Refining the smallholder market integration framework: A qualitative study of Ethiopian pastoralists

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A Qualitative Study of Ethiopian Pastoralists

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Abstract

The continued interest in market access and market integration policies targeting small-scale agricultural producers has led researchers to further explore the theoretical underpinnings of these concepts. This study presents an in-depth qualitative investigation into the behavioral consequences of market integration for Ethiopian pastoralists. The findings show that pastoralists further strengthen their strategic connection to the market by the processes of market sensing and market responding, which enable them to offer livestock with the quality attributes demanded by buyers. Pastoralists engaging in these activities typically generate more revenue from the market, thereby improving their livelihoods. They are also more capable of adapting to changes in natural conditions and are more likely to change their lifestyles. These findings imply that policymakers should not only foster the market participation of small-scale agricultural producers, but also ensure that producers align their products with the wants and needs of customers by sensing and responding to their market.

Highlights

- Examines behavioral consequences of the market participation of smallholders
- Presents evidence of qualitative research on pastoralists in Ethiopia
- Develops a behavioral concept to refine the theoretical market integration framework
- Shows how market integration and adaptation to ecology are achieved simultaneously

Introduction

Over the past three decades, debates on global development have placed markets at the center of economic development policies [1]; for example, the Washington Consensus has put export performance at the forefront of economic growth and poverty reduction [2]. When markets underperform, public authorities do not have the resources at their command to ensure sufficient levels of national economic growth [2]. In the context of this debate, policies were developed to integrate small-scale agricultural producers in developing countries with global markets, following the rationale that the sales of their agricultural output will enable them to better access goods and services that will improve their lives [3]. There are also other benefits expected from the market participation of small agricultural producers; for example, the FAO [4] considers their involvement as a key strategy to strengthen food security. Enhanced market integration can also strengthen the adaptability of small agricultural producers to changing climatic conditions [5].

At the micro-level, the debate has focused on the concept of market integration. Although the literature is not fully consistent in the use and naming of concepts [e.g. 6], we define market integration as the degree to which smallholders coordinate and plan their production for buyers [e.g. 7]. Market integration has been largely viewed as the extent to which producers grow cash crops for the market (specialization) versus food crops for subsistence (farming for food) [8]. The first step of market integration is for smallholders to obtain market access, defined as their ability to acquire the necessary farm inputs and farm services, as well as their capability to deliver farm produce to buyers [9,10]. Market participation therefore refers to the amount of produce offered for sale by smallholders and the extent of their use of purchased inputs [6]. The latter is sometimes used as an operational definition of market integration [e.g. 11,12]. As policy attention for market integration grows, researchers have begun to enrich and question the related and theoretical

concepts of such policies. Chamberlin and Jayne [13], for example, questioned the meaning of the market access concept, reporting that the behaviors of market agents are often stronger determinants of access to markets than their physical infrastructure.

The present study extends this line of research by taking a behavioral approach to market integration. More specifically, we refine the concept of market integration in the context of Ethiopian pastoralists, in which the behavioral components following initial market participation are placed. This leads to an extension of this framework, which can be used to develop policy implications that extend or refine the traditional implications of market integration. Our study is consistent with the so-called bottom-up approach, which aims to elucidate the on-the-ground, day-to-day constraints of poor people and build concepts from such insights [14,15]. This type of in-depth, bottom-up study providing further conceptualization about market integration based on the day-to-day realities of small-scale agricultural producers is lacking in the current literature; however, the aim of this article is to provide these contributions in the context of Ethiopian pastoralists. Pastoralists are people whose livelihoods depend on livestock raised using natural pasture [16]. This context is particularly interesting for market integration studies because, by definition, pastoralists live in relatively remote areas far from their markets. Market participation therefore constitutes an important change to their traditional livelihoods.

In the following sections, we first provide a theoretical background on market integration and review the relevant literature on the antecedents and consequences of market integration. Next, we provide the background on market integration in the specific context of pastoralists. The framework derived from the literature review is subsequently used as a point of departure for an empirical investigation, which in turn refines the framework at several important points. The article concludes with policy implications, limitations, and directions for future research.

Background on market integration

The market integration of smallholders, sometimes called 'commercialization' [17,8], 'market participation' [18,19], or 'market orientation' [20], is often defined by the amount of agricultural produce that is commercialized (offered to market) versus the amount consumed by the household [11,12]. In the literature, there is a growing interest in the market integration of smallholders in general [21,22,23], because is expected to reduce poverty [24] and drive development by providing those involved with increased incomes [22,25,26,24]. Researchers have therefore focused their studies on the antecedents and consequences of market integration of smallholders in general. Table 1 summarizes a number of relevant studies on the market integration of smallholders, while Fig. 1 portrays the antecedents and consequences of the market integration of smallholders.

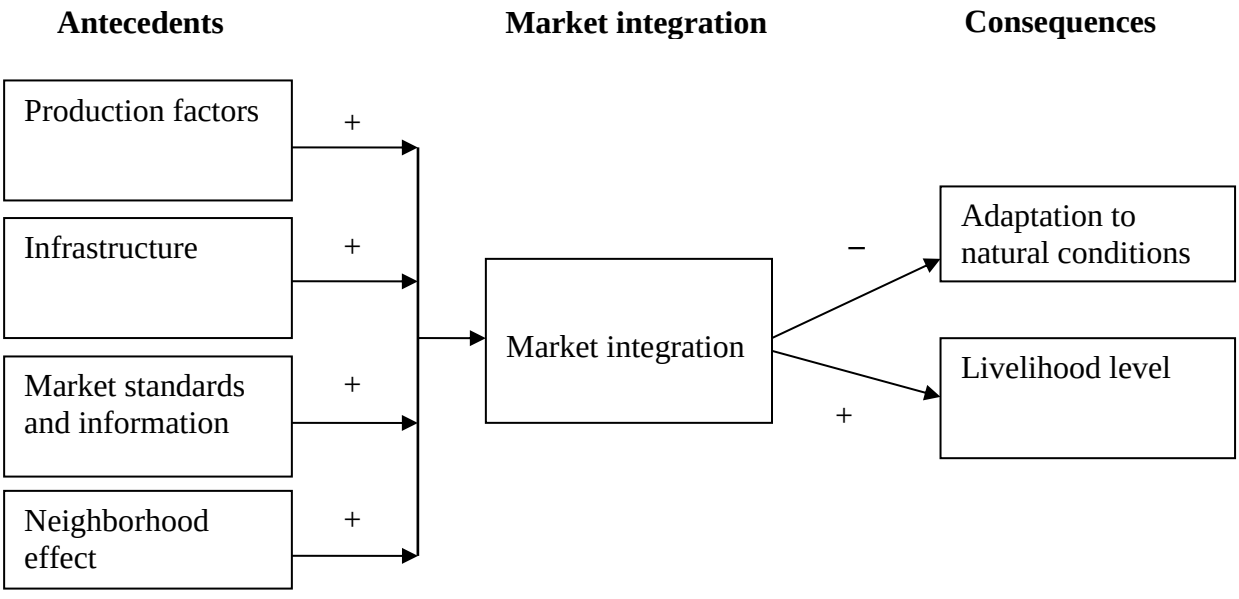


Fig. 1. Antecedents and consequences of smallholder market integration.

Four antecedents of market integration have been identified in the literature (see also Fig. 1). First, *production factors* are the necessary inputs required for production by the smallholders, such as (land) farm size, farm labor, and fertilizers [21,27]. Production factors can also include important ecological conditions such as the availability of pasture and water. The increased availability and use of production factors can increase the market integration of smallholders by enabling them to create more outputs, and thus generate surpluses they can sell in the market [28,29]. Second, *infrastructure* such as roads positively influences the market integration of smallholders because they increase access to markets. Balat et al. [30] showed that high trade costs due to poor infrastructure prevented farmers in Uganda from adopting major export crops.

Third, *market standards and information* refers to the extent to which smallholders use market standards (such as reference yardsticks for quality levels) and market information (on prices, quality, and other attributes) when choosing and selling their products. The regular use of market standards and information enhances the market integration of smallholders by managing the expectations of the buyers, who will have a better idea of the quality to expect, and the farmers, who better understand the prices they can expect [30,31,32]. In that respect, the availability of legal and contractual institutions regulating market standards for product units and quality can enhance the market integration of smallholders [8]. Next to these economic factors, research has also drawn attention to a *neighborhood effect*, which refers to the extent to which smallholders can learn from the increased market integration practices of other producers [33]. In their study on the smallholder livestock producers in the Philippines, Lapar et al. [34] found that the market integration decisions of smallholders are influenced by their observations of the decisions made by other farmers in their vicinity.

The most important consequence of market integration is an increase in the quality of life of the smallholders. *Livelihood level* refers to the level of household income and well-being that smallholders can generate as a result of their increased market integration; for example, many studies indicated that market integration enhances the income [30,35,8] and nutritional status of households [8] (see also Table 1). Other researchers have criticized this effect however, because focusing on fewer crops can make smallholders more vulnerable to price changes in those crops [12]. As a remedy to this issue, some researchers have suggested that smallholders should grow crops that can be used for home consumption as well as for commercialization [36,37]. Another consequence is that market integration can be detrimental to the local ecology, because once smallholders are producing what the market wants they are less flexible to *adapt to natural conditions*, with adaptation referring to 'the decision-making process and the set of actions undertaken to maintain the capacity to deal with current or future predicted change' [38, pp. 396] [39]. One study by Pendleton and Howe [40] showed that the increased market integration of smallholders in Bolivia damaged the natural environment because farmers increased forest clearance for cash cropping. In Thailand, Tipraqsa and Schreinemachers [28] also indicated a concern regarding the sustainability of smallholders in relation to their excessive use of agrochemicals (such as pesticides) during commercialization.

Table 1
Studies on the antecedents and consequences of market integration of smallholders

Reference	Country	Commodity/ Product	Methods	Antecedents of market integration	Consequences of market integration
Balat et al. [30]	Uganda	Export crops (e.g. coffee) and food crops (maize)	Household data on the entire country of Uganda	Infrastructure (e.g. roads), market availability, and market information	Export crop producers have higher incomes and more wealth than subsistence producers
Bernard et al. [41]	Ethiopia	Different crops	Households survey for propensity score matching (1,702 in comparison and 830 in treatment)	Cooperative membership, landownership, and education level	Higher income
Bouis and Haddad [42]	Philippines	Sugarcane and maize	Panel data on 510 maize- and sugarcane-producing households	Farm size and better access to credit, technology, and education	Higher profits per hectare for sugar-producing households than maize-producing households
Dorsey [36]	Kenya	Coffee	Survey of 67 coffee-growing farmers	Government provision of credit, decrease in land available, and the production of many crops	Income increase to farmers
Kilic and Carletto [43]	Guatemala	Snow pea for export	Panel data on 136 snow pea adopters and 157 non-adopters	Market availability and government support (technical and marketing)	Increased income of households growing snow pea for export
Key et al. [29]	Mexico	Maize	Survey of 382 maize-producing households	Access to credit and infrastructure, and the use of high-yielding varieties of maize	Increased output of households

Lapar et al. [34]	Philippines	Livestock	110 households consisting of 75 livestock producers and 35 non-producers	Neighborhood effects, livestock numbers, and extension services	Not included
Maertens and Swinnen [35]	Senegal	Fresh fruits and vegetables (FFV)	Survey of 168 households producing FFV and 158 non-FFV-producing households	Product quality standards	Higher incomes and poverty reduction for the households
McCulloch and Ota [44]	Kenya	Horticulture	Survey of 141 horticulture producers and 122 non-producers	Land size, education level, and growing different types of crops (diversification)	Participants in export horticulture are wealthier than those who did not
Mithofer et al. [32]	Kenya	Vegetables	Survey of 11,132 households who grow vegetable crops for export	Food safety standards, government support, alternative cash crops, and market availability	Not included
Omiti et al. [31]	Kenya	Milk, vegetables, and maize	Surveys of 43 rural and 33 peri-urban households	Market information and infrastructure	Higher proportion of produce being sold (rather than consumed) by the farmer households
Pendleton and Howe [40]	Bolivia	Bananas and yucca	Survey of 209 households producing bananas and yucca for export	Distance from market, education level, access to credit services	Increased forest clearance for cash cropping
Tipraqsa and Schreinemachers [28]	Thailand	Rice	Survey of 240 farm households	Increased input use (e.g. fertilizer), assets owned (e.g. land), and growing different types of crops (diversification)	Increased productivity and income to the households

von Braun [8]	10 countries	Cash and food crops, fruits and vegetables	Meta-review of studies on commercialization	Infrastructure, institutions (laws and contracts)	Increased income and nutritional status of households
von Braun et al. [45]	Guatemala	Snow pea for export	Survey of 181 snow pea adopters and 218 non-adopters	Increased demand for snow pea in US, higher labor:land ratio in small farms, infrastructure, and assistance from GO and NGOs	Adoption of snow pea led to increased income of households

Background on pastoralists and their market integration

Pastoralism is the dominant way of life for an estimated 200 million people globally [46]. Practiced on 25% of the Earth's land mass, pastoralism provides 10% of all meat consumed by humans [47]. Most pastoralists herd livestock for their own consumption of milk and meat as well as for commercialization, which provides them with the money they need for complementary food items, healthcare, and education for their children. Livestock production is not only essential as a source of income to secure livelihoods [48], but also to cater to the growing demand for animal protein around the world [49].

Consistently, the literature reveals that market integration increases the number of livestock transactions made by pastoralists [50]. Most of the antecedents included in the market integration framework for smallholders also apply to pastoralists. Production factors such as the availability of pasture and water are frequently addressed in the literature on pastoralism, which typically takes place on marginal lands [e.g. 47,51]. Infrastructure [52], market standards, and information [e.g., 53] are also frequently discussed, as the distance to market is almost by definition an issue for the market integration of pastoralists [54,55]; however, to the best of our knowledge, neighborhood effects have not yet been discussed in the literature on pastoralism. In terms of solutions, the pastoralism literature is fairly consistent with the literature on market integration, suggesting that the income generated at the market may improve pastoralists' quality of life by enabling them to access consumer products and long-term investments [55,56]. Others emphasized that the further integration of pastoralists with the market enhances the proper management of livestock, which is necessary for adapting to changes in climatic conditions (e.g. 57). Pastoralists are better able to destock in times of drought (sometimes called pre-emptive selling) and restock afterwards [58].

Market integration can also help to adjust the livestock population to the available feed resources [59], making it more environmentally sustainable [60].

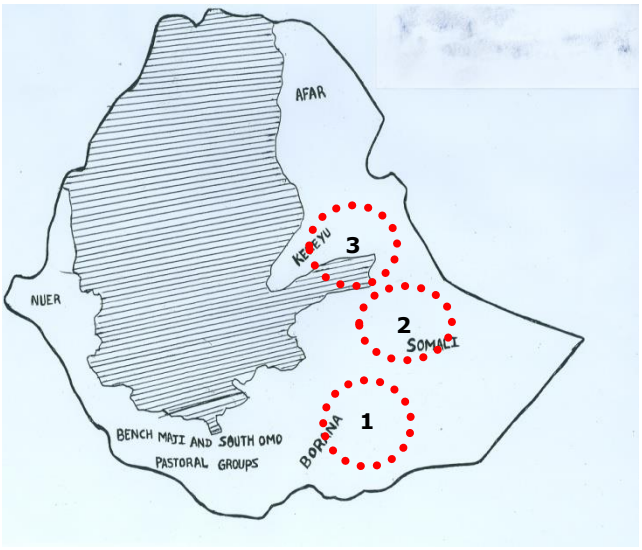
The market integration of pastoralists has not always led the desired outcomes however. Barrett and Luseno [61] describe a network in which pastoralists from northern Kenya actively sell, buy, and resell among themselves, but are unsuccessful in their attempts to add value to sell livestock to external buyers (such as exporters), resulting in inefficient competition and price depression. As a consequence, the pastoralists' ability to supply livestock to the market decreased, affecting their incomes. Market integration can also harm the natural resources on which pastoralists depend; for example, based on their study of Peruvian pastoralists, Postigo et al. [62] stated that the increased market integration of pastoralists leads to the overgrazing and degradation of pasture and water resources. Such evidence means it is important to obtain a deeper insight into the behavioral dimensions of market integration.

Materials and methods

Research context and case selection

This study focused on three pastoral regions in Ethiopia, the country with the largest number of pastoralists (12 million [63]) in the Horn of Africa [64]. Although pastoralists may be active in several markets, selling products such as dairy [65] and firewood or charcoal [66], we focused on the livestock market, which is the closest to the pastoralists' core activity. We aimed to maximize the possible variations among these pastoral regions in terms of natural conditions (such as pasture and water availability) and socio-economic aspects, including income diversification (such as farming in addition to livestock raising), infrastructure, and development projects. We therefore selected the pastoral regions of Borana (low presence of government projects, relatively high

availability of pasture), Yerer Valley (low presence of projects but more informal access to markets in Djibouti and Somalia), and the Middle Rift Valley (high numbers of projects, but pasture is becoming scarce) as the subjects of this investigation (Fig. 2). The decision of which regions to include as case studies was confirmed during consultations with three experts.



Note: Unshaded region represents pastoral areas in Ethiopia

Key: Borana (1), Yerer Valley (2), Middle Rift Valley (3).

Fig. 2. The three pastoral regions in Ethiopia included in this case study (adapted from the Pastoralist Forum Ethiopia [67]).

Data collection

The data were collected through individual interviews, personal observations, focus group discussions, and desk research following the recommendations of Yin [68]. The data were generated and corroborated through desk research, interviews, focus group discussions, and personal observations to ensure the reliability and validity of the case study data [68].

The pastoralists were interviewed around their grazing areas and five market centers selected in each of the three study regions to increase the generalizability of our findings. Interviews with pastoralists (around market centers) were conducted at the end of the market day or the next day. Four trained field assistants were employed to translate from local languages into the national language. Topic lists prepared in advance included open questions covering the market integration framework [69].

A total of 64 individual interviews were held with pastoralists. First-hand information was gathered as in-depth accounts of pastoralist experiences and motivations regarding the market. To better understand the market connections, actors in other parts of the livestock chain were also interviewed, including 21 brokers, 29 traders, four fattening operators, and seven slaughterhouse workers and/or live animal exporters. To obtain a general understanding of the sector, interviews were also conducted with 13 sector experts. Each individual interview session lasted approximately one hour. A total of 14 focus group discussions were held with five to eight participants, with two groups comprising traders and 12 groups of pastoralists to ensure the data could be validated and cross-checked [70]. One broker was included in each of the five focus group discussions with the pastoralists. Group discussions can provide data on the realities of a situation as defined in a group context, and can therefore be preferable to individual interviews [71]. Each focus group discussion lasted between 90 minutes and two hours [72]. All interviews and focus group discussions were recorded to increase the accuracy of the data presented [73], then transcribed into English.

Observations and desk-based research were used to substantiate the outcomes of the interviews [68]. All the market centers included in this study were observed by the first author on major market days, as were the operations of the slaughterhouses, fattening operators, and live animal exporters. The desk-based research involved reviewing the related literature, including

published articles and documents from relevant institutions, such as the International Livestock Research Institute, the United States of America International Development, and the Pastoralist Forum Ethiopia.

Data analysis

The market integration framework presented in Fig. 1 was considered in the context of pastoralists and expanded based on the outcomes of the interviews, discussion groups, and desk-based research. First, an extensive case analysis was prepared for each studied region based on the transcripts of the interviews and focus group discussions, while desk-based research was used to identify any differences in the level of market integration between the pastoralists. The within-case analysis involved searching for confirmations of, and deviations from, the original framework, as well as any possible extensions. These patterns were then compared across all cases to check their consistency and discover potential differences [74,75].

Results

From the case study data, we inductively extended the market integration concept in the context of pastoralists in Ethiopia. We identified three sets of activities that could be seen as components of market integration, namely the initial market participation, market sensing, and market responsiveness of the pastoralists. These activities are driven or conditioned by factors that were previously reported in the literature, including production factors, infrastructure, market information and standards, as well as the neighborhood effect. In our analysis, we also identified new factors that affect these activities; market-discouraging norms, and short-term orientation.

After discussing the dimensions of this concept, we will present the antecedents, conditions, and consequences of the market integration of pastoralists.

Initial market participation

During the visits to marketplaces, we frequently encountered pastoralists who participated in the market without much knowledge of how markets function and what they demand. Such pastoralists simply select the animals they value least given the composition of their herd and sell them at the market in response to a need for cash. We refer to this as *initial market participation*, because this form of market participation may not necessarily lead to a more strategic use of market places by the pastoralists. Quotes on market participation can be found in Table 2 (all quotes come from pastoralists unless indicated otherwise).

Table 2. Representative quotes on initial market participation

Quotes	**Case study**
"We sell to finance weddings, purchases of food items, and also to cover medical expenses for both humans and livestock." "When we have a major problem we take the opportunity [to use the market]. We tend to rush to take the animal to the market and sell it, but highland farmers don't sell at such short notice."	Yerer Valley
"Pastoralists sell when they face a cash problem." (One of the brokers in Meiso town) "We, pastoralists, usually sell our livestock to cover our urgent expenses (e.g., to pay land tax, for the education of children, and to buy cereal food products)."	Middle Rift Valley
"More cattle are supplied to the market by pastoralists during the dry seasons, because during these periods they want money to buy grains for food. In the rainy season they usually use milk as food, and there are therefore fewer cattle sales." (Experts during focus group discussion in Negelle town) "When a family member dies, I borrow money from my neighbors to buy cereals to provide meals for people at the funeral. Then I sell my cattle to pay that debt. Whenever I face financial shortages for my children (e.g., schooling and clothes) or weddings, I decide to sell my cattle."	Borana

Market sensing

Pastoralists who have gained some experience in the market tend to start actively developing their knowledge. Through *market sensing*, pastoralists access information on the livestock types, breeds, and qualities that buyers want, as well as the time at which the demand for their products becomes high. Some even obtain insights into the wants of specific buyer groups, such as exporters. Market sensing by pastoralists is largely conducted through personal visits to the market, speaking with other pastoralists during their travel to and from the market, and through their social networks. In areas more remote from market places, where pastoralists have less experience with market participation, we generally observed lower levels of market sensing, while in places closer to markets, pastoralists were more actively engaged in information gathering. For example, pastoralists in the Middle Rift Valley area generally undertake more market sensing than pastoralists located in remote parts of Borana, such as Melka Guba. Some clans who have advanced their market sensing to higher levels may appoint one person to become a broker in a market town and arrange the transactions on behalf of the entire clan. Such clan-brokers can be reliable sources of information.

Table 3. Representative quotes on market sensing

Quotes	Case study
"I always ask my clan broker about the prices of types of livestock before I trek to the market." "Now we can use mobile phones even in remote grazing areas. We contact our broker in the town and ask him which type of livestock to bring and when to take it to the market."	Yerer Valley
"We ask for information from those who have been to market to sell livestock. Based on that, we estimate the price [of the livestock we want to sell]. These days we use mobile phones and also get information through radio transmissions from Adama town." "Every pastoralist who has been to the market passes market information [to us]."	Middle Rift Valley

"I get market information from brokers and other people who have been to different market places."	
"I always inquire the market price conditions for livestock from people in our community who have recently visited the market. Based on that, I decide whether to sell goats or cattle." "When we learn that Arab traders (exporters) are coming to buy camels, we send word to our clan members in advance to bring camels to Moyale market." (One of the brokers in Moyale town)	Borana

Market responding

Some pastoralists use market information to strategically respond to the preferences of buyers. One frequently mentioned activity was the strategic use of fattening, for example by giving special treatments to the animals to be sold so that they met or exceeded the expectations of the buyers. Other pastoralist responses to market information include the selection of breeds and switching between different types of livestock (for example, raising goats instead of cattle) and removing livestock from their herds if they do not have a strategic fit with the market demands.

Table 4. Representative quotes on market responding

Quotes	**Case study**
"I give my cattle medicine to kill ticks, and I feed them salt and ground nuts to make them attractive to traders." "During the dry seasons the price of the animals is very high. I feed them on my farm and fetch water for them. When they gain weight and their body condition improves, I take them to the market to sell. I also bought grazing pasture near Jijiga town and feed the livestock during drought to fatten them."	Yerer Valley
"To fatten our livestock and make them gain weight before selling, we collect hay to feed them and also give them water together with salt." "Pastoralists are becoming motivated to fatten. Nowadays fattening is becoming common." (Noted by an expert in Meiso town)	Middle Rift Valley
"When I decide to sell my cattle, I feed them [in a separate grazing enclosure] near Kaallo and give them salt. When the cattle get fat, I take them to Yabello town to sell.	Borana

I also prefer to sell my cattle before Arafa and Easter periods because I get a better price during these times." "Nowadays, pastoralists are thinking ahead to when they can get the best market prices and fattening their livestock ahead of good market seasons such as holidays. Some of them have bought a house and land in the towns." (Expert)	

Production factors

Pasture and water are the most important (livestock) *production factors* for pastoralists. Shortages in these vital resources immediately influence the ability of pastoralists to raise and sell their livestock, and as such are basic drivers of market participation. During the dry season, pastoralists may focus on feeding their livestock to minimize the possibility of death rather than increasing their quality to sell.

Table 5. Representative quotes on production factors

Quotes	Case study
"First, it is important to be well-organized (e.g., in cooperatives), then there is a need to improve feed and water and solve any disease problems in the animals. Then we can focus on quality and marketing." "The main problem is feed and water, which is affected by the high population of livestock, conflicts over grazing lands between neighboring regions, and the lack of land demarcations for pastoralists and farmers. It is only when you have feed and a place to shelter your animals that you can provide quality produce to the market." (Agricultural expert in Jigjiga town)	Yerer Valley
"We move to various distant places for water and forage. Yes, we go to the bush and return when it starts raining." "We could have done fattening like in Adama town, but the problem is water and feed shortages."	Borana
"Our district (Meiso) is a pastoralist area but we don't have sufficient grazing land for our animals. So, we think about marketing only when we have adequate feed and healthcare for our animals." "During the dry season, our cattle are not in demand by traders because of their poor quality. Due to the shortages of grass for feed, the cattle are not fat enough to be sold for meat purposes during the dry season."	Middle Rift Valley

Infrastructure

The *availability of infrastructure*, such as roads, also influences pastoralist market participation because it increases their access to training and credit services from the government and non-government organizations (NGOs). Like the availability of pasture and water, this is a basic requirement that directly influences market participation.

Table 6. Representative quotes on infrastructure

Quotes	Case study
"The distance to the market affects our marketing of livestock. Sometimes we need to travel three days to reach the market." "Distance is the main problem during the selling of our livestock. When the livestock can't be sold, it is so hard to trek them back to our villages again. I usually leave my cattle with my clan broker until the next market day."	Yerer Valley
"We used to travel longer distances to reach market places. As a result, the animals were weaker and lost weight before they reached the market, and we were also tired and thus didn't haggle much on the price." "Pastoralists don't use trucks to transport their goats and cattle to the market. Due to their long-distance trekking, both the men and livestock are tired and weak when they arrive to the market. The men can buy bread and tea near the market center, but obtaining feed and water for the livestock in the market center is a problem." (One broker at Meiso)	Middle Rift Valley
"Since we trek very long distances, we keep the unsold livestock with our clan members living in areas close to the market. This is because the livestock will lose weight if we trek them back. We then bring them to the next market day." "The market practices of pastoralists are affected not only by their long-distance treks but also by the lack of watering points and livestock sheds in most of the market centers around Borana."	Borana

Market standards and information

The use of *market standards and information* by traders, NGO projects, government extension agents, or other actors can influence the market orientation of the pastoralists. This means the pastoralists can spend less time searching for market information, which enables them to respond properly to market demands. It may also reduce pastoralists' hesitation to visit markets in the first place.

Table 7. Representative quotes on market standards and information

Quotes	**Case study**
"There is a daily communication with traders, who transmit the current market prices from rural and village markets to exporters. At the same time, exporters transmit the international prices (paid by importers) to traders. This helps traders to reduce their costs when purchasing livestock." (Expert) "When the market price is good at Bordede market, we take our livestock there based on the information that traders from Awash give us. We also check the type and condition of livestock demanded in the market."	Middle Rift Valley
"Pastoralists are not getting quality market information and are suffering from price fluctuations. Pastoralists frequently visit places close to the market to have tea and coffee and there they hear the market information from others who visit the coffee houses." (Experts on Babile market) "We continuously meet and interact with other pastoralists around pasture and water wells. There, we discuss the markets and prices, which facilitates our marketing practice".	Yerer Valley
"Those buyers who have no experience request the support of others to visually check the quality of their livestock. Some prefer large body structures and fattened animals; others prefer the long-horned cattle. To identify the age of the livestock, they check their teeth. They observe the teats of heifers. When we get support from the government, we can supply quality animals to market. If the government does not protect the market and provide medication, it is hard to provide quality produce as we are not educated." "To determine the price for our livestock, we usually compare the price of another person's cattle sold on that day with the price offered by our *delali* (broker). If the price is lower than what we had in mind based on our comparison to the market prices, we can say that we are not satisfied."	Borana

Neighborhood effect

The practices of *neighboring* farmers influence pastoralists' responsiveness to markets, as well as their initial market participation; for example, in Meisso (Middle Rift Valley) and Babile (Yerer Valley), pastoralists often fatten cattle before they bring it to the market. These areas are located at the opposite lower edge of the Hararghe highlands, where fattening is frequently practiced by farmers; therefore, the pastoralists mimic the fattening practices of neighboring farmers.

Table 8. Representative quotes on the neighborhood effect

Quotes	Case study
"Pastoralists are becoming motivated to become involved in fattening. Nowadays, fattening is becoming common." "Farmers buy bulls for fattening (from pastoralists), since they have already sold their oxen. Following the farmers, we also started to practice fattening."	Middle Rift Valley
"I sell after fattening the cattle and when I think I will get better price. We learned about fattening from highland farmers in Harar. These days, the Agricultural Office in our area also provides us with information on fattening." "There are pastoralists and traders in this area (Babile) who were facilitated by the Bureau of Agriculture to visit commercial cattle fattening operators in Adama town. After that, some local pastoralists and traders also started to fatten cattle by feeding them straw and hay."	Yerer Valley
"Pastoralists and agro-pastoralists who are closer to towns give salt and medicine to make their livestock fat before taking them to the market. Other pastoralists are also learning to fatten their livestock from them." "Traders near Yabello town started to keep and feed the cattle they bought from pastoralists for some weeks to improve their body condition. Some pastoralists noticed this and started to fatten their cattle before they trekked to the market'. (One of the traders in Yabello town)	Borana

Market-discouraging norms

An important limiting factor for more strategic use of market places are *market-discouraging norms*, the cultural clan norms that value the possession of livestock over sustainable herd management, including selling livestock at markets. Clan elders often force pastoralists to protect the traditional way of life, discouraging them from developing more knowledge about markets. Discouraging norms actually discourage pastoralists to strengthen their ability to "sense markets" after initial market participation. Many pastoralists indicated that clan elders monitor their livestock sales, and that repeated livestock sales without a justifiable reason may result in punishment.

The punishments are aimed to deter the depletion of the herd, which pastoralists consider to belong to their clan. The elders can order individually owned livestock to be contributed to the clan; for example, when other members incur a loss of livestock due to raids or droughts. A typical example of such clan a contribution is '*Buusaa-gonofa*', a traditional insurance system of Borana pastoralists. Due to the market-discouraging norms enforced by the clan elders, pastoralists may put more effort into increasing their herd by breeding rather than fattening the livestock they want to sell or breeding the types that are in demand at the market. We found market-discouraging norms to be more present in traditional areas, in particular in Borana, while in the less remote places, in particular in the Middle Rift Valley they seem less influential.

Table 9. Representative quotes on market-discouraging norms

Quotes	**Case study**
"Culturally we like to have many animals, and this is still there with us. However, we sell our animals because of (financial) problems." "Unless the pastoralist is obliged to sell because of problems such as the death of a family member, a marriage, or family finances, he always wants to breed his animals. Otherwise, the animal must be intended for sale, which is chosen by some of us nowadays. They then feed these animals before selling them."	Yerer Valley

"We have advisors in our culture. When youngsters sell their cattle or their father's cattle from time to time, the elders will be disappointed and usually advise him not to repeat this, since these actions are waste of wealth. He will be advised not to sell and prohibited from doing so." "People without cattle are considered poor in our culture. If someone is always taking cattle to the market, the community will disrespect and hate him. He will be considered a fool, since later on they assume that he will be poor. Even if my father's shoes are worn out, they (the community) will prevent him from selling."	
"We view cattle as everything, and the image and prestige of someone with many cattle is very high. For example, there are many individuals with up to 1,000 heads of cattle. If someone is selling many cattle, he may be considered within the community to be a drunk or someone adulterated by city life." "In our culture (Borana), more cattle means more esteem; therefore, selling cattle is usually not encouraged." "There are some individuals in our community who cannot sell any livestock because of a clan decision. When a pastoralist sells his cattle for personal expenditures, his wife will report to the clan elders and the clan members punish him."	Borana
"After selling a bull, it is a culture to buy a heifer, a calf, or a small bull as a replacement. If the animal sold is a goat, the replacement should also be a goat. There is a saying among pastoralists, 'Do not bring the rope back empty to prevent the barn being empty.'" "We like to breed rather than bring our animals to the market to sell. We always aspire to exceed our peers (some of whom have 1000 or more livestock) in terms of herd size. This is our culture!" "I am always disturbed when I select one of my camels from my herds to sell. I sell under mental stress and disturbance. Until I replace it by purchasing another smaller camel or I see new one born, I always feel the loss of my camel. If people in the community know that someone has sold his camel, they always inquire what that person replaced it with."	Rift Valley

Short-term focus

Not all pastoralists develop a strategic response to the market. Some actively use the information they have gleaned to speculate on the market and make money. Rather than a long-term plan, they

develop a *short-term focus* on the market. They usually settle in places relatively close to the market and bring animals to sell when they expect (or know) that prices are high; for example, they would sell two camels when prices are high and keep the money to buy four more when prices are low. Not surprisingly, the results seem to suggest that a short-term focus occurs more frequently in the Middle Rift Valley than in Borana, while Yerer Valley takes a place between the other two.

Table 10. Representative quotes on short-term focus

Quotes	Case study
"I sell a cow to buy more goats, and let them browse for some weeks in my village. When prices get higher in the market, I sell them." "Before holidays (e.g., Easter), I buy goats from Metehara market. When the holidays approach I take the goats to another market center (Welencheti) to sell at a higher price and make a profit."	Middle Rift valley
"There are some pastoralists in this area who always visit this market (Jigjiga) during the dry season to buy livestock whenever prices get low. After some time, they bring the animals back to the market to sell at a higher price." (Clan broker in Jigjiga town) "Today I sold my camel at a good price. Since the price of heifers is low in this market today, I will buy three to resell them after a few weeks when their price is higher."	Yerer Valley
"I buy cattle during the dry season because they are cheap during this time. I sell them when prices are high or during the rainy season when they look nice." "Some pastoralists buy cattle from remote villages where traders don't visit, such as the Ethiopian side of the Moyale district. After a few days, when prices are good, they bring them either back to the Ethiopian side of Moyale market or trek them to the Kenyan side." (One trader in the Ethiopian side of Moyale market)	Borana

Livelihood performance

By offering the preferred breeds of livestock and/or fattening their animals, pastoralists can often receive higher prices, which in turn impact their *livelihood performance*. Pastoralists who are more

responsive to the market seem to have more varied diets (for example, they buy processed food), and are able to pay for medical care and the education of their children. They are also more frequently involved in other additional income-generating activities such as farming, petty trading, and livestock trading, and they are more likely to own houses or shops in town. A higher level of market responsiveness logically provides them with more starting capital to undertake other income-generating activities.

Table 11. Representative quotes on livelihood performance

Quotes	Case study
"I buy livestock during the dry season to fatten (using straw and grass)and sell. I have a better house (corrugated roof) than others in my area." "We [who fatten cattle to sell] have better market information than other pastoralists. Their cattle are not in demand since they have never put a rope around the heads of their livestock. We sell sometimes at prices that are 1000 birr [Ethiopian currency] higher than for other mature cattle on the market, because ours are the fattened ones." (The rope around the head of cattle refers to customizing cattle to live and eat in one place, which is a necessity to fit into the livestock systems of fatteners.)	Yerer Valley
"Pastoralists nowadays plan ahead as to when they can get best market prices by fattening their livestock." (Broker in Borana) "Pastoralists use medicine to kill ticks on their cattle. They even buy veterinary drugs from Kenya Moyale. They feed the animals hay and grass to sell at higher prices for traders. They have also started to buy flour mills."	Borana
"I sold my cattle after fattening and using that money I started to buy farming tools. I am now growing tomatoes and selling them to traders to make more money at Metahara town." "These days, pastoralists like money more than livestock. Pastoralists are more aware and now save money in banks and build houses in the town to rent for more income."	Middle Rift Valley

Changes in lifestyle

Higher market responsiveness can also bring *changes in the lifestyle* of pastoralists, who shift from subsistence to monetized dealings using their income. This shift in the pastoralist way of life is emphasized in sociological studies [76,77]. Their increased income means pastoralists can become consumers of different products, including manufactured goods; for example, the use of mobile phones represents a significant lifestyle change to pastoralists. They can use mobile phones to check livestock prices from their (clan) brokers and to get in touch with family members who are out with their herds. Increases in the market response can mean pastoralists live more individualistic lifestyles, rather than the traditional reciprocity-based lifestyle [78,79]; for example, pastoralists have indicated that some of their members spend their money in towns on alcohol and 'khat', a stimulant leaf. Expenditures on alcohol or khat for individual indulgence may also occur at the expense of the reciprocity and sharing that characterizes pastoralists' traditional way of life.

Table 12. Representative quotes on changes in lifestyle

Quotes	**Case study**
"If they feel that the person is selling too many animals, drinking, or chewing, then the clan chiefs can decide that this person is not allowed to sell their animals in the future. For instance, there are some individuals in our community who cannot sell any animals by the decision of the clan. These people sold animals in the past in exchange for food, but they instead used the money to drink alcohol and chew khat." "Some pastoralists have left their villages and pastoralist livelihoods to work here in the town as laborers. Those trusted by their clans also work as brokers here." (One expert in Babile)	Yerer Valley
"When one [pastoralist] treks a camel to the market, some of his relatives follow him to chew khat in the town after selling the camel." "Clan elders have prohibited the drinking of alcohol in our village because more people are selling their livestock to drink beer."	Borana
"More pastoralists bring their cattle to sell here at Matahara town. After that, they start to drink beer and chew khat. Some of them even stay the night in the town."	Middle rift valley

"Pastoralists also come to the market place to buy khat."	

Adaptation to natural conditions

Differences in the market responsiveness of pastoralists affect their *adaptation to the changes in the natural conditions*. This includes the extent to which pastoralists change their herd size depending on the expected change in climatic conditions, such as droughts that cause shortages in pasture and water. Pastoralists with lower market responsiveness are also less responsive to changes in climatic conditions because selling is more difficult and less beneficial for them. Such pastoralists have difficulty in providing the livestock in demand at the market, because they may not fulfill the requirements of buyers by improving the quality of livestock they want to sell. On the other hand, pastoralists with a higher level of market responsiveness destock (sell) some of their livestock before the dry season after fattening. They also restock their livestock from the market after the drought, making them more adaptable to natural conditions.

Table 13. Representative quotes on adaptation to natural conditions

Quotes	**Case study**
"When Hayyuu (a wise man) tells me that the drought will be severe, I sell some of my cattle and sheep. When Hayyuu tells me the rains will be good, I start to buy additional cows. Some pastoralists around Yerer buy grazing land and feed their livestock to sell before the drought occurs." "Before the dry season I start to fatten, and when the dry season comes I sell the fattened animals. I take other livestock to remote areas for good pasture. When the rains come and the land becomes green, I also start to buy cows."	Yerer Valley
"When pasture becomes scarce in my areas, I leave only fattened livestock to sell in my area and take the others to distant places for pasture and water." "Culturally, Borana pastoralists are known for their cattle herds, but due to frequent droughts and shortages of pasture they are now changing their herds from cattle to goats and camels." (Expert from Negele town)	Borana

"We sell some of our cattle before the drought comes and buy goats, since they can withstand drought better than cattle." "Whenever pasture comes scarce, some of the pastoralists near Metehara town use sugarcane leftovers from Metehara Sugar Factory to feed their cattle."	Middle Rift valley

Discussion, implications, and conclusions

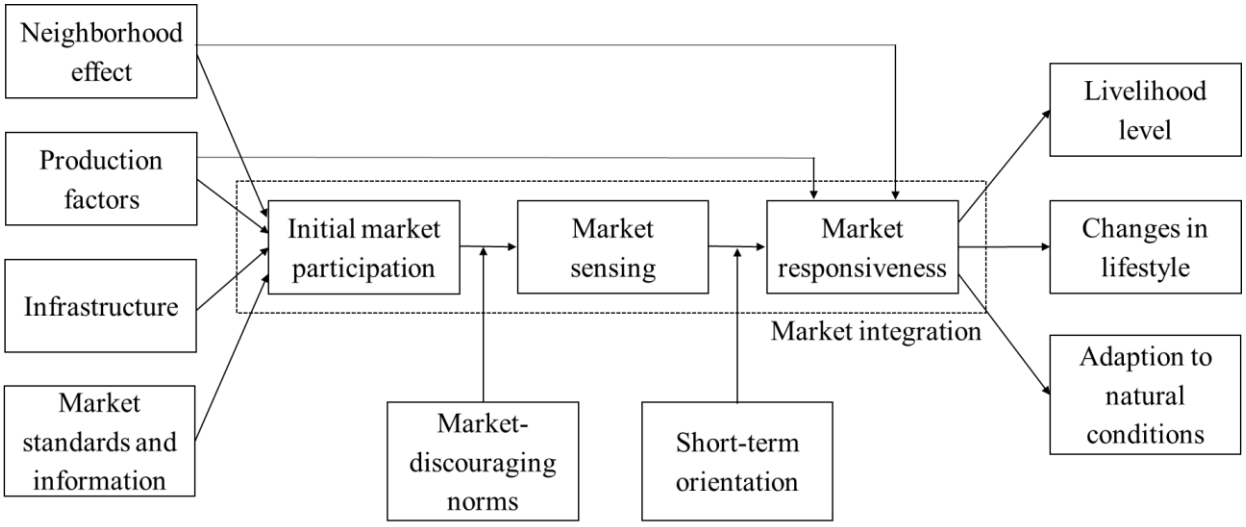


Fig. 3. Refined framework of smallholder market integration

Discussion

Drawing on extensive case study data from Ethiopian pastoralists and market experts, this study developed an extended model of smallholder market integration (see Fig. 3). The analysis revealed three components that can be seen as subsequent steps leading to the more strategic integration of a smallholder business with the market, namely their initial market participation, market sensing, and market responsiveness. The data showed that Ethiopian pastoralists who are more responsive to the market (in a strategic way) often receive higher prices that translate to higher levels of

income, positive changes in lifestyles, and a better adaptation to natural conditions. Because livestock that meets the buyers' preferences is easier to sell when natural conditions require a reduction of the herd size, the relationship between market orientation and adaptability to natural conditions was found to be positive rather than negative (as previously reported for market integration [6, 2]).

In addition to basic production factors, infrastructure, and information on market standards and pricing, initial market participation is also driven by neighborhood effects, because smallholders may copy the behaviors of their peers. Initial market participation may not always lead to more strategic market sensing behaviors however, because the clan norms, enforced by elders, may discourage the selling of livestock. Such norms prevent the market from playing a more central role in the activities of the pastoralists. Furthermore, market sensing does not necessarily lead to a higher level of market responsiveness. Some pastoralists become prone to short-term focus, using the market "to make a quick buck". Such short-term market responsiveness is fundamentally different from the concept of strategic market responsiveness revealed in our data; short-term behavior restricts the development of more durable relationships with buyers, preventing the pastoralists from developing insights into the attributes that buyers are really looking for and restricting their understanding of how they can translate these market standards into their daily activities. It also prevents pastoralists from selling their animals when natural conditions demand destocking to protect natural resources. Logically, market responsiveness itself also depends on the availability of natural resources, and to some extent these behaviors can be imitated from others.

Together, the insights of this study demand a strategic perspective on market integration. This contradicts the relatively simplistic but widely used conceptualizations of market integration

found in the literature, which are often restricted to the number of transactions made by smallholders [e.g. 81] or the relative percentage of outputs they sell on the market versus the percentage used for home consumption [11,12]. These conceptualizations do not properly represent the strategic nature of market integration; for example, smallholders who use the market to speculate may engage in more transactions than those who respond strategically to buyers' demands. Smallholders who only sell a small share of their output on the market but know precisely what, when, and to whom they should sell may generate a higher income than those who sell a much larger share without a strategic vision.

The terms market sensing and market responsiveness are not uniquely new. They are used in the literature, particularly in the debate about market orientation in which comparable processes are reported, albeit in the very different context of "modern" companies. Kohli and Jaworski [80] first recognized the processes of market intelligence generation and dissemination and responsiveness to market intelligence in companies, which were together referred to as market orientation. Our findings are comparable in that we observed the generation of market information (market sensing) and responsiveness in our data. Although we found cases in which market information is shared between pastoralists, this process is not identical to the processes reported within companies because pastoralists do not have the same clear boundaries as companies. Market orientation (including sensing and responsiveness) is known to satisfy buyers and lead to higher financial performance [82], which has interesting implications for our findings.

The main implication of this study for policymakers is that our findings suggest that by pursuing a policy directed towards the more strategic market integration of smallholders, policymakers might simultaneously achieve two important goals, namely improving livelihoods and adapting food production to natural conditions. This is important because it suggests that

making smallholders more "business minded" does not necessarily mean that they will become prone to overexploiting natural resources at times that such resources are particularly vulnerable. A policy shift towards a more strategic approach to the integration of smallholders may require the revision of many policy elements. In terms of interventions, policymakers should not only consider the traditional forms of support, such as infrastructure and production inputs, but also interventions that may change norms and attitudes towards the market. A logical example is the provision of training to explain the benefits and importance of the market while openly discussing the implications for traditional lifestyles.

In addition to policy directions and documents, it is also important to reconsider the indicators of market integration. To evaluate policies that strengthen the market integration of smallholders in a strategic manner, policymakers should look beyond generic measures of this process, such as the volume of goods sold versus the volume consumed by the household. Market sensing and responsiveness are behavioral concepts, so observational measures are probably more valid. Alternatively, output measures such as quality levels or product attributes could be used, in addition to measures that tap the degree of customer satisfaction. Such measures have the advantage of minimizing the biases of self-overestimation.

Finally, policymakers should be aware that higher levels of market integration may come with undesired lifestyle changes, such as the alcohol abuse mentioned during our interviews and group discussions. Successful attempts to increase the level of market integration may therefore need to be accompanied by policies that help smallholders to use their revenues for beneficial investments in their business or elsewhere.

Limitations and directions for future research

This study is limited in that it is context specific. Although our findings are based on data from three regions of Ethiopia and gave rise to new additions to the framework (market-discouraging norms and short-term focus), we cannot be certain that the findings also apply to smallholders in general, or even pastoralists in other parts of the world. Notably, we developed a framework that goes beyond specific contextual factors, which should therefore also be applicable to other smallholder contexts. Nevertheless, other specific contexts may involve factors not currently reflected in the model. As such, the generalizability of our findings must still be tested in the future. Future research could also be directed at identifying the effects of market integration on changes in the lifestyle of pastoralists. In this regard, sociological research might be conducted to investigate relationships between increased levels of pastoralist strategic market integration and the short-term ways in which this could be achieved with respect to their changes in their current lifestyles. The outcomes of this type of research could be helpful in designing polices that aim to enhance market integration in a strategic manner while being cognizant of pastoralists' culture and lifestyles.

Second, further research is required to empirically validate the contribution of market integration to the ability of pastoralists to adapt to changes in the natural conditions. In this respect, a semi-experimental study could be designed to test how pastoralists respond to changes in climatic conditions, such as rain and drought, by changing their herd size.

Third, it might also be important to analyze the relationship between the market integration of other smallholders, such as crop farmers, and their ability to adapt to changes in climatic conditions. Researchers could investigate how their market integration influences the crop varieties they use, their timing of plantings, and their additional income-generating activities such as petty trading, all of which could impact their adaptation to climatic changes.

Conclusions

In this study, we developed an extended framework of market integration for pastoralists in Ethiopia. When practiced strategically, market integration helps smallholders to align their output with the requirements of the market, enabling them to determine market information and respond to the preferences and requirements of buyers. By strengthening smallholder market integration, policymakers can achieve multiple objectives, including poverty reduction and adaptation to climatic conditions, while contributing to the production of food for the growing urban population and the export position of their countries.

References

[1] Broad, R. (2004) 'The Washington Consensus Meets the Global Backlash: Shifting Debates and Policies', *Globalizations* 1 (2): 129–54.

[2] Drache, D. (2001) 'Beyond the Washington consensus; Governance and the public domain in contrasting economies', International Conference, Beyond the Washington Consensus-Governance and the Public Domain in Contrasting Economies: The cases of India and Canada. The Centre for Research in Rural and Industrial Development, Chandigarh, February 12–14, 2001.

[3] Onis, Z. and Senses, F. (2005) 'Rethinking the Emerging Post-Washington Consensus', *Development and Change 36* (2): 263–90.

[4] FAO (2013) *Market-oriented farming: An overview.* FAO, Rome.
E-ISBN 978-92-5-107540-1.
http://www.fao.org/docrep/018/i3227e/i3227e.pdf (Accessed November 2013).

[5] IFAD (2008) 'Climate change and the future of smallholder agriculture: How can rural poor people be a part of the solution to climate change? Discussion paper prepared for the Round Table on Climate Change at the Thirty-first session of IFAD's Governing Council, 14 February 2008. http://www.ifad.org/climate/roundtable/ (Accessed November 2013).

[6] Berhanu G, Moti J (2010). Commercialization of smallholders: Is market participation enough? Contributed Paper presented at the Joint 3rd African Association of Agricultural Economists (AAAE) and 48th Agricultural Economists Association of South Africa (AEASA) Conference, Cape Town, South Africa, September 19-23, 2010.

[7] Shepherd, A. (2007). Approaches to linking producers to markets. A review of experiences to date. Agricultural Management, Marketing and Finance Service FAO Rural Infrastructure and Agro-Industries Division.

[8] von Braun, J. (1995) 'Agricultural Commercialization: Impacts on Income and Nutritional and Implications for Policy', *Food Policy* 20 (3): 187–02.

[9] IFAD (2010). Rwanda:Gender and youth in the tea and coffee value chains, Smallholder Cash and Export Crops Development Project (PDCRE). Rome.

[10] van Tilburg, A., & van Schalkwyk, H. D. (2012). Strategies to improve smallholders' market access. In H. D. Van Schalkwyk, G. C. G. Fraser, A. Obi, & A. van Tilburg (Eds.), *Unlocking markets for smallholders. Lessons from South Africa* (Vol. 10, pp. 35–58). Wageningen, the Netherlands: Wageningen Academic Publisher.

[11] Timmer, C.P. (1997) 'Farmers and Markets: The Political Economy of New Paradigms', *American Journal of Agricultural Economics* 79 (2): 621–27.

[12] Fafchamps, M. (1992) 'Cash Crop Production, Food Price Volatility, and Rural Market Integration in the Third World', *American Journal of Agricultural Economics* 74 (1): 90–99.

[13] Chamberlin, J. and Jayne, T.S. (2013), 'Unpacking the Meaning of 'Market Access': Evidence from Rural Kenya,'*World Development*, 41 (January): 245-264.

[14] Narayan, D., Patel, R., Schafft, K., Rademacher, A., and Koch-Schulte, S. (2000), *Voices of the Poor: Can Anyone Hear Us?* New York: Oxford University Press.

[15] Viswanathan, M., Sridharan, S., Ritchie, R., Venugopal, S. and Jung, K. (2012), 'Marketing Interactions in Subsistence Marketplaces: A Bottom-up Approach to Designing Public Policy,'*Journal of Public Policy & Marketing*, 31 (2): 159-77.

[16] Koocheki, A. and Gliessman, S. (2005) 'Pastoral Nomadism, a Sustainable System for Grazing Land Management in Arid Areas', *Journal of Sustainable Agriculture* 25 (4): 113–31.

[17] Pingali, P. and Rosegrant, M.W. (1995) 'Agricultural Commercialization and Diversification: Processes and Policies', *Food Policy* 20(3): 171–85.

[18] Barrett, C.B. (2008) 'Smallholder Market Participation: Concepts and Evidence from Eastern and Southern Africa', *Food Policy* 33 (4): 299–17.

[19] Bellemare, M. and Barrett, C. (2006) 'An Ordered Tobit Model of Market Participation: Evidence from Kenya and Ethiopia', *American Journal of Agricultural Economics* 88 (2): 324–37.

[20] Gebremedhin, B. and Jaleta, M. (2010a)*Market Orientation, Diversification and Market Participa-tion of Smallholders: Evidence from Ethiopia*. International Livestock Research Institute (ILRI), Improving Productivity and Market Success (IPMS) Project, Ethiopia. Tropentag, September 14–16, 2010, Zurich.

[21] Arias, P., David, H., Ekaterina, K., and Jamie, M. (2013) *Smallholder integration in changing food markets*. Food and Agriculture Organization of the United Nations, Rome.

[22] von Braun, J., Kennedy, E. and Bouis, H. (1990) 'Commercialization of Smallholder Agriculture: Policy Requirements for the Malnourished Poor', *Food Policy* 15 (1): 82–85.

[23] Gabre-Madhin, E.Z. (2009) *A Market for All Farmers: Market Institutions and Smallholder Partici-pation*. CEGA Working Paper Series No. AfD-0903. Centre of evaluation for global action. University of California, Berkeley.

[24] Keller, W. and Shiue, C.H. (2007) 'Market Integration and Economic Development: A Long-run Comparison', *Review of Development Economics* 11 (1): 107–23.

[25] Pingali, P. (1997) 'From Subsistence to Commercial Production Systems: The Transformation of Asian Agriculture', *American Journal of Agricultural Economics* 79: 628–34.

[26] Dollar, D. and Kraay, A. (2004) 'Trade, Growth, and Poverty', *Economic Journal* 114: 22–49.

[27] Future Agricultures (2012) *Factors Influencing Smallholder Commercial Farming in Malawi: A Case of NASFAM Commercialisation Initiatives.* Future Agricultures, Policy Brief 051. February 2012. www.future-agricultures.org (Accessed December 2013).

[28] Tipraqsa, P. and Schreinemachers, P. (2009) 'Agricultural Commercialization of Karen Hill Tribes in Northern Thailand', *Agricultural Economics,* 40 (1): 43–53.

[29] Key, N., Sadoulet, E. and de Janvry, A. (2000) 'Transactions Costs and Agricultural Household Sup-ply Response', *American Journal of Agricultural Economics* 82: 245–59.

[30] Balat, J., Brambilla, I. and Porto, G. (2009) 'Realizing the Gains from Trade: Export Crops, Market-ing Costs, and Poverty', *Journal of International Economics* 78 (1): 21–31.

[31] Omiti, J., Otieno, D., Nyanamba, T., Mccullough, E. (2009) 'Factors Influencing the Intensity of Market Participation by Smallholder Farmers: A Case Study of Rural and

Periurban Areas of Kenya', *African Journal of Agricultural & Resource Economics* 3 (l): 57–82.

[32] Mithöfer, D., Nangole, E. and Asfaw, S. (2008) 'Smallholder Access to the Export Market: The Case of Vegetables in Kenya', *Outlook on Agriculture* 37 (3): 203–11.

[33] Bala, V. and Goyal, S. (1998) 'Learning from Neighbours', *Review of Economic Studies* 65: 595–21.

[34] Lapar, M.L., Holloway, G. and Ehui, S. (2003) *How Big is Your Neighbourhood? Spatial Implicat-ions of Market Participation by Smallholder Livestock Producers*. Proceedings of the 25th International Conference of Agricultural Economists (IAAE) 16-22 August 2003. ISBN Number: 0-958-46098-1, Durban, South Africa.

[35] Maertens, M. and Swinnen, J.F.M. (2009) 'Trade, Standards, and Poverty: Evidence from Senegal', *World Development* 37 (1): 161–78.

[36] Dorsey, B. (1999) 'Agricultural Intensification, Diversification and Commercial Production among Smallholder Coffee Growers in Central Kenya', *Economic Geography* 75: 178–95.

[37] Jayne, T.S. (1994) 'Do High Food Marketing Costs Constrain Cash Crop Production? Evidence from Zimbabwe', *Economic Development and Cultural Change* 42 (2): 387–02.

[38] Nelson, D., Adger, W. and Brown, K. (2007) 'Adaptation to Environmental Change: Contributions of a Resilience Framework', *Annu. Rev. Environ. Resour. 32:* 395–19.

[39] Angelsen, A. (1999) 'Agricultural Expansion and Deforestation: Modelling the Impact of Population, Market Forces, and Property Rights', *Journal of Development Economics* 58(1): 185–18.

[40] Pendleton, L. and Howe, E. (2002) 'Market Integration, Development, and Smallholder Forest Clearance', *Land Economics*78 (1): 1–19.

[41] Bernard, T. Gabre-Madhin, E. and Taffesse, A. (2008) 'Impact of Cooperatives on Smallholders' Commercialization Behavior: Evidence from Ethiopia', *Agricultural Economics* 39: 147–61.

[42] Bouis, H. and Haddad, L. (1994) 'The Nutrition Effects of Sugarcane Cropping in a Southern Philippine Province', in J. von Braun and E.Kennedy (eds), *Agricultural Commercialization, Economic Development, and Nutrition*. The Johns Hopkins University Press, Baltimore, Maryland, USA.

[43] Kilic, T. and Carletto, C. (2009) 'Non-traditional Export Crops and Household Livelihood Strategies: Panel Data Evidence from Guatemala', Paper provided by European Association of Agricultural Economists in its series 111th Seminar, June 26–27, 2009, Canter-bury, UK.

[44] McCulloch, N. and Ota, M. (2002) *Export horticulture and poverty in Kenya*. IDS Working Paper 174.

[45] von Braun, J., Hotchkiss, D. and Immink, M. (1989) 'Non-Traditional Export Crops in Guatemala: Effects on Production, Income, and Nutrition', Research report 73. IFPRI, 16.

[46] WISP, (2007)*World initiative for sustainable pastoralism*. Policy issues paper 2. www.data.iucn.org/wisp/documents_english/. (Accessed February 2009).

[47] FAO (2001) *Pastoralism in the new millennium*. FAO Animal Production & Health Paper 150.

[48] Millar, J. and Photakoun, V. (2008) 'Livestock Development and Poverty Alleviation: Revolution or Evolution for Upland Livelihoods in Lao PDR?, *International Journal of Agricultural Sustainability* 6 (1): 89–102.

[49] Delgado, C.L. (2003) 'Rising Consumption of Meat and Milk in Developing Countries has Created a New Food Revolution', *Journal of Nutrition* 133 (11): 3907S–3910S.

[50] Fratkin E. and Mearns, R. (2003) 'Sustainability and Pastoral Livelihoods: Lessons from East African Maasai and Mongolia', *Human Organization* 62 (2): 112–22.

[51] Davies, J. and Hatfield, R. (2007) 'The Economics of Mobile Pastoralism: A Global Summary', *Nomadic Peoples* 11 (1): 91–16.

[52] Pavanello, S. (2010).Livestock marketing in Kenya-Ethiopia border areas: A baseline study: Humanitarian Policy Group (HPG)Working paper, Overseas Development Institute (ODI).

[53] Taye, D. (2016). Assessment of Cattle Marketing Practices in Guradamole Woreda, Bale Zone of Oromia Regional State, Ethiopia. Int. J. Agril. Res. Innov. & Tech. 6 (2): 36-41.

[54] SNV (2012). Improved Livelihoods for Pastoralists. SNV Practice Brief, Issue 2, January 2012.

[55] Adriansen, H.K. (2006) 'Continuity and Change in Pastoral Livelihoods of Senegalese Fulani', *Agriculture and human values* 23 (2): 215–29.

[56] Riseth, J.A. and Vatn, A. (2009) 'Modernization and Pasture Degradation: A Comparative Study of Two Sámi Reindeer Pasture Regions in Norway', *Land Economics* 85(1): 87– 06.

[57] Amanor, S. (1995) 'Dynamics of Herd Structures and Herding Strategies in West Africa: A Study of Market Integration and Ecological Adaptation', *Journal of the International African Institute*65 (3): 351–94.

[58] Turner, M. and Williams, T. (2002) 'Livestock Market Dynamics and Local Vulnerabilities in the Sahel', *World Development* 30 (4): 683– 05.

[59] Verbeke,W., D'Haese, M., Kyeyamwa, H., Opuda-Asibo, J. and Van Huylenbroeck, G.(2009) 'Assessing Institutional Development for Livestock Market Participation of Traditional Cattle Keepers in Uganda, Tanzania and Kenya', *Outlook on Agriculture* 38 (3): 275–83.

[60] Adriansen, H.K. (2008)'Understanding Pastoral Mobility:The Case of Senegalese Fulani', *Geogr-aphical Journal*174 (3): 207–22.

[61] Barrett, C.B. and Luseno, W. (2004) 'Decomposing Producer Price Risk: APolicy Analysis Tool with an Application to Northern Kenyan Livestock Markets', *Food Policy* 29: 393–05.

[62] Postigo, J.C., Young, K.R. and Crews, K.A. (2008) 'Change and Continuity in a Pastoralist Comm-unity in the High Peruvian Andes', *Human Ecology* 36 (4): 535–51.

[63] Getahun, T. (2008) *Working with the pastoralists: a gate way to sustainable development in Ethiopia in the 21st Century.* http://www.pfe-ethiopia.org/pub_files/working%20with%20pastoralists.pdf (Accessed October 2009)

[64] ECHO (2007) *Humanitarian Assistance to Populations Affected by Epidemics, Malnutrition, Climatic Hazard, Resettlement, and Conflict*. European Commission Directorate-General for Humanitarian Aid-ECHO (Accessed June 2010).

[65] Nori, M., Kenyanjui, M., Yusuf, M. and Mohammed, F. (2006) 'Milking Dry Lands: The Marketing of Camel Milk in North-East Somalia', *Nomadic Peoples,* 10 (1): 9–28.

[66] Devereux, S. (2006) *Vulnerable Livelihoods in Somali Region, Ethiopia*. Research Report 57. Institute of Development Studies.

[67] Pastoralist Forum Ethiopia (2010) 'Pastoralism and Land: Land Tenure, Administration and Use in Pastoral Areas of Ethiopia'. http://www.pfe-ethiopia.org/pub_files/pastoralism%20&%20Land%20full%20Book.pdf.v (Accessed June 2011).

[68] Yin, R.K. (2003) *Case Study Research Design and Methods*. Third edition. Applied Social Research Methods Series, Vol. 5. Sage Publications.

[69] Dibb, S., Russell, Y. and Simkin, L. (1997) 'The EU Marketing Environment: Pharmaceuticals and Japanese Strategy', *European Management journal* 15 (2): 195–05.

[70] Strauss, A. and Corbin, J. (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Sage publications, Inc. 2nd edition.

[71] Frey, J. and Fontana, A. (1991) 'The Group Interview in Social Research', *The Social Science Journal* 28(2): 175–87.

[72] Stewart, D.W. and Shamdasani, P.N. (1990) *Focus Groups: Theory and Practice*. Applied Social Research Methods Series, Vol. 20. Newbury Park, CA: Sage Publications.

[73] Patton, M. (2002) *Qualitative Research and Evaluation Methods*. 3rd ed. Sage publications, inc.

[74] Eisenhardt, K.M. (1989) 'Building Theories from Case Study Research', *Academy of Management Review*14 (4): 532–50.

[75] Miles, M. and Huberman, M. (1994) *Qualitative Data Analysis*. 2nd edition.

[76] Chabot, M. (2003) 'Economic Changes, Household Strategies, and Social Relations of Contemporary Nunavik Inuit', *Polar Record* 39(208): 19–34.

[77] Leatherman, T. (1992) 'Illness as Lifestyle Change', H. Rebecca et al. (eds), *Health and Lifestyle Change*. Research papers in science and archaeology, 9. Museum applied science center for archaeology. University of Pennsylvania.

[78] Smith, K. (1998) 'Farming, Marketing, and Changes in the Authority of Elders Among Pastoral Rendille and Ariaal', *Journal of Cross-Cultural Gerontology* 13( ): 309–32.

[79] Casciarri, B. (2009) 'Between Market Logic and Communal Practices: Pastoral Nomad Groups and Globalization in Contemporary Sudan (case studies from central and western Sudan)', *Nomadic Peoples* 13 (1):69–91.

[80] Kohli, A. and Jaworski, B. (1990) ‘Market Orientation: The Construct, Research Propositions, and Managerial Implications’, *Journal of Marketing* 54 (2): 1–18.

[81] Maltsoglou, I. and Tanyeri-Abur, A. (2005). Transaction Costs, Institutions and Smallholder Market Integration: Potato Producers in Peru. ESA Working Paper No. 05-04. Agricultural and Development Economics Division The Food and Agriculture Organization of the United Nations.

[82] Kirca, A.H., Jayachandran, S., and Bearden, W.O.. (2005) ‘Market Orientation: A Meta-Analytic Review and Assessment of its Antecedents and Impact on Performance. *Journal of Marketing* 69 (April): 24–41.