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Full Length Research Paper

Drought Insurance Pilot Program in Tanzania: an understanding from Cotton Growers Focus Groups

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Agricultural insurance business is almost still unavailable in Tanzania. However, evidence shows that in 2011, weather index insurance pilot program was introduced in Bunda district, though not much has been documented in the literature on how this program works in practice. To explore the operationalization as well as the challenges facing it, a collateral information using focus groups was sought from cotton growers so as to assess farmers' risks and depict comprehensively how this program functions. Findings revealed the program is a drought insurance running in form of contract farming with much of implementation procedures being unfamiliar to majority of farmers. It is essential, as a policy implication, to enhance a thorough understanding of the program operationalization by the farmers for a successful program implementation

Keywords: Drought insurance, operationalization, cotton growers, Tanzania

INTRODUCTION

Drought insurance that uses indices of weather derivatives like temperature, rainfall, and evapotranspiration is gaining increased attention as a potentially sustainable market mechanism to transfer weather risk in lower income countries (Carriquiry and Osgood, 2012). Unlike the traditional agricultural insurance markets, weather index insurance presents a promising alternative for many low income countries (Collier et al., 2009). Due to this good reason, a number of weather index insurance programs (WII) especially in low income countries are in pilots and some countries have started to implement (Bryla and Sryoka, 2007; Binswanger-Mkhize, 2012; Shiferaw et al., 2014). However, literature shows that despite the best intentions, these programs die out after the pilots end due to some reasons that include lack of insurance participation for majority poor farmers due to competing demands for scarce surplus from agriculture (Giné et al., 2008; Tsikirayi et al., 2013) as well as lack of interest on part of insurance providers (Wixson and Katchova, 2011).

In Tanzania, nearly 40 per cent of about 45 million population is affected by cotton crop directly as farmers, buyers, transporters, ginners and consumers of cotton seed products (George, 2012). Cotton in Tanzania is produced mainly in two zones with 98% coming from the western zone that includes Mara, Mwanza, Shinyanga, Simiyu, Geita, Tabora and Singida regions while the remaining 2% come from the eastern zone regions of Morogoro, Coast and Tanga (Pauw and Thurlow, 2011; George, 2012; Mwinuka and Maro, 2013).

However, over the years the cotton sector has been faced with so many challenges that include low productivity caused mainly by drought, low extension services, low value addition and other regulatory problems (Bargawi, 2008; Wolter, 2008; Salami et al., 2010; George, 2012; Delpeuch and Vandeplas, 2013). Hence to address these challenges in the cotton sector, the Cotton and Textile Development Program (CTDP) under the Tanzania Gatsby Trust (TGT) through Tanzania Cotton Board (TCB) came out with six projects of Research, Seed Multiplication, Conservation Agriculture, Contract Farming(Contract farming is referred to as an agricultural production agreement between buyers and the farmers in which farmers are offered with technology and inputs on usually on loan and are compelled to sell the crops to the buyer in the future date at a specified quality and price(Carney, 1988; Grosh, 1994; Bijman, 2008; Salami et al., 2010), Investment Promotion and Capacity Building (George, 2012). In the contract farming project, an insurance company, Microensure, was commissioned by TCB through TGT to conduct the experiment in Bunda district so as to provide insurance to

cotton growers. The deal, which was implemented from 2011/12 intended to protect against vulnerabilities resulting from unpredictable weather changes and was expected to be extended to other cotton growing districts once successful.

Theoretical background on implementation of risk hedging programs:

Famers' risks, consequences and coping mechanisms

Weather index insurance is designed to operate particularly in low income countries where a large number of farmers are characteristically small holders who are beset with salience of covariate risks, such as weather risk (Barrett et al., 2007). One of the criteria for providing farmers with risk managing tools is the fact that they must be faced with risks patterning to their main undertakings. The agricultural risks of primary concern particularly in countries with low income are the weather shocks such as, typhoons, floods, droughts and hurricanes (Zhang, 2008).

Catastrophes have several consequences and the instant one that can be experienced by the household is the damage they cause on the household's income. These weather-related shocks can not only destroy sources of current incomes such as existing crops and livestock, but also can destroy farming equipment that have been accumulated for years with the purpose of generating future incomes (Zhang, 2008). It is important to know how farmers respond to these risks since, if such responses can appropriately absorb shocks, then farmers can avoid falling into the poverty trap. In other words, farmers' response to shocks can similarly help to trap them into destitution because the shocks can push them below the threshold setting them on a downward spiral into poverty from which they cannot recover (Dercon, 1998, 2005; Carter and Barrett, 2006; Krishna, 2006; Barrett et al., 2007; Carter, Little, et al., 2007). Evidence from literature shows that, it is common for poor households to use assets so as to cope with risks. Hence, deprived households commonly liquidate assets in order to cope with shocks which usually push them down into persistent poverty (Krishna, 2006). Households that are extremely poor usually forego consumption instead of using their limited assets to cope with the shocks (Zimmerman and Carter, 2003; Kazianga and Udry, 2006; Barnett et al., 2008). These kind of decisions from poor households may lead into reduced expenditures on education, health care or consumption of food as households tend to stop paying school fees, remove their children from school and fail to provide their families with enough food (Carter, Galarza, et al., 2007). Due to deficiencies in education and health, the value of human assets diminishes hence trapping the households further into poverty (Barnett et al., 2008). However, owing to consequences of shocks, the poor opt to manage their risk exposures by choosing assets that have low risk but unfortunately with low returns. This narrows the investment incentives when choosing a range of activities with ability to reduce their sufferings. As a result, their potential for growth becomes much limited (Zimmerman and Carter, 2003; Dercon, 2005; Carter and Barrett, 2006; Rosenzweig and Binswanger, 1993).

Since risk aversion is usually negatively related to wealth, the poorer people are often more likely to choose livelihood strategies so as to avoid risks (Barrett et al., 2007). An empirical study that was done in Indian further expresses this phenomenon. Barrett *et al.* (2007) and Rosenzweig and Binswanger (1993) showed that, farmers who were in shock opted for assets and technology portfolios to use in coping with the shocks while the assets they selected were not only less sensitive to rainfall variation but also less profitable. The implication here is that, when the formal risk sharing mechanisms are not available, farmers depend on traditional methods that they feel can smooth the agricultural production risks (Raju and Chand, 2008). However, traditional strategies that are used by farmers to cope with risk are in most cases ineffective as they are unable to mitigate the risks that farmers are exposed to (Raju and Chand, 2008). Weather index insurance products are worthy implementing in a country with farmers in such risk conditions so as to smooth farmers 'income and increase their production.

Review on implementation of agricultural insurance

Apart from the risks beset by famers, implementation of WII further would depend on among other factors, the knowledge the public has about the product. Many studies have shown lack of understanding on how the agricultural insurance program operates, leading to failure of these programs (Ackah and Owusu, 2012). Also, as reported by the World Bank, governments play a vital role in implementation of an agricultural insurance programs particularly on development and maintenance of agricultural and weather databases useful for helping insurers to properly design and price agricultural insurance contracts, hence reducing adverse selection (Mahul and Stutley, 2010). Where insurance operates, services provided by the government such as public extension services that assist and supervise farmers in the management of their production risks before and after the occurrence of a loss can help to reduce moral hazard. Additionally, the World Bank stresses that governments have a crucial role to play in information dissemination and educating farmers whose awareness to risk is low. Farmers, according the report, tend to be very aware of their production risks but may underestimate the possibilities of events to happen, or misjudge the severity of such risks. Hence, since farmers are central in any agricultural risk management investment (FAO, 2012),

governments have a vital role in creating farmers awareness, provide appropriate educational programs to famers, as well as support the private insurance sector in marketing and promotion program of agricultural insurance (Barnett and Mahul, 2007; Mahul and Stutley, 2010).

Literature reveals further that, implementation of WII must go hand in hand with the availability of delivery channels, although the effectiveness of these channels depends highly on the development status of private insurance markets (Mahul and Stutley, 2010; Tsikirayi et al., 2013). In high income and upper-middle-income countries where almost 80 per cent of agricultural insurance programs are offered on a voluntary basis, insurance is traditionally marketed through insurance agents employed by insurance companies or insurance brokers (Mahul and Stutley, 2010). On the other hand, in low-income countries, where the insurance market is underdeveloped (Seyed et al., 2010), cooperatives and farmers' groups are mainly used to provide agricultural insurance because rural banking network, including microfinance institutions, is still very limited though there are some initiatives in Africa and Asia (Mahul and Stutley, 2010). Agricultural insurance in lower-middle- and low-income countries is often compulsory for borrowers of agricultural loans, a condition that provides an opportunity for such credit-linked insurance programs to develop agricultural insurance in developing countries (Mahul and Stutley, 2010).

However, literature shows that, due to problems of covariance risks and asymmetry of information prevalent in developing economies, agricultural insurance has been funded by the governments with the belief that the involvement of the governments could absorb the costs of asymmetry information (Roumasset, 1978; Venkatesh, 2008; Olubiyo et al., 2009; Hazell et al., 1986). Under this operation, problems of adverse selection and moral hazards have resulted into banning of private sector from participating or emerging in the business (Miranda and Glauber, 1997; Mojarradi et al., 2008; Olubiyo et al., 2009). On the other hand, some authors criticize that the level of involvement by various governments in the provision of agricultural insurance cripples the sustainability of agricultural insurance because the benefits are disproportionate with the committed financial investment (Wenner, 2005; Olubiyo et al., 2009).

In low income countries, most Governments are not capable to persistently offer subsidies to farmers (Smith and Watts, 2009). For that matter, it is necessary for any agricultural insurance program to be self-sufficient for its risk hedging sustainability. Although agriculture plays a vital role in Tanzania's economy, over the years, majority of people mostly small holder farmers living in rural areas have remained extremely poor because farming as their main livelihood activity is beset with uninsured risks that often make them earn inadequate incomes for their livelihoods. This situation finally causes them to be trapped into poverty (Holzmann and Jørgensen, 2001; Chantarat et al., 2013). Despite the fact that farmers have been faced with numerous agricultural risks since independence in 1961, agricultural insurance products in Tanzania are absent in the micro insurance market, with the exception of few pilot programs (SFSA-SCBF, 2014). It was revealed in 2012 that, the weather index insurance product pilot was taking place in Tanzania, covering the value of inputs given to farmers on credit (Maina, 2012). However, even after its introduction in the area, complaints have not been uncommon from cotton growers in the course of implementing the program. Therefore, the crucial issue is to understand what knowledge farmers have on how this program functions in providing valuable risk reduction to farmers after being introduced in 2011. Specifically the study sought to determine precisely from farmers perspectives, how the drought insurance program works in practice. The research questions for the study were: 1) which risks are farmers in the area of study faced with? 2) How do famers in the area manage their risks? 3) What is the understanding of the general public about how the drought insurance program operates in the locality? 4) What challenges farmers face in the course of implementing the drought insurance contract pilot program in Bunda? Findings provided in this study are intended to draw attention of the government, stake holders like private insurance companies and other development partners to learn from the experience and explore more opportunities of using the best technologies and approaches of offering agricultural insurance in Tanzania.

MATERIALS, PARTICIPANTS AND METHODS

To gain an understanding on the risks faced by farmers and how the WII operates in the area, a cross sectional survey and focus groups were conducted respectively in three wards of Bunda district between November and December, 2014. First, the researcher sought to assess the kind of risks famers have in the area as well as determining how growers cope to these risks. For this purpose, a sample size of 410 households was randomly selected from a sampling frame of 3422 households comprised of 9 villages from three wards of Bunda district. Both growers in the program as well as the non- program participating growers were included in the sample. Structured questionnaires were administered to the respondents to collect information on their socio economic characteristics, risks faced by growers as well as their responses after they experience yield loss due to drought. The social economic characteristics of respondents play a vital role in influencing the person's response behaviour, as revealed in the literature that the rise in educational level changes attitudes, encouraging rational thinking and the way people asses reliability of information (Krantz et al., 1983; Lehman and Nisbett, 1990). Also, rise in education according to literature

Table 1: Composition and Demographic characteristics of Focus Groups

Focus Groups composition and Demographic characteristics of participants					
Date	***Location***	***Group Category***	***Attendance***	***Males***	***Females***
2/12/2013	Wariku	Farmers	11	8	1
6/12/2013	Kunzugu	farmers	12	9	1
13/12/2013	Guta	farmers	8	7	1
4/12/2013	Bunda	Govt and org. officials	6	4	2
Demographic characteristics of focus groups					
	Farmers focus groups (n=31)		Officials focus group (n=7)		
	Age	Schooling yrs	Age	Schooling yrs	
Mean	42.3	7.4	38.7	15.3	
Std. Deviation	10.7	2.3	13.1	2.6	
Minimum	24	0	24	13	
Maximum	66	13	56	20	

The interview time lasted between 75 to 90 minutes in which, the transcriptions of the proceedings were tape recorded.

Views on whether risk and whether the drought insurance is available

- In which recent years do you remember to have suffered yield loss?
- Do you have an insurance program to ensure your crops from yield loss in this area?
- What is the name of insurance program?

Views on structure of the insurance program

- Who are the operators of the insurance program?
- What are the roles played by each actor in the program chain?

Views on the operationalization of the insurance program

- How does this insurance program work in this area?
- After facing yield loss due to drought, can you explain how the process of compensating a farmer takes place does?
- Have any of the farmers been compensated after suffering yield loss due to drought? What was experienced?

Exploring opinions about the benefits and challenges of the program

- What are the benefits having this program in the area?
- From your experience in this program, what are the main challenges that farmers are faced with in the course of implementing this program in this area?
- What other opinion do you have about implementation of this program in the

Box 1: Interview schedule

promotes superior cognitive sophistication, complex reasoning, thereby allowing individuals to better assess new ideas (Ohlander et al., 2005). To understand how the insurance contract works, the researcher reflected that farmers who were in the program had relatively better knowledge on how the program operates than the non-participating farmers. Hence, only farmers participating in the program from three wards in the district were purposely preferred for focus group interviews in which, snowball, a non-probability sampling method was used to identify potential subjects. This method was useful in sampling rare or hard to reach lead farmers who were limited to a small subsection of population (Faugier and Sargeant, 1997). Unlike the one to one interviews, focus groups were preferred so as to gain an insight from farmers' perspectives on how the program operates because differences in opinions can easily be capitalized on group interaction so as to uncover hidden attitudes (Elwyn et al., 1999). The method can also help to explore differences in opinions as well as help in defining consensus.

Focus group structure and interviews

Four focus groups were conducted, three comprising of farmers and lead(Lead farmers are farmers in contract farming program who are identified to lead other farmers in a group. Usually they are selected using criteria of being successful in their farming carrier in terms of abiding to proper farming practices as recommended by agricultural experts making them to be regarded as models to other farmers.) farmers while one involved district government and organization officials that worked with the program hence making a total of 38 participants taking part in the discussion. The average age and years of schooling for farmers' focus group participants was 42.3 and 7.4 while that of officials was 38.7 and 15.3 respectively (table 1). Participants of the focus groups were introduced to the concept of operationalization of drought insurance and provided with an outline of suggested subtopics. The means of communication used was Swahili, a national language in Tanzania. Results from respective groups (the farmers and the officials' focus group) were at the end of each discussion, summarized and read loudly for every participant from respective groups to get the summary of discussion and where ambiguity existed, clarification was sought from among the group participants before the researcher concluded and the respective groups dismissed from the discussion venue. After each consultation, group interviews were held and, using an interview schedule (box 1), reactions was explored. With the aid of proper group discussion techniques, farmers were made active

Table 2: Sex and age of respondents

		Sex		Age	
		Females	**Males**	**15-64**	**65 and above**
Non Participants	n	25	126	141	10
	%	16.6	83.4	93.4	6.6
Participants	n	45	214	239	20
	%	17.4	82.6	92.3	7.7
Total	n	70	340	380	30
	%	17.1	82.9	92.7	7.3

Table 3: Education status of respondents

Percent of respondents by education level					
Type	***Nonformal***	***Pri edu***	***Sec Edu***	***Tertiary edu***	***Total***
Wards					
Kunzugu	43.4	53.1	3.5	0	100
Wariku	35	61.3	3.6	0	100
Guta	23.1	70.8	3.8	2.3	100
Program participation					
Non perticipants	37.7	56.3	4	2	100
Participants	32	64.5	3.5	0	100
Overall	34.1	61.5	3.7	0.7	100

and given opportunities to contribute.

Analysis

Descriptive statistics were used to analyse quantitative data whereby data from focus groups were analysed using qualitative research methodology, particularly the constant comparative method. The transcripts from focus groups participants were examined by the researcher to recognize emergent themes (Elwyn et al., 1999; Frankland and Bloor, 1999), which were then agreed by participants in the discussion and categorized for an overall classification in terms of frequencies and percentages. No statistical generalizability was achieved in this qualitative data analysis method because the method was intended to present cotton growers' viewpoints. However, trends and agreements of the majority were specified.

FINDINGS

Socio economic characteristics of respondents in the program implementation area

Results showed that majority of households in the surveyed area (83%) were headed by males and 17% by females (table 2). This percentage is higher than the Mara region's male headed household percentage of 78, according to National Sample Census of Agriculture (NSCA) 2007/2008 (URT, 2012). In Tanzania, people are considered economically productive if their ages range from 15-64 years and are non-productive outside that range (Mattee et al., 1998). Results showed that, 92.7% of respondents were of productive age while 7.3% of household heads had ages above 64 hence falling into the non-productive age category. Throughout the surveyed area, no household head had years below 18.

In this survey however, the age groups of respondents were categorized into youths (18-35 years old), adults (36-60) and olds 61years and above. Results as presented on table 2 showed that, 30.2% of household heads were youths, 58.8% were adults while the olds were 11%. The lowest and highest age of household heads in the surveyed area was 18 and 73 respectively for both males and females. However, the average ages of household heads were 42.4 for females and 43.0 for males, while the overall average of household heads was 42.9. These results differ from those of 2007/2008 National Sample Census of Agricultural results which indicated that the highest average age of household head was 47. This drop in average ages as well as the relatively increasing proportion of young farming farmers implies that more young people are being involved into agriculture as one source of their livelihood probably due to high pressures of unemployment.

Results for the education status of heads of households showed that 80.5% of respondents in the area attended formal education whereas, 19.5 % never attended school (table 3). The number of non-participating farmers who never attended formal education was higher (37.7%) as

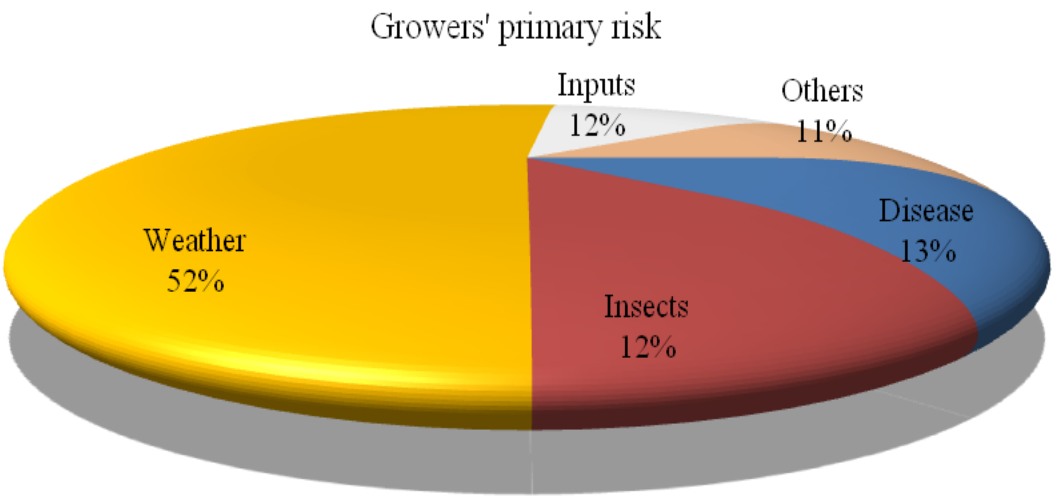

Figure 1: Cotton Growers' Primary Risks in Bunda District

***Source*:** Author

compared to 32 % of the farmers enrolled in the program. With regards to education attained at various levels ranging from primary school to post-primary education, results indicated that a large number of household heads had primary education (61.5%) and only 4.4% had post primary education. Regarding the size of the family, findings indicated that the average family size in the area of study was 7.0, which higher than the Bunda district's average of 6.7 according to Tanzania's 2007/2008 National Sample Census of Agriculture. Results showed that majority of households surveyed (72%) had cotton farms of sizes between 1 to 3 acres(1Hectare=2.47105381 Acres (http://www.asknumbers.com/HectaresToAcresConversion.aspx) which is less than two hectares and few (27%) grew cotton on farms of nearly 2 or more hectares of land.

The average cotton farm size in the area was 2.85 acres (1.15ha). About 97 per cent of households' main sources of livelihood come from farming activities they undertake yearly. Findings showed that, 3.2 per cent of respondents had their livelihood sources mainly from employment, engaging in business, and some depended on remittance. Findings showed that only 38% of respondents in the surveyed area engaged in off farm activities while 62% were not. Of those engaging in off farm activities, majority of them (58.3%) were households not in the insurance program and 41.7% were in the program. In total, results revealed that, 47.8 %, 33%, 10.4% and 8.7% engaged in casual earnings, small petty business, selling forestry products and fishing respectively.

Risks faced by farmers in the area

Concerning the primary production risks facing cotton growers in the study area, most respondents (52%) mentioned weather problems like shortages of rains and unpredictable rains to be the main risk facing famers in the area. Other respondents (13%) mentioned crop diseases, while insects and inputs were each altogether mentioned by 24%. Eleven per cent of respondents mentioned wild animals invading famers' farms to be other risks faced by farmers in the area (figure 1).

Implementation of drought insurance- Focus group Results

Views on weather risks and whether drought insurance exists in the area

First results on which production risk participants faced indicated that majority admitted they are confronted with drought problems that often times result into unexpectedly painful yield losses. When asked which years they suffered much from drought, majority mentioned 2002, 2006, 2008 and 2013, as one of the lead farmer stated: "….2002 and 2006 are the years I still remember until now. In 2006 for instance, the growing season we were used saw no rains at all. I grew cotton in 3 hectares, but almost nothing came out". These were the years expressed by respondents as having few rains coming late in months not commonly used for growing cotton which caused farmers to get almost nothing from their fields. Views from farmers matched with those given by the officials' focus group where a vivid example was given citing an incidence in the year 2013 where in Guta ward alone about 100 cows died of drought in just one day. They collectively underlined drought was the major problem and underlined that a reliable insurance program was important for them.

Regarding the existence of the insurance program in the area, all participants of focus groups agreed there

Table 4: Percentage distribution of focus groups responses about knowledge on program implementation issues

	Farmers' FG (n=31)		Experts FG (n=7)		Total(n=38)	
	Understand	**No idea**	**Understand**	**No idea**	**Understand**	**No idea**
Presence of Program	100.0	0.0	100.0	0.0	100.0	0.0
Structure	29.0	71.0	100.0	0.0	42.1	57.9
Operationalization	67.7	32.3	100.0	0.0	73.7	26.3
Payouts	0.0	100.0	0.0	100.0	0.0	100.0
Program usefulness	35.5	64.5	71.4	28.6	42.1	57.9
Challenges	100.0	0.0	100.0	0.0	100.0	0.0

was a program of insurance known as “bima ya ukame”(*drought insurance)* as one participant in the farmer focus group discussions was quoted saying: “…yes there is. I heard about this insurance in 2011. It is called “bima ya ukame”. They said, they would start giving services to farmers who were in groups of contract farming for cotton crop”. Results revealed that, the insurance protected famers from drought and covered only one crop, cotton. Participants from expert focus groups also explained the program existed in the area, the government knew it and some of the farmers were aware of that. But the program sounded like it was not in place since no incidences of yield loss had been reported to provoke repayments.

Structure and operationalization of drought insurance program in Bunda

When asked about who were the operators of the insurance program, 22 out of 31 participants of farmer focus group (70%) were not able to mention the company names or insurer while only few (30%) managed (table 4). Those who failed however responded almost in the same way as noted from one participant as saying:”…there is an organization that signed contract with ginners to work with farmers. They told us all farmers who were previously in contract farming are in the insurance program.”

The results of the few farmers who managed to mention the actors in the program complied with those of expert focus groups which expressed that the actors directly or indirectly involved in the program chain were the Tanzania Cotton Board (TCB), Bunda District council, Ginners, MicroEnsure and cotton growers. The discussion results revealed the roles of TCB through Cotton Development Trust Fund (CDTF) was to link farmers with the insurer and ginners and distribute inputs. Farmers according to the findings were organized into groups whereby each group was led by a lead farmer. The government through the district council provided education and extension services while MicroEnsure was commissioned for managing the insurance services to farmers.

Regarding the operationalization of the program, about 74% participants of FGs were able to mention some activities involved in the drought insurance program. Results showed that farmers were organized into groups and a company signed a contract with famers to provide both seeds and chemicals while farmers were supposed to sell their harvests to the companies after harvesting. After the farmer sells his/her harvests, the company through its agents would deduct the loan incurred by the farmer. In 2012 insecticide per bottle was 1500Tsh(1USD=1674.8053 TZS Thu 09/10/14, 9th October 2014

http://www.currency.me.uk/convert/usd/tzs). But farmers who were in the insurance had to pay 1700Tsh, 200 being an insurance premium. The seeds were also given to farmers by loan. However, the government subsidized 50% of the seeds cost. Farmers therefore were required to pay 600Tsh instead of 1200Tsh per each kilogram of cotton seed. The inputs were provided on loan to be repaid by the farmer after selling the harvests.

Compensation

Findings in the study area did not show that pay-outs are triggered by weather derivatives from weather stations or other sources as participant narrated only few stations were later on installed in the district. Results from focus groups revealed further that, the insurance was not actually compensating farmers after they faced yield loss, but it was rather an adjournment of the farmer’s loan that was decided after loss verification as one farmer focus group participant explained: “….After suffering yield loss, the farmers inform the lead farmer who reports the incidence to the agricultural extension officer. The officer informs the TCB who would make arrangements to inform the agent (input provider), agricultural extension officer, and the insurer to visit and assess the loss on the farm. After verifying the loss, the company that gave the loan to the farmer is required by the contract to free the farmer from repaying the loan that year.”

Benefits and challenges

Results from the study showed that, farmers benefited from the program through having access to input loans and education which would otherwise be hard to access. However, all focus groups expressed that it is still hard to know exactly how this weather index insurance would be

different from the ordinary contract farming they had been involved with in the past because, as an insurance program they never witnessed compensation despite farmers suffering from yield loss caused by drought. This assertion was justified by one participant in the focus group who expressed that: "…. in this program we don't get compensated. When there are no harvests we pay all the loans, and so we suffer much. For example in Kunzugu village we were forced to take input (seeds) on loan. Later, floods occurred in the area and everything died on the ground. At the end of the day we were required to repay all of our loans'.

Further, it was revealed that, farmers in the area are sceptical about the program's ability to compensate them after yield loss as they reported experiencing a different reaction from the insuring companies contrary to what they understood earlier. Growers reported a scenario from the past when, after the drought disaster occurred, they not only lost harvests but also got heavy and unbearable debts owing the companies.

Consequently, farmers expressed another obstacle of low prices they received from buyers in Bunda even when the quality of cotton produced in the region had high quality compared to other places due to the fact that, cotton from their region is usually very white. Along with that, both farmers and expert focus groups reported that their buyers collude so as to bring down the cotton prices which usually end up hurting growers.

One notable finding in this study about the challenges in this program was interference from politicians as was reported by a participant from expert focus group discussion who stated that: "…. I think politicians are also a very big program to the implementation of this program in the area as ward councillors use farmers to gain political influences by convincing them that the program does not benefit them". For example, focus group participants expressed that at the introduction of the project, insurers began by educating farmers how the insurance would be operated to benefit them. But before it was very clear to famers, politicians at village and ward levels tended to discourage famers by telling them how a program could just ensure drought while there were other risks such as theft, animals, diseases, floods etc.

The views were supported with those from the expert focus groups when they revealed incidences of politicians witnessed to even convince farmers not to abide to some agronomic principles as recommended by agricultural experts so as they can demand a bigger pay from insuring companies after experiencing yield loss.

With regards to opinions about the program usefulness, nearly all participants of focus groups viewed insurance to be necessary to farmers due to the fact that they are faced with rainfall shortages and variability. However, when asked about the usefulness of the on-going drought insurance pilot program, nearly 58% participants of FGs expressed dissatisfaction. Views from the district government officials' focus group stressed the program be given more attention and enough time without political interference. Their opinions concurred with those of the farmers' focus groups as one of the participants emphasized: "….yes, we badly need crop insurance especially on cotton, since this is our major source of income earning in this place".

DISCUSSION

Drought insurance exits and is currently operated in a form of contract farming. The objective of the program was to assist farmer increase productivity by hedging them from weather risks. Usually it takes a long time for a program like an agricultural insurance to develop. Much as it was introduced as weather index insurance, evidence from the study shows the program exists as drought insurance with much of its operations done in form of contract farming. So far farmers are benefiting from access to input loans and farming education. However, the implementation is still challenged with farmers little understanding on the how the program operates since it is still not very clear to most farmers whether the program is contract farming or a weather index insurance that is using weather derivatives to determine indemnity payments, as was known at its launching (Maina, 2012). This confusion suggests that more education is required to enable farmers precisely understand how the current program under pilot ought to operate so as to increase farmers' confidence on the program. Issues of low prices given to farmers were revealed as being sources of defaults and side selling by farmers, while politicians were mentioned to be an obstacle to the smooth implementation of the program. In addition, dishonesty by the buyers or their agents was expressed in terms of how they exploit farmers by tampering with the weighing machines.

Study limitations

Efforts to reach program experts from relevant authorities were made but ended up in vain given the availability of time and resources. However, comparison between what is presented by program implementers and what is perceived or understood by farmers down at the field level was beyond the scope of this study. Any discrepancy between the study results and information other than these findings should be considered as areas for further research or treated as gaps that need to be addressed promptly by the relevant bodies in charge of the program implementation.

CONCLUSION

The objective of this study was to establish from farmers' perspectives and experience, how the drought insurance operates in Bunda district. From farmers' understanding,

it is clear that despite the challenges, drought insurance program for cotton growers in Bunda that is mainly operated in a form of contract farming is necessary to provide farmers with high value supply chains. There could be several technical implementation issues to tackle before the index insurance program that uses weather derivatives takes off successfully.. However, since farmers are central in any agricultural risk management program it is essential therefore to enhance a thorough awareness and a clear farmers' understanding of the program operationalization because ambiguities may lower demand of the product and decrease their participation in the program or similar programs in the future.

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