



# Responsible Land Governance: Towards an Evidence Based Approach

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY  
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## **THE IMPACT OF INITIAL SECURITY OF TENURE ON SMALLHOLDER FARMERS' HOUSEHOLD INCOME AND FOOD SECURITY: A CASE STUDY OF THE CHIRADZULU DISTRICT IN MALAWI**

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## **Abstract**

Sustainable agricultural production and productivity has proven much less pro-poor in countries that began with an inequitable distribution of land and or that fail to recognize legitimate land rights for women and subsistence farmers. It depends on land, ownership of, or access to, agricultural land. The land tenure system affects agricultural land use, prospects for improvement, productivity and food security. Using Social Tenure Domain Model (STDM), this paper examined how the structure of land tenure system among the beneficiaries of the Sustainable Agriculture Production Programme (SAPP) in Malawi influences technology adoption, agricultural productivity and food security among beneficiary households. The paper found out that 85 % of those renting fields were not practice sustainable land and water management practices such as soil and water conservation, agroforestry, in-situ rainwater harvesting technologies and conservation agriculture resulting into low production and productivity. The female headed households renting land were found to be more food insecure as they experiencing more hunger season of 3.1 months compared with female headed households who owned land experienced hunger for 1.8 months. It is concluded that for sustainable impact, initial analysis of tenure on land and natural resources should be considered when designing any agricultural development programme.

## **Key Words:**

*Food security, Land tenure, Malawi, Subsistence farmers, Women*



## 1.0 INTRODUCTION

Chiladzulu district with a total rural farming households of 93,258 (42,130MHH, 51,128FHH) is one of the six districts which is benefiting from an IFAD funded programme called Sustainable Agriculture Production Programme (SAPP) in Malawi. The goal of the programme is to contribute to reduction of poverty and improved food security by creating a viable smallholder agriculture sector employing good agricultural practices (GAPs). In Chiladzulu the programme is targeting to reach about 12,600 out of 200,000 total poor rural households comprising mainly productive men, women and youths. As of 2016, the programme in Chiladzulu had reached 4900 out of 81872 total programme beneficiaries with good agricultural practices ranging from sustainable land management to livestock production. The program mainly focuses on improving on technology adoption, agricultural productivity, and food security among the beneficiary households.

The smallholder food security (SHFS) households form the main target group for SAPP in the district. This comprises of productive men and women who have the potential to achieve household food security, but due to limited resources find it difficult to produce a surplus for market. They aim at food security and need technical and financial support in terms of basic inputs such as seed and fertilizer to increase food crop yields. This group constitutes 80% of smallholder farmers, and is the focus of the public extension service.

The SHFS group also includes the ultra-poor who have few assets, are often chronically ill or disabled, and live in elderly or child-headed households. This extremely vulnerable group relies mainly on low-paid seasonal labour.

## 2.0 LAND TENURE SYSTEMS IN CHILADZULU

The district covers a total area of 77,700 hectares of which 33,000 hectares is arable. The total cultivated land is estimated at 50,475 hectares. This means that some farmers are cultivating in marginal land due to land pressure. Area under estate farming is about 1,785 hectares while that under forests covers 1,804 hectares. There are three major categories for controlling land viz: customary land, public land, and private land.

**Customary land** previously was owned communally which compromises on land tenure security especially to the most vulnerable members of the community including women. Chiefs administered land



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under the delegated authority of the Minister Responsible for Land Matters as provided for under Section 26 of the existing Act. Chiefs use these delegated powers to allocate customary land falling within their areas of jurisdiction; and land disputes which could ably be handled administratively are handled through the courts of law which is quite complicated and expensive for an ordinary Malawi citizen.

The new customary land law (2016) provides (i) creation and registration of customary estates. This means that both natural and legal persons will be registered as private owners of such land (ii) Customary estate has been defined to mean any customary land which will be owned, held or occupied as private land within a Traditional Land Management Area and which will be registered as such under the Registered Land Act. (iii) With the creation of a customary estate, an individual, either man or woman will be registered as the owner of the land which in turn can be used to secure a loan from a bank or create a lease or sub-lease. The owner of the land will have a secure title and he /she will be able to raise money by creating either a lease or sublease which will be registered at the District Land Registry. The tenant will be required to pay monthly or annual rentals to the registered owner of the customary estate (iv) The Law will also allow registration of persons as joint tenants or tenants in common. The advantage of owning property as joint tenants is that when one person dies, the survivor automatically takes over the property without applying for Letters of Administration. The process of obtaining Letters of Administration is quite costly since the person representative is be required to pay estate duty and legal fees to the Legal Practitioner who is engaged to apply for Letters of Administration (i) The Law provides for the administration and Management of unallocated customary land through the formalization of the role of chiefs (vi) The Law formalizes the role of chiefs in land administration and management through land committees and tribunals (vii) The Law further provides for the establishment of gender sensitive land committees (viii) The creation of Land Committees will ensure transparency and accountability in land administration and management. Each Land Committee shall be chaired by the Group Village headman, six other persons recognized and respected by the community at least three (50%) of whom shall be women who shall be elected by the community (ix) Customary land dispute settlement mechanisms are also provided for in the Law (x) Land Tribunals at Traditional Authority level, District Level and a Board at the National level will be created to hear and determine land disputes.

*Land which comprises two classes (i) “Government land” which is privately owned by the Government and dedicated to a specified national or public use or made available for private uses at the discretion of Government; and (ii) “unallocated customary land” which is either customary land not yet registered as customary estate under the Registered Land Act or land used for the benefit of the community as a whole.*



**Public land** is as all land which is occupied, used, or acquired by the Government and any other land that is not customary land or private land. It includes:

- any land which reverts to the Government on the termination, surrender, or falling-in of any freehold or leasehold title under which it is held; and
- any land which was, immediately before the coming into operation of the Act, public land within the meaning of earlier legislation

**Private land** is all land which is owned, held, or occupied under a freehold title, a leasehold title, or a certificate of claim or which is registered as private land under the Registered Land Act. Private land comprises of two classes; “leasehold land”; freehold.

The land where farmers are implementing SAPP interventions is customary because there are smallholder farmers. The model was applied in Chidzulu district where land holding size is very small. The average land holding size is 0.4 ha as compared to 2012 where it was at 0.6 ha.

### 3.0 HYPOTHESIS

- i. Farmer who own land capture the benefits of the economic and social production on the land
- ii. Unsecure tenure promotes land degradation resource degradation
- iii. Lack of land access is key factor for household insecurity in especially female headed households

### 4.0 OBJECTIVES OF THE STUDY

The overall objective of the study was to assess the impact of initial security of tenure on smallholder farmers’ household income and food security in Chiladzulu District. Specifically the study was to:

- assess the impact of adaption of technologies related to ownership of land
- identify land related conflicts in Chiladzulu district targeting SAPP beneficiaries
- assess food security and income status for SAPP beneficiaries in relation to land ownership and.
- assess the level of farmers knowledge on good agricultural practices



## 5.0 METHODOLOGY

### 5.1 STUDY AREA

The study targeted Chiladzulu District as one of the SAPP implementing districts. The District has three Extension Planning Areas (EPAs) which are Mbulumbuzi, Mombezi and Thumbwe EPAs. The district was chosen because it has the least land holding sizes among SAPP implementing districts.

### 5.2 SAMPLE DESIGN

#### 5.2.1 TARGETED BENEFICIARIES

The study targeted a total of 140 programme beneficiary farming households in the districts covering all the three extension planning areas as presented in Table 1. The farming households were randomly selected.

(Insert Table 1)

In order to facilitate follow up in the adoption of technologies and for easy analysis of the data into Social Tenure Domain Model (STDM); Global Positioning System (GPS) coordinates were recorded for each interviewed household's farm. Figure 1 shows the spatial distribution of the sampled beneficiaries in the district.

(Insert Figure 1)

#### 4.2.2 SAMPLING PROCEDURE

This study used the random sampling approach for selecting households for questionnaire interviews. In all the three EPAs, the teams conducted a household list and random numbers generated from a computer were used. Using random sampling, proportionate numbers of household per EPA were drawn from the household list. The household list enabled us to generate the probability of the household being selected for interviews for calculation of sample weights for analysis.



### 5.2.3. DATA COLLECTION METHODS AND TOOLS

A number of research techniques were used to collect information and data, some of which included Key Informants Interviews (KII), Focus Group Discussions (FGDs) and administration of structured questionnaires to farm households. The Agricultural Extension Development Officers (AEDOs) were used to collect data for the study. The District Land Resources Conservation Officer (DLRCO) was responsible for monitoring and supervising the data collection exercise.

**The Household Questionnaire** was the main instrument for collecting quantitative data from farming households. It had nine sections and collection information on household composition and characteristics, field characteristics and geo-location, livelihood activities, land tenure issues, land and water management practices, crop production.

**Focus Group Discussion (FGD) Guide** was the main instrument for collecting qualitative data from farming households. Focus group discussions (FGDs) were conducted with SAPP clubs/associations of beneficiaries by gender in the selected communities in the District. The focus group discussions employed several Participatory Rural Appraisal (PRA) techniques such as problem analysis, social and resource mapping, livelihood analysis, institutional analysis and seasonal maps. The FGDs also focused on general issues about farmer adoption of Good Agricultural Practices (GAPs) so as to triangulate with findings from the household questionnaire. The guide started with understanding of different wellbeing groups in the community, and then moved to discussion on farming characteristics and household food security, access to agricultural inputs, access to extension services and experiences with good agricultural practices.

**Key Informants Interview Guide** was used for key informants' interviews with stakeholders in the area, at district and EPA levels. The key informants included the Agricultural Extension Development Coordinators (AEDC) and traditional leaders at the area level, the District Agricultural Development Officer (DADO) at the district level.

### 5.2.5 DATA ANALYSIS

Data was analyzed using the Social Tenure Domain Model (STDM). STDM which is a pro-poor, gender responsive and participatory land information system developed by the Global Land Tool Network (GLTN). STDM is a QGIS plugin that enables users to benefit from all the features of QGIS and adds



several features relevant to land information and tenure security. The most powerful feature of STDM is its ability to allow users to create and customize database tables using the Configuration Wizard.

## 6.0 RESULTS AND DISCUSSION

### 6.1 LAND OWNERSHIP

Land ownership is crucial in the promotion of agricultural interventions in any programme. From the Figure 2, there were 44.3 % of female headed households beneficiaries who owned land and none of them had their land leased. Owned land is land on which the households has ownership or cultivation rights including land rented out but excluding land rented.

It was observed that 10 % of male headed households compared to 5.6 % of female head households were renting land because they were divorced or widowed as they are in a matrilineal society where land belongs to women.

(Insert Figure 2)

For 60 % of those renting field were paying rent to the landlords. The reason why some were not paying rentals was that they were related to the field owners and some fields were rented to an association/club where the owner was also the member. On average, there was a high likelihood that female headed households would feel land tenure secure than male headed ones in the district under the customary land tenure regimes. Figure 3 shows the spatial distribution of land ownership.

(Insert Figure 3)

### 6.2 LAND SIZE HOLDINGS AND PLOT SIZES

#### 6.2.1 DISTRICT LAND HOLDING SIZES

Availability of land among smallholder farmers is one of the critical factors in farmers' willingness to diversify and participate in implementing any programme interventions. The study sought to establish the farm sizes and land holding sizes among smallholder farmers in the study district. The district land holding size is at 0.4 ha compared to 2012 where it was 0.6ha at the inception of the programme. This is lower comparing with than the national mean size of 0.964 hectares (NSO, 2012).



The high population and new marriages are contributing factors to the decreasing land holding sizes where land is fragmented further to accommodate the new marriages and population. This therefore calls for sustainable agricultural production for farmers to produce enough for their food security and income. Maximizing the use of land is very crucial in the district.

#### 6.2.2 FIELD SIZE FOR SAMPLED BENEFICIARIES

The farmers had on average 1.7 plots but they were implementing SAPP interventions on one plot. The average field plot size was 0.24ha. The plots ranged from 0.08 to 0.6 ha as presented in Table 2. The 87 % of farming implementing interventions on small plots of up to .12 ha were mainly doing demonstration of the intervention that the programmes was promoting rather than adopters of the technologies.

(Insert Table 2)

It was discovered that 23 % of sampled households were male headed that own land had their field ranging from 0.1 to 0.2 ha as presented in Table 3. Majority fell in this range because the programme is targeting households that have field sizes of around 0.2 to host demonstrations on good crop diversification and other good agricultural practices.

(Insert Table 3)

#### 6.3 LAND TENURE CONFLICTS.

From figure 4, the study found out that within the district there were indications of land tenure conflicts about 8 % of the total sampled households. The conflicts were related to field boundaries where farmers were encroaching into each other's fields. However, 94.8 % of those who were experiencing conflicts indicated that field boundary conflicts affect food security and income. This is because their crops along the boundary may be uprooted or destroyed during the growing season by unknown people.

(Insert Figure 4)

They were suspecting their fellow farmers who had conflicts with were behind the acts. These conflicts were being handled by local chiefs but some people were not respecting the local chiefs' rulings.



## 6.4 CROP GROWN

Maize was found to be the dominant crop grown by 67% of the sampled beneficiaries for food security purposes, with legumes grown by 50% of farmers for household income and soil fertility improvement. Maize was grown as a sole crop but over 52% of the sampled beneficiaries were intercropping maize with legumes as shown in figure 5. These legumes were soya beans, beans, cowpeas, pigeon peas and the highest proportion growing groundnuts. In terms of land allocation, 61% was devoted to maize (staple crop), followed by groundnuts (28%), pigeon peas (24%), beans (19%), soya beans (18%) and 5% for cow peas. There is limited diversity in the cultivation of the focal crops, on average farmers just cultivating two of these crops.

(Insert figure 5)

The study found that over 72% of farmers that were renting the field were growing maize for own consumption to meet their food demand while the rest were for securing income. Further they were growing soya, beans and groundnuts for income. This concurs with previous studies that showed that over 58% renting in the district do so for household food security.

The decision as to what crops to be grown on a piece of land was made by household head not necessarily depending on the land ownership.

Production of maize which is staple crop in the district had decreased by 30% over the period of five years i.e. from 2011 to 2016 but the area under maize cultivation had slightly increased by 7%. The main reason is that the district and of course the country has been experiencing prolonged dry spells and droughts affecting the maize production.

On the other hand, the production of pulses had increased by 36% over a period of five years (from 2011 to 2016) so too is the area under pulse cultivation which had increased by 17%. This was due to the fact that the programme had been promoting and giving out inputs for growing of pulses in the impact areas and most of the pulses is drought tolerant and of short maturing varieties. However, farmers were not making profits out of pulse sales because of lack of stable markets in the district as they end up selling to vendors who always offer low prices.



## 6.5 ADOPTION OF SUSTAINABLE LAND MANAGEMENT PRACTICES

The programme is promoting good agricultural practices in the district for farmers' adoption them. The study found out that 85 % of those renting fields in the districts were not practice sustainable land and water management practices such as soil and water conservation, agroforestry, rainwater harvesting technologies (swales, infiltration ponds) and conservation agriculture among others. This was observed in mostly in Mbulumbuzi EPA. The main reason was that they were renting the field for not more than two years and their interest was not to conserve a field which does not belong to them. Interestingly during heavy rains you would find that some of their crops and soils were washed away due to running waters in non-conserved fields. In turn the farmers would be putting up temporarily conservation structures in their fields like box ridges and bunds.

From the study it was found out that 50% of the farmers (both renting and owning land) were doing inter cropping for soil fertility improvement as well for household income after sales. They were doing intercropping of maize with legumes such cowpeas, pigeon peas and grilicidia. This is so because the programme is promoting legume production and more crucial was limited land holding sizes which made the farmers to intercrop. It is a major challenge to practice sole cropping as well as crop rotation in the district. They practice intercrop to maxim use of land. Intercropping was widely practiced as a farming method. The intercrop is common in the whole southern region of the country where agricultural land is constrained. Thus, its wide appeal may be related to land holding sizes and labour field management practices.

The study found out that those that were renting land did not practice conservation agriculture. Over 71% of farming owning land were practicing conservation agriculture. They cited higher yields, labor saving, potential soil fertility increase, soil moisture conservation, and soil erosion control as major motivations of CA adoption and the crops under conservation could withstand prolonged dry spells and erratic rains. The findings concur well with Ngwira, A., Johnsen, F. H., Aune, J. B., Mekuria, M., & Thierfelder, C. (2014) where the farmers were adopting conservation agriculture because of the reasons cited above.

For instance under Chikwakwata club in 2015/16 farming season farmers had harvested enough maize despite the dry-spells that greatly hit the districts while in neighbouring farms, where they did conventional agriculture crops dried up with zero harvests. In general those that had been practising conservation agriculture for two years had their yield increased by 40 %.



The study found out that 51 % of owning land had put in place soil and water conservation measures in their fields like swales, pits, box ridges and they were able to retain water in their fields. For those that were renting fields only 21% had soil and water conservation measures and it was specifically box ridges.

## 6.6 INCIDENCE OF HUNGER AND HUNGER SEASONS

Improving agricultural production and food security are stated as the main goals of SAPP. This is consistent with current and previous goals of agricultural development in Malawi. The reduction of hunger and improvements in food and nutrition security are critical measures of success in the programme.

Malawi tends to have pockets of food insecurity every year. According to FEWSNET (2012) the lean season in Malawi occurs between November and March, during which some households are at a high risk of food insecurity. However, different livelihood zones tend to have different months within this period as peak months for seasons of hunger with most livelihood zones hunger occurring from December to February (MVAC, 2005). The SAPP baseline report indicated that highest incidence of hunger was in Chiradzulu occurring among 41.7% of households and the mean hunger season was 3 months. Three years of programme implementation the mean hunger period was found to be 2.2 months and 31% of the households were food insecure in the district. There were 41 % of female headed households who were renting land that were food insecure and had 3.1 months of experiencing hunger compared to female headed household who owned land (1.8 months) as presented in Table 4. The hunger season was between December and February. This is consistent with available literature on Malawi lean period that runs from November to February (FEWSNET, 2012).

(Insert Table 4)

It was found out that 92% of those households owning land and with no land related conflicts were found to be more food secure and had surplus to sale for income during the lean period. These households were also practicing sustainable land management practices like soil and water conservation, conservation agriculture and rainwater harvesting.

Further, farmers that were practicing conservation agriculture especially those that owned land had their yield increase by 50% because the fields were able to withstand prolonged dry spells. However, those that were not practicing conservation agriculture indicated that that due to lack of herbicides and mulch



material they were unable to practice it. Those that were renting the field explained that it was difficult for them to indulge in conservation agriculture because they would need more years to start experiencing benefits of the conservation agriculture. Further, 90 % of households renting land hardly experience increase in yield due to land resource degradation in their fields as they were not implementing sustainable land management practices in their fields so even applying inorganic fertilizers it was being washed away and not fully taken by the crop.

#### 6.7 LEVELS OF KNOWLEDGE ON GOOD AGRICULTURAL PRACTICES

Knowledge assessment was done through simple-dichotomy statements (true/false) to determine the %age of correct and incorrect answers. Findings in table 5 below revealed more incorrect answers than correct answers for all the statements. Only 50% of the statements had correct answers above 50%. Correct answers %age ranged from 13% to 78.5%. This indicates that most farmers have low knowledge on GAPs and requires more effort in raising farmer's awareness on GAPs.

(Insert Table 5)

#### 7.0 CONCLUSION AND RECOMMENDATION

The introduction of the programme in the district expected that farmers would embrace good agricultural practices (GAPs). The study found out that 70% of the farmers not practicing rainwater harvesting technologies and water conservation. Again, those that rented land for agricultural production least adopted the sustainable land and water management that would improve the net value of land. The 85% of those renting fields in the districts do not practice sustainable land and water management practices such as soil and water conservation, agroforestry, rainwater harvesting technologies (swales, infiltration ponds) and conservation agriculture among others.

The study found out that the main land tenure problems in the districts are mainly field boundary conflicts where farmers do encroach into each other's fields. This however does not necessarily affect the food security in the district as only 5.2% of the sampled households indicated that field boundary conflicts affect food security and income.

In terms of land tenure security, the study finds that on average there was a high likelihood that female headed households would feel land tenure secure than male headed ones in the matrilineal societies



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casting doubt as to whether the claim that women may feel more discriminated against and may feel more insecure under the existing customary land tenure regimes is the universal truth. However, it could be argued that land titling could undermine women's grip of land in Malawi. Further, the decision on how to use land was with household head not necessarily owner of the land. This study also finds that land tenure insecurity was not much of a problem to many households and if there was insecurity at all, then it was men who were likely to feel tenure insecure especially in the matrilineal systems. The fact that more land came from wife's mother implies that marriage was still an important means of gaining access to land.

In conclusion, the paper recommends that for effective and sustainable impact, initial analysis of tenure on land and natural resources should be a key component of any design of agricultural development investment programme.



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Tables

Table 1: Targeted beneficiaries per Extension Planning Area (EPA) in Chiladzulu District

ID	EPA	Sample			Total
		Male	Female	Club	
1	Mombezi	19	13	3	35
2	Mbulumbuzi	24	12	3	39
3	Thumbwe	41	23	2	66
	<b>TOTAL</b>	<b>84</b>	<b>48</b>	<b>8</b>	<b>140</b>

Table 2: Basic characteristics of land sizes of beneficiaries

Parameter	Value
Mean	0.24
StdDev	0.123
Sum	33.37
Min	0.08
Max	0.6
n	140
CV	0.516
Range	0.52
Median	0.2

Table 3: %age of households plot size based on gender

Land size category (ha)	% of Household			
	MHHs Renting	FHHs Renting	MHHs Owning	FHHs Owning
0.01-0.1	2.08	0.69	5.6	9.03
0.1-0.2	4.2	1.4	23.6	13.9
0.2-0.3	1.4	-	6.9	1.4



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0.3-0.4	1.4	0.0	6.9	1.4
0.4-0.5	3.5	0.7	7.6	4.9
>0.5	2.8	0.7	-	-

Table 4: Households experiencing hunger season (%)

Household description	% of Households	Mean Duration of Hunger (Months)
MHH renting agricultural land	37	3
MHH owning agricultural land	22	1.6
FHH renting agricultural land	41	3.1
FHH owing agricultural land	25	1.8

Table 5: Levels of knowledge on Good Agriculture Practices (GAPs) (n=140)

Statement given to farmers on GAPs	Correct answer	Farmers' response (%)		
		Do not know	True	False
The retention of crops residues to cover the soil maximizes the capture of rainfall, reducing runoff and loss of top soil	True	15.3	78.5	6.1
Weeding after harvesting will reduce the weeds seed bank in my soil, therefore reducing the incidence of weeds in the next season	False	15.2	63.4	21.4
Crop rotations help breaking the pest and disease cycle of monocultures (e.g Maize, tobacco)	True	6.8	71.2	22.0
The germination of the seed is determined by the variety selected	False	19.6	67.4	13.0
Minimum soil disturbance is done by reducing the space between ridges (from 90cm to 75cm)	False	40.3	35.0	24.7
Roundup herbicide is applied after maize seed germination	False	46.2	17.1	36.7
Pits conserve/ retains water for crop use during prolonged dry	True	28.8	51.3	19.9



# Responsible Land Governance: Towards an Evidence Based Approach

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spells				
Mulching can be achieved without importing residues from other fields	True	26.2	50.5	23.3
Conservation agriculture. is practicable without application of herbicides	True	34.0	42.4	23.6
Mulching can only be done in Maize field	False	25.4	40.8	33.8
You cannot do Conservation agric. on rented land	False	15.0	56.4	28.5
Mulching reduces growth of weeds	True	20.6	66.5	12.9
Planting legumes improves soil fertility	True	10.8	75.1	14.1
Planting stations distance for legumes depend on type and variety of legume	True	22.3	60.0	17.7
Cowpea intercropped with maize need to be planted one month after planting	True	23.2	50.2	26.6

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## Figures

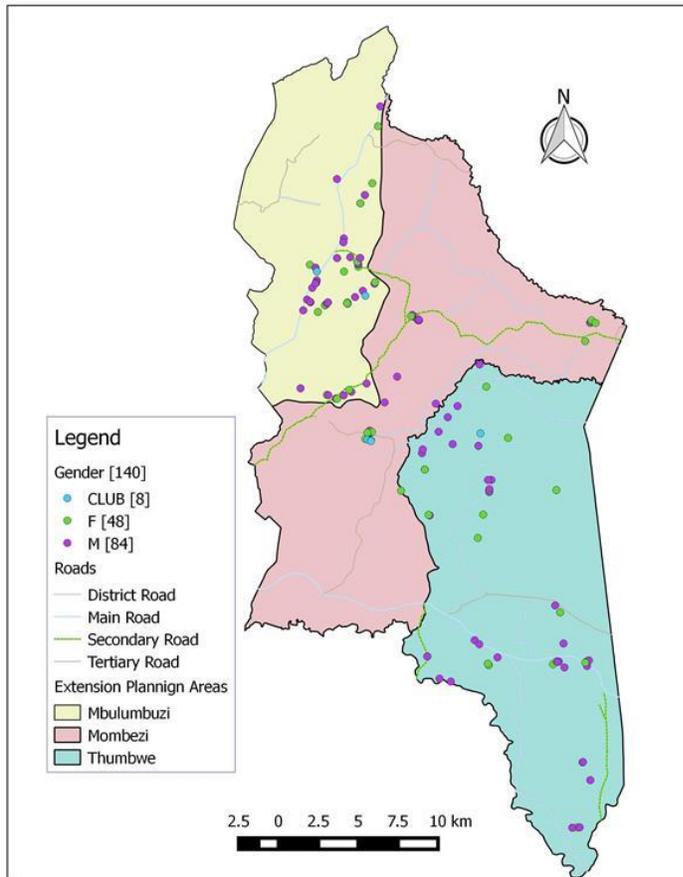


Figure 1: Distribution of sampled beneficiaries

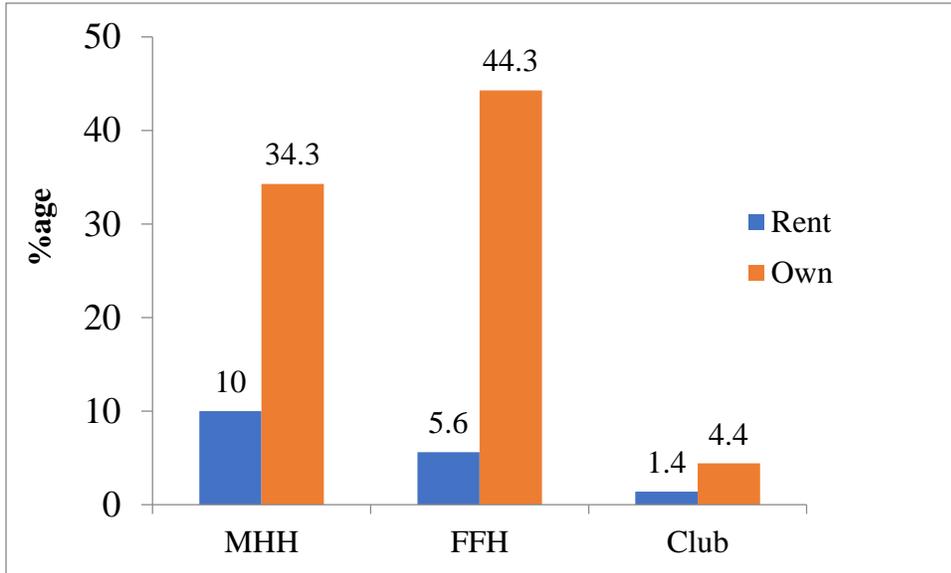


Figure 2: Status of Land Ownership for Sampled SAPP Household Beneficiaries in Chiladzulu District

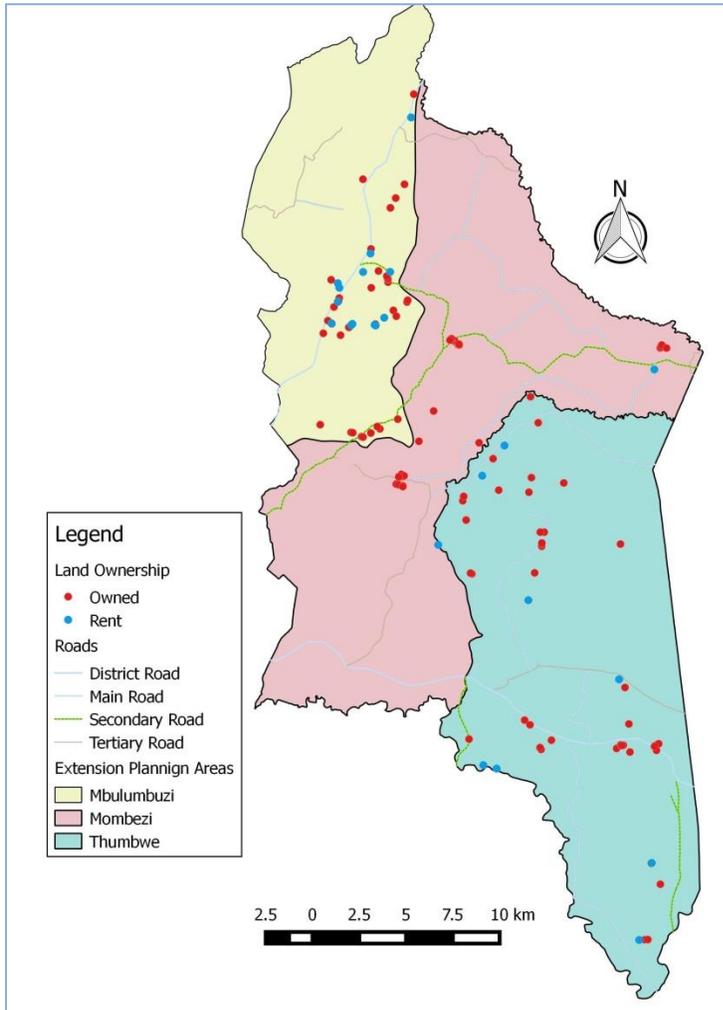


Figure 3: Spatial distribution land ownership for sampled beneficiaries

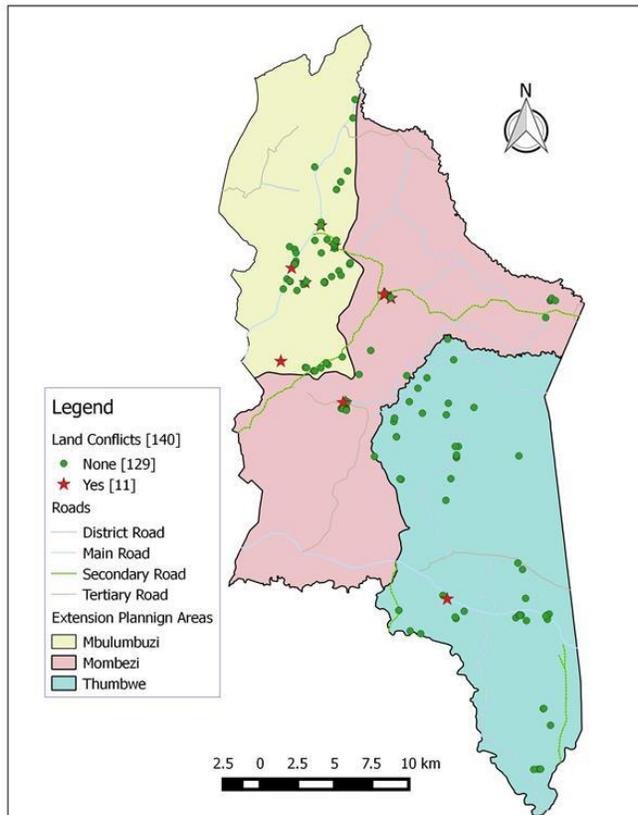


Figure 4: Location of land related conflicts

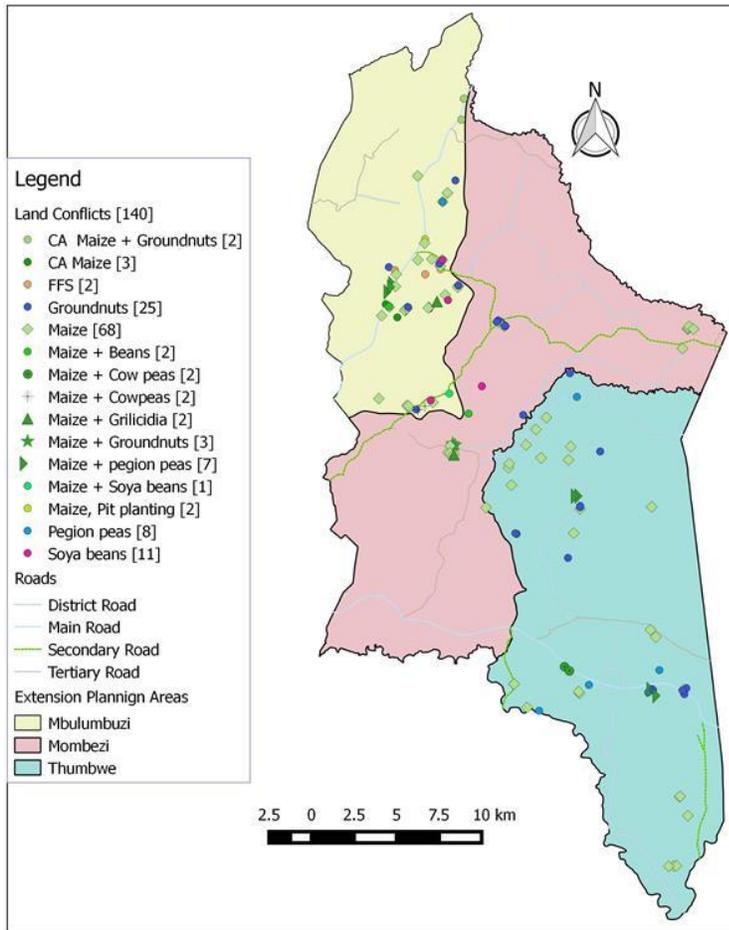


Figure 5: Spatial distribution of programme interventions