

INFORMAL ECONOMY AND DEVELOPMENT

The case of the dairy sector in Mwanza, Tanzania:

Present status and possible pro-poor interventions

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Executive summary

Over the last decades, the so-called “informal” economy has been constantly under examination by development researchers and policy makers. The increase of the informal sector in the developing and transition countries since the period of liberalisation reforms in the decade of 1980s-1990s and the “hidden potential” that informal economy seems to demonstrate, has raised the interest of development thinkers and agents worldwide. Certainly, there are conflicting theoretical approaches on the causes, the impact and the nature of the informal sector and subsequently on the possible intervention policies (La Porta and Schleifer, 2008).

In any case, governments and international organisations have started to take into account the nature, scope and extent of the informal sector, so they can find entry-points for improvement in terms of employment, productivity and income. This has led to a shift in focus from banning “informal businesses” to integrating them in the formal economy (Potts, 2011), by enabling them to upgrade their managerial skills and improve their outputs in terms of quality standards, production density and consistency.

In parallel, over the last years the agriculture and the livestock sector have regained their central position in the development studies as well as the attention of the governments. The vast majority of the population in the developing countries remains engaged in farming and livestock keeping. The contribution of the dairy sub sector to economic growth and poverty alleviation has been increasing (Njombe, Msanga). Furthermore, the development of the sector has brought up a significant opportunity to decrease malnutrition and hunger. However, the potential of both the livestock sector and the milk sub sector are untapped.

The present study focuses on the case of the informal dairy sector in the context of Tanzania and more specifically that of Mwanza (the second larger city in the country), which is characterized by low levels of food security and where no formal milk processing plant is currently operating. The “informal” or otherwise raw milk, which is produced by cattle keepers and is informally marketed by vendors or informally processed to other dairy products by cooperatives in Mwanza, is the subject of the present inventory.

The host organization of the research, SNV Netherlands Development Organisation, has already conducted several studies on the livestock sector and the dairy sub sector in Eastern and Southern Africa (SNV, 2010). Its main goal is to contribute to poverty alleviation and its main development instruments are capacity building and knowledge sharing.

As previous studies indicate, the formal milk sector used to be of great economic importance in Tanzania up to the decade of 1980s, when it started to collapse. Nowadays, informal milk covers around 90% of the milk market on national level (Rural Livelihood Development Company, 2009, p.4)! After some unsuccessful attempts to suppress the informal milk sector by putting the unregistered operators out of business, the government on national and local level shifted to a more inclusive approach. Currently, it tries to promote a formalisation reform.

The objectives of the present study were diverse: first, to examine the main views on the contribution of the agriculture and livestock sector to development as well as the role of the informal economy in growth and poverty alleviation; second, to depict the informal milk sector in the case of Mwanza, Tanzania. The latter objective includes: the presentation of the dairy sector in Tanzania, the description of the informal supply chain in Mwanza and its main actors; the estimation of the informal milk sector's size (the total milk flows in volume and monetary terms); the evaluation of the regulatory and policy environment, including the formalization initiative; and the discussion on possible interventions aiming at sector improvement and pro-poor development.

Both qualitative and participatory methods were used for the collection of data. More than 100 stakeholders (producers, vendors, processors, consumers, representatives of the government, supporting institutions and civil society organizations) were interviewed. In addition, a Focus Group Discussion with the main stakeholders was organized, in order for the information that was already gathered to be triangulated, and the social dialogue on the issue of the informal dairy sector and its ongoing formalization to be promoted. The main research challenges were the lack of correct statistical data by the local government and the long bureaucratic procedures, a characteristic feature of the public administration in developing countries.

However, the research proved to be very fruitful, resulting in various quantitative and qualitative findings, out of which the most important ones are presented and analysed in parallel. Very briefly it was concluded that:

1. In Tanzania the formal dairy sector and the informal one are linked and interdependent on the supply level. The informal producers and vendors supply with milk the formal collection centers and factories, while the latter provide training and market information services to the first ones.
2. The contradictory dynamics of the two sectors over the last decades have been caused both by demand factors, such as the population and income growth as well as the shift in food consumption patterns, and by policy factors such as the privatization of the dairy industry and the deregulation of the sector.
3. In Mwanza the development of the milk supply chain is blocked by various constraints that the chain actors confront, most of the times due to their informality. The actors, who play a leading role in the chain management, such as the chain partners and chain co-owners, are possible entry-points for chain development.
4. The current size of the informal dairy sector and its dynamics at all levels of production, processing and marketing, compared to the flows of the imported packaged milk in volume and value terms, indicate a high developmental potential.
5. The current regulatory and policy environment, including the formalization initiative, is considered as more enabling than the almost absent regulatory framework of the decade 1980-1990s or the dominant policy direction of the past towards the destruction of the informal sector. However, the enforcement of the existing regulation is low and a large part of the planned interventions have partially implemented, so the latter need to be completed before a sufficient evaluation takes place.
6. Finally, the recommended interventions, that aim to build an improved and pro-poor dairy sector, are divided in five categories: a) first, the re-strengthening of the formal dairy industry through the re-involvement of the government/state in the provision of the required infrastructure and subsidized equipment; second, the

collectivization and unionization of the milk supply chain actors; third, the promotion of microfinance programmes; fourth, the promotion of skill development programmes; and fifth, the cooperation and coordination of all levels of the authorities and institutions that work on the sector.

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1. Introduction

While walking on the streets of Mwanza, one can observe dozens of petty vendors selling food at very low prices. At several crossroads, one can see vendors on their bikes, transferring 50 lt of raw milk in aluminium or plastic cans from the one end of the town to the other. Others transfer the fresh milk by boats, crossing the famous Lake Victoria, and sell it in specific “meeting points” within the city center.

(From the author’s research diary)

The present study aims, first, to detect the role of the “informal” economy in development (economic growth and poverty alleviation); second, to depict the present status of the informal dairy sector in the context of Mwanza, Tanzania; and third, to recommend possible pro-poor interventions. Although many studies have been conducted either on the informal economy or on the dairy sub sector in a developing context, this is the first baseline study on the “informal” dairy sector in the given context.

The role of “informal” economy in development has been debated extensively since the independence of the present developing countries. A wide range of views on “informality” have been expressed from time to time. Some scholars see the informal sector as a constraint to development (Farrell, 2004) and others see it as a potential source of economic growth and poverty alleviation (Schneider and Ernste, 2000). Over the last decades a theory and policy shift has taken place, from banning the informal economic activities and businesses to integrating them to formal economy.

Furthermore, the agriculture and livestock sector as well as the dairy sub sector have regained the attention of development thinkers and agents. Their share in the GDP and employment in the developing countries remains the largest, comparing to other economic activity sectors. Moreover, the global food crisis has triggered various discussions over the current food production and consumption patterns as well as possible interventions aiming at food security. Smallholder agricultural production and small-scale food processing dominate in the developing world and especially in Sub-Saharan Africa. Moreover, especially in the case of the dairy sub sector, marketing process is dominated by informal market networks. Possible interventions aiming to increase agricultural

productivity and commercialization as well as to facilitate producers' access to markets and build processing plants are under examination.

In Tanzania, the formal milk industry almost collapsed after the withdrawal of the state during the liberalization reforms in the decade of 1980s. In Mwanza, there is no milk processing plant operating at the moment. In contrast, the “net” of the so-called “informal” milk, has been growing over the years by involving an increasing number of people and managing a significant quantity of milk. Given the income poverty and undernutrition problem in Tanzania and especially in the region of Mwanza, this net becomes more important as it can contribute to food security and generation of income and employment. Currently, the government on country and regional level, attempts to formalize the “informal” milk sector, aiming to upgrade the quality standards and the value of the produced and marketed milk.

Given the aforementioned developments, the topic of the present study is of increasing importance. Studying it can contribute to development thinking and policy formulation in various ways: first, by providing an update literature review on the current status and the dynamics of both the informal economy and the dairy sub sector in a developing context; second, by providing first-hand information on the structure and the potential of the milk supply chain in the context of Mwanza, Tanzania; third, by evaluating the formalization process, as an example of intervention initiated by the government on national and local level; and last, by making further recommendations on sector improvement and pro-poor development.

In order to realize all the above components, both desk study and primary collection of data were needed. The latter implied a three month-period of field research, under the supervision of SNV (Netherlands Development Organisation) Tanzania – Lake Zone Portfolio. Qualitative and participatory research methods were applied, including observation, semi-structured interviews of key informants and Focus Group Discussions. The fact that the obtained information refers mainly to the region of Mwanza is not an obstacle for broader uses, since the conditions of informality in the milk sector are similar not only all over Tanzania but also all over Sub-Saharan Africa.

The structure of the present study is as follows: Chapter 2 presents briefly the contribution of the agriculture and livestock sector as well as the dairy sub sector to

economic growth and poverty alleviation in a developing context; moreover, it analyses the main views on the phenomenon and concept of informality over the last 6 decades; it presents both the debate on the impact of the informal economy on pro-poor development and the consequent regulation and formalisation debate; last, it presents the concepts of the “value chain” and “supply chain” analysis, since the latter is one of the fundamental analytical tools of the present study.

Chapter 3 presents the regional framework of the study on national and regional/local level. It provides basic information on the geographical background, the demographic status, the administrative structure and the economic dynamics of Tanzania and Mwanza. Furthermore, it presents the historical background and the present status of the informal economy on country level.

Chapter 4 presents the methodological approach adopted by the study and the research process itself. It includes the conceptual model, the research questions and sub questions, the types of qualitative and participatory methods that were used, the sampling, the data collection process and the main research challenges.

Chapter 5 presents the main qualitative and quantitative findings of the study, following the logical order of the research questions. Specifically, it presents the structure of the dairy sector in Tanzania and the linkages between the formal and the informal milk sector on national level; it describes the informal milk supply chain actors and the leading actors in the chain management as well as the development status of the informal milk supply chain and the challenges confronted by the actors in the context of Mwanza; it presents the current size of the informal milk sector in volume and value terms and the potential of the sector on production, processing and marketing level; finally, it describes the regulatory framework and the policy environment, including the formalisation initiative, on which the opinions of the actors are recorded.

Chapter 6 provides an interpretation of the aforementioned findings. It analyses the findings, comparing them to the results of other studies and reports. Specifically, it analyses the complementary relationship between the formal and the informal dairy sector in Tanzania; the contradictory dynamics of the two sectors over the last 3 decades and their causes; the incipient status of the milk supply chain in Mwanza and the role of the leader actors in sector improvement; the limited size but high potential of the sector;

as well as the enabling and constraining elements of the existing regulation and policy environment.

Subsequently, chapter 7 proceeds to a brief discussion on possible pro-poor interventions in the dairy sector in the context of Mwanza, Tanzania and recommendations for further work.

2. Views on the roles of the agriculture and livestock sector as well as the informal economy in pro-poor development

2.1 Introduction

Over the last years, the dynamics of the agriculture and livestock sector as well as these of the dairy sub sector in developing economies have been discussed intensively, mainly by policy makers. The increasing contribution of the above sectors to economic growth and poverty alleviation is briefly examined at the beginning of the present chapter.

Also, the “hidden” potential of the informal economy has been the subject of extensive discussions throughout the last decades by both academics and development agents. The fact that smallholder production and “informal” market networks dominate in almost all developing economies indicates, according to multilateral financial institutions such as World Bank, the need for wider commercialization and formality. Various debates have been held with respect to the formalization of the informal economy. In this chapter the main focus will be the status and potential of the informal economy in a pro-poor development¹ context. Views on the nature, causes and impact of the informal sector are analyzed in depth and potentially successful intervention policies are presented.

Last, the concepts of supply and value chain analysis are presented, as analytical instruments applied in the present study.

2.1.1 Views on the contribution of the agriculture and livestock sector to pro-poor development

The first Millennium Development Goal is to eradicate extreme poverty and hunger (World Bank, 2011). The role of the agriculture and livestock sector in achieving the aforementioned goal is considered as crucial, since agriculture is seen as a potential engine of growth and poverty reduction in the less developed and agriculture-based

¹ Pro-poor development is defined as development, which contributes to poverty alleviation and brings benefits to the poor not only in absolute but also in relative terms; in other words development which benefits the poor over-proportionally.

economies. For instance, in Sub Saharan Africa economic growth, poverty alleviation and food security depend to a large extent on the agriculture's performance.

Specifically, at low levels of development, agriculture accounts for the half of gross domestic product (GDP) and its share in employment is approximately 85% (World Bank, 2008, p.27). According to cross-country econometric studies, "GDP growth generated in agriculture has large benefits for the poor and is at least twice as effective in reducing poverty as growth generated by other sectors" (ibid, p.29).

In addition, the role of livestock in pro-poor development is perceived as increasingly important. Out of the 1.3 billion extreme poor -defined as those who have to make a living on less than \$1 a day- 45% is estimated to fully or partially depend on livestock for their livelihoods. Moreover, about 70% of the rural poor worldwide get benefited by traditional livestock systems (FAO, 2011).²

Due to shifts in human food consumption patterns, from staple food and cereals to protein-rich food items, the contribution of livestock sector to agricultural value-added seems to increase. "In industrialized countries the livestock sector accounts for an average of 50% of agricultural value-added as compared to about 30% in today's developing countries" (FAO, 2008 in: Pro-Poor Livestock Policy Initiative, 2009, p.2). Furthermore, "demand growth rates of 3% for cereals are less than half the demand growth for high value livestock commodities" (FAO, 2011).

It is worth to mention the various ways that the livestock sector contributes to pro-poor development. First of all, it is a source of employment and income. Second, sufficient production of meat, milk and eggs contributes to food security. Third, livestock produce marketable products, which are generally less vulnerable to harvest timing than many crops. Fourth, they are used as a store of wealth for future investment. Fifth, they can contribute to soil fertility and recycling of agricultural waste. Last, byproducts such as hides and skins can be used as raw materials for the tanning industry and the manufacture of leather products.

For all these reasons, the livestock sector is seen as a means to upgrade poor people's livelihoods and as an important source of economic and sustainable development

² Between 46% and 82% of rural households in Asia, Africa and Latin America keep livestock (FAO, 2008 in: PPLPI, 2009, p.3).

2.1.2 Views on the contribution of the dairy sub sector to pro-poor development

The contribution of the dairy sub sector to economic growth and poverty alleviation as well as undernutrition reduction seems to be particularly important. The developing world is dominated by smallholder production and milk is a high value product, which brings quick returns to small-scale livestock keepers.

Over the last decades, meat and milk consumption has almost doubled in developing countries. In the decade 1995-2005 the annual growth rates in consumption and production of meat and milk in developing countries averaged between 3.5% and 4.0% (FAO, 2008 in: PPLPI, 2009 , p.3). From 2005 to 2010 the dairy production in Asia increased by 41 million tons, in South America by 10 MT and in Africa by 8 MT (International Dairy Federation, 2011). Smallholders produce the vast majority of milk in developing countries, where demand is expected to increase up to 25% by 2025 (FAO, 2011)!

“In the past, increases in global milk demand have been mainly driven by population growth, whereas nowadays they are also fuelled by rising per capita milk consumption in some highly populated developing countries” (FAO, 2010, p.16). Moreover, one of the reasons for which developing countries are increasing their shares in global dairy production is the fact that overall profitability of milk production appears to be higher in developing than in industrialized countries. (The profit margin, resulting from the average milk production cost and the average price of milk, is greater in developing countries).

The benefits derived from small-scale milk production are various: first, it improves the food security of milk-producing households; second, it helps to create numerous employment opportunities throughout the dairy value chain (for example, opportunities for small-scale processors and intermediaries); third, it implies low production costs; in other words, if smallholder milk producers get organized, they could compete with large-scale, capital-intensive dairy farming systems (ibid, p.7). Certainly, besides the strengths of and opportunities for the dairy sub sector in a pro-poor development context, there are also significant weaknesses and threats.

Table 1: World dairy market at a glance

	2006	2007 <i>estim.</i>	2008 <i>f'cast</i>	Change: 2008 over 2007
	<i>million tones milk equivalent</i>			<i>%</i>
WORLD BALANCE				
Total milk production	664.1	676.3	693.2	2.5
Skim Milk Powder (SMP)	23.4	23.7	23.8	0.6
Whole Milk Powder (WMP)	22.3	21.7	22.3	2.8
Butter	58.4	61.2	63.2	3.4
Cheese	82.5	84.3	86.3	2.3
Other products	477.5	485.4	497.6	2.5
Total trade	39.4	38.0	36.4	-4.3
SUPPLY AND DEMAND INDICATORS				
Per caput food consumption:				
World (<i>kg/year</i>)	101.7	102.4	103.9	1.5
Developed countries (<i>kg/year</i>)	243.5	244.0	248.0	1.6
Developing countries (<i>kg/year</i>)	63.0	64.1	65.4	2.0
Trade - share of prod.(%)	5.9	5.6	5.3	
	2006	2007	2008	Change: Jan-Apr 2008 over Jan-Apr 2007
FAO Dairy Price Index (1998-2000=100)				<i>%</i>
	138	247	275	49

Source: FAO, 2011

In any case, the potential of the agriculture and livestock sector as well as the dairy sub sector in developing countries is to a large extent untapped. For instance, a large part of the milk production is consumed either on farm or marketed through informal networks. According to FAO, over 80% of milk consumed in developing countries (200 billion litres annually) is handled by informal market traders (2011). Consequently, the economic outcome is not always as high as the raised expectations. The role of informality of economy in pro-poor development is examined further on.

2.2 Views on the informal economy in light of pro-poor development

The informal economy has been the subject of various academic debates and controversies within the development sector for more than 6 decades. Several scholars have attempted to “capture” the nature of the informal sector and its main characteristics;

to understand how the informal economy is created and what the main factors that cause its emergence are. A wide range of questions have been posed from time to time and have been given different answers, depending on the context. What are the views on the impact of informal economy on economic growth and poverty alleviation? What kind of regulation policies and intervention practices are considered as successful?

In the present chapter some of the most important dimensions of the above discussion are examined, focusing on the relation of the informal economy to pro-poor development. Specifically, it is attempted: first, to present the phenomenon and concept of informal economy; second, to propose a definition of the term “informal sector”, by referring to its main characteristics; third, to analyze the dominant views on informality over the last five decades; fourth, to examine the views on informality’s impact on poverty reduction and economic growth; fifth, to present the basic views expressed within the policy debate on formalisation and regulation of the informal economy; and last, to review successful examples of intervention policies, as applied in a developing context.

2.2.1 The phenomenon and concept of “informal economy”

“Informal”, “unofficial”, “irregular”, “secondary”, “parallel”, “hidden”, “shadow”, “underground” and “black” economy are all terms that refer to similar versions of the same socio-economic phenomenon.

Although the actual term of informal sector originates from a study of Hart on small entrepreneurship in Ghana (1970, pp. 104-120) and a report of the International Labor Office on employment in Kenya (ILO, 1972), the phenomenon had been already recognised by other authors. Dualists, such as Boeke (1953), had already studied the co-existence of two sectors within a developing economy and society in the decades of 1950s and 1960s. However, after the decade of 1970s the interest in informal economy increased and several studies started to come up, not only in the context of developing countries but also that of developed and socialist or lately transition countries.

The distinction between studies of the informal sector in developed countries and studies on less developed countries is followed also by the use of different terminology. Thomas suggested that the term “black economy” should be used for developed

countries, the term “informal sector” for developing countries and the term “second economy” for centrally planned and transition countries (1992).

Other economists consider second economy as a broad category consisting of three sub-categories: informal sector, parallel market and black market. The term “informal sector” refers to small scale, unregistered production and distribution activities, usually done by self-employed operators, who normally lack access to organised markets, credit institutions, education system and other public services, in both rural and urban areas. The term “parallel market” implies illegal production and trade of goods that are legal themselves and usually is created as a response to government restrictions, while the term “black market” involves production and distribution of completely forbidden goods. According to the authors, each of the above phenomena should be confronted by different policies (M.S.D. Bagachwa and A. Naho, 1995, p. 1388).

On the other hand, Tripp argues that within informal sector there are two types of activities: licit and illicit ones. Illicit activities refer mostly to criminal activities, such as drugs trafficking; while licit ones refer to activities, which are legitimate and “do have a legal counterpart in the society under question” (1997), such as tailoring or food selling.

In any case, the limits between the several terms that attempt to conceptualise the phenomenon of informality are not clear. In this study, the focus is exclusively on a developing context in Sub-Saharan African countries, with particular emphasis on the case of Tanzania. Consequently, the term which is chosen to be used, is no other than that of “informal sector”, according to Thomas’ classification.

2.2.2 Term definition and main characteristics of the informal sector

As we mentioned above, there is no consensus regarding the definition of the so-called informal sector. Fajana pointed out that “the notion of the informal sector has some of the disadvantages of any residual category: it is essentially defined but what it is not and therefore may include everything” (2008, p. 372). However, almost all authors agree that informal economic activities share some common characteristics, wherever and whenever they take place.

Table 2: The main differences between the formal and the informal sector

Formal economic activities	Informal economic activities
Registered/recorded	Unregistered/unrecorded
Regulated	Unregulated
Large-scale	Small-scale
Usually employed, corporated-owned	Usually self-employed, family-owned
High level of organisation	Low level of organisation
High level of education/skills	Low level of education/skills
Use of technology	Lack of technology
Difficult entry by new enterprises	Easy entry and exit
High initial capital	Low initial capital
Reliance on foreign and institutional resources	Reliance on indigenous and individual resources
Access to bank credit	Financing from informal sources
Formalised accounting	Informal accounting (if any)
Full-time occupation	Part-time occupation
Legal protection	No property rights
Social provision	No health insurance, pension
Decent remuneration/pay	Low earnings, complementary income
Capital intensive	Labour intensive
High productivity and quality (expensive products)	Low productivity and quality (cheap products)
Independence	Dependence on formal sector

Source: Compiled by the author

A widely accepted definition would include activities which are small-scale, self-employed, unrecorded, unregulated, at a low level of organization and technology and they aim at generating income, most of the times complementary. Other characteristics, mentioned by various authors, are the following: low initial capital requirements, ease of entry and exit, individual rather than institutional resources (personal savings), financing from informal sources (not from commercial banks), no formalised accounting, part-time

occupation, no legal protection (no property rights), no social provision (no health insurance, pension), vulnerability and insecurity (due to shifts in government policy and police harassment), low earnings and dependence on the formal sector (Macharia, 2007, pp. 149-155).

2.2.3 Views on informality – historical overview over the last 5 decades

The concept of two sectors, which coexist within the less developed economies and societies, derives from the theory of dualism, analyzed by authors such as Boeke and Lewis. Boeke regarded dualism as a form of disintegration: “Social dualism is the clashing of an imported social system with an indigenous social system of another style” (1953, p. 4 in: Cypher & Dietz, 2009, p. 100). Most frequently the imported system is dominated by the capitalist mode of production, while the indigenous system is dominated by pre-capitalist forms of production, often depended on subsistence agriculture. While Boeke is rather pessimistic about this coexistence, Lewis believes that the pre-capitalist sector will be gradually absorbed by the capitalist one (Potts, 2011, p. 152).

Dualist approach was followed by modernization theory, which focused on the transformation of the pre-capitalist sector, a process supported by government interventions, following the successful example of the developed countries. The success of this unilinear model of development was questioned, among others, by the dependency school of thought, which gave emphasis on the unequal power relations - between the developed (centre) and the less developed countries (periphery) - set up by the colonisation and reproduced by the capitalist economic system (Cypher & Dietz, 2009).

In the same vein, during 1950s-1960s the majority of the analysts, as well as the governments of the recently decolonised countries, considered the formal sector as modern, progressive and characterised by intensive production. In contrast, the informal sector was considered as traditional, backward and characterised by low productivity, often based on family labour.

However, by the 1970s the dominant point of view shifted and informality was seen as a solution to poverty: First, due to its low level of productivity, informal sector created

high employment. Second, the produced goods were usually cheap, because either the labour was cheap or their quality was low. Third, the low level of technology implied more jobs per product and the low investment meant more jobs per invested dollar. Last, the use of indigenous resources was regarded as positive, due to lack of foreign exchange and self-employed or family labour started to be regarded as hardworking and entrepreneurial (Potts, 2011, p. 155).

Once again, the dominant perceptions towards informality shifted in the neoliberalism era (1980s), initiated by policies such as liberalisation of trade, decrease of government expenditure and currency devaluation. The informal sector was re-considered as unproductive, dangerous and a major obstacle to economic growth. Ironically, instead of being reduced, the informal sector in many countries -and especially the less developed- increased rapidly during the implementation of the liberalisation reforms and Structural Adjustment Programmes (SAPs). Government cuttings in combination with exposition to foreign competition led to a speedy de-industrialisation, which created mass unemployment. This way, many people ended up working in the informal sector (Misati, 2010, p. 222).

2.2.4 Views on the impact of informality on growth and poverty alleviation

Nowadays, “in an average country, roughly 30% of the economy is informal”, while in poor countries informality ranges from 29% to 53% (La Porta and Shleifer, 2008, p. 284)³. Over half of the work force in developing countries is exclusively or partially occupied in the informal sector. “In fact it is legality that is marginal; extralegality has become the norm” (De Soto, 1989, p. 30). More specifically, the majority of the population in African cities participates in informal economic activities and according to several case studies this tendency is rather increasing.

Regarding the impact of this trend, some studies argue that informal sector contributes to economic growth and there is a positive relationship between informal economic activities and investment, while other studies claim that informality blocks

³ Certainly, there is great difficulty to estimate the size of the informal sector, since it is informal, meaning unrecorded, and consequently states don't have at their disposal sufficient statistical data. Moreover, economists often end up with different estimations, as they use different criteria, indicators and techniques to measure it.

investment and growth. The latter are usually based on the fact that by lacking property rights (meaning collateral for loans), operating outside the regulation set, evading taxes and consequently having difficulties to access credit, the informal businesses inevitably lose investment opportunities and impede governments to increase revenue.

Although this seems to be the dominant viewpoint, for a group of analysts, informal sector is not only able to generate subsistence income for the poor, but is also able to develop entrepreneurial spirit, competition, innovation and possibly lead to accumulation. In addition, it is “entrusted with the task of serving the sponge effect” (Mazumdar, 1980 in: Fajana, 2008, p. 386), absorbing the shocks of socio-economic crises, created by rapid urbanization and high unemployment (Misati, 2010, pp. 223-4).

2.2.5 Views on formalisation and regulation in the policy debate

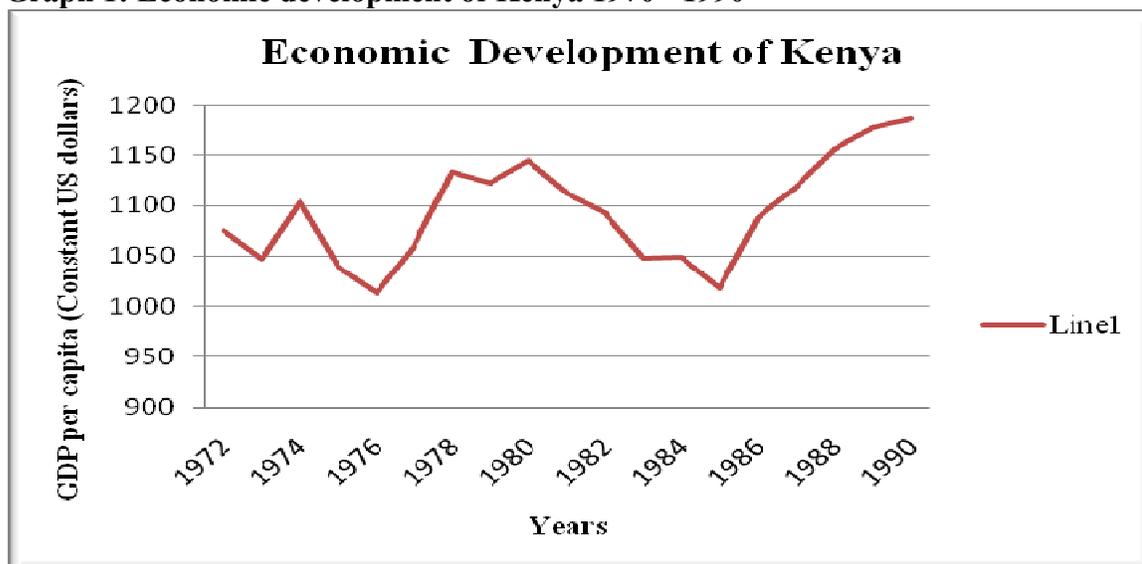
Certainly, the dominance of any of the above approaches within the academic debate on informality has direct impact on the intervention policies that are followed by the governments of the developing countries as well as international development organizations such as World Bank and International Monetary Fund. La Porta and Shleifer present three broad views on the role of informal firms in development: the dual, which they support themselves, the “parasite” and the “romantic” view (2008). However, these three approaches are not the only ones in the academic debate, despite the fact that they are presented as such. There are also other views with different theoretical origins and policy orientations, but these three seem to be the most influential in political terms.

The dual view originates from the older dualism theory and its main features have already been presented above. It argues that informal firms are very different from the formal ones, definitely inferior in productivity and human capital terms. However, due to the fact that informal businesses operate in different markets, having different customers, they don't threat the formal ones in any way. According to this view, as the economy develops, informal businesses will be eventually displaced by new formal ones, run by new, more qualified people. Consequently, government policies should focus on the creation of efficient, formal firms and let the informal sector die (La Porta and Shleifer, 2008, p. 278).

The dual approach could be criticised mainly on two points: First, based on empirical studies such as the present, one could question the fact that informal firms operate in totally different markets, having different customers (a point which will be discussed further in the case of informal milk sector in Tanzania). Many authors have mentioned the weakness of any conceptualisation that ignores the interconnection between the two sectors. “Throughout Africa today, hundreds of thousands, perhaps millions, of people who used to have formal sector jobs are now self-employed informal workers and many others who still have a formal job are also moonlighting in the sector” (Potts, 2008, pp.157-158).

Second and most important, the statement that informal sector disappears as the economy develops has not been confirmed from the past five decades. Since independence in 1960s, many developing countries have had phases of economic development, while the informal economies seemed to have steady upward trend.

Graph 1: Economic development of Kenya 1970 - 1990



Source: Based on data taken from Heston et al., 2011

For instance, in the decades 1975-1995 the GDP per capita in Kenya, despite some fluctuations, rather increased (see graph 1), while in the same period the informal sector overdoubled. “In 1972 the ILO estimated that the informal economy in Nairobi employed about 20% of the municipality’s active labour force. [...]By the early 1990s, Nairobi’s

informal sector was employing as much as 45% of the city's active labour force" (Macharia, 2007, p.149).

According to the "parasite" view, by avoiding taxes and regulations, the informal firms remain small and unefficient, while they have a cost advantage, which leads to reduced prices also in formal products. This way, informal firms harm growth "both because their small scale makes them unproductive and because they take away market share from bigger, more productive formal competitors" (La Porta and Shleifer, 2008, p. 277). So, the ideal government response, suggested by this approach, is no other than to eradicate informal businesses by strengthening law enforcement.

However, the so-called "Wal-Mart" theory (the name of which symbolises its preference towards big, competitive firms over small family-based firms) does not address at all the issues of mass unemployment and severe poverty that will be created by putting millions of informal operators out of business. Besides the fact that both dual and parasite views do not take into account the causes of informality, seen as a product of socio-economic inequalities, the policies which they recommend could deepen these inequalities even further.

For instance, the most probable scenario, if businesses run by "less able entrepreneurs or managers" with low education level are simply banned, is that these people will lose any chance to upgrade their human capital and their social status. Consequently, the inequalities which led them to this position will be once again reproduced. Economists often overlook this dimension. But development, as a broader category, differs from economic growth exactly on this dimension: it includes growth, while it presupposes poverty alleviation and inequality reduction.

On the other hand, the "romantic" view is deservedly represented by the Peruvian economist Hernando De Soto, since he appears to be the most optimist, compared to the other two schools of thought. His aim is to show how the less developed countries will achieve economic development through capitalisation of their informal economies. Through his work "The Mystery of capital: Why Capitalism Triumphs in the West and Fails Everywhere Else" (1989) and "The other path: the invisible revolution in the Third World" (2000), he tried to show that property rights are at the core of the economic success of the West. Specifically, is due to formal property systems, that assets can be

transferred, traded and used as active capital, producing large amounts of surplus value in expanded markets. As he stated, “the formal property system is capital’s hydroelectric plant” (Hernando De Soto, 1989, p. 47). According to this approach, informal firms have the potential to be productive and will be sufficiently productive if they get formalised, acquiring property titles.

De Soto’s ideas have been widely acclaimed as well as intensively criticised, both by right-wing and left-wing thinkers and policy makers. First, De Soto does not refer to any historical injustices generated by colonialism or socio-economic inequalities within the developing countries. Similarly, he does not suggest any kind of redistribution of wealth, neither from privileged groups to unprivileged ones within a country nor from developed to less developed countries through debt relief. Second, De Soto easily discards “the old Weberian idea that poor people’s ability to achieve prosperity and advancement is restricted by cultural dispositions and patterns of behaviour” (Graner, 2007).

In addition, as Nyamu-Musembi pointed out, a “social evolutionist bias” underlies the work of De Soto, according to which the transition to private, individual ownership is inevitable, like it is “the destiny of all societies” (2006, p. 3) Last, it’s not an iron law that property rights provide security to their holders, since in practice they often put them at risk. For instance, there are many cases where indigenous people acquired property titles over land and very soon their land was sold to foreign companies or large landowners for a very low amount of money. Due to unawareness, lack of information and illiteracy, poor people easily fall victims of exploitation or even fraud. It’s not a coincidence that de Soto’s ideas have been criticised for opening not only the markets, but also the way for land grab and conflicts over natural resources in developing countries.

In general, experience has shown that there is no rule indicating that “increasing or decreasing the formalisation necessarily improves or worsens the well-being of the poor or welfare of society at large” (Guha-Khasnobis, Kanbur and Ostrom, 2006, p. 9). Nevertheless, in some cases the formalisation process, that De Soto suggests, is a demand of informal operators themselves, since it seems to be the only way for them to get recognition, access to credit and public services and consequently raise their income and

improve their living standards. At this point, the present study argues that the state has an important role to play.

First of all, it has to set an enabling regulatory environment⁴. But which type of regulatory environment is an enabling one? This is rather debateable. There are studies, according to which more regulation leads to a larger informal economy, since the over-regulation of the market by the government -through taxes and labour legislation, quality and safety regulations or production standards- raises the transaction costs of operating in the formal sector and as a result participating in the informal economy becomes more advantageous (Gerxhani, 2004, p. 279). In order to prevent this development, liberalisation reforms during the decades of 1980s-1990s promoted the deregulation of the markets in developing countries, attempting to motivate private initiative. However, as we have already mentioned above, their goal was not succeeded.

In contrast with the neoliberal doctrine, there are analysts who claim that reducing the degree of market regulation, set by the state, will not necessarily lead to formalisation of the economy. In many developing countries, over the past twenty years, regulation has been decreasing, while informality has increased. According to Basak Kus, “the size of the informal economy has a more significant association with the quality of enforcement than with the degree of regulation” (2010, p.489). Specifically, in regulatory environments, such as these of many OECD countries, where limited regulation is combined with effective enforcement institutions, informality remains low. In contrast, in regulatory environments, which are characterised by restrictive regulation and at the same time ineffective law enforcement, informal economy seems to be wide (Kus, 2010, p. 502).

2.2.6 A review of successful intervention policies as given in literature

Besides regulation policies, possible intervention practices, run both by governments and international development organisations, can be subdivided to two categories:

- A. First, the ones which aim to contribute to collectivisation of informal operators and enterprises, as a tool both to upgrade their legal status and increase their production and marketing performance;

⁴ Here, regulation is defined as “public control over private sector behaviour” (Vogel, 1996)

- B. Second, the ones which aim to increase operators' individual capacity and skills in order for them to meet certain standards, make their businesses sustainable and be able to participate in broader entities.

Certainly, the two intervention categories are interconnected, since the success of the first type of interventions towards collectivisation requires the existence of the second type of capacity building policies and vice versa.

A. Collectivisation process has usually two dimensions: the creation of production-oriented or market-oriented cooperatives and the establishment of labour unions. There is evidence from both formal and informal sector that producers and processors' associations and cooperatives give the opportunity to small-scale operators to produce and market their products more effectively (Markelova et al., 2009, p. 2). Furthermore, unionised informal workers are in a better position to defend their labour rights and negotiate with the government over any unfavourable to them policy.

Nowadays, large part of informal economy in developing countries is still not unionised, but a positive trend is observed by scholars. According to several studies, a new and more dynamic generation of organised actors has risen up in various contexts, including the region of Sub-Saharan Africa. The formerly limited in size and perspective, highly localised associations have been evolved into national organisations which connect not only with each other on international level, but also with other collective actors, such as Non Governmental Organisations and social movements, forming broad networks (Lindell, 2010, p.209).

However, there are still various obstacles towards unionisation and general development of informal sector. Sola Fajana examined unionisation, as a strategy both to achieve decent remuneration and labour conditions as well as to promote national development, in the context of Nigeria. She considered "limited access to credit facilities" and "lack of suitable skills" as two of the major problems that block the development and unionisation of Nigerian informal economy (2008, pp. 380-381).

B. At this point, governments and development agencies could encourage unionisation and general development of informal sector also through measures, such as micro-financing policies and training programmes aiming at skills development.

In 2004 the Nigerian government introduced National Economic Employment and Development Strategy (NEEDS), in order to confront a series of macro-economic problems, including unemployment. Among other things, it also promoted a microfinance policy, which has encouraged until today many microfinance institutions to provide credit to informal enterprises (Akintoye, 2008, p. 97).

Another step taken by the Nigerian government to reduce unemployment was the establishment of the National Directorate of Employment (NDE) in 1986. The objective of NDE was to implement innovative programmes towards the provision of training opportunities to graduate farmers and small scale entrepreneurs (Akintoye, 2008, pp. 99-100). Similar vocational programmes can be designed both for informal businesses which have already been operating for some time and young people who intend to participate in the informal sector in the near future.

According to some scholars, there is a low interest in skills development and “this international neglect of skills development in developing countries is underlined by its absence in the MDGs” (Palmer, 2007, p. 399). However, the 2005 World Summit Outcome mentions the significant “role of both formal and informal education in the achievement of poverty eradication and other development goals” (UN, 2005, p. 10, Section 43). Intervention policies focused on skills development, concerning both formal and informal economy, have already been suggested for various contexts.

For instance, in Ghana the 2006–2009 Poverty Reduction Strategy (GPRS II) sets a series of goals in order to strengthen the existent training system on national level. However, emphasis has been given almost exclusively on pre-employment skills training and much less on traditional apprenticeships within the informal economy -despite the fact that informal apprenticeship remains the only real option for the majority of young people (Palmer, 2007, p. 402).

In his study on skills development for the rural informal economy in Ghana, Palmer mentions that currently there are two basic types of training programmes, which are provided to informal operators: first, skills upgrading programmes, such as the Vocational Skills and Informal Sector Support Project (VSP); and second, pre-employment training programmes, such as the ICCES in rural areas of Ghana (2007, p.

405). Similar pro-poor development-oriented programmes could be designed and implemented in any developing country.

Certainly, the potential and the needs of each developing country are different to a large extent. Furthermore, the strengths and weaknesses of each economic sector, such as the agriculture or manufacture sector, differentiate as well. Therefore, first a careful analysis on the regional context is needed; and second, a supply or value chain analysis on the sector under examination is considered as necessary. There are no blueprints; however, there are general policy directions that, after the necessary adjustments and improvements, can be proved useful.

2.3 Views on supply and value chain analysis

The term “supply chain” emerged in the decade of 1980s, as the main concept of Supply Chain Management (SCM), and meant the downstream flow of goods from suppliers to ultimate users (Cooper et al., 1997). The supply chain is considered as a single entity, integrating all the businesses processes and functions which are necessary for the delivery of a final product or service. According to some scholars, the reduction of the costs is at the center of SCM. Furthermore, the relationship of the chain actors is limited to the transaction of the goods or services.

On the other hand, the concept of “value chain” has its origins in the work of Porter on business strategy (1980) and represents a specific type of supply chain. It depicts the value flows which derive from customers, in the form of demand, and end to suppliers. In other words, value chain can be considered as a “demand chain” involving all the activities that add value to the product, according to customers’ needs. Therefore, value chain analysis focuses more on innovation in product development and marketing (Feller et al., 2006, p.4). In addition, it requires a more active involvement of the actors, who invest in terms of financial and human capital in order to increase their cooperation and efficiency.

However, both supply chain and value chain refer to similar networks of suppliers, intermediaries and customers -simply from a different point of view. Nowadays, both terms are used in a similar way. Nevertheless, a shift to the value chain approach is observed. The latter is related to the increasing competition and the current trends

towards globalization of production and supply, which lead inevitably to development of new production patterns and marketing mechanisms.

In the present study a supply chain analysis will be carried out for a series of reasons, which will be explained in the methodological and empirical part of the study. In any case, the actual focus points of the analysis will not be very different from the ones that a value chain analysis would include. According to Rich et al., value chain analysis includes a mapping of the chain actors, an assessment of governance mechanisms, a detection of entry-points for upgrading within the chain and a consideration of the distribution of benefits among the actors (2010, p.2). The present study attempts to address all the above components to a greater or lesser extent.

2.4 Conclusion

To sum up, both the dairy sub sector, as a traditional sector with a new emerging dynamic, and the informal economy, as a constant “hidden power” in the developing world, are at the center of attention in the development thinking community. Nowadays, there is a significant opportunity for these sectors to stand out and contribute to economic growth and poverty alleviation. In a series of regions around the world and especially in South Asia steps of outstanding progress have already been done. In contrast, the outcomes of the performance of both sectors in Sub Saharan Africa are still limited. In the next chapter the regional context of the present study will be presented, shedding light on the aforementioned general trends.

3. Regional Framework

3.1 Introduction

The present chapter aims to provide basic information regarding the regional context of the study as well as to detect the potential of the region under examination in terms of (human) geography and economy.

First, it presents basic data on the geographical potential, the demographical status, the historical background, the political and administrative structure and the economic dynamics at national, regional and local level. The emphasis is on the most dynamic sectors of the economy at all levels of the regional context (Tanzania, Mwanza Region and City) and especially on the dairy sub sector. Second, it provides an overview on the informal sector in Tanzania. A general picture of the informal economy's historical background, present status and intervention policies on national level is given.

3.2 National level: Tanzania

3.2.1 Geography

The United Republic of Tanzania is located in the central Eastern Africa. "It borders on the Indian Ocean to the east, and has land borders with eight countries, anticlockwise from the north: Kenya, Uganda, Rwanda, Burundi, Democratic Republic of Congo (across Lake Tanganyika), Zambia, Malawi and Mozambique." (Foreign and Commonwealth Office, 2009).

Tanzania is the largest country of East Africa. It covers an area of 945,087 sq km, with land covering 886,037 sq km and water 59,050 sq km (CIA, 2008). The country is topographically varied. There are high grasslands and mountain ranges near the coast and to the south. The coast and offshore islands have a hot and humid tropical climate, while on the Plateau the climate is hot and dry (East Africa Living Encyclopedia).

Two thirds of the country is too dry or too wet to sustain high agricultural productivity. However, "out of the total 88.6 million hectares of land resource, 60 million hectares are rangelands suitable for livestock grazing" (Njombe and Msanga, p.1).

Since 1996 Tanzania's official capital has been Dodoma, whereas its largest city and the center of most government institutions is Dar es Salaam (former capital). Dar es

Salaam still remains the center of trade for Tanzania and its landlocked neighbors, due to its coastal location. Tanzania's other major cities include Arusha, Mwanza, Mbeya, Mtwara and Stonetown.

Map 1: Tanzania



Source: http://www.embassyworld.com/maps/Maps_Of_Tanzania.html

3.2.2 Demographical status and dynamics

The country's total population is 41.8 million (2010 estimate), whereas it is concentrated along the coast and isles, the fertile northern and southern highlands and the area bordering Lake Victoria (United States State Department, 2010). Although the population of Tanzania has tripled in the past four decades, the country remains sparsely

populated. Nevertheless, density has been increasing in some parts of the country over time.

Table 3: Demographical dynamics in Tanzania

Tanzania					
Demographic Indicators	2011	1995	2005	2015	2025
Population					
Midyear population (in thousands)	42,747	29,753	37,771	46,123	53,428
Growth rate (percent)	2.0	2.6	2.1	1.8	1.2
Fertility					
Total fertility rate (births per woman)	4.2	6.2	5.1	3.6	2.6
Crude birth rate (per 1,000 population)	33	44	38	29	23
Births (in thousands)	1,395	1,318	1,421	1,347	1,225
Mortality					
Life expectancy at birth(years)	53	47	49	54	56
Infant mortality rate (per 1,000 births)	67	105	74	62	51
Under 5 mortality rate(per 1,000 births)	114	160	130	104	81
Crude death rate (per 1,000 population)	12	17	15	12	11
Deaths (in thousands)	517	491	550	533	580
Migration					
Net migration rate (per 1,000 population)	-1	-2	-2	0	0
Net number of migrants (in thousands)	-23	-52	-82	0	0

Source: U.S. Census Bureau, International Data Base, 2011

The high population growth rate in Tanzania has been caused by high fertility and declining mortality levels. “According to the 2002 census, the life expectancy at birth is 51 years” (National Bureau of Statistics, 2011). Tanzania’s population lives predominantly in rural areas (74%), despite the increasing urbanisation trend.

The official languages of Tanzania are Kiswahili and English. However, more than 120 ethnic groups are represented in Tanzania and each of these groups differs, to varying degrees, from other groups in culture, social organization, and language. The largest ethnic group, the Sukuma, represents nearly 13% of the total population. Ethnicity has been reflecting geographic area since colonial rule. In any case, interethnic conflict has not been a significant political problem in Tanzania as it has been elsewhere in Africa (East Africa Living Encyclopedia).

3.2.3 Political and historical background

The modern Tanzanian state is formed from the former colony of Tanganyika on the mainland and the former Protectorate of Zanzibar. Tanganyika achieved independence in 1961 and became a republic in December 1962 with Nyerere as the first President. Zanzibar became independent from Britain in December 1963, while the union of Tanganyika and Zanzibar took place in April 1964.

“Following independence, Tanzania enjoyed political stability and national unity unparalleled in Sub-Saharan Africa” (IDA, 2009). In 1965 the constitution was changed to establish a one-party system of socialistic inspiration (Foreign and Commonwealth Office, 2009). The Nyerere regime, following the Arusha Declaration of 1967, adopted policies based on self-reliance, extensive nationalisation of the industrial sector and compulsory villagisation (ujamaa). Only in 1992, the Constitution was amended to allow for a multi-party political system.

3.2.4 Present political and administrative structure

Despite the introduction of multiparty politics, Tanzania is still characterised by a rather dominant-party system. “The Revolutionary Party of Tanzania (Chama Cha Mapinduzi - CCM) has been in power for more than thirty years. [...] Due to the CCM’s

overwhelming majority in the National Assembly and the ineffective opposition, government policies remain largely unopposed within parliament” (EDC, 2011).

Regarding the administrative structure, in the present Tanzania consists of 26 regions (mkoa), 21 on the mainland Tanganyika and 5 in Zanzibar. 99 districts (wilaya), each with at least one council, have been created to further increase local authority. There are 114 councils operating in the 99 districts. The councils are also known as *local government authorities*, out of which 22 are urban and 92 are rural. The 22 urban units are further classified as city councils (Dar es Salaam and Mwanza), municipal councils (Arusha, Dodoma, Iringa, Kilimanjaro, Mbeya, Morogoro, Shinyanga, Tabora, and Tanga) or town councils (the remaining eleven communities).

Since 1990s several decentralization reforms have taken place that aimed to strengthen the local government. Currently, the Local Government Reform Programme aims to improve the quality of the access to public services provided by local government authorities (Ngwilizi, 2001, p.3).

3.2.5 Economic dynamics: growth and poverty

Despite annual GDP growth of between 5% and 6% during the last decade, the performance of the Tanzanian economy remains weak. Tanzania has a GDP of \$21.4 billion (2009-2010 estimated) and a per capita income of \$426 (World dataBank, 2011). It remains one of the world's poorest countries, with almost 15 million people -in other words 36% of the population- living below the national poverty line (CIA World Factbook 2010). However, there have been some successes in delivering social services, such as education, health, sanitation and water (Foreign and Commonwealth Office, 2009).

“Poverty remains predominantly a rural phenomenon, although the number of poor in urban areas, mainly the unemployed and those engaged in the informal sector, is growing fast” (Tanzania National Website). Therefore, agriculture and livestock have been reconsidered as priority sectors, while informal economy and SMEs, including cooperatives, have gained important attention by the *National Strategy for Growth and Reduction of Poverty (NSGRP)* (2005, p.37).

Table 4: Economic Performance of Tanzania

Tanzania Economic Indicators	2000	2009-10
GDP per capita (US\$)	298	426
GDP per capita growth (%)	2.3	3.0
Agriculture value added (% of GDP)	33.5	28.8
Industry value added (% of GDP)	19.2	24.3
Poverty gap at \$1.25 a day (PPP) (%)	217	19
Poverty gap at national poverty line (%)	69	33
Poverty gap at rural poverty line (%)	61	27
Poverty gap at urban poverty line (%)	18	9
Exports of goods and services (% of GDP)	13.4	23.2
Imports of goods and services (% of GDP)	20.1	35.2
Total external debt (% of GDP)	70.1	34.3
F.D.I net inflows (US\$ millions)	463,4	414,5

Source: World dataBank (WDI & GDF, Africa Development Indicators), 2011

Since independence, Tanzania's economy has been relied heavily on agriculture, which still accounts for nearly half of GDP and employs 80% of the workforce.

According to several scholars, in the past Africa's agricultural record was considered as a prime illustration of the dangers that state intervention in pricing and marketing brings (Putterman, 1995, p.1). Many Sub-Saharan African countries, including Tanzania, had so low economic performance during the decades of 1970s and 1980s, that by the mid-1980s had no alternative but to accept economic reforms designed by the Multilateral Financial Institutions. The reform programmes included broad changes in the "rules of the game" (North): trade liberalisation, financial market deregulation, property rights reforms, privatisation of public firms and price liberalisation. However, the concern over the socio-economic impact of the reforms on the welfare of the people and especially the poor grew in late 1980s and early 1990s, as the inequalities were deepened

Currently, the dynamic sectors in Tanzanian economy seem to be tourism and mineral sector. Tourism is growing in importance and ranks as the second highest foreign exchange earner after agriculture. Mineral production (gold, diamonds, tanzanite) has grown significantly in the last decade. It represents Tanzania's biggest source of economic growth, provides over 3% of GDP and accounts for half of Tanzania's exports (Kafumu, 2005).

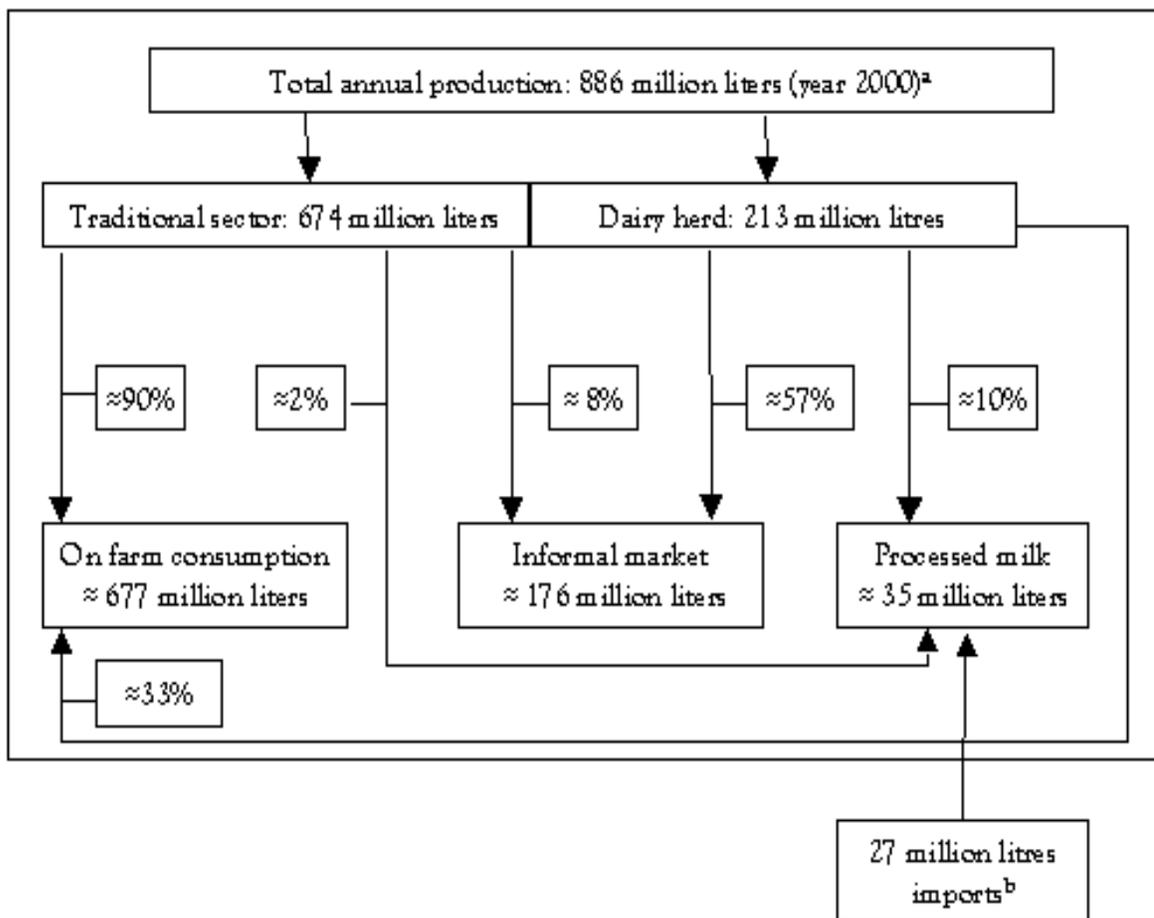
Furthermore, "Tanzania is endowed with abundant natural resources, which include land, forage and a large livestock resource base" (Njombe and Msanga, p.1). It has the third largest cattle population in Africa, after Ethiopia and Sudan. Out of the 18.8 million cattle found in the country about 560,000 are dairy cattle and the rest are indigenous cattle, raised for both milk and meat production (p.7).

Despite this potential, the livestock sector accounts for only 13-18% of the GDP: 40% from beef, 30% from milk and another 30% from poultry and small stock production (SNV, 2010, p.1). However, the contribution of livestock is not limited to its share in the total GDP. Livestock also contributes to national food supply (meat, milk and eggs) and food security. It is a source of cash income and employment (it directly employs about 3.7 million people, mainly within traditional systems) and an inflation free store of value (Njombe and Msanga, p.1).

3.2.6 The dairy sub sector

More than 1,2 million households in Tanzania keep dairy cattle. The milk production is currently estimated at 1,150 million liters per annum, mainly produced by smallholder farmers. Out of the annual national production about 813 million liters (70%) come from indigenous cattle and a significant part (72 %) is consumed on farm. Furthermore, over 90.5 % of the remaining marketed milk is traded through traditional informal networks and only approximately 9.5% is processed and sold through formal markets (Rural Livelihood Development Company, 2009, p.4).

The flow of milk in the Tanzanian market



Source: MoAC/SUA/ILRI, 1998

In the mid-1970, the Tanzanian government and its development partners recognized as one of their priorities the development of the dairy sub sector. As a result, the

improved dairy cattle increased, more milk collection centers were established and processing was developed by state owned TDL (Tanzania Dairies Limited). However, during 1990s government owned assets, also in the dairy industry, started to be privatized, aiming at increase in private investments. In practice, many of the former processing units were closed down or drastically reduced their operation capacity. Over the last 15 years the processing industry has almost collapsed by shrinking more than 80% (RLDC, 2009, p.4).

Currently, the national formal dairy sector has to compete with both the informal markets and the more competitive imported dairy products. The locally processed dairy products keep a market share of 70 % against the imports (ibid). The main constraints are the following: inconsistency in supply, inadequate infrastructure (lack of cooling equipment, storage facilities and means of transportation), weak regulatory framework and lack of marketing mechanisms.

However, the existing production capacity and high demand for milk indicate, first, a great opportunity for the dairy sector to be developed, through wider commercialization; and second, a significant chance to contribute to poverty alleviation, by upgrading the income of livestock keeping households, especially in the rural areas of Tanzania.

3.3 The informal sector

3.3.1 Historical overview

The history of informal sector in Tanzania is not very different from the history of informality in any African or even developing country. During colonialism discrimination policies and restricting regulations -such as taxation policies- used to keep Africans in rural areas, while colonisers used the cities as administration and trade centres.

As the time passed, more Africans from the countryside began entering the cities as cheap labour for the European-owned enterprises and a rural-urban migration trend came up. As much African population was increasing in urban areas, unemployment started to increase as well. Once again discriminatory policies -this time on entrepreneurship, trade and finance- created “first” class markets for Europeans and “second” class markets for Africans (Lugalla, 1997, p.429). Since the surplus labour couldn't be absorbed by the

formal sector, unemployed migrants started to operate as informal vendors in petty trade activities (such as selling food).

After decolonialisation, the fact that internal migration was easier to happen led to rapid urbanisation and enlarged unemployment. Given the fact that public services were also unable to serve the recently arrived population, informal housing and self-employment became the rule. Since then the informal economy has been increasing, but not at a steady pace all the way, depending on the dominant perceptions and policies towards informality each period.

According to Lugalla, the development policies during the period 1967-1980 kept the growth of informal sector at low levels. In contrast, by the 1981 the government adjustment policies, followed by an agreement with the International Monetary Fund on the adoption of the “Economic Recovery Programme” in 1986, led to increasing cost of living and stagnant wages that forced people to search for secondary sources of income (1997, pp.433-434). The informal economy in Tanzania grew “from a low level of less than 10% of official GDP during the late 1960s to a sizeable proportion of over 20% after the mid- 1980s” (Bagachwa, 1995, p.1393).

3.3.2 Present status and intervention policies

Currently, Tanzania has with 58.3 by far the second largest informal economy in Africa (Schneider, 2002, p.7). In some sectors, such as the dairy sector, even 90% of the market on national level may be covered by informal production. Tripp mentions that in Tanzania “the informal sector contributes more to the GDP than the formal manufacturing sector” (2001, p.5).

The majority of people engaged to informal activities in Tanzania usually choose to participate in the informal sector as a way to increase their income. Certainly there is also a part of the population, which pursues informal activities in order to survive. According to a study of Lugalla on urban poverty in the mid-1990s, the main sources of extra income were the following: 85% of the population was engaged to urban farming, 17% to poultry keeping and 10% to dairy farming (1995, p.124). Since mid-1990s these activities, plus grocery kiosks and hairdressing saloons, have been the dominant complementary sources of income for middle and upper social classes.

Lugalla suggests that informal activities can be divided in two categories: the “modern” and “traditional” ones. The lower classes normally deal with “traditional” activities, such as hawking and selling food. Despite this, most of the policies which intend to promote the development of informal economy are directed towards the so-called “modern activities”, which have the potential to reach the standards of the formal sector at some point (1997, pp.447-448). Consequently, the very poor do not get any benefit from these measures.

On the other hand, over the last years there is a commonly observed shift from banning informal businesses to integrating them in the formal economy. After some unsuccessful attempts to suppress the informal sector by putting informal operators out of business, the government on national and local level shifted to a more inclusive approach. Currently, it tries to promote a formalisation process, which includes the formation of Unions, the proceeding of regular quality inspections as well as the provision of training and certification to the involving operators.

As the president stated himself: *The time has come for the government, both central and local, and for the people in the public and formal sector as a whole, to accept the informal sector for what it is: a reality of life, an important provider of goods and services, and a market for goods and services provided by the formal sector... There is indeed an immense potential within the informal sector. This potential has been condemned to function outside the existing legal regime, constraining its ingenuity and productivity, and thereby denying the poor and the economy as a whole the benefits of the entrepreneurship that is vital to their self-determined well-being and the prosperity of their country.* (Mkapa, 2004, p.50 in: Muller, 2005, p.56).

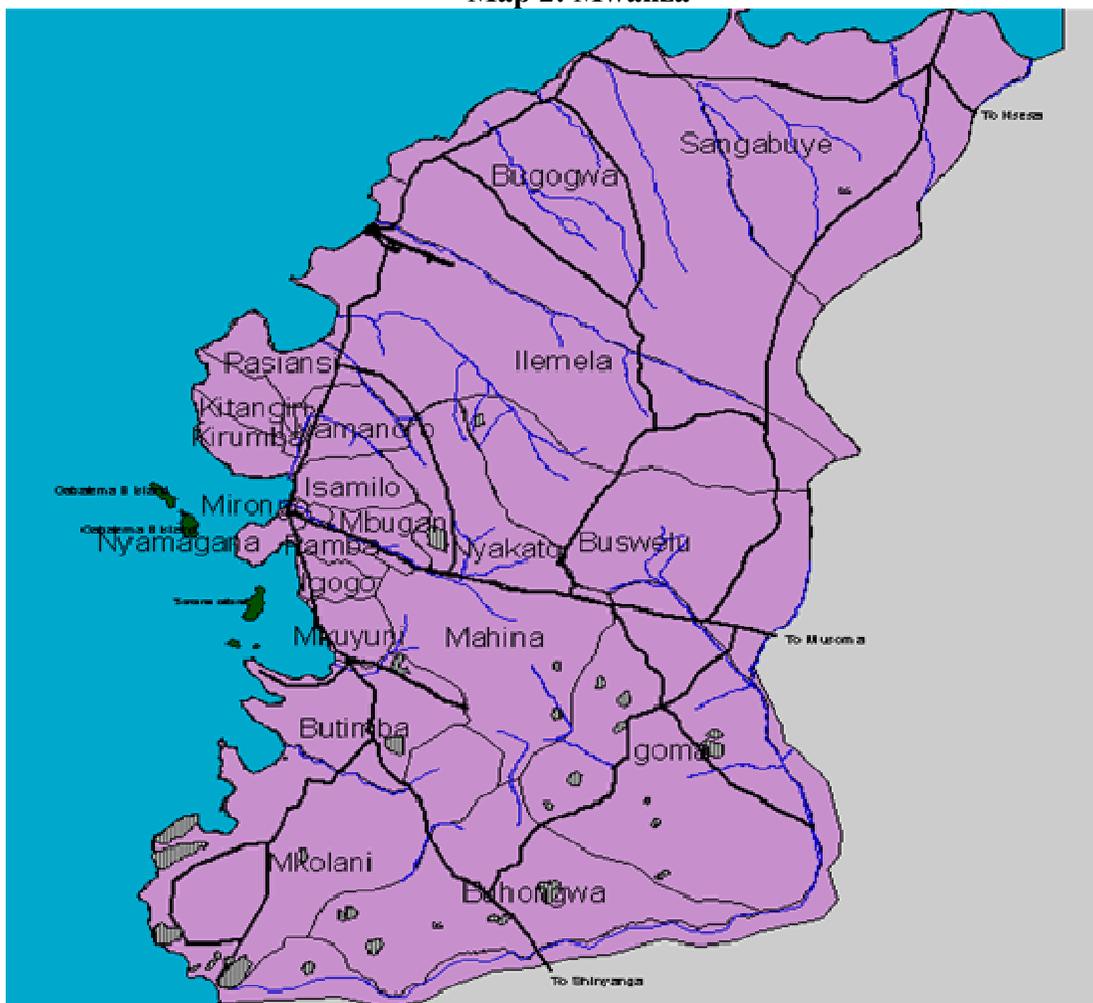
3.4 Regional and local level: Mwanza region and city

3.4.1 Geography

Mwanza Region lies in the northern part of Tanzania. Regions bordering Mwanza region are Kagera to the west, Shinyanga to the south and south east and Mara region to the north east. The northern part of Mwanza region is surrounded by the water of Lake Victoria which in turn separates the region from neighbouring countries of Uganda and Kenya. Mwanza is a relatively small region occupying 2.3 percent of the total land area

of Tanzania mainland, while 43% of the region's surface area is water (Msekela, 2008). Mwanza City is situated on the southern shores of Lake Victoria. 68% of the area is covered by water and 32% is dry land.

Map 2: Mwanza



Source: SNV Lake Zone Portfolio, 2011

3.4.2 Demography

Although Mwanza is the fourth smallest region in terms of dry land area, the population of the region is now estimated to be 3.5 million people. Mwanza boasts the highest level of urbanization (18.6%) of its population after Dar es Salaam (89.6%) and Morogoro (21.1%). The main ethnic groups in Mwanza region are the Sukuma, Zinza,

Haya, Sumbwa, Nyamwezi, Luo, Kurya, Jita and Kerewe. The Sukuma dominate by constituting over 90% of the population.

Mwanza City is the second largest city and one of the fastest developing urban centers in Tanzania. Mwanza has grown rapidly over the last decades. The population is estimated at 571,200 based on National Population census 2002, growing at 3% per annum (natural growth).

Table 5: Total population of the 8 Districts of the Mwanza Region

District	Male	Female	Total	Density
Ukerewe	129,547	132,397	261,944	409
Magu	202,077	214,036	416,113	136
Nyamagana	105,316	105,419	210,735	-
Kwimba	152,733	163,447	316,180	-
Sengerema	254,733	247,182	501,915	81
Geita	355,823	356,372	712,195	105
Misungwi	125,970	131,185	257,155	132
Ilemela	133,371	132,540	265,911	-
Total	1,459,570	1,482,578	2,942,148	146

Source: PMO-RALG/UNDP/UNCDF, 2006

3.4.3 Administrative structure

Mwanza region has in total seven Local Government Authorities and it is divided in eight districts: Ukerewe (to the north), Magu (to the east), Sengerema and Geita (to the west), Misungwi and Kwimba (to the south) and Nyamagana and Ilemela (the city). The districts are divided into 33 divisions and these in turn are further subdivided into 174 wards, 683 villages and 481 mitaa (small administrative areas resulting from subdividing wards within town ships, municipalities and cities and for this case are within Mwanza City). Mwanza City is divided in two districts: Ilemela and Nyamagana. It includes 21 wards and 8 registered villages.

3.4.4 Economic dynamics

Mwanza region is among the poorest in Tanzania. The very high population density, aggravated by serious pressure on land, is the main causal factor for the high levels of poverty in the region (PMO-RALG/UNDP/UNCDF, 2006, p.18). Food insecurity is one of the most severe problems in the region. Significant shortage of food has been experienced over the last decade and external sources, such as food aid and import, “had to be sought to supplement the internally generated food supply” (ibid, p.20).

Table 6: Indicator of under nutrition

	Number of meals per day	% of population
Mwanza Region	1	6
	2	68
	3	27

Source: Kidane, 2010

Mwanza region has an overall low level of economic performance when measured by per capita gross regional product: It ranks 10th amongst 12 selected regions with 48,508 TSh per annum, followed by Mara and Dodoma with 43,748 and 39,604 respectively (ibid). The economy in Mwanza is dominated by smallholder agriculture, which employs about 85% of the region’s population. The commercial farming in the region is limited, while subsistence farming is the dominant form. Intensification of farming practices and exploitation of Lake Water for irrigation farming have been suggested as potential solutions to increase of food production and security.

An expanding fisheries sector, mining industry and livestock sector also command a recognizable share in the economy of Mwanza region (Msekela, 2008). Specifically, livestock keeping is the third leading economic activity of the majority of people in Mwanza and a potential source of economic growth and poverty reduction. Mwanza is the second region in the country, after Shinyanga region, with livestock estimated at approximately 2,312,375 cattle, 2,620,818 poultry, 873,009 goats, 166,864 sheep and 610 pigs (Ministry of Livestock Development, 2006).

Within Mwanza City, the main economic activities are (urban) agriculture (32,1%), commerce and trade (15,8%) and fishing (14,9%) (according to 2002 census). The informal sector is estimated at 13%. However, there are indications which show that this estimation is rather modest (Mwanza City Council, 2011).

Most of the urban-based wards practice poultry farming and zero grazing livestock keeping. The city enjoys livestock products such as milk, eggs, cattle meat and skins. According to 2004/2005 estimates, there are 1,420 milked cows at Nyamagana District and 2,359 at Ilemela. Liters of milk produced at Nyamagana District are 340,800 of which 272,640 liters are sold. Ilemela District produces 566,160 liters of milk, out of which 452,928 liters are sold. Processed milk (both as fresh milk and yogurt) is in total 1,770 liters (Mwanza City Council, 2004/2005). However, statistical data on livestock keeping, meat and milk production, processing and marketing are insufficient.

The informal sector in Mwanza consists of micro-enterprises that are not registered and do not have business licenses. It includes activities such as selling old clothes, vegetables (at open spaces), carpentry, selling small items like cosmetics, shoes etc. In all occasions, the size of these businesses is so small that paying for a trade license is unaffordable. Due to the contribution of this sector to the economy (as an employment and income generating sector), Mwanza City Council in consultation with the traders themselves established markets / working places for the informal businesses and petty vendors in Mwanza (ibid).

3.5 Conclusion

The above indicates that both on country-level and on regional as well as local level, there are significant weaknesses and constraints regarding the demographic dynamics and the economic performance but there is also a significant potential for growth and poverty reduction. The agriculture and livestock sector as well as the dairy sub sector are of great importance for both the economy and the well-being of Tanzanian people. This potential can be found not only in the formal but also in the informal sector. What is the extent of the potential of the informal sector in the given context and how can it be mobilised to contribute to pro-poor development? These are questions that the present study attempts to pose further on.

4 Methodology

This chapter presents the methodological framework of the primary data collection. The components of this framework are diverse. They include the conceptual model, the research questions, the operationalization of the concepts, the sampling and information on the data collection, including challenges as confronted during the field work.

4.1 Conceptual model

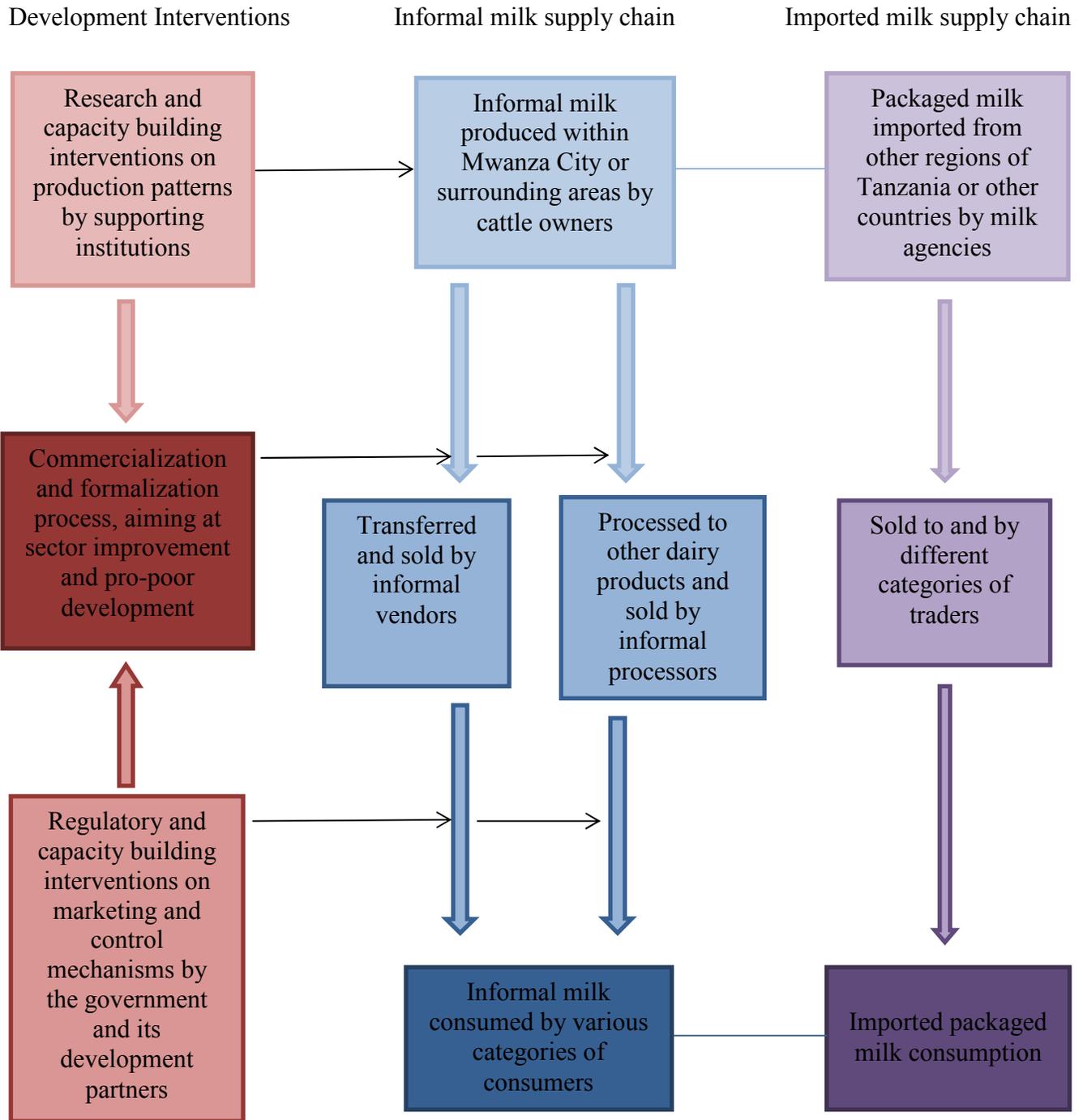
The conceptual model below presents both the main concepts and the main “processes” under examination in the present study. More specifically, it attempts to depict three parallel “processes”: first, the informal milk supply chain in Mwanza City (at the center); second, the value chain of the imported packaged milk (on the right); and third, the current interventions in the informal milk sector, aiming at sector improvement and pro-poor development (on the left).

The informal milk supply chain indicates both the flow of the milk from local production to consumption and the direct actors of the chain⁵: informal milk producers, vendors and processors as well as different categories of consumers. The value chain of the imported milk indicates the flow of the packaged milk and the direct actors of the chain such as agencies of milk companies and different categories of traders and consumers.

The current development interventions are subdivided in two categories. First, there are the interventions which aim at upgrading the consistency and quality of local milk production through improved production patterns. These interventions are usually being carried out by supporting institutions such as research and training centers. Second, there are the interventions, which aim at imposing the access to markets through business development and upgrading of marketing mechanisms. The latter are usually carried out by government and development agencies, including business service providers. The ultimate goals of both types of interventions are the formalization of the sector and the commercialization of small-holder production.

⁵ The definition of the concept “direct actors” is given in the sub-chapter “operationalization of concepts”.

Milk Supply Chain and Development Interventions in Mwanza City, Tanzania



4.2 Research questions and sub questions

By studying the available reports on informal dairy sector in Tanzania and by presenting and analyzing the empirical data, as collected during the field research on the informal dairy sector in Mwanza City, it will be attempted to answer the following questions:

1. *What are the structure and the dynamics of the formal and informal dairy sector on national level?*
 - a) How is the dairy sector organized on national level?
 - b) Which are the linkages between the formal milk sector and the informal one?
 - c) Which are the factors that explain the different dynamics of the formal dairy sector and the informal one?
2. *What are the characteristics of the informal milk supply chain in Mwanza City?*
 - a) Who are the direct chain actors and what are their characteristics?
 - b) Who plays a leading role in the chain management?
 - c) To what extent is the informal milk supply chain developed?
 - d) What are the main constraints to chain development?
3. *What are the present size and the potential of the informal milk sector in Mwanza City?*
 - a) How much raw milk in liters is produced and marketed (processed/sold) and what is the value of this milk in monetary terms?
 - b) How much packaged milk is imported and what is the value of this milk?
 - c) What is the potential of the informal milk sector?
4. *What is the role of the regulatory and policy environment?*
 - a) What is the regulatory framework of the dairy sector?
 - b) What policy interventions are planned or already implemented by both the government and its development partners in Mwanza?
 - c) What is the opinion of the chain actors on the formalization initiative?

5. *What are the entry-points for development?*

a) What types of interventions can contribute to sector improvement?

b) What types of interventions are effective to make the sector pro-poor?

4.3 Operationalisation of concepts

The aim of the operationalization is to define the main concepts of the study. Certainly, the main concept of “informal economy” and the concepts of “supply” and “value chain” have already been analyzed in the theoretical framework of this study. With respect to the remaining concepts, appeared in the conceptual model and/or the research questions, precise definitions are provided at this point.

- **Supply chain:** the flow of goods from suppliers to users (including all the necessary processes) as well as a set of linkages between actors, whose relationship is limited to the transaction of the goods.
- **Value chain:** a specific type of supply chain, which depicts the value flows of a product (including all the value-adding activities) as well as a set of linkages between actors, who cooperate with each other in order to satisfy demand and improve their efficiency.
- **Chain actors:** those who get involved in all the necessary processes and activities, in order for the final product to be delivered. They are divided to direct actors, who are commercially involved in the chain, and indirect actors, who provide financial or non-financial support services (KIT, 2005, p. 3).
- **Chain activity integrators:** chain actors who have moved from one activity into other activities in the chain (KIT, 2005, p. 19).
- **Chain partners:** chain actors, who exert influence over the management of the chain, get organized for technological innovation and/or institutional dialogue in the chain (KIT, 2005, p.20).
- **Chain co-owners:** chain actors, who increase both their activities and their influence. They are organized in business cooperatives that develop new products (ibid).

- **Chain management:** includes management over pricing and terms of payment; management over market information, record-keeping and traceability of products; management over quality standards, grading, control and certification; innovation management; as well as management over chain cooperation, such as chain vision, trust building, joint action plans, negotiation and marketing intelligence (KIT, 2005, pp.26-28).
- **Stakeholders:** both the chain actors and other actors, whose action is important for the sector, such as government agencies on national and local level and development partners.
- **Regulatory framework:** a system of regulations and the means to enforce it, usually set by the government, in order to regulate a specific activity or a sector.
- **Pro-poor sector:** a sector which contributes to poverty alleviation and brings over-proportional benefits to the poor.

4.4 Qualitative and participatory research methods

The methods, which are chosen to be applied in the data collection, are qualitative and participatory. They include observation, semi-structured interviews of key informants and focus group discussions (FGDs).

The fact that the chosen methods are not quantitative themselves doesn't mean that there are no quantitative findings deriving from the research. According to the so-called "cross-fertilisation" of methodological tools, "quantitative information can be obtained through participatory and/or qualitative methods" and vice versa (Desai and Potter, 2006, p. 118-119).

More specifically, in the case of depicting informal milk supply chain, different methods of data collection, such as quantitative surveys, would be almost impossible to handle, due to the certain circumstances that informal activities imply. First, the duration of the meetings with the informal milk operators and especially with the vendors is limited, since the meetings are carried out in informal operators' workplace. As a result, the researcher has to be flexible with respect to the selected questions, in order to obtain

the necessary information each time. Second, a significant part of the informal operators are illiterate and as a result it would be impossible to let them answer a questionnaire by themselves and return it afterwards. Third, it is very uncertain whether one can find informal operators in the same place at the same time in a daily base in order to gather the answered questionnaires.

On the other hand, in the case of assessing the role of the regional and local government as well as that of supporting institutions, a survey would be more possible, but probably not so effective. From personal experience, when government officials are asked to answer structured questionnaires, it is probable either to ask for some time to prepare their answers and then to shift responsibility to lower ranking employees or to accept to answer the questionnaire straight away, giving unreliable answers.

In contrast, interviews give the opportunity to researchers to make open questions and observe the overall behavior and reactions of the interviewees to each question and subsequently understand more about the level of reliability of the obtained information. Certainly, the danger of subjective analysis and bias of the results is always present when qualitative methods are used and the researcher has to be very careful not to be misled by prejudices and prior believes. In this study, it is assured that the members of the research group were aware of this danger throughout the research process.

Furthermore, interviews can provide factual information about government initiatives, such as the formalization reform, and an opportunity to examine motivations and reasons for successes or failures (Desai and Poter, 2006, p.146). Moreover, semi-structured interviews seem to be the most suitable methodological tool, since this way it is ensured that the important areas of the topic are covered, while the interviewees are provided with opportunities to expand on their own ideas and thoughts (ibid, p.145). In other words, in the case of informal milk sector the advantages of qualitative research and analysis seem to outweigh the potential disadvantages.

In addition, it is attempted to use FGDs as a complementary tool. The latter provides an enabling environment for understanding collective social action and accessing group beliefs and attitudes that might be overlooked in interviews (ibid, p.154). The main benefits of this method are its participatory character, the stakeholder involvement and the empowerment of participants through the research process.

On the other hand, there are some limitations, of which the research group is aware in order not to overestimate the contribution of FGDs: First, focus groups are inappropriate for exploring individual motivations. Second, groups sometimes evoke misleading notions of a “homogenous community” or “collective consensus”. Third, groups can be dominated by powerful “voices” and conceal controversies and conflicts. Last, they are difficult to organise and are considered as time-consuming, especially when interpretation is used and the communication is not direct (Laws et al, 2003). Nevertheless, the organization of one at least FGD is still crucial, since its aim is dual: first, to triangulate the gathered information; second, to promote the social dialogue on the issue of informal dairy sector and its ongoing formalization.

To conclude, a creative combination of qualitative and participatory methods is used, in a way that the advantages of the one method cover the disadvantages of the other one. Consequently, a relatively complete picture of the facts and ongoing processes in the informal milk sector and the causes of these processes as well as their impacts on local people’s well-being is gradually formed.

4.5 Sampling

The sample for the semi-structured interviews has to include various stakeholders: informal milk producers, processors and vendors; regional and local government officials, such as livestock and public health officers; as well as representatives of supporting institutions, such as research institutions, training centers, business development service providers and developmental NGOs.

Regarding the public officials and the related to the sector supporting institutions, it is rather simple to choose a sample, since their contact details and general information about their work are easily accessible. In contrast, it is much more complicated to end up with a list of interviewees from the above mentioned categories of informal operators. Due to the nature of their activities, which most of the times are unrecorded, there are no official catalogues with their personal data.

Therefore, the first step is to visit the places where the informal milk vendors are normally gathered and can give information about the other links of the supply chain, both producers and consumers. In addition, the “snowballing” technique is a suitable

sampling method for this type of research. One interviewee suggests other possible contacts who in turn suggest others, making the list of potential interviewees longer (Desai and Potter, 2006, p.148).

Furthermore, contact with “gatekeepers” is important at some points of the research and mostly at the beginning, in order to recruit interviewees (ibid, p.147). People who play a significant role in the sector, such as Chairmen of Unions, are sometimes the key to a long list of interviewees deriving from a broad network. However, it is crucial to assure the diversity of the sample and consequently not to rely on one person’s network or on a group of people with the same characteristics in terms of age, gender etc. Moreover, the presence of a “gatekeeper” during the interviews may influence interviewees’ answers, biasing the findings. Therefore, in the present research it is preferred to meet the interviewees privately.

4.6 Data collection

The desk study took place mostly in SNV offices in Mwanza City, where adequate infrastructure is available and access to official documentation (mostly regulation guidelines) and research reports on the dairy sector at national and local level is possible. In contrast, observation and semi-structured interviews took place in various locations all over Mwanza Region, wherever the informal operators, local government officials and representatives of supporting institutions are based.

The data were collected by our research team during March and April 2011. Within this period we visited 6 entry points of informal milk (Airport Road, Mwaloni-Sengerema Ferries, Buswelu, Musoma Road, Buhongwa Area and Kamanga Ferries); we interviewed 70 informal milk vendors, 11 producers / owners of cattle and 4 yogurt processors’ groups as well as 4 representatives of formal milk agencies (Fresh Dairy, Brookside, Mara Milk and Musoma Dairy) and Tanga Fresh Cooperative. Moreover, we visited several shops, supermarkets, retailers, hotels, restaurants and learning institutions, in order to record the preferences and opinions of final consumers.

Regarding the role of regional and local authorities, we interviewed the Livestock Officer of Mwanza Region, the Livestock Officer and Dairy specialist of Nyamagana District, a Public Health Officer of City Council as well as 3 Officers of Mabuki

Livestock Research Center and Mabuki Farmers Training Center. Furthermore, we visited 13 Ward Offices, while we managed to interview 8 Ward Livestock / Health Officers and get information about the following areas: Ilemela, Kirumba, Nyamanoro, Isamilo, Pamba, Buswelu, Butimba, Mkolani and Igoma. In addition, we visited some supporting institutions, such as Heifer International, TFDA (Tanzania Food and Drugs Authority), SIDO (Small Industry Development Organization) and VIC (Veterinary Investigation Center).

Last, we organized a Focus Group Discussion, where a multi-stakeholder approach was adopted and a group of complementary sources of information was formed. The Livestock Officer of Mwanza City Council, the Chairman of UWAMATA (Union of Milk Vendors in Tanzania), a representative of TUKWAMUANE (Processors' Women's Group) and a livestock advisor of SNV were invited and actively participated.

4.7 Research challenges

An important challenge to the research was the lack of correct statistical data by the different levels of regional and local government (City Council, District Councils and Ward Offices). Specifically, it was not possible to triangulate the obtained information on cattle keeping and milk production (the total number of cattle owners and the total amount of informal milk either produced within Mwanza City or coming from surrounding areas of Mwanza Region).

There are indications that Ward Officers don't have at their disposal the correct statistical data and as a result may misinform also the higher levels of local and regional government. For instance, there is a great difference in given numbers of milk production from the one area to the other. The Ward Officer of Buswelu claimed that only 50 lt per day are produced in the area and the Ward Officer of Ilemela said that 5500 lt per day are produced in the area, while both of the areas are outside the center with cattle keeping potential. It can be simply speculated that the estimation of Ilemelela Ward Officer is more probable and reasonable than that of Buswelu Ward Officer.

The impact of this constraint on both possible interventions and the present research is debatable. It could be crucial to the extent that interventions designed by the local government are based on false data - an assumption that cannot be totally excluded.

However, the impact on the research results, which will be presented below, is limited due to the availability of alternative sources of information.

In addition to the above mentioned challenge, there is another one that was confronted during the collection of data: The long bureaucratic procedures are a characteristic feature of the public administration in developing countries. Sometimes, ward officers denied to be interviewed without official permission by the District Councils, which in turn delayed to provide us with the list of the ward offices and the required permission. Nevertheless, the reasons for these delays were related to inadequate coordination and infrastructure (power cuts, lack of technological equipment etc.), rather than to unwillingness from the employees' side to contribute throughout the research.

5 Findings on the informal milk sector in Mwanza, Tanzania

The findings can be subdivided mainly into quantitative and qualitative. However, they are interconnected and they are presented in parallel. The thematic order, in which the findings are organized, follows the logic of the aforementioned research questions: first, the dairy sector in Tanzania is presented; second, the informal milk supply chain in Mwanza is depicted; third, the size and the potential of the informal milk sector in Mwanza is estimated; and fourth, the regulatory and policy environment is evaluated.

5.1 The structure and the dynamics of the dairy sector on national level

First, the basic information on the structure of the dairy sector on national level are presented; second, the supply linkages between the formal dairy sector and the informal one are illustrated; third, the relationship of the two sectors on demand level is described; and fourth, the factors that explain the different dynamics of the two sectors are highlighted.

5.1.1 The structure of the dairy sector in Tanzania

The dairy production base in Tanzania consists of smallholder producers, the vast majority of whom keeps the so-called “Zebu” traditional cattle (98% of the total available cattle). Specifically, “70% of the total national milk production comes from smallholder dairy farmers” (MMA, 2008 in: Quaedackers, 2010). A significant part of the producers are organized in cooperatives. Currently, the Tanzania Milk Producers Association (TAMPRODA) has 220 individual members and 570 farmers groups on national level.

A large part of the produced milk is consumed on farm, while the rest is predominantly marketed by hawkers (informal vendors) and delivered door to door. Only a small part is marketed through milk collection centers and is formally processed to packaged fresh milk or other dairy products and sold by formal retailers to the consumers.

Currently, there are 35 processing plants of installed capacity higher than 1000 liters per day. Out of these 22 are in operation and 13 are closed or have suspended production. Moreover, the dairy industry in Tanzania is characterized by enormous capacity underutilization (Mbwambo). Most of the processors are members of TAMPA (Tanzania Milk Processors Association).

Finally, the milk consumption rates in Tanzania are low. As a producer interviewed mentioned, “Tanzanians are not milk drinkers” (Gachocha, 2011). With only 39 liters of milk per annum (2007), average milk consumption per capita in Tanzania is lower than that in Uganda, with 50 liters per capita, and Kenya, with 100 liters per capita (Quaedackers, 2010).

5.1.2 The supply linkages between the formal dairy sector and the informal one

There are important linkages between the two sectors. The latter are linked especially on the supply level. The backward linkages⁶ between the formal dairy sector and the informal one are illustrated in the way that the informal operators supply the formal dairy industry with their products or services and vice versa:

A significant part of the producers that provide the formal processing plants with milk in Tanzania can be considered as informal. They are neither necessarily registered and/or trained, nor have the required identification and/or certification. Moreover, in order for the raw milk to be marketed and reach the formal processing plants, informal vendors may take part in the supply chain.

For instance, in Mara Region, where two major milk factories operate (Musoma Dairy and Mara Milk), much of the milk sold to the processors is bulked by middlemen who act on behalf of informal traders, who subsequently sell it to the collection centers, owned by the companies (SNV, undated). Formal processors usually have a negative opinion about informal vendors and push the local government to enforce the regulation of forbidding the sale of unpackaged milk. However, as indicated above, vendors play a valuable role in linking small scale producers to the market (SNV, undated).

Furthermore, from the moment that the producers and vendors start to supply the milk factories, there is a good chance to be organised and/or trained with the support of the milk companies. For example, one of the main objectives of Tanga Fresh Project⁷ is

⁶ Backward linkages are channels through which information, material and money flow between a company and its suppliers and create a network of economic interdependence.

⁷ Tanga Fresh counts more than 3000 individual members and 11 cooperatives, under the umbrella organization Tanga Dairies Cooperative Union (TDCU). Smallholder dairy farming was introduced in the

the promotion of reproductive performance and milk quality management for smallholders through the Dairy Farmers Information Service. Around 2000 out of the Tanga Fresh's 4500 farmers access the service. The latter provides the milk producers with information on the market, sector developments and animal husbandry practices, and keeps farmers in touch with vets and extension support (ACEF, 2011).

5.1.3 The relationship of the formal and the informal dairy sector on demand level

The relationship of the two sectors on the demand level is at the same time competitive and complementary, as they were communicating vessels.

Despite the fact that on the household level the formal dairy sector targets rather to the upper income socio-economic groups, in overall the two sectors share the same market, since the majority of the large-scale consumers, such as businesses and institutions, use also -and even more- raw milk. The fact that the two sectors share the same market and consequently are competitive between each other is also confirmed by the fact that when the demand for milk is not covered by the informal sector, the consumption of the formal milk increases.

Representatives from formal milk agencies have indicated that the major competitor for the formal milk industry in Tanzania is not the imported milk from other countries but the informal milk, which is produced domestically and marketed through informal networks. More specifically, the representative of Musoma Dairy (one of the most important formal milk companies in Tanzania) mentioned that “during the dry season producers of informal milk do not have at their disposal enough milk to sell, so the demand for milk is high. Having stocked milk in cooling centers during the wet season, Musoma Dairy is able to cover the high demand of the dry season” (Mazara, 2011).

Tanga region in 1985 by a bilateral Tanzanian-Dutch dairy development programme. Nowadays, Tanga Fresh is the main supplier of fresh milk products to Dar es Salaam. (ACEF, 2011).

5.1.4 The dynamics of the formal and the informal dairy sector and their causes

Over the last two decades the formal milk industry has shrunk more than 80% in Tanzania. In contrast, the informal milk sector increased to such a large extent, that it currently represents over 90% of the total milk flows in the market (RLDC, 2009). This difference in dynamics between the two sectors can be explained mainly through two socio-economic developments:

1. On the one hand, the withdrawal of the state, as a result of the decentralization and deregulation processes, which were promoted by the liberalization reforms and the Structural Adjustment Programs (SAPs) in the decades of 1980-1990s, caused the collapse of the milk industry, which was until then under the control of the government. Private actors failed to take over the sector or maintain it on high performance levels, probably because they lacked the required know-how and initial capital.
2. On the other hand, the population and income growth -especially in the urban areas- as well as the appearance of an increasing number of learning institutions, hotels and restaurants, which are the principal large-scale milk consumers, led to a rapid increase of the demand for milk; creating a gap between demand and supply that was ready to be filled by the informal sector.

5.2 The characteristics of the informal milk supply chain in Mwanza

The present section presents the main findings regarding the characteristics of the chain actors and the marketed milk, the leading roles in the chain management, the development status of the supply chain and the main constraints to chain development, thus the main challenges confronted by the chain actors.

5.2.1 The characteristics of the chain actors and of the marketed milk

The direct chain actors consist of four categories: the milk producers, the milk vendors, the processors of yogurt and the customers or final consumers.

A. Informal milk producers

The vast majority of the milk producers are smallholders, semi-subsistent farmers. They are scattered all over Mwanza Region and especially in the peri-urban and rural areas surrounding Mwanza City. All the producers interviewed were middle age men except one old woman. For most of them, selling milk is a supplementary source of income. Their main occupational activities are diverse, from running a business to being employee in the public sector.

The socio-economic status of the producers and their educational background vary as well. In general, the higher the socio-economic status, the higher is their level of education. For example, Mr. Gachocha, who is a retired civil servant and another producer in Ilemela, who is an owner of a restaurant, are better educated than the producers in the remote area Tx, where infrastructure and housing is of low standards. Specifically, the producer who supplies with milk his own restaurant has been enrolled in higher education on Agriculture Studies, while the producers in Tx were enrolled only in the primary schooling.

Regarding the income level, an important part of the producers does not keep records; so, they are not able to estimate accurately their additional income, derived from milk. The ones who keep records, such as Mr. Gachocha and Mr. Mkama in Ilemela district, were able to make an approximate estimation about their monthly income: 100.000 TSh (50 Euros) and 150.000 TSh (75 Euros) respectively.

Table 7: Characteristics of the milk producers

Producers (individuals or members of associations)	Other professions	Location	Number and type of cows	Milk/day (lt.)	Selling price/lt (TSh)
1.	-	Kilimahewa area	1 exotic	12	1000
2.	Owner of a restaurant	Ilemela (near the airport)	30 indigenous, 10 exotic	25 from indigenous, 90 from exotic	1000
3. Mr. Gachocha	Former Civil Servant	Ilemela Kiseke	5 cross breeding (Haifa II)	30	800
4.	-	Tx	6 indigenous, 3 exotic	15	500
5.	-	Tx	2 cross-breeding (Friesian)	10	600
6.	-	Igombe	22 indigenous and 5 exotic (only 1 out of five is milked)	7,5from indigenous and 18 from exotic	600
7.	Businessman in the fishery sector	Kayenze	782 indigenous, 12 exotic (10 are milked)	40	-
8. Mr. Mkama	-	Ilemela	13 cross-breeding (4 are milked)	9	1000
9.	Vendor	Mwaloni (coming from Nyarwambo)	-	20	375
10. Member of a Producers' Association from Buhongwa, Mkolani and Nyegesi	-	Mkolani	20 exotic (Friesian Ayrshen)	40	900
11.	-	Pasiansi – Nyasaka Street	21 indigenous	26	1500

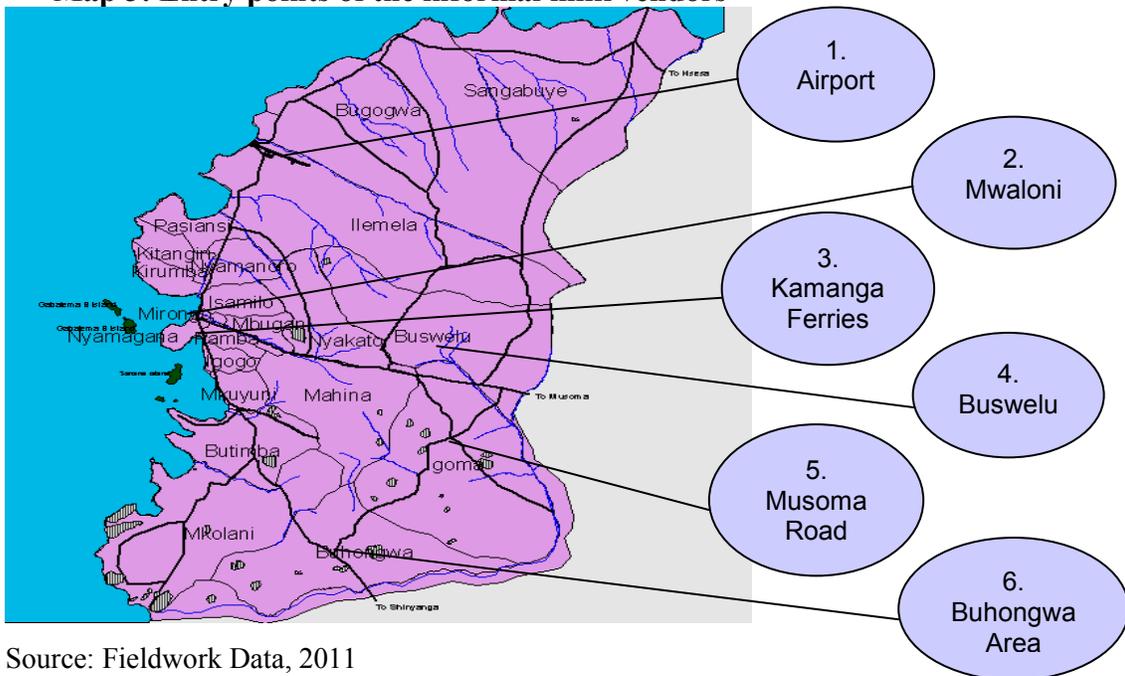
Source: Fieldwork Data, 2011

B. Informal milk vendors

It is estimated that the informal milk vendors are in total around 220, while 150 of them are either already registered or in the process to register. For the vast majority of the vendors, marketing raw milk is a full-time occupation. Their socio-economic status and educational level are in general low.⁸ They are all men either young or of middle age, being able to carry and transfer big quantities of milk. They get into the city mainly through 6 entry points (4 by bikes and 2 by boats).

Similarly to the case of the producers, many of the vendors do not keep records and they are not able to calculate their monthly income with accuracy. Out of the ones who keep records, two members of UWAMAKA (Union of Milk Vendors from Kamanga), which consists of men in the age of 35-40 years old, claimed that their average income per member reaches the 600.000 TSh (300 Euros) per month. In contrast, two other UWAMAKA members indicated that their monthly income does not exceed the 100.000 TSh (50 Euros). Similarly, the vendors, who were interviewed while they were passing from the entry-point of Musoma Road, had an average income of 80.000 TSh (40 Euros) per month.

Map 3: Entry points of the informal milk vendors



Source: Fieldwork Data, 2011

⁸ Unlike the case of the producers, the research team did not have the opportunity to observe the living conditions of the vendors, since the interviews were held in the “points”, where the vendors enter the city.

Table 8: Characteristics of the milk vendors

Milk vendors [Unions or individuals]	Entry point and origin of milk	Milk/ day/vendor (lt)	Buying price/lt (TSh)	Selling price/lt (TSh)
UWAMAKA (Umoja wa Wauza Maziwa Kamanga) [16 members]	Sengerema Ferries – Coming from Kamanga, Kalumo, Nyamatongo, Nguma, Katunguru	Average: 80	Average: 475	Average: 650
Chairman of UWAMATA (Umoja wa Wauza Maziwa Tanzania)	Coming from villages around Ilemela District	50 in dry season, 85 in wet season	500	800
VijanaSimamaI mara [5 members]	Mlangommoja	30 (6 vanish in boiling and 20 are sold)	1000	1500
18 individuals	Musoma Road - Coming from Kwimba, Misungani, Magu, Misungwi, Kisesa	Average:40	Average: 450	Average: 650
3 individuals	Mwaloni – Coming from Sengerema	Average: 40	Average: 750	Average: 1050
20 individuals	Airport Road - Coming from villages around IlemelaDistrict: Sangabuye, Nyamwirorerwa, Igogwe, Bugogwa, Kayenze and Kabusungu	Average: 50	Average: 450	Average: 700
4 individuals	Buhongwa Road – Coming from Misungwi, Isamilo village, Mayoro, Masungwe and Usagara	Average: 40	Average: 350	Average: 500
3 individuals	Buswelu – Coming from Kisabo, Sese	Average: 48	Average: 430	Average: 730

Source: Fieldwork Data, 2011

C. Informal milk processors

There are no milk processing plants operating at the moment and the 12 informal milk processors are all small-scale. A representative sample of the processors' cooperatives is presented in table 9. For the three out of the four cooperatives interviewed, processing milk is their main activity. Most of the members are young and middle age women. Their socio-economic status and educational level are in general low, but both are improved through their participation in the cooperatives. All cooperatives are located in poor neighbourhoods, such as Mabatini and Buswelu. All have leaderships (chairmen) and organize regular meetings in order to make decisions (once in a week or month). Proper bookkeeping is the responsibility of the cooperatives' accountant.

Table 9: Characteristics of the milk processors

Processors of yogurt [Cooperatives]	Location / Origin of milk	Milk /day (lt.)	Bying price/lt (TSh)	Selling price/lt (TSh)
TUKWAMUANE Women's Group [9 members]	Mabatini	40	800	1300 (for the surrounding communities) 1500 (for foreigners)
MAHINA Women's Group [5 members]	Yustina Milk Kiosk, Nyakato-Mecco (Milk from Musoma)	40 (3 are evaporated, 37 are processed to yogurt)	750	1300
Vijana Simama Imara [5 members]	MlangoMmoja	30 (4 are processed to yoghurt)	1000	1500
TUJIKOMBOE [17 members]	Buswelu	12 (11 are processed to yogurt)	1000	1600

Source: Fieldwork Data, 2011

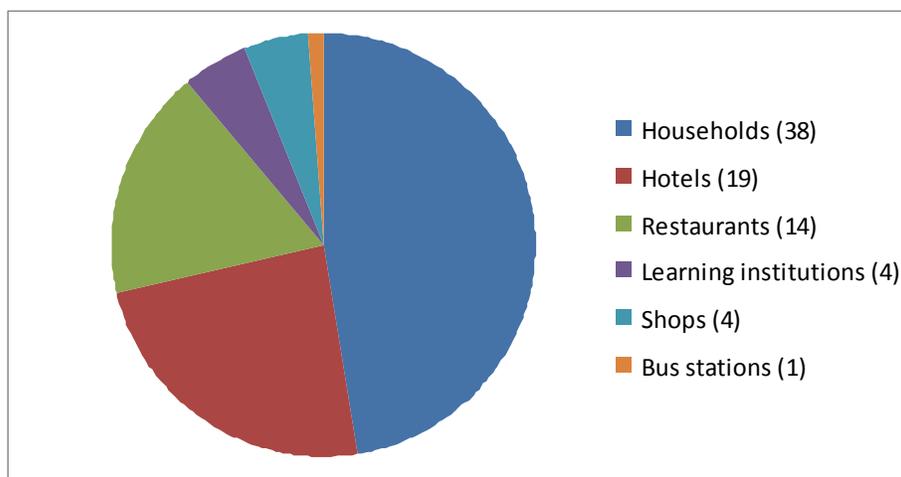
TUKWAMUANE, which is the most efficient of the cooperatives, has been processing milk to yogurt since 2004. It consists of young and middle-age women (31-52 years old) and is the fruit of the women's economic empowerment initiative taken by Kivulini Women's Rights

Organisation⁹. The members were able to estimate that their average income per month is 50-60.000 TSh (25-30 Euros). Similarly, the other three processors' cooperatives are the fruits of TUKWAMUANE's success. Their members or at least their leaderships were trained by TUKWAMUANE with respect to both business logistics and women's rights. Mahina Women's Group estimated that their monthly income per member is 50.000 TSh (25 Euros). Last, Vijana Simama Imara, which consists of young girls and boys (18-25 years old), started to process and sell milk in April 2010, so they have been operating only for a year. They calculated that their income per month per member is 15.000 TSh (8 Euros).

D. Customers / final consumers

The main categories of customers and final consumers of informal milk in Mwanza are presented in graph 2, as frequently as appeared in the answers of the interviewed producers, vendors and processors' cooperatives (80 in total). As illustrated, the households, the hotels and the restaurants are the most important customers of the informal milk vendors and producers.

Graph 2: Categories of informal milk consumers



Source: Fieldwork Data, 2011

⁹ "Kivulini" literally means "in the shade/shelter".

The interviewed customers and consumers indicated that they prefer the informal milk over the formal one for a series of reasons. These reasons are presented in table 10 in order of importance.

Table 10: Reasons for preference over informal milk

Advantages of informal milk	
Customers / Consumers of informal milk	1. Low price
	2. Natural taste
	3. Easy to cook
	4. Good quality

Source: Fieldwork Data, 2011

5.2.2 Leading roles in the supply chain management

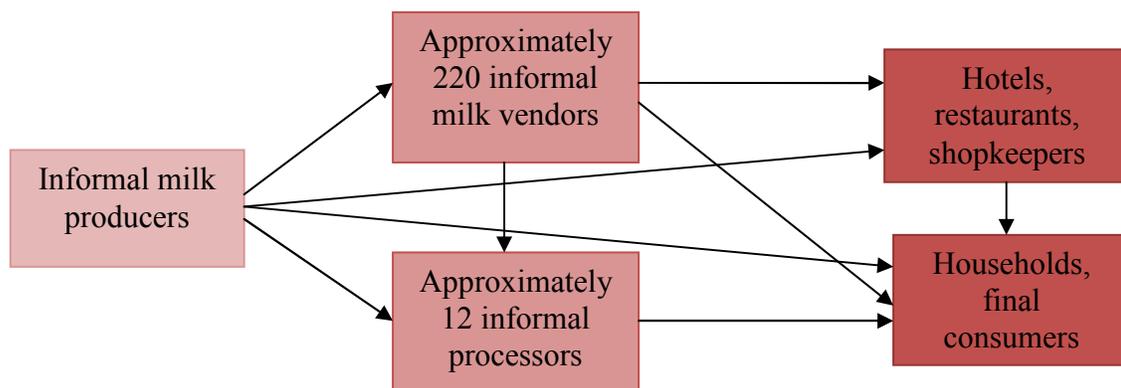
With respect to the leading roles within the informal milk supply chain, the actors who have the control over pricing, market information, quality standards, innovation and chain cooperation are diverse. First, the role of the producers and the vendors, as broad categories of actors, will be examined; and second, the role of the chain partners and chain co-owners will be examined.

- The ones who decide over the selling price are predominantly the producers. However, in some cases there are conflicts about the price, since the price is not uniform and stable. Then, most of the times the producers adapt to the vendors' or processors' offers, after negotiating with them. In general, the bargaining power of the actors depends on the milk quality and availability as well as the level of the demand each season. For instance, in the dry season, which is characterized by shortage of milk, the bargaining power of the producers is increased.
- The ones who have control over market information are mostly the vendors. Due to their position in the supply chain, they are more informed on price and demand trends in the milk market.
- The quality standards are normally set by the producers. Since there are no fixed quality standards, as in the formal sector, the quality level of the informal milk depends primarily on the willingness and ability of the producers to fulfill certain conditions (related to the health of cattle, the milking process etc.). However, the vendors are the ones who control the quality of the milk by using a lactometer, which measures the density of the milk and assures that the milk is not adulterated (mixed with water or cassava).

- Chain activity integrators and partners (see p.49) have a key role in technological innovation and institutional dialogue. For example, the Chairman of UWAMATA (Umoja wa Wauza Maziwa Tanzania), meaning the Chairman of the association of the milk vendors in Tanzania, is also a producer. Moreover, he participates both in public debates, as a representative of the vendors, and in interventions, which are initiated by the government and/or its development partners and aim to upgrade the existing production patterns.
- Chain co-owners (see p.49) also play an important role in the chain management. For example, TUKWAMUANE Women’s Group are one of the first cooperatives in Mwanza, which started to process milk to yogurt “transforming” a product that used to be considered as a luxury product into a component of the daily diet. In parallel, the cooperative participates in various activities: provision of training to other processing groups, distribution of pro-biotic milk to HIV patients, promotion of women’s empowerment.

5.2.3 The development status of the supply chain

The informal milk supply chain in Mwanza is not fully developed; it is rather an incipient supply chain. It consists of short sub chains, where the milk is marketed either by the vendors or by the producers themselves (chain activity integrators, see p.49). Subsequently, the milk is sold either to processors; or to customers such as businesses and learning institutions and then to the final consumers; or directly to households and final consumers. The majority of the producers sell surplus that they cannot consume themselves and most of the processors sell their product to their neighbour communities. Many components of the chain management are underdeveloped. Record-keeping, traceability, quality grading and certification, innovation, chain cooperation and market intelligence are either lacking or exist on a low level.



5.2.4 Constraints to supply chain development

The main constraints, which the chain actors confront in order to upgrade their activities and consequently to develop the informal milk supply chain, are presented in table 11 in order of importance. The most important problems for the producers are the access to and the high costs of cattle medication and food; for the vendors are the means of transportation and the low quality or even the adulteration of milk; while for the processors is the lack of initial capital and funding along with the low quality of milk.

In addition to the challenges presented below, a significant part of the chain actors is characterized by a low education and training level and does not have access to the necessary information concerning regulations, credit possibilities and the establishment of a business in general. As the chairman of TUKWAMUANE Women’s Group indicates: “Getting a loan is a very long procedure... Once we tried to make an application for a government fund, but we didn’t succeed. We don’t know how to construct a proposal...” (2011). The low education and training level in combination with the lack of initial capital and funding possibilities actuate a vicious circle, which includes lack of the necessary equipment, low quality standards and product value and finally low income and credibility for the chain actors.

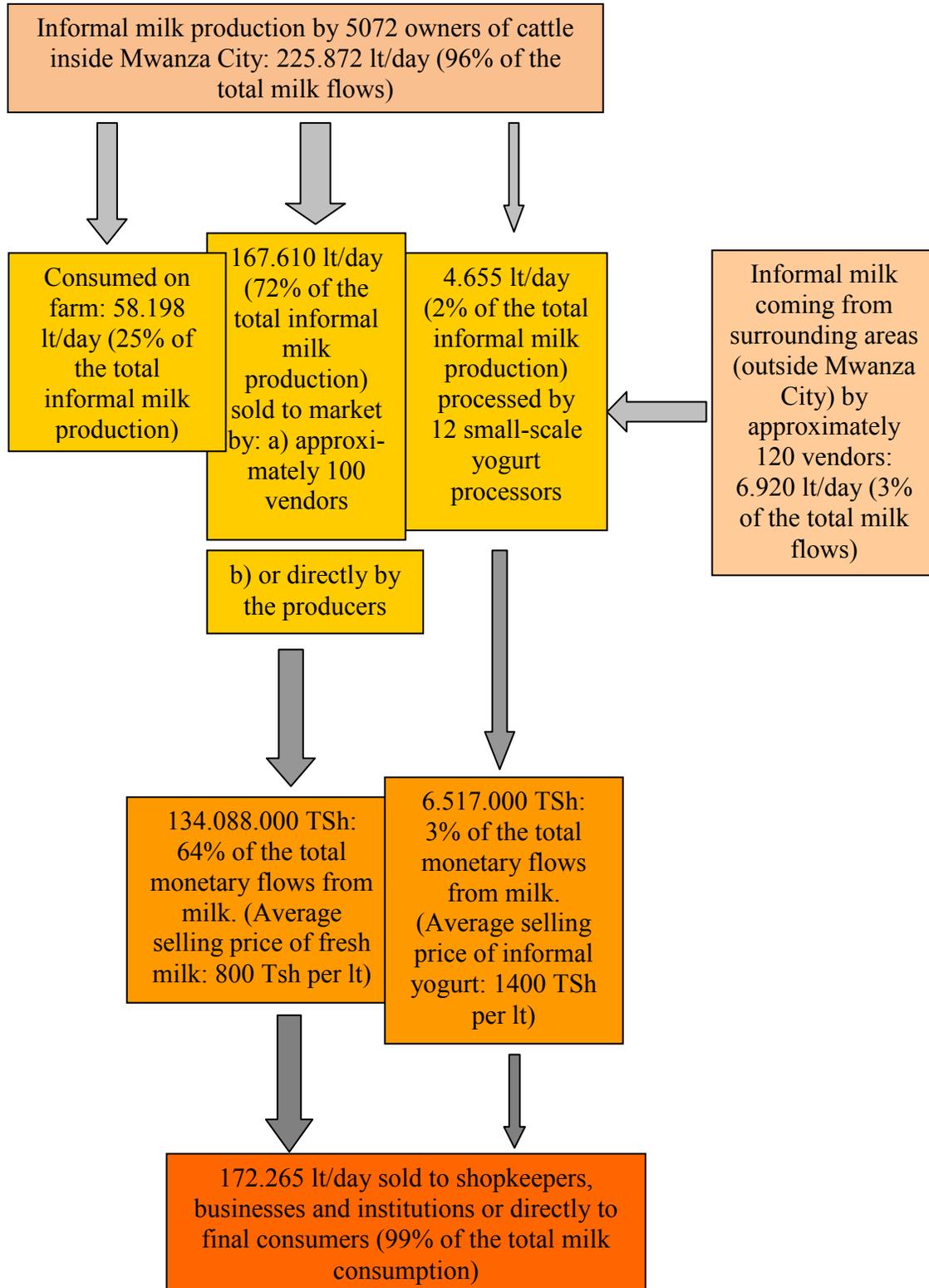
Table 11: Challenges confronted by the chain actors

Chain actors	Challenges
Milk producers	<ol style="list-style-type: none"> 1. High Costs (of cattle feed, medication, pesticides) 2. Access to medication/food 3. Marketing of milk 4. Lack of capital/funding 5. No access to bank loans 6. Low education level/ No training
Milk vendors	<ol style="list-style-type: none"> 1. Means of transportation 2. Low quality/adulteration of produced milk 3. Price determination (not unified/stable price) 4. Debts of customers 5. No stable marketplace/collection centers 6. Difficulty to find customers
Processors of yogurt	<ol style="list-style-type: none"> 1. Lack of capital/funding 2. Low quality/adulteration of produced milk 3. Lack of equipment (cooling, packaging) 4. No access to bank loans 5. Low education level/No training 6. Lack of electricity

Source: Fieldwork Data, 2011

5.3 The present size and potential of the informal milk sector in Mwanza

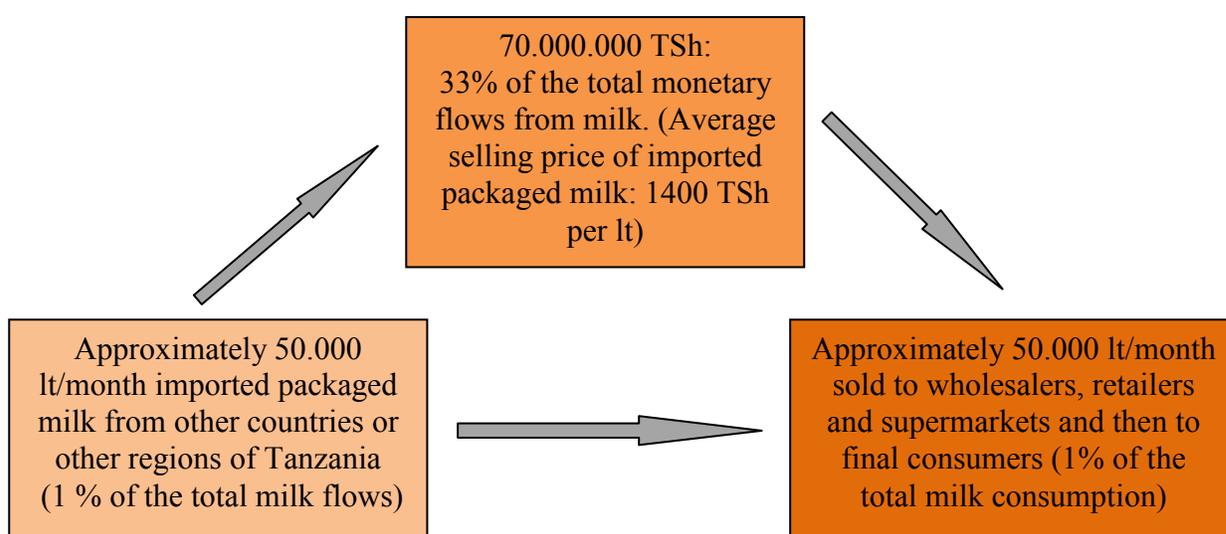
5.3.1 The informal milk flows in volume and value terms



As illustrated above, the informal milk in Mwanza represents 99% of the total milk flows in volume! Nevertheless, it represents only 67% of the total monetary flows coming from milk, because of two factors: first, around 25% of the total informally produced milk is consumed on farm, so it is not marketed and does not produce monetary flows; second, the value of the informal milk is lower than that of the formal one, due to its quality standards which are considered as lower as well. Consequently, if the percentage of the informally produced milk that is consumed on farm is left out, then the informally marketed milk represents around 73% of the total milk flows in the market in volume terms.

5.3.2 Comparison with the imported milk flows

Around 50.000 lt. of packaged milk per month are imported in Mwanza from Kenya, Uganda, South Africa, The Netherlands (mostly powder milk) and other regions of Tanzania, such as Mara and Tanga. This represents only 1% of the total milk flows in volume, but 33% of the total monetary flows coming from milk, since its value is higher. However, if compared exclusively with the informally marketed milk (and the informally produced milk that is consumed on farm is left out), then it represents around 27% of the total flows in the milk market in volume terms as well.



Source: Fieldwork Data, 2011

5.3.3 The potential of the informal milk sector in Mwanza

A) Production / Supply

First, out of the 2,312,375 cattle population on regional level and the 77,180 cows (both indigenous and improved) on local level, only a small part is currently milked. Specifically, a large part of the improved cattle are actually milked, since they are considered as dairy cattle, able to produce more milk of better quality. In contrast, a very small part of the indigenous cattle are milked, while they are usually sold for meat or kept as indication of prestige and wealth. Consequently, the potential of the milk production in Mwanza is much higher than its current size.

Second, although the indigenous (Zebu) cattle outnumber the improved ones both on regional and local level, the milk production deriving from the latter is significantly greater. Table 12 shows the daily milk production deriving from both types of cattle in Mwanza, according to the regional and local government estimates (Mbwiliza, 2011). Moreover, according to Mabuki Farm, the productivity of an indigenous cow is 49 lt. per year, while that of an improved dairy breed is 842 lt per year (Udoba, 2011). Although both the daily milk production of the two types of cattle on regional and local level and the annual productivity of the two types of cattle per unit are approximately estimated, the fact that the improved cattle are in general more productive than the indigenous ones is commonly accepted. Consequently, if the indigenous cattle are replaced by the improved ones, the productivity will rise to a large extent.

Table 12: Milk production per type of cattle

Level	Type of cattle	Number of cattle (not only milked)	Milk production per day
Mwanza Region	Indigenous	2,312,375	300,000
	Improved		150,570
Mwanza City	Indigenous	49,418	59,302
	Improved	27,762	166,570

Source: Livestock Officers of Mwanza Region and Nyamagana District Council, 2011

B) Processing

In 2000 the Victoria Dairy (Kishimba area) processing plant was established in Mwanza. According to the Tanzania Dairy Board (TDB), Victoria Dairy's installed capacity was 45,000 lt; equal to the installed capacity of the Ex TDL New Northern Creameries in Arusha and the Ex TDL Musoma Dairy in Mara. After a half of a decade, the capacity of Victoria Dairy was estimated at 15,000 lt/day; similar to the capacity of Tanga Fresh Ltd, which is currently considered as one of the most important dairy cooperative unions and processing factories in Tanzania. The difference is that the actual production of Tanga Fresh was 14,000 and its capacity utilisation 80, while in 2006 the Victoria Dairy processing plant was already closed. However, the potential of processing milk in Mwanza remains high.

C) Marketing / Demand

First, as indicated above, the milk vendors pass from certain points in order to enter the city. These entry-points are potential milk collection centers, where the quality can be tested and the distribution can be facilitated. Second, the ongoing dairy consumption promotion campaigns and the school milk feeding programmes, initiated by the government and the civil society, can contribute to efficient marketing of the milk. Last, the increase of the population as well as the development of the tourism industry (hotels, guest houses, restaurants) and the education sector (learning institutions) are factors that potentially contribute to the increase of the demand for milk.

5.4 The regulatory and policy environment of the dairy sector

5.4.1 The regulatory framework: enabling or constraining?

The major components of the regulatory framework of the dairy sector in Tanzania are three: first, the implementation of the Dairy Industry Act in 2004, which appointed the Tanzania Dairy Board (TDB) in 2005; second, the Tanzania Food, Drugs and Cosmetics Act of 2003; and third, the dairy policy harmonization in the East African Community (EAC: Kenya, Uganda, Tanzania) through the implementation of the East African trade protocol. The major step “in this process is the involvement of TDB in the

harmonization of dairy products and milk testing standards through participation in the dairy products technical committee of the Tanzania Bureau of Standards” (Kilima, 2007).

In the case of the informal dairy sector, mainly the two first components of the regulatory framework are important, since the third component refers to the terms of intra-regional trade and the informal milk is obviously not exported. It is indicated by the government that the aforementioned regulatory sets aim to create an enabling environment for the development of the dairy sector and the food industry in general. However, the high degree of regulation does not imply also strong or well-targeted law enforcement. The examples below are representative:

- According to the Dairy Industry Act, among the functions of the TDB is to liaise with Tanzania Food Drugs and Cosmetics Authority (TFDA) on licensing milk producers, vendors and processors. When the manager of TFDA branch in Mwanza was asked about the TFDA’s activities on informal milk sector, he replied that “TFDA does not deal with raw milk. TFDA deals only with pre-packaged food. The product’s quality is checked and the package’s material is evaluated, according to certain standards. Then the product is declared as registered by TFDA”. However, this means that TFDA branch in Mwanza does not work at all on milk, since informal milk is the only type of milk that is produced, processed and marketed locally. As indicated above, the packaged milk in Mwanza is all imported by other regions of Tanzania and other countries.
- Moreover, the manager of TFDA mentioned that “only if there is a stable marketplace, where milk is processed and sold, TFDA can conduct a control”. TUKWAMUANE Women’s Group, which is a processors’ cooperative stably based in Mabatini area (Mwanza), applied for TFDA certification in July 2010; but they have not got an answer yet.
- On the other hand, law enforcement is strong when it is applied to repress informality. Raw milk vendors, as those coming by Kamanga Ferries indicated, are often harassed by the local authorities, since even if they are trained and registered and as a result they have certain identity cards, it is considered as illegal for them to engage to trade activities on the street; they supposed to transfer the milk directly to their customers.

5.4.2 Policy interventions in the dairy sector in Mwanza

The dairy policy interventions, planned or already implemented by the government and its development partners, can be divided into two main categories.

- A. First, the interventions aiming at the improvement of the production patterns, thus the increase of the cattle productivity and the milk quality through research, knowledge sharing and capacity building. The most significant achievement in this process is the establishment and the function of supporting institutions, such as livestock research centers, livestock multiplication units and farmers' training centers (interventions targeting at the agriculture and livestock sector as well).
- B. Second, the interventions aiming at the improvement of the marketing and control mechanisms, through government regulatory reforms and capacity building by business development service providers. These interventions include: the establishment of milk collection and cooling centers, the registration and unionization of the chain actors, the provision of training and licensing to them and the conduct of inspections.

All the above mentioned interventions lead to the so-called "formalization" and commercialization process, which supposed to contribute to sector improvement and pro-poor development. In the case of Mwanza, the following interventions are planned or already implemented:

- A. Regarding the production patterns, Mabuki Farm has been established in Misungwi (Mwanza) by the Ministry of Livestock and Fisheries Development. It consists of a livestock research center, a livestock multiplication unit and a farmers' training center. In addition, a Zonal Artificial Insemination Center is established in Lake Zone (Mwanza). The main function of the Livestock Research Center is conducting research on livestock production and breeding. The aim of the Livestock Multiplication Unit is to increase the productivity by better breeding; it does not produce milk but it does produce milking cows. Mabuki Farm produces crossbred heifers by the mixture of indigenous with exotic dairy breeds, such as Boran with Friesian, which are considered as healthier and stronger. As a representative of Mabuki Farm indicated, "indigenous cattle are

adequate in terms of adaptability and European cattle are greater in terms of productivity. That is why the mixture is the best” (Udoba, 2011).

Table 13: Crossbred cattle production

Livestock Multiplication Unit	Number of cattle	Type of crossbred cattle	Heifer production 2007/2008
Mabuki Farm	2902	F1 (Friesian-Boran)	311

Source: Fieldwork Data, 2011

B. Regarding the marketing and control mechanisms, the following steps are currently done:

1. A formal milk collection and cooling center is under construction in Mkolani.
2. Unionisation of the chain actors and participation to SACCOS is promoted in order for the actors to secure their registration and have access to loans. In addition, as a representative of the Public Health Department mentioned, “that makes easier Officers’ job to trap the illegal actors” (Sabbo, 2011).
3. According to the ASDP (Agricultural Sector Development Programme), the requests of the groups for funding, equipment etc. are examined by the District Council and then submitted to the Regional and National Officers. Poultry has been a successful example. For dairy, the process supposed to have started in July 2011, in the beginning of the financial year.
4. Seven Business Development Service Providers have trained the staff which currently trains groups of informal milk producers and vendors. Milk producers are trained on cattle health conditions, milking management and techniques etc. According to the Dairy Specialist and Livestock Officer of Nyamagana District, “53 informal milk vendors coming from within Mwanza City are already registered and trained by TDB and/or the City Council on milk testing, use of recommended utensils and means of transportation and storage” (Mbwiliza, 2011). Training per person costs more than 40.000 TSh (20 Euros).

5. Each District has 3 milk inspectors: 2 from the Livestock Department and 1 from the Public Health Department. Regular inspections supposed to have started since February 2011. However, “due to the political instability on the Council level and the political cost of implying fines, the implementation of the inspections’ plan was postponed, starting from April 2011. Eventually, the vendors who are unregistered and/or untrained will be either obliged to be registered and trained or put out of business” (ibid).

Table 14: Number of trained and inspected chain actors

Chain actors	Trained / Certificated [By TDB / Heifer International / Mabuki Farm / Austro Project / Local Government Officers in Kisesa]	Inspected [By Livestock and/or Public Health Officers]
Producers	4 out of 11	5 out of 11
Vendors	32 out of 70	25 out of 70
Processors	1 out of 4	1 out of 4

Source: Fieldwork Data, 2011

5.4.3 The opinion of the chain actors on formalization

At this point, the results on the following subjects will be presented: first, the opinion of the chain actors on the ongoing formalization; and second, the possible benefits and challenges derived from the formalization initiative in order of importance. Table 15 shows that the vast majority of the chain actors are in favour of the ongoing formalization, a significant part is indifferent or not aware of and only 1 chain actor was actually against the initiative.

Table 15: The opinion of the chain actors on formalization

Chain actors	Formalisation			Total Number
	In overall positive	In overall negative	Indifferent / not aware of	
Producers	6	0	5	11
Vendors	59	1	10	70
Processors’ Cooperatives	2	0	2	4

Source: Fieldwork Data, 2011

Subsequently, table 16 indicates that for all the categories of the chain actors the most important potential benefits derived from the ongoing formalisation are the stable marketplace, the unified price, the access to loans and the certified quality of the milk. On the other hand, the government inefficiency, the increased market competition and the collection of taxes are the most important challenges that the chain actors potentially confront.

Table 16: The possible benefits and challenges of the formalization initiative

Chain actors	Formalisation	
	Possible benefits	Possible challenges
Producers	<ol style="list-style-type: none"> 1. Stable / proper marketplace 2. Stable / unified price 3. Access to loans 4. Better / certified milk quality 5. Establishment of collection / cooling centers 	<ol style="list-style-type: none"> 1. Government inefficiency 2. Increased competition 3. Collection of taxes 4. Loss of current customers
Vendors	<ol style="list-style-type: none"> 6. Easier marketing of the milk 7. Increase of the milk value 8. Increase of the actors' income 9. Recognition by the authorities 10. Permanent occupation 11. Production of other dairy products 	<ol style="list-style-type: none"> 5. Cost of business 6. Registration cost
Processors	<ol style="list-style-type: none"> 12. Increase of youth employment 	

Source: Fieldwork Data, 2011

5.5 Conclusion

The findings presented above indicate, first, that the rapid expansion of the informal dairy sector and the shrinking of the formal one over the last decades in Tanzania, has taken place due to demand and policy factors. Furthermore, there are important links between the two sectors on both the supply and the demand level. Moreover, in the area of Mwanza there are significant constraints but also a high potential for the development of the milk supply chain, where the leading chain actors play an important role. In addition, the government on national and local level attempts to create a new regulatory environment and promote a formalization reform, which the vast majority of the chain actors are in favour of, since the possibly caused benefits outweigh the possibly caused challenges.

6 Analysis of the informal milk sector in Mwanza, Tanzania

In this chapter it is attempted to analyse and interpret the findings presented above, comparing them to findings of other studies either on the informal economy or on the milk sector in a developing context and particularly in the context of Tanzania.

6.1 The formal and the informal dairy sector: communicating vessels

As indicated in chapter 2, the dualist view claims that the formal sector and the informal one are two separate worlds within an economy and society. Specifically, “official and unofficial firms operate largely in different markets and have different customers” (La Porta and Shleifer, 2008, p.278). In contrast, the findings presented above show that the formal and the informal dairy sector are interdependent in Tanzania, both on the supply and the demand level. There are important backward linkages between the two sectors, such as the dependence of the formal milk processing plants and collection centers on the production and marketing of the informal milk. Furthermore, the two sectors partially operate in the same market and do have common customers, since for instance the informal milk is not sold to and by supermarkets but it is sold to and by restaurants and guest houses.

Moreover, the dualist view claims that gradually, as the economy develops, the unofficial firms being hugely inefficient will be displaced by official ones run by new people. In contrast, the findings presented above show: first, that until now unofficial dairy operators have been increasing regardless the fluctuations in economic performance; and second, that even if they decrease in the near future, this will mean that the vast majority will have been integrated to the formal dairy sector and not that they will simply vanish, as the dualist view implies.

In addition, the formal dairy sector and the informal one are at the same time complementary and competitive with each other, as they were communicating vessels. As the structuralists have claimed, “the informal-formal sector relationship is pro-cyclical [...]: expansion or contraction in one necessarily implies an expansion or contraction in the other” (Castells and Portes, 1989). Similarly, in the case of Tanzania and Mwanza, while the formal dairy sector was shrinking, the informal one was expanding, covering the demand for milk.

6.2 The impact of the neoliberal reforms on the dynamics of the dairy sector

Unlike the expectations of the supporters of the neo-liberalism doctrine, the latter proved to be harmful for the development both of the primary and secondary sector of economy (agriculture and industry) in Tanzania. In her study on small-scale manufacture firm clusters in Nigeria, Meagher concludes that the introduction “of liberalization, globalization and state neglect” policies have not fostered novel forms of economic governance, but have given rise to “ungovernance” (2007, p.499).

Instead of collective efficiency, global value chains and rising productivity, the Nigerian clusters have succumbed to a dynamic of “collective inefficiencies”, clandestine global value chains and social disorder. [...] The economic ungovernance of African clusters is not a product of cultural failures, but of the hostile economic and political environment created and reinforced by economic restructuring policies (ibid).

Similarly, as the findings showed, the decline of the formal dairy sector in Tanzania over the last decades has been strongly related to the effects of the SAPs held in the decade of 1980s. The liberalization of the economy, the privatization of the dairy sector and the deregulation reforms, promoted by the World Bank and the IMF and adopted by the government, strengthened neither the dairy sector nor the private initiative.

On the other hand, the “inefficient” informal milk sector increased, filling the huge gap between the available supply and demand. Instead of decreasing or upgrading the informal businesses, initiatives inspired by the neoliberal ideal contributed to the emergence of an expanded and diversified but not more efficient informal economic sector.

6.3 Conditions of (under)development in the informal milk supply chain

As all the reports on the dairy sector in Tanzania have indicated so far (MoAC et al., 1998; Njombe et al., undated; Quaedackers, 2010), the vast majority of the informal milk producers and processors are small-scale operators, performing low productivity and processing capacity. Furthermore, as it has already been said, the informal milk supply chain is rather underdeveloped, consisting of short chains with limited adding value opportunities.

One of the biggest challenges confronted by the informal milk chain actors is the vicious circle of lack of initial capital and funding, lack of necessary equipment, low education level and inefficient managerial skills, low use of technology, low quality standards, low product value and income and as a result low credibility and lack of access to credit; which re-actuates the vicious circle all the way from the beginning.

A possible entry-point for the development of the informal milk supply chain is the leading actors, such as the chain partners and the chain co-owners. Because of their key role in the chain management, they obtain human and social capital that the rest of the chain actors lack. For instance, because the chain partners and the chain co-owners are organised in cooperatives and participate in the dialogue with the government, they have easier access to information and training, while they expand their social networks. Consequently, they are in a better position to develop the chain in terms of record-keeping, quality grading, innovation, cooperation and market intelligence.

6.4 The size and the untapped potential of the informal milk sector

Most of the reports (RLDC - NIRAS, 2010) on the dairy sector in Tanzania agree on three things: first, that the percentage of milk consumption on farm is significant (around one third or fourth of the produced milk); second, that the percentage of the formally marketed milk is very low (around 2% of the produced milk); and third, that the imported milk is very low as well (around 1% of the milk market flows). The rest represents the domestically produced and informally marketed milk.

In the case of Mwanza, the first statement has been confirmed by the findings presented above, since it was estimated that approximately 25% of the produced milk is consumed on farm. Similarly, the second and the third statements have been rather confirmed, since in Mwanza only 1% of the milk market flows is covered by imported packaged milk, which though represents both the imported packaged milk coming from other countries and the imported packaged milk coming from other regions of Tanzania. In other words, in the case of Mwanza the 1% includes both of the above mentioned categories: the domestically (in Tanzania) produced, formally marketed milk and the imported milk. Consequently, the percentages both of the imported milk coming from other countries and the formally marketed milk coming from other regions of Tanzania

are even lower than 1%, while there is no domestically (within Mwanza) produced and formally marketed milk.

One thing that is usually missing in the reports is the difference between the size of the formally and informally marketed milk in volume terms and their size in value terms. As the findings show, the value of the formally marketed (packaged) milk is much higher than that of the informally marketed one. In short, although the informal milk sector is much bigger in volume, its monetary value is much lower than that of the formal milk sector.

Moreover, as other studies indicate (SNV, 2008) the potential of the dairy sector in Tanzania is high. In the case of Mwanza, as the findings showed, there is indeed a great potential on all levels of production, processing and marketing. Regarding the supply side, the number of potential dairy cattle is much larger than the number of the cattle that is actually milked. On the processing, the possibility to operate a milk processing plant with high capacity remains. Last, the increase of the demand for milk is very probable, mainly due to the population and income growth rates as well as the shift in food consumption patterns.

6.5 From a constraining regulatory and policy environment to an enabling one

Over the last years an effort has been made to re-regulate the dairy sector in Tanzania. Following the successful policy example of Kenya, Tanzanian government has developed a new regulation set, with TDB as the central regulatory body. Moreover, it has shifted to an inclusive approach, according to which the informal milk sector could and should be integrated into the formal one through a series of measures.

Nowadays, the degree of regulation may be high, but the actual enforcement is weak. The presented example of TFDA (in chapter 5), which is not cooperating with TDB in order to work on informally marketed and processed milk, while this is the only form of milk produced and processed in Mwanza, illustrates exactly this weakness to enforce the set regulation in an productive way. The statement of Kus, according to which the size of the informal sector tends to be larger in economies highly regulated but characterized by ineffective enforcement, is confirmed in this case (2010).

On the other hand, the interventions, initiated by the government and its development partners, in both the milk production patterns and the marketing mechanisms are considered as positive for the improvement of the sector. The functioning of supporting institutions, such as livestock multiplication units and training centers, is crucial for the increase of the cattle productivity and milk quality. Certainly, the interventions aiming at the upgrade of the marketing mechanisms, such as the establishment of collection and cooling centers, are still at an initial stage. Consequently, the success of this type of interventions depends on the ability and willingness of the local government to implement sufficiently the existing plan, avoiding any distractions and delays caused by exogenous factors, such as the aforementioned “political cost”.

6.6 Formalisation: Friend or foe?

The findings showed that the vast majority of the informal milk supply chain actors are in favour of the principal measures, included by the so-called “formalization”. Most of the informal milk producers, vendors and processors expressed a positive opinion regarding the promotion of the formalization and commercialization reform, while a significant part of them have been already registered and/or participated in a training programme (cf table 16).

Subsequently, a very small percentage of the chain actors kept a negative or skeptical position. However, there is a percentage of actors, who despite the fact that are in favour of formalization, they have not started to be formalised themselves. Two of the main reasons are the registration cost (the cost to enter the formal sector) and the general cost of doing formal business (the cost to remain formal). On the one hand, the cost for training and registration might be paid once and for all, but the cost for doing business, such as the cost of packaging, has to be paid regularly by processors, who most of the times don't afford it.

In any case, the most important problem confronted by the research team in the case of the opinion poll on formalization was rather the ignorance of the chain actors than their negativity or pessimism. A large part of the actors, especially those of lower income living in remote areas, was unaware of the formalization initiative, thus what formalization consists of and which are the main stakeholders involved (such as TDB).

Among these actors, some chose to answer in a neutral way “I am not aware” or “it is indifferent to me” and others, after some clarification questions, chose to express their positive thinking. In the latter case there is a danger of bias, since the positive answer of these actors is not a result of their own experience but of the researchers’ interpretation of what formalization is.

To conclude, there are indications that the direction of the current policy initiatives, such as the formalization process, is positive for the sector improvement and pro-poor development. However, the regulatory and policy environment of the dairy sector will become more enabling, as soon as the enforcement of the set regulations will be strengthened and the implementation of the planned interventions will be completed.

7 Discussion: How to build a pro-poor dairy sector in Mwanza, Tanzania

Pro-poor development includes economic growth, poverty alleviation and inequalities reduction. In order to bring disproportional net benefits to the poor, it is necessary to adopt intervention policies, which are directed towards the majority of the population in Mwanza and in general Tanzania; towards the informal but largest part of the active labour; towards smallholder livestock keepers and milk producers as well as small-scale milk vendors and dairy processors.

Looking back at the presentation and the analysis of the findings, a series of pro-poor interventions can be recommended in order to reduce the negative implications of informality in the dairy sector and reclaim its hidden potential. The most important possible policy directions, targeting the informal dairy operators and especially those of the lower social strata, are the following:

- First of all, after the bitter “end” of a long period of liberalization and deregulation reforms, the government should re-provide support (such as material infrastructure, financial aid etc.) to both formal and informal milk operators, in order to boost the production and facilitate their access to the market. In parallel, the government should continue the effort to develop a new regulation set and an enabling policy environment. However, more importantly it should give emphasis on the enforcement of the existing regulations and the implementation of the already planned interventions.
- Specifically, the government should attempt to break the vicious circle, which blocks the development of the small-scale milk operators and has as a starting point the lack of education and funding, by providing free or subsidized training and equipment as well as certification to operators. So, the latter will improve their quality standards, increase the value of the milk and their income and give them the opportunity to get a business loan from a bank, which will re-actuate the virtuous circle all the way from the beginning. This way, the government will benefit in the long run from the taxes that these businesses will pay and not from their licensing fees. As a dairy advisor claimed, “licensing, rather than taxes, as a revenue business is a wrong perception of the past...” (Mlay, 2011).

- Furthermore, as the examples of cooperative initiatives in other developing countries as well as the “Tanga Model”¹⁰ within Tanzania have shown, a key-element for the successful transformation of the informal economy and in this case of the informal milk sector is the creation of producers’, vendors’ and processors’ associations. The most accessible way for informal operators to accumulate the required financial, social and human capital is to establish production and marketing cooperatives, which facilitate access to market, credit and information. The cooperative movement has a long history in Tanzania and can be revived; this time preferably from a bottom-up point of view. This way, unionized operators will have a greater amount of capital, labor, production and income to manage, organize and distribute, making accumulation possible. Furthermore, they will be in a better position to fight for their labor rights, reducing the chances of being exploited or harassed.
- Moreover, the “Tanga Model” has also revealed the importance of microfinance institutions, such as Farm Friends Tanzania¹¹. Certainly, the focus should be on the establishment and well-functioning of domestic (within Tanzania) microfinance institutions. Nowadays, the credit schemes provided by Small Industries Development Organisation (SIDO) in Tanzania tend to benefit a small number of enterprises, which usually are not the ones in most need. Therefore, the strengthening of informal microfinance groups, such as Savings and Credit Cooperative Organizations (SACCOS), Rotating Savings and Credit Associations (ROSCAs) and Accumulating Savings & Credit Associations (ASCAs) is necessary. Furthermore, emphasis can be given on the creation of linkages between the formal and the informal financial sector.
- In addition, skills training development for informal milk producers, vendors and processors should be considered as one of the government’s and its development partners’ priority. The increase and upgrade of vocational programmes, such as

¹⁰ As it is mentioned before, Tanga Fresh counts more than 3000 individual members and 11 cooperatives, under the umbrella organization Tanga Dairies Cooperative Union (TDCU).

¹¹ The Farm Friends Foundation is a non-governmental initiative that supports financially dairy enterprises in the third world. Tanga Fresh’ success is also the result of its collaboration with both the Farm Friends Foundation and the livestock company Holland Dairies (Farm Friends Nederland, 2011).

those provided by Vocational Education and Training Authority (VETA), are necessary. VETA works on skills development by providing training to young people who intend to participate or they have been already operating either in the formal or the informal sector.

- A prerequisite (which has been fulfilled partially until now) for the achievement of all the above interventions is the cooperation and coordination of the various authorities and institutions that work on the milk sector. Regional and local government, TFDA (Tanzania Food and Drugs Authority), Livestock Research and Farmers Training Centers, as well as NGOs that work on similar activities, should communicate more with each other, sharing knowledge and experiences, and work together in order to implement the set regulations and policies or suggest alternatives. Therefore, it is recommended that regulators and policy makers on various levels of government should work together, in order to have a unified approach and avoid regulatory conflicts or overregulation, and then collaborate with supporting institutions and organizations of civil society, in order to implement the set regulations and policies more effectively and make improvements wherever it is possible.

As indicated above, the policy interventions aiming at the collectivization of the milk supply chain actors and skills development are equally important to the interventions aiming at the material and economic support of the dairy operators and businesses. The collectivization and education of the chain actors are not only steps of a process that leads to expansion of their social networks and easier access to knowledge and information (social and human capital). They are also steps towards the generation and accumulation of financial capital. Subsequently, the chain actors are able to invest in the upgrade of the quality standards and increase the value of their product. In parallel, the collectivization of the actors in combination with the actors' access to training and credit lead to the establishment of risk sharing entities and economies of scale, contributing to economic development and poverty alleviation.

With the aforementioned recommendations, addressing the two last research sub questions on possible interventions both on sector improvement and pro-poor

development, the present study comes to an end. However, the limits of the present study do not reflect the limits of future research as well. There is significant space for further research on the various aspects both of the informal and the dairy sector as well as their contribution to pro-poor development in Tanzania and other developing regions.

First, the structure and the linkages of the formal dairy sector and the informal one could be examined in various regional contexts from a comparative perspective, revealing important similarities and differences. Moreover, multiple estimations of the size and the potential of the (informal) dairy sector should be done, in order to indicate investment opportunities for both the public and the private sector. Furthermore, the information on the profile of the chain actors and the constraints to the development of the milk supply chain should be triangulated, in order for the government and the supporting institutions to be provided with reliable statistical data and promote interventions, designed according to the actual needs of the sector and the actors. Finally, the ongoing regulatory and policy initiatives taken by the government and its development partners on national and local level should be re-evaluated regularly; in order for the main stakeholders to have sufficient information on the effectiveness of the interventions and re-negotiate and shift to new policy directions, if necessary.

However, history has shown that, in order to make any intervention policies work effectively, the most important question one should ask is “by whom and for whom” these measures are taken. If these policies are chosen by the informal operators themselves and for their own benefit and they are not externally imposed securing the interests of foreign actors, then the duties that derive from the implementation of these policies will be more easily accepted. From this point of view, pro-poor development means development planned, supported and implemented by the so-called “poor” themselves, where poverty alleviation meets social empowerment.

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