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INSURANCE MARKET AS A COPING STRATEGY TO DIFFERENT ENVIRONMENTAL SHOCKS TO PASTORALISTS: THE CASE OF ETHIOPIAN PASTORALISTS

Workneh Kassa Tessema (PhD)[1]*, Desalegn Amlaku (MBA), Kassahun Mamo (MA)**, Mulugeta Getu (LLM)**, *Addis Ababa University, and **Haramaya University, Ethiopia**

Abstract

Pastoralists live in arid and semi-arid areas that experience different livelihood shocks due to changes from environmental, social and economic environments. For example, pastoralists are highly vulnerable to repetitive livelihood shocks due to droughts which devastate their livestock. If the level of livestock loss is to be minimized a form of insurance could be important to pastoralists to maintain their livelihood after the drought. But provision of tailored made micro-insurance to pastoralists is not yet fully materialized. Rather Ethiopian pastoralists, like other east African pastoralists, have been using for generations a wide variety of informal insurance mechanisms as strategies to cope with different shocks. This research was conducted to study the existing formal and informal insurance products in pastoralist areas. Using the case and survey based studies in Afar and Somali pastoralists in Ethiopia, the research answers: a) the main formal and informal livestock related insurance products available among pastoralists, b) the perception and willingness of pastoralists to buy formal insurance to cope with the livelihood changes due to drought, c) the major challenges and opportunities to make the livestock insurance products sustainable to pastoralists.

The study shows that both in Afar and Somali region, pastoralists have strong clan based informal insurance networks. Informal insurance can be provided in the form of livestock, livestock products, and cash. Among the Ethiopian Somali pastoralists the informal insurance is commonly called '*Xoohologuyu*'**.** Among the sampled pastoralists, about 80% and 48 % have participated as informal insurance contributors and recipient in the last five years, respectively. Majority of contributors have made it for sharing the social obligations, gifts given during marriage (61%) and blood compensation

[1] Correspondence: worknehtessema@gmail.com
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(23%). About 44 % of the contributors have made the contributions for livestock losses due to drought and/or livestock diseases. About 91% of sampled pastoralists have a good perception on the relevance of insuring their livestock from droughts through formal insurance mechanisms. This study shows that informal insurance is currently dominant among pastoralists in both regions as a means of coping to different livelihood shocks. The study also shows that though pastoralists are willing to buy the formal insurance, sustaining the same will still largely depend on the willingness of government and NGOs for subsidizing insurance premiums.

Key words: Pastoralists, insurance, environmental shocks, coping

1. Introduction

Pastoralists and agro-pastoralists of Ethiopia live in arid and often remote areas that experience a number of different livelihood shocks. As a result, pastoralists are increasingly facing pressures from different risks that are related to environmental, social and economic factors. With respect to the environment, for example, recurrent droughts and livestock disease are resulting in livelihood asset shocks to the pastoralists. There is growing evidence that frequency and severity of droughts are increasing with time (Pavanello, 2009). Due to the multiple risk exposures and limited capacity of pastoralists to cope with the shocks, increasing vulnerability have become characteristics for many pastoralist in many areas. Thus, irrespective of pastoralists' livestock wealth level, they remain highly vulnerable to repetitive livelihood shocks; primarily as a result of droughts. To minimize the level of livelihood shocks that result from livestock losses due to droughts, a form of insurance coverage could be important to pastoralists. For example, tailored micro-insurance can allow pastoralists to transfer their risks to a third party (Dessai and van der Sluijis, 2007).

Micro insurance product in particular and insurance in general, there is limited insurance service coverage in Ethiopia (Wolday etal., 2013). Existing 17 formal insurance companies (as of August 2014) in the country have not yet scaled up their operation into the micro-insurance products. As a consequence, potential micro-insurance product types are not yet fully identified and developed. There have been some problems related to the premium payment and administration of the policy itself in rural areas. However, the concept of insurance is not new to Ethiopian communities; they have practiced their informal insurance such as Iddir, Iquub and Bussa Gonofa. Even agricultural communities such as pastoralists who are largely located in remote areas have readiness to accept formal insurance product (Smith and Chamberlain, 2010). Although there has been efforts in building

micro-insurance service providers in Ethiopia (such as insurance companies, and deposit taking micro-finance institutions), provision of tailored made micro-insurance services to the needs of low-income agricultural households such as pastoralists is not yet fully materialized (Wolday etal., 2013). It is a recent phenomenon that that Ethiopian financial service providers have begins to provide micro-insurance schemes such as weather index insurance in Borana by Oromia Insurance, and livestock indemnity insurance in Tigray by Africa Insurance. Thus, investigating on the role of formal insurance products as a coping strategy to drought shock exposures of pastoralists is important.

2. Objectives of the study

Developing an appropriate insurance service for pastoralists is believed to have crucial role in managing risks associated with environmental shocks. Effectively introducing insurance services to pastoralists can help them to transfer drought-related livestock mortality risks to third party. With this notion, this study has conducted in Afar and Somali regions of Ethiopia, market research on existing insurance products to capture best practices and lessons learned. The market research also attempts to assess the willingness of pastoralists to buy the formal insurance product. The study can be helpful in assessing formal and informal insurance products and their (commercial) sustainability, evaluate potential insurance providers, and ways for adapting insurance products in the context of pastoralists.

The overall objective of this study is therefore to conduct market research on existing formal and informal insurance products to pastoralists in Afar and Somali regions of Ethiopia. Specific objective of the study are to: i) identify the major risks to (agro) pastoralist production system in Afar and Somali regions that demand insurance, ii) assess the perception and willingness of pastoralists to buy formal insurance product to minimize their risks, iii) the major challenges, and opportunities to make the livestock related insurance products commercially sustainable to pastoralists.

3. Theoretical framework

3.1. Concept of risk and insurance

An insurance agreement is a mutual co-operation between two parties to protect one of them from unexpected future asset or financial loss (Hussain and Pasha, 2011). Under conventional setup the main view point of insurance is to minimize the risk. Risk is a probability or threat of damage, injury, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities and that may be avoided through pre-emptive action. Risks can be categorized as idiosyncratic or

covariate based on their breadth of causality (Llanto et al., 2007). Idiosyncratic risks (individual risks) occur when only one or a few individuals or households in a community suffer losses (Llanto et al., 2007). On the contrary, covariate risks (aggregate risks) affect a large number of households, which can be entire communities or regions within a country or countries. Consequently, all people are equally exposed to such risks (Llanto et al., 2007).

Pfeffer (1956) defines insurance as "a device for the reduction of risk of one party, called the insured, through the transfer of particular risks to another party, called the insurer, who offers a restoration, at least in part, of economic losses suffered by the insured". Therefore, an insurance contract is aimed to minimize the risk of loss due to accident or ill-fated situation.

Smallholders in developing countries face numerous sources of risk. Much of this risk is directly related to agricultural production: years of low rainfall can reduce crop yields dramatically, or cause the death of livestock because of shortage of feed and water (Burke et al., 2010). Risk pervades the lives of small holder agricultural producers such as pastoralists (Burke et al., 2010); affecting their livelihood decisions and outcomes. In the absence of savings, credit, or insurance, a drought year can force households to liquidate productive assets or curtail consumption, with large negative implications for their livelihood. Informal risk management strategies, where they exist, are typically unable to protect against common local weather shocks: when all farmers or pastoralists in a village or broader region experience a drought, risk pooling across households provides little effective insurance (Burke et al., 2010).

Currently, the institutional response to disasters such as droughts in the majority of low income countries is after they have already happened, with little attention paid to prevention or ex-ante risk management schemes (Burke et al., 2010). New approaches in agricultural insurance markets have the potential to address both of these problems, helping agricultural producers smooth incomes in bad years and helping governments and relief agencies respond quickly and fully to weather-related disasters when they occur. Principal among these new approaches is *index based insurance*, which links indemnity payments to easily and publicly observed outcomes (such as rainfall) instead of to individual farmer yields, as is typical in traditional insurance (Virginia et al., 2012). Such an approach has clear advantages: insurers only have to monitor a single index instead of potentially thousands of individual fields, greatly reducing costs. Furthermore, because payments are linked to externally measured outcomes rather than to farmer effort, index insurance does not suffer the same moral hazard and adverse selection problems of traditional crop insurance: insured farmers have no incentive to reduce effort, and all farmers receive the same payout regardless of their individual risk

(Biener and Eling, 2012). Since there is no longer a need to verify individual claims, an index-based approach could also substantially improve the timeliness of indemnity payments. Rainfall can be measured in real-time such that payments can be made as soon as the predetermined threshold in the insurance contract is reached.

3.2. Micro-insurance

Traditional insurance distribution systems are not designed to serve low income markets: It is with limited incentives for agents and brokers who focus on large number policies or sales instead of servicing (Biener and Eling, 2012). As a consequence, a micro-insurance scheme is largely designed to address the untouched areas through the provision of insurance product. Micro-insurance is thus a mechanism to protect poor people against risk (e.g. accident, illness, death in the family, and natural disasters such as flood or droughts) in exchange for payments tailored to their needs, income, and level of risk. It is aimed primarily at the developing low-income smallholder producers, especially those in the informal economy who tend to be underserved by mainstream commercial and social insurance schemes. The lack of access to formal risk management mechanisms for the majority of the world's smallholders means that households are forced to self-insure against catastrophic events such as drought (Cole et al., 2012). Informal risk management methods, however, often diminish the productivity of agricultural activities, and provide only limited coverage (Cole et al., 2012).

Micro-insurance allows policy holders to recover and rebuild after a crisis. It can mean avoiding difficult, often devastating risk coping measures such as eating less food, or selling productive assets. It promotes resilience and contributes to the Millennium Development Goals, including reducing hunger and child mortality, and improving maternal health. There are differences between the conventional insurance and micro-insurance schemes with premiums, policies, claims, delivery channels, and control efficiencies (see Table 1).

Table 1. Conventional insurance and micro-insurance

Element	Conventional Insurance	Micro-insurance
Premiums	Typically regular annual, quarterly, monthly, based on age or other specific risk characteristics, and collected regularly, mostly from bank deductions.	Frequent or irregular premium payments, group pricing with links to other services.
Policies	Complex policy document, much	Simple language, few to no

	exclusion, usually annual terms.	exclusions, terms appropriate to market, may require life and non life benefits
Claims	Claims process for large sums, insured may be quite difficult	Claims process for small sums, insured is simple yet still controls fraud, rapid claims processing
Delivery Channels	Sold by licensed agents or brokers to wealthy, middle class, or companies that typically understand insurance.	Often sold by unlicensed traditional agents to low-income persons, preferably in groups requiring significant consumer education
Control efficiencies	Screening requirements may include a medical examination, or other tests.	If there are any screening requirements, they are very limited to keep costs low.

Adapted from: International Association of Insurance Supervisors (2007)

Micro-insurance is insurance that is accessed by low-income population, provided by a variety of different entities, but run in accordance with generally accepted insurance practices. Importantly this means that the risk insured under a micro-insurance policy is managed based on insurance principles and funded by premiums. The micro-insurance activity itself should therefore fall within the purview of the relevant domestic insurance regulator/ supervisor or any other competent body under the national laws of any jurisdiction (IAIS, 2007).

The provision of microfinance is more prevalent in certain regions than others, with certain products often finding particular popularity in specific countries. For example, the developing Asia-Pacific region is a huge market for micro-insurance products (Virginia et al., 2012). One of the largest markets for micro-insurance, however, remains in Africa, where a lack of resources or infrastructure and a heavy reliance on agriculture has stimulated growing interests in credit, life, funeral and agriculture protections (Virginia et al., 2012). There are several issues that challenge a wider distribution of micro-insurance to the low income segments of a society, including *lack of awareness, relative costs, and lack of quality data on risk* (Allen and Overy, 2012).

i) Lack of awareness: One of the major challenges facing the micro-insurance sector is lack of awareness about insurance itself and insurance products among people with low income. Due to a lack of information about the benefits of insurance people are often wary of it. They prefer to rely on traditional arrangements or religious practices. This viewpoint means that fewer people in lower income families would consider taking out insurance which in turn leads to a lack of demand (Allen and Overy, 2012).

ii) Relative costs: Micro-insurers applying standardized methods find that operating costs are very high due to the different circumstances they face in target markets; including trying to reach a population spread out over a large area. Many large insurers do not have much experience of selling to people on low-incomes, which can be a barrier to entry. It can be extremely difficult to tailor what essential paperwork is required to the understanding of the target market.

iii) Lack of quality date on risk: The lack of quality data makes it difficult to assess and price the risk. Insurance products need to be reasonably priced to attract consumers but they also need to be profitable. If insurers can tailor the insurance to the needs of low income population, this also means they will be more likely to sell it.

3.2.1 Index based micro-insurance

The risk of unfavourable weather conditions is one of the most important risks faced by millions of poor rural households around the world. Governments have implemented range of programs to address these risks, most notably crop insurance programs and disaster relief aid programs which tie payments to individual farmer's experience may suffer from two serious problems: moral hazard, whereby farmers may not exert as much effort to avoid risk or its consequences; and adverse selection, whereby farmers with higher risk are more likely to take up such products.

Traditional crop insurance has proved expensive to administer, since each individual claim needs to be verified before payouts are made. It has also suffered from lack of transparency and long lags in administering payouts. Contracting innovations have de-linked indemnification from individual production by basing insurance against losses arising from poor weather on an observable index (e.g. local rainfall or aggregate local crop yields) which is not directly linked to individual production. Such 'index-based' micro-insurance products promise to offer a financially sustainable mechanism to reduce the risk faced by agricultural households. Index-based micro-insurance overcomes many of the challenges faced by crop insurance program by delinking indemnification from individual production (Cole et al., 2012). Index insurance may provide less-costly and more-transparent risk management than other alternative products, enabling smallholder agricultural producers to make more-productive investments and better manage consumption risk (Cole et al., 2012)

3.3. Willingness to pay to insurance products by smallholders

Many factors affect the demand for micro-insurance by smallholder agricultural producers including; perceptions and attitude toward insurance; risk management substitutes; affordability (cost of

coverage and payment mechanisms); poverty level (purchasing power); and frequency of risk occurrence (Llanto et al., 2007). In existing literature on micro-insurance, studies measure willingness to pay for index based insurance using a hypothetical insurance policy (Cole et al., 2012). The price of insurance that is affordable to low-income households may be less than the cost at which commercial insurers are willing to supply insurance. Hence, a demand-supply gap arises in insurance product delivery (Llanto et al., 2007). Knowledge of the willingness to pay by smallholders like pastoralists regarding the insurance product may be useful in a policy environment because they might hint a causal links as the predictors of demand for insurance product (Cole et al., 2012). A study by Rong et al. (2011) states that crop producers would be willing to pay more for insurance than livestock producers in China. They state that regardless of benefit in terms of reducing extreme risks, farmers are price sensitive to insurance products (Rong et al., 2011). Thus for a large-scale adoption of weather insurance, a subsidy for example by government or NGOs would be necessary (Chantara et al., 2009).

4. Methodology

This study used both case study and structured survey based approaches to collect pertinent information regarding the existing informal and formal insurance products among the pastoralists in Afar and Somali Regions. The case study employed desk top reviews on the concept of insurance in general and micro-insurance product in particular. It employed open-ended questions that are intended to solicit the intentions and practices of pastoralists in involving in the informal and formal insurance products. The case study is also based, among others, on the opinions of experts from the agricultural bureaus in the Afar and Somali region, MFIs, Insurance companies, and clan elders' opinions. Based on the results of the case study, structured questionnaire was designed and administered on 124 pastoralists in the two regions. While testing the perception and willingness of pastoralists to purchase drought insurance, a hypothetical insurance product was designed (in the context of pastoralists) and then read to them to respond using a Likert type five point scale. The results reported in this study are therefore case based and supported through structured survey method. The data was collected from March to June, 2014.

5. Findings and discussions

5.1 Findings

5.1.1 Major risks to (agro) pastoralist production system that demand formal insurance

The major risk types associated with pastoralist production system includes droughts, flood, livestock disease, and predators. About 81 percent (101) of the sampled respondents' ranked drought as their first severe risk (see Table 2).

Table 2. Major risk types to (agro) pastoralists in Afar and Somali regions

Risk type	Number of respondents ranking the risk as first	Percentage
Drought	101	81.5
Livestock disease	21	16.9
Crop pest risk	1	0.8
Other risks (e.g. predators)	1	0.8
Total	**124**	**100**

Source: Field survey, 2014

The actual number of livestock loss also reinforces the aforementioned ranking of the respondents. The most critical risk type that the pastoralists face is drought, which is followed by livestock disease. Numerical illustration showed that out of the total loss of 7,526 head of livestock since 2000 E.C., drought together with livestock disease account for about 98 percent of the livestock losses (see Table 3).

Table 3. Livestock loss across risk and type in Afar and Somali regions

	Livestock losses					
Risk type	Camel	Cattle	Goat	Sheep	Total	Percentage
Drought	108	564	2145	1149	3966	52.7
Disease	135	830	1816	692	3473	46.15
Flood	0	22	20	0	42	0.56
Other risks	7	20	7	11	45	0.60
Total	250	1436	3988	1852	7526	
Percentage	3.32	19.08	52.99	24.6		

Source: Field survey, 2014

The majority of the loss (53 percent) is registered for goats, followed by the loss of sheep (25 percent). The loss of livestock can bring a critical decline in the livelihood of pastoralists. But pastoralists might rank differently among the different livestock types regarding their critical importance to their livelihood. In this regards, about 43 percent and 27 percent of the sampled pastoralists indicated that loss of cattle and goat, respectively, has critical implication on their livelihood.

There are traditional and scientific early warning systems for risk mitigation. Most of the sampled pastoralists (76 percent) in Afar and Somali Region indicated that they rely on the weather prediction of the tradition forecasters (Table 4). Locally the traditional forecasters are called '*Hutukobiya'* and '*Xidigiye'* in Afar and Somali regions, respectively. This may mean that any intervention for the early warning information to pastoralists needs to be reconciled with the traditional weather forecasts of pastoralists.

Table 4. Pastoralists' trust level on sources of early warning information

Source of early warning	Number of respondents who trust the source	Percentage
Traditional	76	61.3
Experts from NGOs and others	38	30.6
Experts from government bureaus	10	8.1
Total	**124**	**100**

Source: Field survey, 2014

Though the traditional weather forecasting technique is widely trusted among the pastoralists, majority of the respondent (83 percent) do not have any clue about the forthcoming rain fall situation in their locality. This may mean that pastoralists' level of advance assessment on the rainfall conditions is relatively low.

5.1.2 Existing formal micro-insurance providers to pastoralists and farmers

In Ethiopia, some insurance companies and MFIs have started offering the micro-insurance policy to pastoralists and farmers in the absence of separate regulatory framework. Most of these attempts are pilot projects initiated by international partners like ILRI, IFPRI, World Bank, Oxfam America, and

International Labor Organization (ILO) or credit-life insurance policies offered by MFIs to insure repayment of loans.

Formal insurance companies that currently offer micro-insurance to pastoralists and farmers in parts of Ethiopia include: Nyala Insurance, Oromiya Insurance, Africa Insurance, and Ethiopian Insurance Corporation (pilot level). There are also many MFIs who deliver (or serve as channels) the micro-insurance product to pastoralists and farmers, including: Oromiya Credit and Saving Institution, Addis Credit and Saving Institute, Gasha Microfinance Institution, and Dedebit Credit and Saving Institution. Despite of these developments, formal micro-insurance product is not yet commercialized to pastoralists and farmers in the Afar and Somali Regions. The only exception regarding the micro-insurance to pastoralists in Ethiopia is the case of Index Based Livestock Insurance (IBLI) in Borana area that is implemented since the last four years by Oromiya Insurance.

5.1.3 Pastoralists' perception on the importance and willingness to buy formal insurance

Sampled pastoralists have responded as yes (113) and no (11) on the importance of formal insurance alternative in times of drought. This figure might show that overwhelming proportion (91%) of sampled pastoralists has a good perception on the relevance of insuring their livestock products for droughts. Only 9% of them have respondent as no. All the no responses are from the pastoralists in the Somali region. This might be due to the fact that the prevalence of droughts in Afar region is so severe as compared to the Somali region. The more emphasis by the Afar pastoralists on the importance of insuring their livestock can be also witnessed by the degree of their willingness to buy insurance products. To this respect, about 96% (55 out of 57) of pastoralists have indicated that they are (definitely) willing to buy the insurance product for their livestock (see Table 6). Whereas in the Somali region about 86 percent (49 out of 57) of pastoralists indicated that they are (definitely) willing to buy insurance product for their livestock.

Table 6. Pastoralists' level of willingness to buy livestock insurance

	Livestock insurance alternative for drought			**Willingness to buy formal livestock insurance certificate**				
Region	Yes	No	Total	Definitely willing	Willing	Not sure	Not willing	Total
Somali	56	11	67	29	20	4	4	**57**

Afar	57	0	57	43	12	2	0	**57**
Total	**113**	**11**	**124**	**72**	**32**	**6**	**4**	**114**

Source: Field survey, 2014

But the extent of pastoralists' willingness to buy drought related livestock insurance varies across livestock type (Table 7). To this respect, in both regions cattle and goats are the first and second priority livestock types to be insured. The priority for insuring sheep is at the third place in Afar whereas in Somali region camel is at third level priority for insurance.

Table 7. Pastoralists' priority for formal insurance across livestock types

	Insurance priority across livestock type						
Region	Cattle	Goats	Sheep	Camel	Cattle and camel	Cattle, goat and sheep	**Total**
Somali	22	15	3	4	3	1	**48**
Afar	13	12	10	3	11	3	**52**
Total	**35**	**27**	**13**	**7**	**14**	**4**	**100**

Source: Field survey, 2014

It was also assessed whether pastoralists are willing to pay for insurance in kind (in livestock head). To this respect, 39 pastoralists (46 %) indicated that they are willing to pay one head of cattle to insure 10 cows; followed by (29 %) 24 pastoralists who indicated that they are willing to pay one head of goat or sheep to insure ten goats or sheep.

5.1.4 Informal insurance in Afar and Somali Regions

In both Afar and Somali Regions, pastoralists have social exchange systems which involve contribution of livestock, livestock products and other items; as compensation to different risk exposures and social obligations. This is a reciprocity based social assistance system that helps pastoralists to share asset loss due to different environmental shocks such as droughts. Therefore, any form of social support and risk sharing practices among pastoralists can be considered as an informal insurance product. This informal insurance can be provided in different forms of compensation; cash, food items, livestock (e.g. goat) or livestock products such as milk. Both in Afar and Somali regions, the informal insurances have also religious, kinship and neighborhood bases.

a) Religious beliefs: In both Afar and Somali regions; Islam is the dominant religion where its rulings encourage the better-off followers to assist the poor ones. This religious ruling helps to redistribute wealth and risk within the society. The most well known social support system rooted in religious beliefs is *zakat. Zakat* is a religious obligation on every Muslim to make monetary or in kind contributions to the poor and destitute ones.

b) Kinship: As pastoral resources are often managed on a collective basis, their informal insurance mechanisms are often kinship-based. As a result, livestock and other assets circulate regularly within clan members from the better-off to the poorer.

c) Community relations: Pastoralist households sometimes request for support from neighbors even during normal times in order to meet their needs. Pastoralists often use sharing of lactating animals or their milk products to maintain social ties. Based on the relationship of the recipient household and the wealth level of the donor, beneficiary household may be entitled: the lactating animal, only the milk of the lactating animal, or only the offspring of the lactating animal. Access to this type of support is related to 'belonging' in the community.

Pastoralists who have relatively a good network with clan members, relatives, friends and marriage relationships with wealthy family manage to recover easily after crises with the assistances obtained from their network. Among Somali pastoralists there is strong reciprocity assurance system during social and economic crisis called '*Xoohologuyu*'**.** Under the '*Xoohologuyu*' upon a request of victim fellow community member (often via their clan elders) clan members contribute livestock to indemnify the loss. *'Xoohologuyu'* is administered by clan elders where elders committee decides the need for making contribution to a clan member's loss (see also Table 8). When there is a need for contribution, the elders committee determines each community members' share of the contribution. Individual contribution level is determined by clan elders' assessment of his/her wealth level. In this regard, the clan members are required to absolutely comply with the elders committee's decided share of contribution. And anyone who refuses to contribute his assigned share will face punishments and fines of additional livestock besides previously decided share of the contribution. The recipient can only get his/her clan members' support once for a certain risk type such as drought. According to the interview conducted with clan elders, the total clan contribution can be enough to restore pastoralist's livelihood within few years. Sometimes, the total clan members' livestock contribution might be greater than pastoralist's livestock wealth level before the occurrence of the risk. That means that there is a possibility that with the '*Xoohologuyu*' assistance, households might end up with a profit out of risk occurrence.

Under '*Xoohologuyu*', households are only entitled to get the support if they have lost almost all of their livestock and have no any other means to revive their livelihood without the support of their relatives and clan members. But the clan members have to be in good wealth level to contribute to others at the time of the risk occurrence. Therefore, '*Xoohologuyu*', is not functional for covariant risks, such as drought, since almost all pastoral households might experience livestock losses. Therefore, in the absence of formal insurance for covariant risks, pastoralists have only self insurance options to withstand with drought since it is not covered by the informal insurance system.

Table 8. Informal insurance support types among Somali pastoralists

Type of support	Nature of support	Incidence type	Provider	Recipient
Hirsi	Giving milk as a gift to relatives or neighbors	Dry season or drought	A relative or a neighbor	A relative or a neighbor
Mala	Lending of lactating animal for milking to a relative or a neighbor. The lactating animal and the offspring will be returned back to the lender.	Dry season or drought	A relative or a neighbor	A relative or a neighbor
Mag/ Dhiig	Clan members' and relatives' contribution of birr equivalent of camels to their clan member who has to pay blood compensation for killing of a person.	Clan member kills a person	Relatives and clan members of the killer	Victim's family members
Mawloxo	Clan members' and relatives' contribution of birr equivalent of camels to their clan member who has to pay compensation for causing physical injury.	Clan member causing physical injury.	Relatives and clan members of the aggressor	Injured person or his/her family
Kaalo	Gifts given in terms of livestock during marriage to support newly married couple as well as to serve as inducement to the bride's family to give their daughter.	During marriage	Family members and relatives of the groom.	Bride's family and the couples.
Zakat	A religious obligation of every Muslim to make monetary or in kind contributions to the poor.	Fasting periods of Muslims	Wealthy households	Poor households

Source: Field case study, 2014

Among the Afar pastoralists the tradition/informal insurance schemes are also common. Some of them include the *'Fihima' and 'Erbonta'. 'Fihima' is a* contribution of the clan members for blood compensation after one of their member is penalized for his violence against other person for either

physical damage or loss of life. '*Erbonta'* is a contribution of clan members during the time when one of their members faces loss of livestock due to drought, raids or predators.

5.1.4.1 Pastoralists' participation in the informal insurance

Pastoralists were asks whether they had participated in the informal insurance practice. Many of the respondents have participated either as contributors (80.3 %) or recipients (47.5 %) in the informal insurance (see Table 9). Based on Table 9 the number pastoralists participated as contributors is higher than the number of recipients. This might be due to the fact that the wealth level of the majority of pastoralists was better during the last five years since there was no major drought occurrence in the same period in the Afar and Somali regions.

Table 9. Pastoralists' participation in informal insurance in Afar and Somali regioons

Pastoralists contributed to the informal insurance support			Pastoralists who received support from informal insurance	
	Frequency	Percent	Frequency	Percent
Yes	98	80.3	58	47.5
No	24	19.7	64	52.5
Total [2]	122	100	122	100

Source: Field survey, 2014

Many of the pastoralist respondents, who have not participated as contributors to the informal insurance in the last five years indicated that they are willing to contribute but there was no request by clan elders for contribution. Significant proportion of the sampled pastoralists who have not received any support in the last five years responded that there were no livestock losses or other social obligations to request the support of others.

Table 10. Number of contributors, and livestock contributed along coverage type in Afar and Somali Regions

Coverage	**Pastoralists involved in the informal contribution (and livestock numbers)**				
	Camel	Cattle	Sheep	Goat	Total
Drought	0 (0)	7 (13)	11 (66)	17 (50)	35
Diseases	0 (0)	2 (3)	6 (14)	5 (9)	13
Blood compensation	3 (8)	7 (38)	7 (24)	6 (34)	23
Marriage	5 (10)	19 (36)	15 (50)	22 (66)	61

[2] Two pastoralists failed to indicate their contribution to the informal insurance.

Other	0 (0)	0 (0)	16 (132)	7 (49)	23
Total	**8 (18)**	**35 (90)**	**55 (286)**	**57 (208)**	

Source: Field survey, 2014

Among the sampled pastoralists respondents who indicated to have contributed to the informal insurance in the past three years, 35 and 13 of them have made their contributions for livestock deaths due to drought and livestock diseases, respectively. But majority of them have made their contributions for sharing social obligations of their informal insurance network member; gifts given during marriage (61) and blood compensation paid for victims (23). In terms of the livestock type, sheep and goat are the most common contributions with 286 and 208 number of contributions, respectively (see Table 10). This means that sheep and goats are the most common type of pastoralists' informal insurance contributions. This may be justifiable since small ruminants are less expensive, and pastoralists usually have large herds of small ruminants than camel and cattle. Cattle are also important type of contribution next to sheep and goat. Camels are seldom used for informal insurance contributions except in times of blood compensation and marriage. This may be due to the fact that camels are more expensive to give as contributions.

Table 11. Number of receipts, and livestock received along the coverage type in Afar and Somali regions

Coverage	Number of pastoralists who received livestock through informal insurance (and livestock numbers)				
	Camel	Cattle	Sheep	Goat	Total
Drought	1 (1)	8 (14)	10 (41)	9 (59)	28
Diseases	2(2)	1 (1)	8 (63)	1(3)	12
Blood compensation	0 (0)	0 (0)	0 (0)	1(3)	1
Marriage	1(1)	19 (36)	2 (8)	9(24)	31
Other	0 (0)	1 (1)	2 (2)	3 (8)	6
Total	**4 (4)**	**29 (52)**	**22(114)**	**23 (97)**	

Source: Field survey, 2014

Fifty eight of the sampled pastoralists have indicated that they have received some sort of support from the informal insurance in the past three years. 28 respondents have indicated that they received informal insurance support as a compensation for asset loss due to drought. Goat, sheep and cattle are, respectively, the main type of compensations made for drought loss. 31 of the respondents have received the support during marriage. Most of marriage support recipients have received either cattle

or goat mostly from their family members and relatives. But majority of informal insurance recipients have received support as sharing of social obligations than as coverage to the most critical risks of pastoralists, i.e. drought and livestock disease. Sheep (114 heads) and goat (97 heads) are the most common livestock contribution that the respondents indicated to have received as support from their network (see Table 11). For questions related with informal insurance contributions, quit significant number or 34% of respondents have made informal insurance contributions for compensations to be paid as blood compensations. However, only 5 percent of the respondents have indicated to have received such contribution. This may be because the respondents are afraid to openly acknowledge this type of compensations they have paid for causing physical injury or death to other fellow members.

5.1.4.2 Lessons learned from the informal insurance of pastoralists

The following are the main lessons learned from the informal insurance of pastoralists.

i) Informal insurance as restocking mechanism: The existing informal insurance practices of pastoralists often serve as restocking mechanisms. Beyond serving as insurance against shocks, informal insurance also supports the recovery process after crises as restocking mechanism. However, in times of severe drought, the informal insurance may not serve as effective restocking mechanism since the drought might affect the livelihood of almost all pastoralists within their support network.

ii) Limited risk coverage: The existing informal insurances often make compensations only for pastoralists who have lost all of their livelihood assets and have no any reserve capacity to recover. And pastoralists who have lost some portion of their assets will not be compensated. Even those who lost all of their assets may not be fully compensated to reinstate to their earlier (pre-shock) wealth level. They are usually compensated only to the asset level that is assumed to be enough to recover within a certain time period.

iii) Inability to manage covariate/collective risk: All informal insurance practices are basically reciprocity systems where better-off households contribute to severely devastated households. However, during drought, the reciprocity assurance system becomes less effective for the reason that all community members find themselves in the same boat with respect to covariate risk. Therefore, although pastoralists' informal insurance practices have effectively made inter-household transfers as insurance against individual (idiosyncratic) shocks, it often does not offer insurance against collective (covariate) shocks.

iv) Weakening with time: According to case study interviews conducted most of the respondents' claim that traditional system of risk sharing among pastoralists is in decline**.** They often attribute it to the reduction of resource base for pastoralists due to recurrent droughts and increased urbanization in pastoral areas. The increased urbanization trend has strong influence on monetization of livestock products and the community's way of life into individualism than collectivism. Supplies of food aids and restocking interventions by the governments and NGOs are also claimed to have contributed to the weakening of the pastoralists' traditional informal insurance.

5.1.5. Challenges and opportunities to make livestock insurance pastoralists

The following are the major challenges and opportunities to make livestock insurance products sustainable to pastoralists.

a) Challenges

i) Pastoralists' lack awareness on livestock insurance: There is very low level of awareness and knowledge about livestock drought insurance on the part of pastoralists. In line with this, it requires a comprehensive and advanced communication and marketing tool in order to create awareness among pastoralists.

ii) Pastoralists mobility: Pastoralists often move from place to place in search of water and pasture. This adds constraints to the product designing, accessibility of pastoralists, enforcing contracts and marketing tools designed for pastoralists' awareness creation.

iii) Gaps in the legal and regulatory framework: Ethiopian National Bank has been trying to promote micro insurance; however, still it needs a lot to be worked out on legal framework including clear directives which foster the design and development of such products. There must be incentives to insurance providers to persuade them into agricultural insurance products and identifying ways of strengthening and standardizing livestock insurance products.

iv) High risk and cost of livestock insurances products: Most of the insurance companies in Ethiopia are reluctant to take a lead in investing in agricultural insurances, including livestock insurance, which is considered to be a high risk class of insurance. Limited financial capacity of insurers and concern about their ability to access international reinsurance are some of the major problems in this regard.

v) Limited credit access to poor pastoralists: Since pastoralists usually have limited access to credit, it gets very difficult to sell insurances on credit base. This necessitates cash base insurance sales than

on credit. However, pastoralists might not have money all the time that makes pastoralists' dropout rate more higher.

vi) Limited insurance providers in pastoralist areas: Almost all Ethiopian insurance companies' branches are located in major cities. As a result, insurers are handicapped to closely work on the majority of rural farmers in awareness creation, follow up and marketing of the product.

b) Opportunities

i) Potential partnership with NGOs: International NGOs works on food security and related issues are showing keen interest in packaging the weather insurance scheme as one of the remedial measures.

ii) Establishment of reinsurance companies domestically: Recently both international reinsurers and domestic investors are showing interest on the establishment of Reinsurance Company in Ethiopia. This will hopefully alleviate the problem faced by local direct insurers while looking for reinsurance arrangements for placing covariant (draught) risks in the international market.

5.2 Discussion

In Afar and Somali regions of Ethiopia, there is no yet formal micro-insurance product that is sold to pastoralists and farmers. A single formal insurance company has not yet launched the service in these areas. The recent practices in the delivery of the micro-insurance product in Ethiopia are largely limited to the highland farmers; with the exception of IBLI to Borana pastoralists. As a result, there are no lessons and best practices to be learned from formal micro-insurance in Afar and Somali regions; because the product delivery does not yet exist. However, the challenges and lessons from the micro-insurance practices to farmers and that of pastoralists (IBLI case) in other areas of Ethiopia can be applicable to the pastoralists of Afar and Somali regions.

Because of lack of any alternative insurance mechanism, pastoralists in Afar and Somali regions currently dependent on the informal (traditional) reciprocity based insurance mechanisms to mitigate unforeseen livelihood shocks such as droughts. But majority of informal insurance recipients have received support as sharing of social obligations than as coverage to the most critical risks of pastoralists such as droughts. Existing informal insurance systems are also broad but limited to specific village (limited coverage in terms of area).

The current reliance of pastoralists on the tradition forecasters as early warning system might not go with the conditions that formal insurance might require. Thus, in addition to what pastoralists

locally use the traditional forecasters called '*Hutukobiya'* in Afar and '*Xidigiye'* in Somali region, formal meteorological information might be important to enhance their demand to formal insurance product. This may also require that any intervention for the early warning information to pastoralists needs to be reconciled with the traditional weather forecasts of pastoralists.

When the nature of the formal insurance product is clearly described to pastoralists, they are willing to participate in it. As a result, overwhelming proportion (91%) of sampled pastoralists has a good perception on the relevance of insuring their livestock products for droughts through formal insurance mechanisms. But the extent of pastoralists' willingness to buy drought related livestock insurance varies across livestock type. The existing high perception of pastoralists about the benefits of formal livestock insurance may mean that appropriate insurance products coupled with awareness creation, more pastoralists may participate in buying the livestock insurance products in the future.

6. Conclusion and policy recommendation

6.1 Conclusion

Currently the provision of micro-insurance product to pastoralists in Ethiopia is largely limited and some of the cases are also driven by NGOs such as ILRI and IFPRI. As a result, the involvement of the government and the local business community to the promotion of the micro-insurance product is minimal. In Afar and Somali regions, there are no formal micro-insurance schemes to cover any risks to the livestock losses of pastoralists due to droughts. To promote the product for a wider distribution to pastoralists so as to minimize livelihood shocks due to drought, concerted efforts need to be made by all stakeholders. Micro-insurance at current stage in Ethiopia is not viable unless subsidized. And hence, micro-insurance requires strong involvement of the government and other stakeholders such as NGOs. But before launching the micro-insurance product to pastoralists, adequate awareness mechanisms to explain the nature and the importance of the product needs to be exercised among pastoralists.

6.2 Policy recommendation

Increased awareness creation as the first step for micro-insurance promotion among pastoralists: Future interventions need to focus on the awareness creation of pastoralists before introducing the product. While enhancing the awareness of pastoralists on the importance of micro-insurance the role of clan leaders might also be crucial to convince the participation of pastoralists. Thus, awareness creation and promotion needs to incorporate the traditional leaders and elders.

Provision of in kind payment rather than cash as an alternative scheme for premium payment: Limitations in the participation of pastoralists to the micro-insurance product might be because it takes several days for pastoralists until they convert their livestock into cash. The process of taking their livestock to the market to sell for premium payment might discourage pastoralists' participation in the micro-insurance. Thus, by involving local actors such as cooperatives, there needs to be a provision where a pastoralist might pay for example one goat to insure his/her one milking cow.

Targeting better-off pastoralists as entry approach to the micro-insurance distribution: Pastoralists' traditional social insurance mechanisms rely heavily on better-off pastoralists insuring poorer households. However, there are no opportunities for better –off and middle wealth groups to access any form of formal insurance for their livestock assets. Providing formal insurance protecting the assets of wealthy groups is necessary to sustain existing informal insurance mechanisms. Therefore, targeting wealthy pastoralists in introducing formal insurance will have dual effect of strengthening both the formal and informal insurance mechanisms in pastoralist contexts.

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