that may peril their livelihood.

Close contact and transparent communication support trust building over time and encourage farmers to open up to new ideas (MCCORMICK 1999: 1545). As it can be

seen in Mtwango, the interest among other farmers has increased during the first year, when a good reputation has been reached and the yields turned out high. The head of the farming group estimates 200 people that became interested in the next season (Potato Farmer 2016: l. 30). The milk project, has fewer challenges with trust, as the cooperation exist already for a period of time and the relationship between contract farmers and factory relies on interdependencies. The farmers receive livestock keeping support and explanation about business development, like the lower milk price. The company itself needs every liter of milk since it is operating at a sub-optimal scale, thus needs to keep up a good contractual relationship with the farmers.

Building trust is also strongly connected to regional and socio-cultural factors. In Tanzania, cooperative structures, personal networks and organized programs by the governments are not unfamiliar, as the Ujaama project built strongly on the socialization of agricultural production, which has shaped the habits and supported a tradition of cooperation (MWONGERA et al. 2014: 15, ITC 2005: 31).

Projects should be designed in collaboration with farmers and established from the bottom, as the applicability and acceptation of agricultural practices by farmers are context specific. The different agricultural habits are influenced by mindset but also environmental factors (SHIKUKU et al. 2016: 3, 8). In the empiric study in High- and Lowland Iringa, each farmer's group prioritized the suggested modern agricultural practices differently (ibid. 2). Thus, when evaluating a project it needs to be considered that the same project design might cause different outcomes and might be challenged by different issues.

6.3 Institutional embeddedness

The general Tanzanian political environment relating to agriculture is complex and has been exposed to many political changes (see 3.1). It often exceeds the Ministry of Agriculture, for instance, when coordinating research: the Zonal Research institutes, such as Uyole ARI are under this Ministry, whereas SUA is under the Ministry of Education, what makes cooperation between them difficult (COULSON & DIYAMETT 2012: 9). Moreover, the public-sector actions for the development of the agriculture, such as extension services, are usually evaluated as insufficient and with little impact, depending on the resources and the commitment of each single office (ROOTHAERT & MUHANJI 2009: 21).

For the SAGCOT program, an own institutional setting has been set up. Most prevalent challenges are delays, due to limits in financial and personal resources (SAGCOT Review 2014), which may also affect the implementation at project-level.

The SAGCOT Ltd. main office, needed until 2014 to recruit the whole team of 11 workers (ibid.), slowing down the work and lowering the quality of interactions with partners (Lifeland 2015: 9). In addition, the partnership involves over 90 very diverse partners, of which some are coming from other countries. This makes the coordination and communication work complex and requires, for instance, dealing with different procedures and requirements of donor organizations (SAGCOT Review 2014).

At the same time, the coordinators had to experiment with an entirely new program structure and were in a „learning by doing“ process (JENKINS 2012: 33). Meanwhile, interested donors and investors were already waiting to see first implementation actions and signs of progress, to estimate the reliability of the program (SAGCOT Review 2014, JENKINS 2012: 33). Donor organizations criticize, for instance, the vague communication about how the program is finally structured, whether the focus is more on smallholder's or investor's interest and how program goals are in particular realized (DFID 2015: 2, SAGCOT Review 2014). In the annual review by SAGCOT Ltd. (2014), it is mention, that a new re-shaping process will now lead to a more „smallholder-focused shell“. Also, three large non-state societies have signed a memorandum of understanding (MoU) with SAGCOT Center Ltd. to bring in the collective voice of smallholders (SAGCOT 2014, Oxfam 2014: 27).

Within the potato project, coordinated by SAGCOT Ltd., the scheduling of training has not been ideal, according to the interviewed farmer (Potato Farmer 2016: l. 26f.). Shortly before harvest, the farmers in Mtwango were worried about the proper market access and Kilimo Trust had to find solutions ad hoc. This situation has created additional uncertainties for the farmers about the income development during the first season. Also, the farmers are overstrained by their new entrepreneurial role for which they had not yet been prepared sufficiently (Potato Farmer 2016: l. 26). In the milk project, the factory manager has experienced adequate service: SAGCOT Ltd. has proved the application carefully and within the time frame. They received recommendations to improve the wastewater management of the plant to meet the environmental standards of the program (Factory Manager 2016: l. 43ff.).

6.4 Relations and networks

Cluster involve many different partners that interact, so that BATTERMANN et al. suggest to examine formal business relation and informal personal networks separately (2013: 163). This section will focus mostly on the cooperation, providing services and knowledge to the farmers.

Formal networks. In the dairy case, the farmers are contracted by the factory but are also part of NjoLiFA, a shareholder of the plant. Having an office on the plant's yard, NJOLIFA builds the communication bridge between farmers and the factory management. The network in this case grounds on interdependencies and long-lasting interaction, making it a stable cooperation with a win-win situation for the farmers and the factory (ROOTHAERT & MUHANJI 2009: 38).

On the contrary, the potato project sets on new business partners and presents at that time a more fragile network. Mtanga Farm offers new varieties of certified potato seeds and is so far the only possible supplier for the farmers. When selling the output, the increased yield may now exceed the capacity of the local market, so that the farmers think already about finding new markets and need to find new business partners. In March, the possibility of selling to the far distanced wholesale market in Dar es Salaam was discussed. However, this new marketing strategy creates uncertainties for the farmers' group. They are unsure about what entrepreneurial knowledge is now required and how they will be able to negotiate prices. The british development agency DFID argues, that the inclusion of downstream actors, like in the case of NMF, is an important link to acquire costumer-related information but is still often missing in SAGCOT projects. It can support the development of sustainable commercial farming that acts demand-oriented (DFID 2015: 11). In both cases, financial services are also not involved and need to be consulted by farmers individually.

Personal networks. Regarding the challenges from the formal cooperation, connections to knowledge-providing research institutes are in both projects important. SUA, the leading national research institute for agriculture, is involved in both projects and teaches regularly farmers during practical field work (COULSON & DIYAMETT. 2012: 7). The intense interaction with farmers might influence the drive research focus towards relevant issues for smallholder (MWAKALINGA 2014: 13) and improve the researcher's understanding of farmers' concerns and habits (OECD 2015: 33). The potato project also provides a cooperation between two different research institutes, enabling to foster an exchange between both (SAGCOT Ltd. Njombe: 33, COULSON & DIYAMETT 2014: 2). The described linkages show, that communication with smallholder usually goes in both directions, instead of being top-down, as discussed in other reports (MWONGERA et al. 2014: 14, Lifeland 10).

Within the smallholder groups, there are also informal networks that serve the efficient distribution of information. Either the village representative or the speaker of a farming group has the role of a central contact person, known by institutions, to receive information and is in charge to spread these to the others members. Generally, this group system is seen as a practical and powerful tool for effective teachings and spreading awareness (MWONGERA et al. 20134: 15).

The data about program-related networking events, acquired by the interviews, is thin. Besides the project-intern exchange, there have been annual SAGCOT networking events or thematic workshops involving very different stakeholders (e.g. Lifeland 2015). In May 2016, a dairy value chain meeting was held with all interested regional actors (SAGCOT 2016). Yet, the general awareness about the program among the Tanzanian population or about similar or close SAGCOT projects is still low (SAGCOT review 2014). Even in Njombe three different projects exist on the same road without knowing each other.

6.5 Access to information

Both cases have shown that the farmers need information, concerning improved farming techniques and market information (ELLY & SILAYO 2013: 559, NARROD et al. 2009: 9). Since it is difficult for farmers to access information hubs or are not even aware of how to get certain information, a cluster initiative intends to establish new networks and interaction between different partners (BOLO 2008: 50). The strategies should consider, that smallholder mostly prefer traditional forms of communication, yet nowadays the cell phone is also widely spread (ELLY & SILAYO 2013: 558f.).

Both projects have started with training units to introduce farmers to new methods or improved practices. As the farmers need to apply the new knowledge on their own after a short seminar, practical training is conducted in both cases and seen as most efficient (OECD 2015: 33). The potato farmers learned how to adjust to the requirements of the new crops and had to set up a training field of 5 acres at their village. Facing also the challenge of marketing and transport arrangement, they also received entrepreneurial seminars for budget calculation and organizing a cooperative (Fig. 6).

The milk factory needs a certain quality of milk and a regular supply of milk, which depending on the shelter, feeding and milking techniques. Dairy farmers with different experiences in livestock keeping can upgrade the quality and the amount of milk. To combine training with site-visits, the visited dairy farmer also serves as a

teaching facility to demonstrate full-cycle agriculture, that combines horticulture and livestock on a realistic site. Participants can observe how the farmer manages to include haymaking, diversify the nutrition of the cows and using the manure as fertilizer and for biogas in his practices.

In additions to training, some cases require regular updates on certain issues, e.g. weather forecasts for pest management (ELLY & SILAYO 2013: 554). These information help to optimize the use of chemicals, which is challenging even of experienced farmers (SAGCOT Ltd. Njombe 2016). The potato project has arranged a scheme of specialized partners that provide different support for the farmer. Farmers received most of the information before the cropping season, which helps to plan the budget (ELLY & SILAYO 2013: 544). However, the potato farmer missed more concrete advice about marketing opportunities and has to resolve this at the time of the harvest (Potato Farmer).

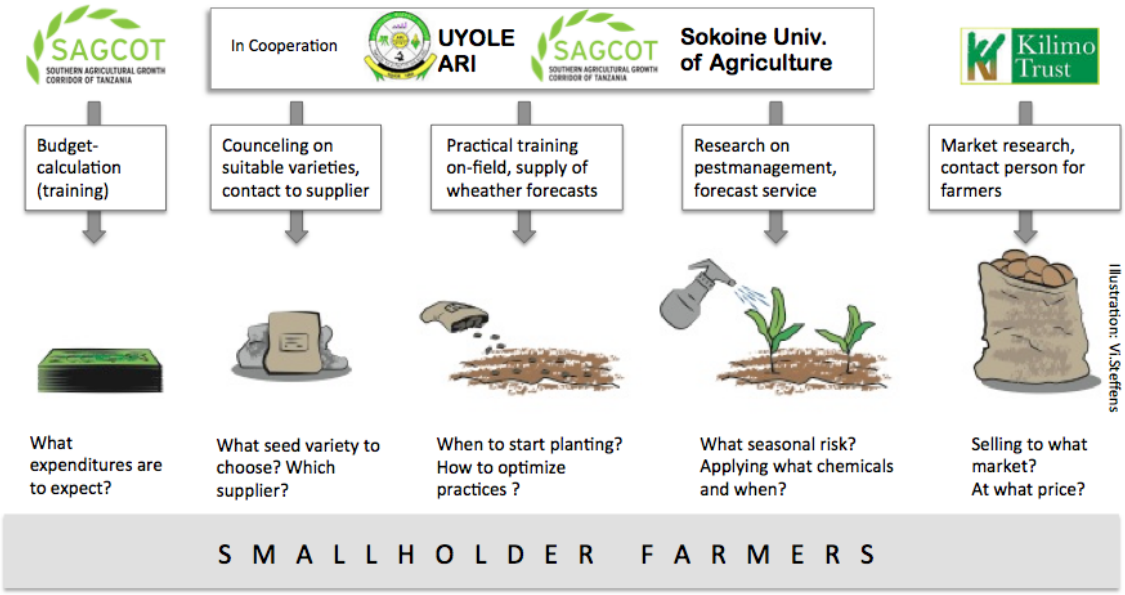


Fig. 6: Information needs of potato farmers and services by SAGCOT partners in Njombe (own design, 2016, based on own interview data)

7 Discussion: potentials on income development of smallholder

The analysis has presented a variety of circumstances and project strategies that have different effects on the goal of income improvement. During the interviews, the farmers have already identified some improvements or potentials that they associate with the project.

By participating, the potato farmers in Mtwango received a greater harvest with the new variety. How much this will contribute to their income, could not be answered at the time of visit. The profit will depend on the market access, the price development and the farmers' adjustment of marketing strategies for selling larger amounts. For these issues they receive guidance. So far, the farmers could benefit from buying their inputs collectively, what the project coordinator estimated to save about 20,000 TSh (8.50€) (SAGCOT Ltd. Njombe: 43). For the upcoming seasons, a collectively financed storage facility is planned, which will be instructed by the project office (Potato Farmer 2016: l. 40). Then the farmers would be able to sell potatoes more flexibly when market prices are higher.

The dairy project has not started with the implementation so that the interviewees have forecasted changes in respect to the current situation. The main target is the improvement of the haymaking process, which is currently work intensive but makes the farmers independent from foreign animal feed suppliers. Within SAGCOT, the fodder production is going to be upgraded by a shared mowing machine and additional training. The interviewed farmer could save the work of four people over two weeks for his acre (Dairy Farmer 2016: l. 4). Surpluses of hay could potentially provide another income when the farmers sell them to underprovided farmers, especially closer to urban areas (ibid. l. 14). The hay production addresses the problem of unregular forage availability, during the dry season, that may lessen the milk supply in these months (KATJIUONGUA & NELGEN 2014: 15). In general, milk farmers benefit from a regular income and side products like manure, which reduce expenditures on fertilizer. The visited farmer is convinced of livestock keeping combined with horticulture to improve his livelihood, however, some other farmers have given up the dairy production, since their household could not cope with the workload (Dairy Farmer 2016: ll. 25f.).

The literature review on income development has shown, that the improvement of income is not only dependent on the farmer's skills, resources and the amount of obtained output. There are some other factors, such as the organization of the program, that can further support or hamper the income development. The three most imported factors, which are presented in section 2.5, are now discussed in the context of the two cases.

Public assistance around the cluster

Although the government has set up a coordinating institution, it still plays a major role in creating and enforcing legal frameworks (ZENG 2008: 9). These direct the cluster initiative, manifest the recognition of smallholders and guide the implementation of diverse projects which are coordinated by different partners. The government itself is also a large investor, deciding how to spend the public funds (SAGCOT

Mediating between different stakeholders. Picking up the program's target to include smallholders, a critical assessment by ActionAid (2015) argues that public bodies of SAGCOT need to take in a "mediator" role, that balance the uneven power of the stakeholders (10). Although SAGCOT promotes a shared vision and projects should meet the criteria of inclusiveness, the general fairness of outgrower schemes and contract work is widely contested, also particularly within SAGCOT (ActionAid 4, GÁLVEZ-NOGALES 2010: 4, PLAAS 2013). Legal frameworks could be used, for instance, to protect the smallholder's interest against arbitrary price dictations that go far below market prices (GÁLVEZ-NOGALES 2010: 4) or in the form of guidelines to conclude clear agreements with farmers (Oxfam 2014: 23). According to BOLO, the cut-flower cluster in Naivasha, Kenya is an example, where policies have managed to shape the corporate behavior and culture (2008: 50).

However, the examination of SAGCOT related documents (DFID 2015, SAGCOT Review), evokes concern, that the institutional structure might be too weak for a consequent realization of frameworks (THEUS & ZENG 2012: 398). First, the current coordination bodies lack the capacity to engage deeply with a large number of partners and keep track of the different activities (SAGCOT Review 2014). Even some investors and donors at the Lifeland Workshop criticized the effectiveness of the communication with SAGCOT Ltd. staff (2015: 10). Second, since investors and the smallholder's interest may diverge widely, the government has not taken a clear public position between these two poles (see also 6.3). While some criticize only a little smallholder orientation (Lifeland 2015: 10, PLAAS 2013: 5), SAGCOT mentioned in a recent report to the DFID, a reorientation towards smallholder again (SAGCOT Review 2014). But still, the SAGCOT bodies might be pressurized in some cases by large donators to create a more favorable environment for their investment plans. In the past, Tanzania has already experienced that irrational policy interventions and uncertain political development have diminished the confident of investors (ibid.).

Improving the market system. Chapter 3.1 has presented the challenges in Tanzania concerning markets and price developments. Hence, the opportunities for smallholder will also depend on the improvement of current policies and institutional structures (RSEF 2009: 37), which are complex issue to solve (DURANTON 2011: 4). Public officers criticized the lack of reliable statistics (Lifeland 2015: 10, World Bank 1998: 7), which is also an issue of public funding. In 2008, Tanzania was among the African countries with the smallest proportion of GDP that was spent on agriculture-related research (FAO 2014: 18). However, it requires data about country-specific issues to set up goal-oriented projects. The cluster initiative program from 2008 is an example for a program where some aspects were considered as misleading. For instance, certain production segments were boosted but led in some cases to an overproduction and created “a destructive competition“ among smallholders (DIYAMETT & KOMBA 2008: 15). SAGCOT is planning to reach out to 100,000 farmers in the corridor, eventually changing the supply situation drastically.

The potato farmers reported about a long-existing problem concerning Tanzanian markets that has still not been targeted by the ministry: commodities that are brought to the markets by smallholders for purchase are usually measured in volume units as there is no policy to enforce a more accurate method like weight. The weight of the commonly used large bags can range by several kilograms within the product category and farmers are concerned about income losses (SHIKUKU et al. 2016: 38, MWONGERA et al. 2014: 67, Potato Farmer: 37). The potato farmer hope, that the new networks provide a better communication instrument to governmental officials.

Within the Ihemi-Cluster, geographic clustering was tried as a strategy to ease and reduce the volume of required investments (MCCORMICK 1999: 1545, BOLO 2008: 49). The inclusion of very different value chains and the geographically scattered contract schemes within the cluster region, make the improvement of infrastructure, especially road networks only to a small extent cost-effective and easier. However, the current bad road infrastructure impedes, for instance, the outcome of the milk program in many ways: it reduces the profit of almost all value chain actors, determines the possibilities of farmers to participate or the extension of service networks. Remote farmers need to organize transportation by themselves, thus need certain resources to participate and milk collecting centers can only be set up where reliable power supply exists (Milk report 2011: 3). However, faster implementations can be expected concerning new marketing facilities, which requires only punctual facilities.

However, public investment take often longer in their realization process and some strategic spots are underprovided (ESRF 2009: 25). Private actors may need a

faster provision of infrastructure and invest privately. Darsh Industries has used the deficit of market infrastructure for tomato trade in Iringa, were large amounts are cultivated, and built a processing plant within a short time so that farmers can now sell tomatoes to a facility close by (AgriproFocus 2015). On the one hand, this substitutes the under-supply of public infrastructure where it is seen attractive from an economic perspective. The farmers can now benefit from reduced transportation cost or marketing efforts. On the other hand, private actors can gain more influence on market systems and price regimes. The potato farmer sees a similar deficit in Njombe, a major potato production (Potato Farmer: 42), as they start exceeding the current local demand and are already concerned about transportation cost to Dar es Salaam.

Responsible and supportive? – good business partners

The Darsh example already introduced the pros and cons of private actors in initiatives. SAGCOT supports contract farming and outgrower schemes, which are contested in their benefits for smallholder. However, private players are in some cases evaluated as being more effective compared to public services (e.g. extension offices) since they are motivated by business incentives and orient on efficiencies (MWONGERA et al. 2014: 15, ROOTHAERT & MUHANJI 2009: 21). Since this initiative involves very different types of companies and business models, the section provides an answer mainly based on the two cases.

As presented, the milk factory can be regarded as a positive example for a business–farmer relation based on interdependent and direct communication links. Being founded within a development program, the company's background and the current shareholders, (public and social institutions and the farmers' society) result in a farmer-oriented company that may differ from other businesses in SAGCOT (Factory Manager: 47). It is in the company's interest to support the smallholder in their milk production and to offer milk prices that are as high as possible. Nevertheless, the price is significantly below the market price and if not more farmers are convinced to provide milk, the plant continues to process under a suboptimal scale, limiting the receipts of the business and the possibility of raising the milk price. Farmers benefit besides saving the marketing effort and receiving services around livestock keeping, also from a quality control system. Milk is a product that underlies many trading standards, since it can be a public health risk when contaminated (GOWDRU 2015: 43). Selling to the factory protects farmers from risking penalties when bad milk would be detected by the government officers (NjoLiFA: 28).

Regarding the potato project, there is no contract with a company, and there is not much data about the supplying companies. Yet, at the moment, Mtanga Seedfarm is the only plant producing these varieties and it is situated far from the project center in Njombe. While the dairy project empowers farmers to produce mostly their inputs (forage), the potato farmers are recommended to purchase a certain amount of commercial agrochemicals in order to optimize their yields. Concerning the input supply, PLAAS criticizes the general low availability of inputs which may lead to unfavorable prices. Moreover, the list of SAGCOT partners includes leading MNCs that offer agro-chemicals (e.g. Yara, Syngeta), so that recommended practices or even the whole initiative may be influenced by powerful investors (PLAAS 2013: 2, DURANTON 2011: 26). A shift from traditional practices, like locally-available and more ecological fertilizers, to synthetic forms is seen critical, as soils may degrade faster and the application can create dependencies (Misereor 2015: 42). Large providers can also outperform small or local suppliers (Oxfam 2014: 29, PLAAS 2013: 2). However, the cluster development is still at an early stage, and might attract more suppliers and businesses when developing successfully and providing in the future more options to the farmers (MCCORMICK 1999: 1545).

Where, When, and at what price? – finding the best market access

Farmers that have no fixed contracts with processing plants or are involved in outgrower schemes, face the challenge of finding the optimal market every season. At this point, the establishment of new cooperation, networks and other ways to distribute information can provide a decisive support for income generation. The achieved profit when selling to markets is influenced by many factors: the current demand, meeting quality standards, access to information, the ability to network and even the cohesion of a farmers group (ROOTHAERT & MUHANJI 2009: 38). Two important strategies, that are also related to cluster development in literature, will be discussed in detail: accessing market information and collective action.

Access to adequate market information is a general deficit. Many farmers are not aware of alternative marketing options or strategies to reduce costs (ESRF 2009: 26). Entrepreneurship seminars can deal with such topics, yet were in several cases evaluated as insufficient. Also, the potato farmers felt not prepared enough after one seminar for their new challenges to sell large amounts and will receive more training (Potato Farmer: 26). More sustainable and regarded as helpful in the potato case is the contact to the professional institutes dealing with agrarian markets, that can be

consulted about current market price development when needed (ibid. 28). However, due to a growing number of participants, the personal network system for regular information services might need to be replaced soon by automatized services, for instance via internet connection.

Besides improving the farming techniques itself, it is as important to improve the organizational structure (PLAAS 2013: 5). While involved in contract schemes, the dependency on the contract also provides risks or limits to access other opportunities, independent farmers can be supported to be “market ready“ (Oxfam 2014: 23). Within a cooperative farmers can profit from synergies and lift up their bargaining position (KETELS 2013: 256, MWONGERA et al. 2014: 67). Since the market access is in many parts still difficult or limited, the case in Mtwango demonstrated that a group can join the different abilities of farmers. Within the milk chain, a village group benefits from the individual motorbikes that provide the transport and may support those who lack such resources (Milk report 2011: 3). Hence, acting collectively contributes to the aim of inclusiveness, reduces costs and is the current strategy to deal with the large distances and the underprovided infrastructure (MARKELOVA et al. 2009: 2).

The question of sustainability

How sustainable the program finally is, especially in the sense of developing a self-supporting dynamism and continuing to grow, cannot yet be evaluated. However, certain factors to support the development based on the interviews can be pointed out. Regarding former agricultural projects that have stopped operating after the funds were withdrawn, they often lacked the financial viability for companies or the motivation for farmers to continue (Oxfam 2014: 23, ROOTHAERT & MUHANJI 2009: 21). Another issue concerning African cluster initiatives, they might have the problem of getting stuck already at early development stages (MCCORMICK 1999: 1534). The case study showed that SAGCOT is already at a critical point of gaining acceptance among farmers. In both presented cases, farmers may switch back to different practices when the expectation of higher earnings are not fulfilled. Since households, in theoretical models, act profit maximizing they might compare the new benefits and workload to the opportunity costs of other income possibilities (JONASSON et al. 2012: 3). This makes it difficult to estimate whether the new income strategy will be accepted. When the first smallholders give up, effects on the cohesion of the cooperative or the economies of scale in contract schemes can be expected, thus affecting also the income of other farmers and their motivation. Another critical aspect, mentioned by some organization, is the risk of a growing dependency on larger amounts of inputs (improved seeds,

fertilizer, pesticides) or decreasing yields when the recommended amount of inputs cannot be afforded (Misereor 2015: 42). Moreover, some modern seed types need to be bought every season. The financial pressure or the conflict with existing farming habits may reduce the attractiveness of the modern farming techniques. Finally, the program needs to build trust and convince of the objective. How the very different stakeholder can be included simultaneously is one of the many open questions related to the future development of SAGCOT.

8 Conclusion

SAGCOT was launched to target a variety of rural deficits, especially concerning infrastructure and distribution of information, that hamper the agricultural development and lessen the outcome of income generating activities. Even though this thesis can only present a short sequence of an ongoing development process, the case study provided insights from the project level and integrated the farmers' perspective.

(1) The first empiric part dealt with the identification of cluster-related structures and could draw parallels to findings from other African cluster studies, such as the establishment of networks for farmers to gain access and exchange information, the practice of collective transactions and the sharing of limited resources. Cooperatives between farmers are common in Tanzania, however building trust between other institutions can be challenging and requires time among other factors. Yet, two essential criteria for cluster development lack still behind: due to geographically widespread projects and limited road infrastructure, the economic benefits due to agglomeration inside the region are still low; Also, the institutional shell of the program lacks personal resources, which causes delays and hinders the coordination of such a large-dimensioned program.

(2) The second part discussed the effects of these structures on the goal of income enhancement for smallholders. Besides some directly experienced improvements by the farmers (improved yields, discounts for group purchases, sharing of transaction cost and supplied machines), there were three major circumstances related to such an initiative that influence small-scale farmers' income opportunities. By involving public and private partners, SAGCOT combines different resources, yet requires also adequate governance. At first, private stakeholders can fill the gap of public services (e.g. extension service) and investments (e.g. marketing facilities) where scarcities for smallholders agriculture production are a severe – also from an

economic perspective. Second, the public sector needs to coordinate the initiative under the shared vision and balance the different interest of farmers and other stakeholders. Finally, the low spatial concentration slows down the provision of infrastructure, hence collective actions are currently the main strategy to bridge remaining obstacles to access the market. Good market acces was the aspect that concerned the farmers most and determines in the end the financial outcome of the yield. The expansion of networks and connecting smallholders to new institutions and experts, advances the exchange of information and farmers can potentially communicate their requirements and deficits to responsible actors. For a prosperous development, the SAGCOT initiative is currently at a critical point for gaining acceptance and laying the foundation for growth. Yet, it needs promising results to encourage more partners, scale up the smallholder participation and achieve more economies of scale.

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ANNEX: List of interviews and Documents

List of Interviews

Citation in Text	Date of Interview	Place	Annotations
Farmer Ubaruku 2016	11th March 2016	Ubaruku, Mbeya	Rice farmer, not linked to SAGCOT projects, explained general regional farming habits
SAGCOT Ltd. Njombe 2016	14th March 2016	SAGCOT office, Njombe	Project office of SACOT Center for the coordination of the potato Project
NjoLiFA 2016	15th March 2016	SECO office, Njombe Town	Secretary of Njombe Livestock Farmers Association, who are part of a newly approches SAGCOT project
Factory Manager 2016	16th March 2016	Njombe Milk Factory	Visit of the facilities, offices and showing of SAGCOT applicaton forms
Dairy Farmer 2016	17th March 2016	Home of farmer, 7km from Njombe	He showed his fields, cow shelters and the training facility of SUA. He serves also as an example farm
Potato Farmer 2016	19 March 2016	Mtwango, Njombe	

List of Documents

Citation in Text	Date of publishing/event	Obtained by	Annotation
SAGCOT Review 2015	February – March 2014	SAGCOT Ltd.	Response to the DFID report by SAGCOT Ltd.
DFID 2015	February – March 2015	SAGCOT Ltd.	Detailed progress evaluation eeport of SAGCOT from a large British donor
Milk Report 2011	21-25 November 2011 (Field and Consultative Meeting)	Internet	Further detailes about challanges of NMF
Lifeland Report 2015	10th April 2015 Inception Workshop	Internet	Presents concerns and interests of focus groups (GoT, farmers, businesses) in the context of SAGCOT

Selbständigkeitserklärung

Hiermit versichere ich an Eides Statt, dass ich die vorliegende Arbeit selbstständig und ohne die Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe. Alle Stellen, die wörtlich oder sinngemäß aus veröffentlichten und nicht veröffentlichten Schriften entnommen wurden, sind als solche kenntlich gemacht. Die Arbeit ist in gleicher oder ähnlicher Form oder auszugsweise im Rahmen einer anderen Prüfung noch nicht vorgelegt worden.

Bedburg, am 21.11.2016

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