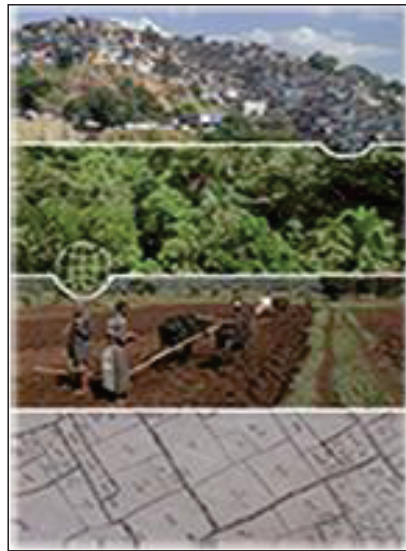


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THE IMPACT OF LAND RIGHT REGULARIZATION ON THE CASSAVA TECHNOLOGY ADOPTION AMONG SMALLHOLDER FARMERS IN MOZAMBIQUE: THE CASE OF THE PRO-POOR VALUE CHAIN DEVELOPMENT PROJECT IN THE MAPUTO AND LIMPOPO CORRIDORS

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INTRODUCTION

The Pro-Poor Value Chain Development Project in the Maputo and Limpopo Corridors (PROSUL) has been working over the last six years on mainstreaming land tenure rights in three value chains (horticulture, cassava and red meat), reaching a total of 17,800 smallholder farmers, across 21 districts in the provinces of Maputo, Gaza and Inhambane.

In the cassava value chain (VC), the project is ensuring land tenure security and technical assistance through the introduction of improved technologies, in order to increase production and productivity for the 8,000 smallholder farmers.

The study aims to assess the impact of land rights regularization on the cassava technology adoption in the 6 targeted districts under PROSUL, through:

- Assessing whether the regularization of land rights contributes the effective use of land for agricultural purposes, with focus on the promotion of cassava production;
- Assessing the effectiveness of the approaches adopted for the regularization of land rights;
- Analysing the contribution of land rights regularization in terms of strengthening land security for women;
- Assess the levels of technology adoption among rural households targeted by the land regularization activities.

MATERIALS | METHODS

The empirical study was conducted from January to October 2018, covering a total sample of 239 smallholder farmers in six (06) districts, and 249 participants in focus groups.

Out of 239 smallholder sample, a total of 40 households from one of the districts belong to the control.

Three questionnaires were developed for households, key informants and focus groups.

The statistical package STATA V.14 was used for data analysis. The descriptive statistics were used mainly for analysis of frequencies and means for general and specific variables, such as: age, sex, gender relationship, access to education services, access to land and technologies.

The t-test and chi-square test were also used for comparing means of frequency between groups adopting technologies such as varieties and plant spacing, respectively.

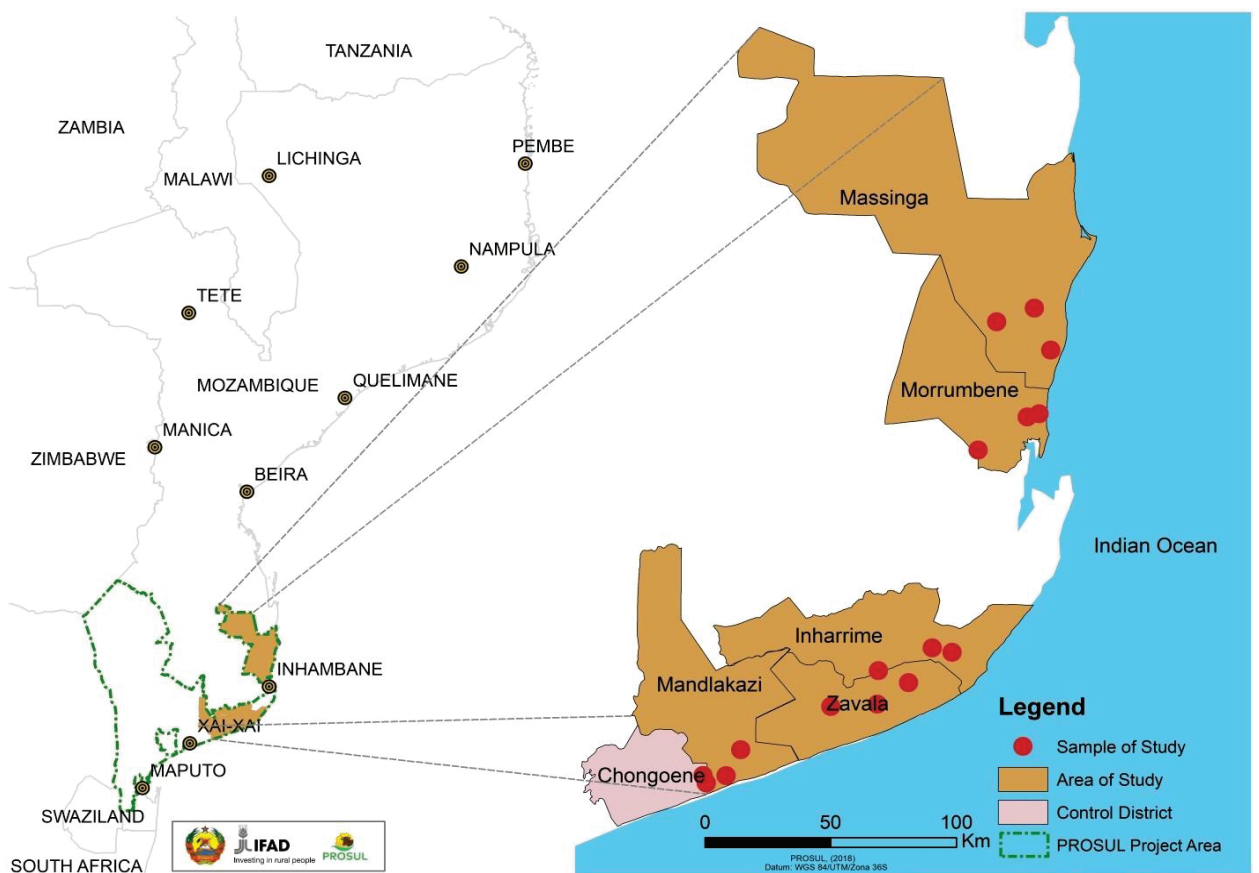


Figure 1. Location of the study area

ACKNOWLEDGEMENTS

The Ministry of Agriculture and Food Security (MASA), the Agriculture Development Fund (FDA); and the International Fund for Agricultural Development (IFAD).

RESULTS

Table 1. Knowledge about land legalization in the study area (n = 239)

Districts	Land law	(% of HH declaring Knowledge about land legalization through		(% of HH declaring Land use improved with		(% of HHs declaring			
		Terra Segura	PROSUL	with/ PROSUL	with/ DUAT	Investment due to DUAT	With DUAT vs increase of cassava intensification	know the cost of DUAT	Average Cost of DUAT (MT)
Chongone	65.0	24.3	13.9	-	-	-	-	-	-
Inharrime	85.0	75.0	97.5	95.0	88.9	20.0	89.2	7.7	19,333.3
Mandlakazi	79.5	79.5	100.0	100.0	95.2	22.2	81.1	32.4	21,150.0
Massinga	76.3	79.5	82.1	89.2	82.4	21.4	80.6	8.3	19,000.0
Morrumbene	85.0	82.5	95.0	85.0	78.4	40.6	100.0	36.4	17,700.0
Zavala	100.0	97.5	100.0	95.1	69.6	16.7	91.4	51.2	13,088.0
Total		81.9	73.6	82.6	92.0	81.5	85.4	23.3	16,845.8

Figure 3. Physical assets acquired by HHs resulting from the adoption of cassava production technologies (n = 239)

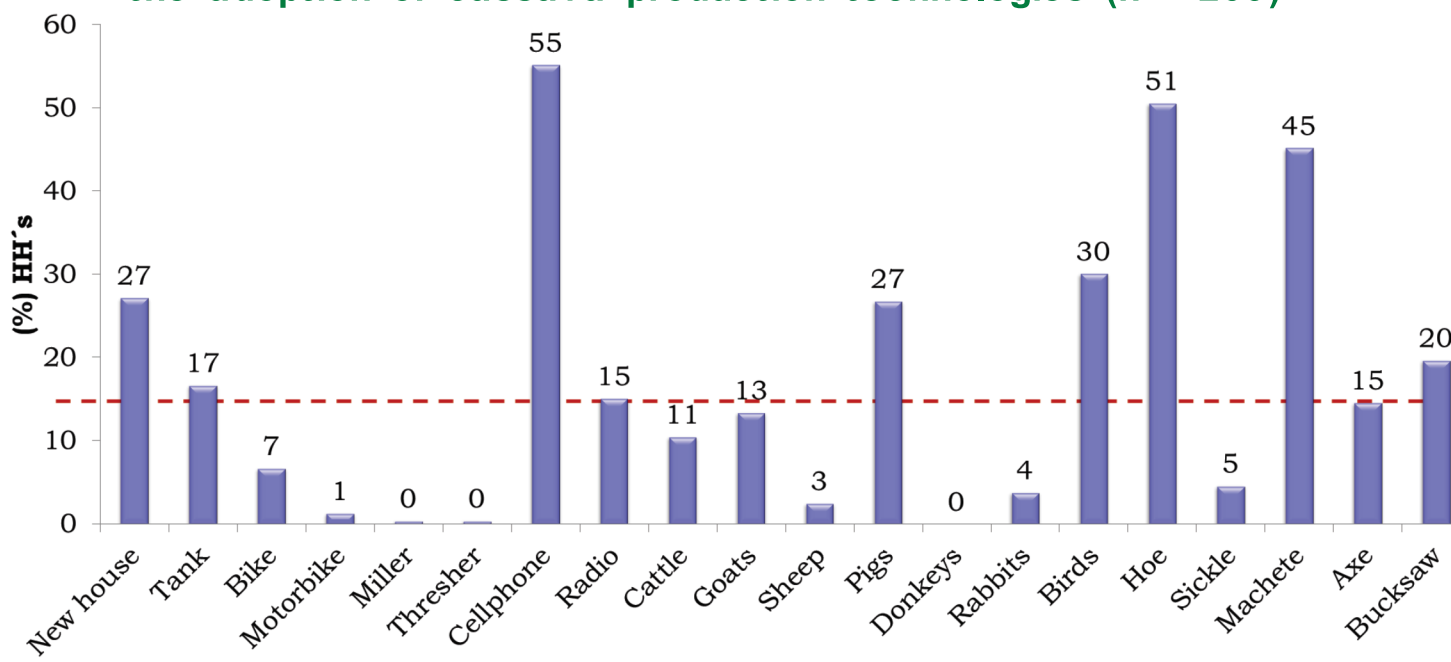
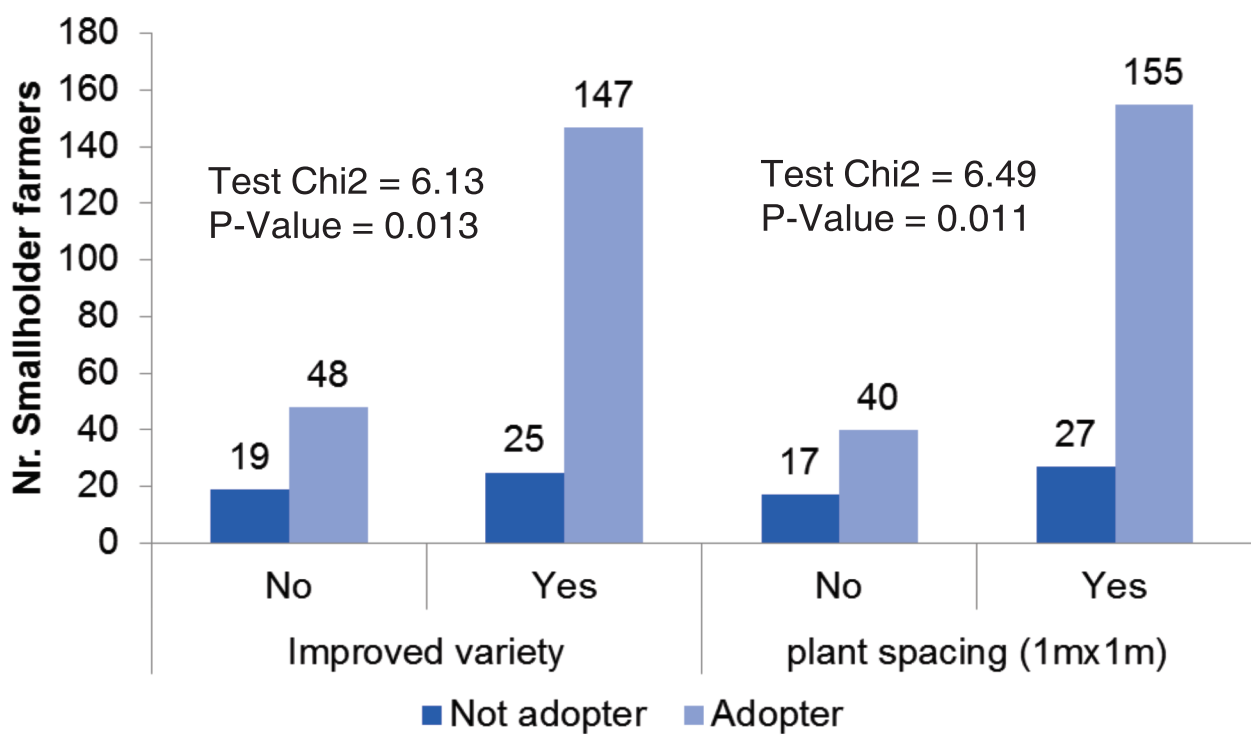


Figure 4. Proportion of adopters of technologies in relation to knowledge about land law.



- The average level of technology adoption by smallholder farmers was 76% (Table 2).
- The knowledge of land law by farmers significantly influenced the adoption of improved varieties (147 respondents, 61.5%) and 1m x 1m (155 respondents, 64.9%) (Figure 4).

Figure 2. Gender distribution/ relationship in regard to the registration of DUAT (n = 161)

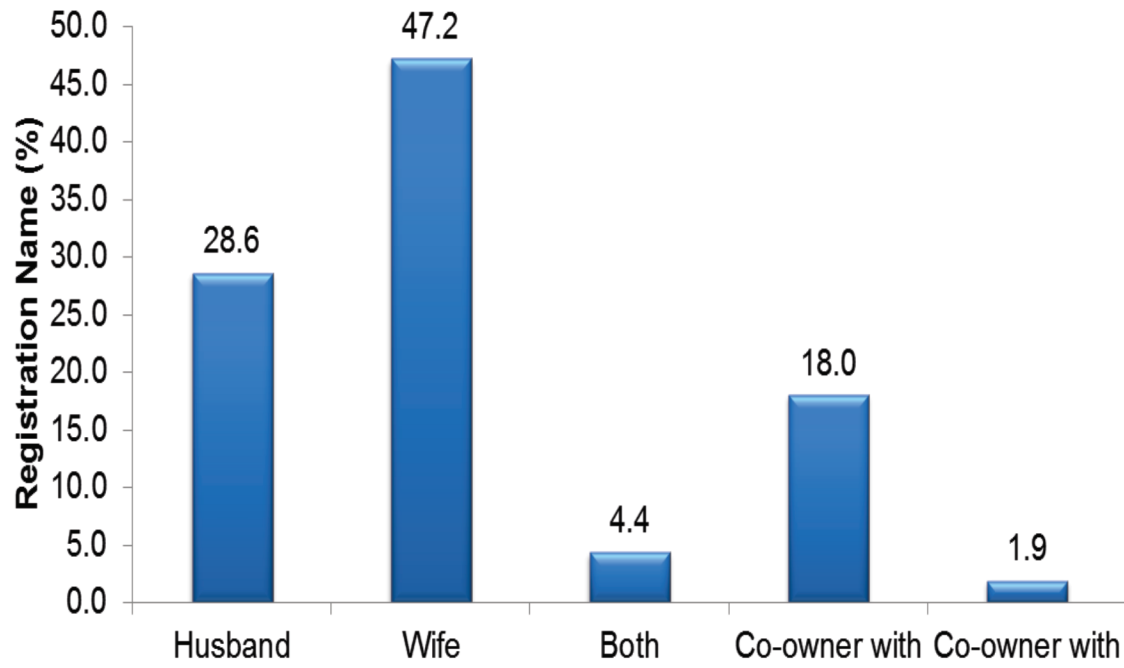


Table 2. Levels of adoption (%) of cassava improved technologies by District

Technologies	Chongone	Mandlakazi	Zavala	Inharrime	Morrumbene	Massinga	Average
Varieties	3	90	90	80	78	92	86
Spacing 1mx1m	23	97	85	80	88	85	87
Spacing 1.5x1m	5	46	68	58	53	67	58
Intercropping	10	90	80	65	85	85	81
Rotation	5	74	71	58	75	74	70
Fertilization	0	51	41	50	40	54	47
Weeding	25	79	88	93	95	92	89
Length cuttings	18	87	80	83	93	79	84
Pest and disease	13	87	90	78	78	74	81
Average	11	78	77	71	76	78	76

- Most of the farmers (81.9%) have received information and/or training related to land legislation in Mozambique (Table 1).
- The regularization of land rights contributed to the improvement of land use for 81.5% of the households included in the sample (Table 1).
- The regularization of land rights contributed to the intensification of cassava production for 85.4% of the households (Table 1).
- The majority of land certificates (DUAT's) have been issued in the name of women (47%), followed by those issued in the name of men (28.6%). The proportion of land certificates issued adopting co-titling is estimated at 18% (Figure 2).
- Most farmers reported to have acquired more physical assets such as: mobile phones (55%); field work tools - such as hoes (51%), machetes (45%) and saw blades (20%); small animals - such as poultry (30%) and pigs (27%); furthermore, many investing in the construction and/or rehabilitation of houses and tanks (17%) (Figure 3).

LITERATURE CITED CONCLUSIONS

- The regularization of land rights is contributing to the improvement of land use, intensification of cassava production and adoption of cassava improved technologies and good practices.
- The land regularization interventions have contributed to improving gender mainstreaming in the cassava value chain area ensuring that the majority of households issues land certificates in the name of women.
- However, it is important to strengthen aspects related to sensitization and dissemination of the procedures including the cost for acquiring land certificate either as individual or group.

ACIS 2009. O Quadro Legal para o Reconhecimento e a Obtenção de Direitos da Terra em Áreas Rurais em Moçambique (Vol. Edição II e III).

CIMMYT Economics Program. 1993. The adoption of agricultural technology: A guide for survey design. Mexico, D.F.: CIMMYT.

PROSUL. 2017. Avaliação de Rendimentos nos Campos de Produção de Mandioca nos Distritos de Manjacaze, Zavala, Inharrime, Jangamo e Morrumbene promovidos no Âmbito do Projecto PROSUL. MASA/FDA.

Tanner, Christopher. 2013. "Valorizar a terra em Moçambique um processo inclusivo ou decisivo?" Em Dinâmicas da Ocupação e do Uso da Terra em Moçambique, editado por Carlos Manuel Serra e João Carrilho, 129-150. Maputo: Escolar Editora.

Tey, Y.S. and Brindal, M. 2012. Factors Influencing the Adoption of Precision Agricultural Technologies: A Review for Policy Implications. Precision Agriculture, 13, 713-730. <http://dx.doi.org/10.1007/s11119-012-9273-6>.

UNHABITAT 2013. Land and Natural Resources Tenure Security. Learning Initiative for East and Southern Africa. Country Report - Mozambique.

