

ESTIMATING AGRICULTURAL DROUGHT RESILIENCE OF SMALLHOLDER LIVESTOCK FARMERS IN SOUTH AFRICA

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1. INTRODUCTION

- There are prolonged & intensified droughts in Africa (IPCC, 2014)
- The livestock industry contributes approximately 48% of South Africa's agricultural output & employs approximately 500,000 people (DAFF, 2016a)

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INTRODUCTION

- Agricultural drought causes the NCP a reduction of livestock production by more than 30% & some farmers lost their entire herds because of the worst drought (Coleman, 2017)

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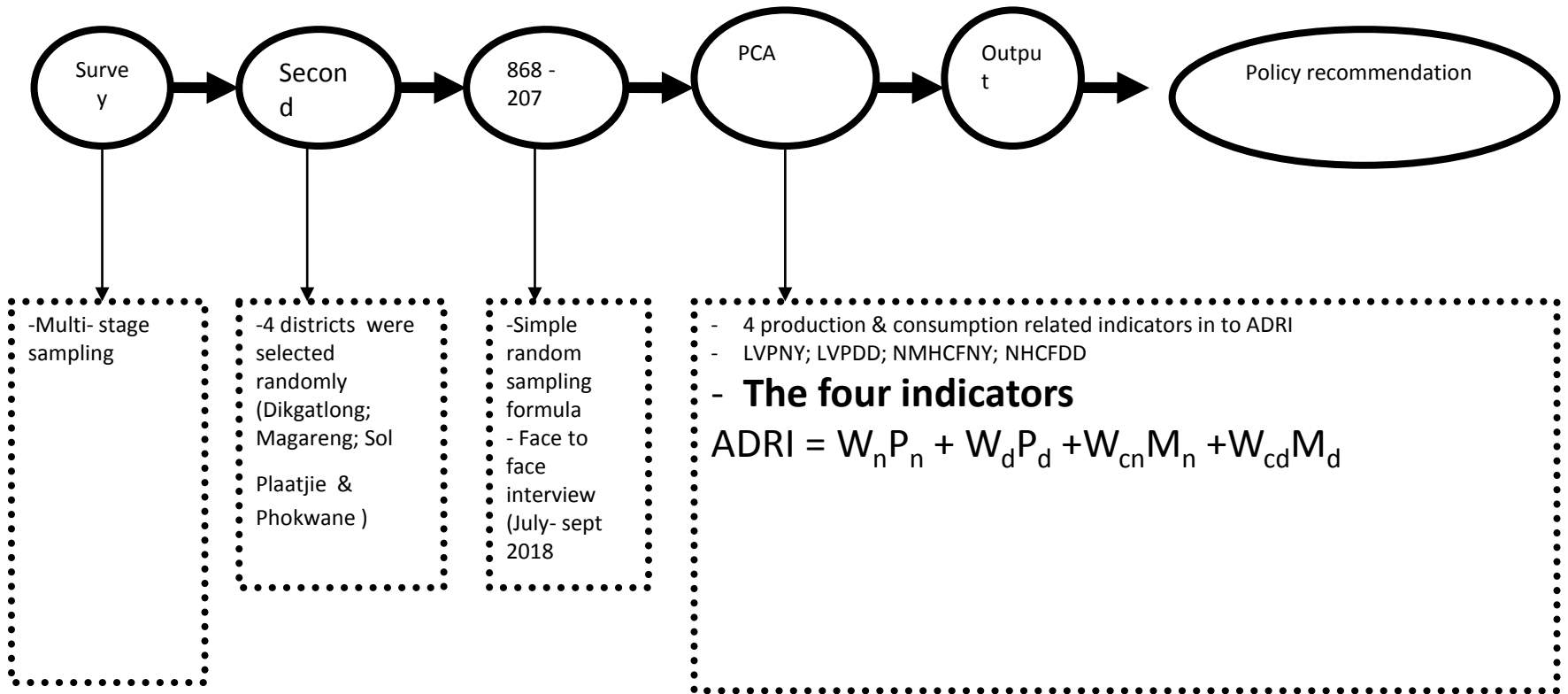
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2. OBJECTIVE

- ❑ Estimate agricultural drought resilience (ADR) of smallholder livestock farms in the Northern Cape province of South Africa

3.METHODOLOGICAL FRAME WORK



4. RESULT AND DISCUSSION

TABLE 1. CORRELATION MATRIX – VARIABLE USED TO ADRI

	PLNY	PLDY	MHCNY	MHCDY
Production of livestock in Normal year (PLNY)	1			
Production of livestock in Drought year (PLDY)	0.585	1		
Months household consume food in normal year (MHCNY)	0.067	0.126	1	
Months household consume food in drought year (MHCDY)	0.084	0.012	0.884	1

RESULT AND DISCUSSION

TABLE 2. BARTLETT'S OF SPHERCITY

Bartlett test of sphericity					
Chi-square					644.86
Degree of freedom					21
P-value					0.0000
Kaiser -Meyer-Olkin measure of sampling adequacy (Determinant of the correlation matrix)					0.549

RESULT AND DISCUSSION

TABLE 3. UN-ROTATED PCA (N207; COMPONENT 3)

Component	Eigen value	Proportion	Cumulative
1	2.304	0.329	0.269
2	1.672	0.239	0.523
3	1.433	0.205	0.667

RESULT AND DISCUSSION

TABLE 4. EIGEN VECTOR FROM PCA

	Component 1	Component 2	Component 3
Production of livestock in Normal year	0.722	0.56	0.223
Production of livestock in Drought year	0.097	-0.599	0.591
Months household consume food in normal year	0.009	-0.051	-0.691
Months household consume food in drought year	0.019	0.028	0.009

$ADRI = 0.722 * \text{Production of livestock in Normal year} + 0.097 * \text{Production of livestock in Drought year} + 0.009 * \text{Months household consume food in normal year} + 0.019 * \text{Months household consume food in drought year}$

RESULT AND DISCUSSION

TABLE 5. ADRI

	N	Mean	Stand. Dev.	Min	Max
ADRI	207	-6.31	6.90	-2.43	6.69
ADRI > 0	18	0.51	1.87	0.14	6.69
ADRI < 0	189	-7.00	6.88	-2.43	-0.008

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

- Government & key role players in the industry should target needy smallholder farmers by supplying fodder, finance and farm inputs to enhance their resilience towards agricultural drought.
- Through the farmer's organization & cooperation's farmers should learn each other's, specifically from resilience farmers how they resist agricultural drought using different strategies.

ACKNOWLEDGMENT

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Questions? Comments?

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And...then you feel as if you have
really opened up all the cogs of
your brain!



Thank You
Dankie

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