



Institute of
Natural Resources



FARMER SUPPORT GROUP
Making land work for rural people



AFRA | Association
For Rural Advancement

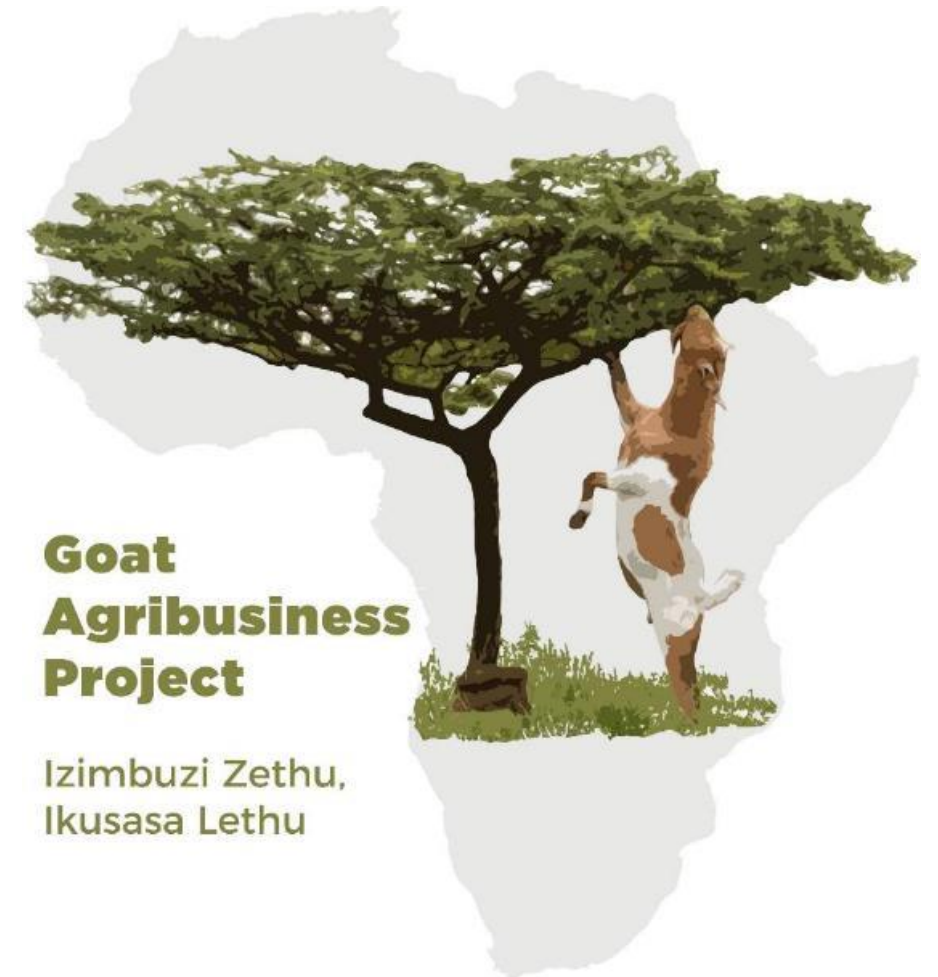
Mitigating the effects of climate change in communal livestock herds

Rauri Alcock & Marisia Geraci
17 February 2022



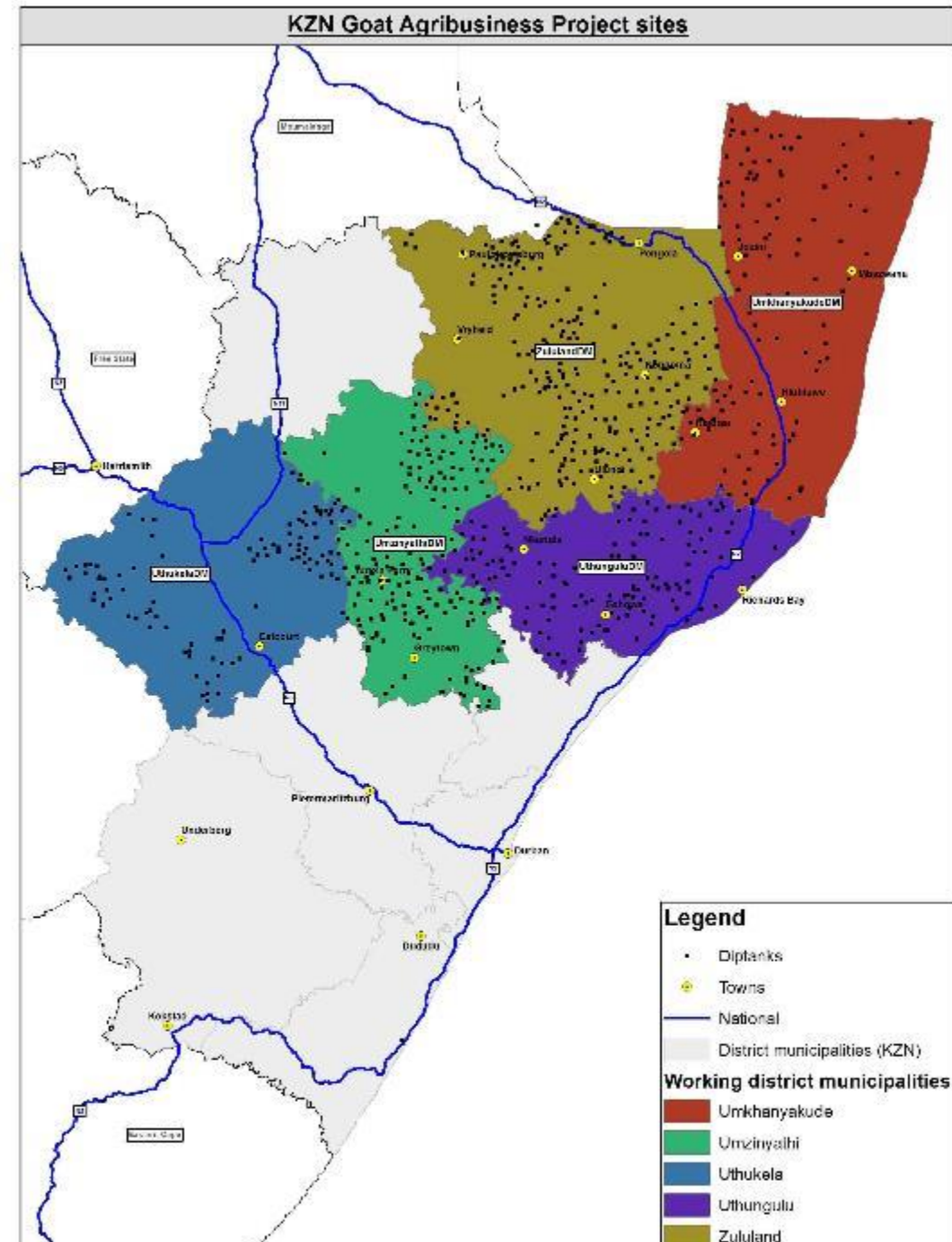
Introduction to Goat Agribusiness Program (GAP)

- Project started in 2015
- Partnership between HPSA and Mdukatshani
- Covers 5 districts in KZN
- Focuses on
 - Rural areas
 - Women farmers
 - Youth
 - Goats
 - Research



Areas and numbers

- A total of **140 community areas** supported in this project.
- **100 000** African farmers have access to the GAP trained Paravets and are secondary beneficiaries of the project
- **9 105** farmers are actively commercialising their herds
- In **5 district municipalities** of KZN



Overview of Presentation

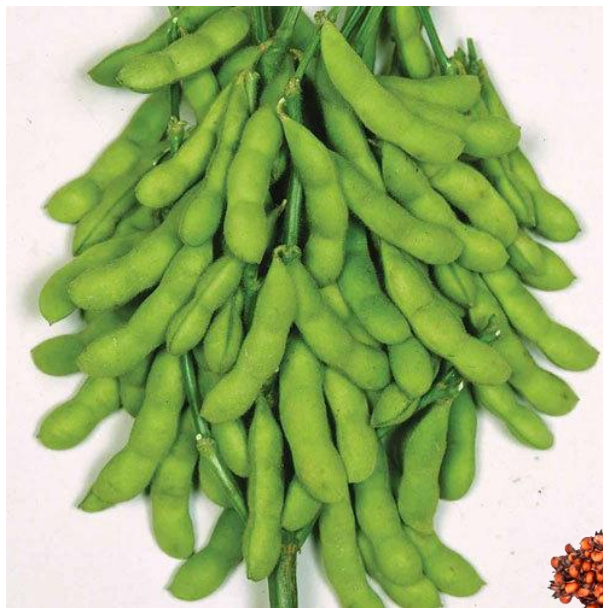
- Farming trends and climate change
- Livestock and droughts
- Who are farmers
- What land they occupy
- So how does climate change manifest
- Ideas on future farming



Climate change is about being ready for the future

- So what is this future?
- Where are we and what foods are we eating in 20 years time?
- The Bill Gates Foundation et al is we all living on plant based diets?





The farming trends –StatsSA

Table 3.2: Number of agricultural households involved in a specific activity

Province	Livestock production		Poultry production		Vegetable production		Other ²	
	2011	2016	2011	2016	2011	2016	2011	2016
Western Cape	28 334	12 373	29 176	17 120	39 337	37 417	63 045	22 669
Eastern Cape	330 354	323 763	334 665	318 621	246 412	157 732	156 880	239 564
Northern Cape	28 040	28 000	25 853	26 319	9 334	7 722	21 257	8 426
Free State	45 207	40 874	51 414	47 296	106 809	86 097	88 110	68 932
KwaZulu-Natal	268 656	256 045	356 881	310 458	340 743	188 442	182 688	210 204
North West	88 633	78 555	117 453	92 222	36 620	35 414	84 237	35 952
Gauteng	62 047	23 277	82 403	48 979	147 870	159 326	218 664	78 340
Mpumalanga	72 896	76 307	127 759	104 713	91 214	97 330	91 919	112 225
Limpopo	172 683	151 018	173 681	154 503	105 181	103 874	206 950	253 397
South Africa¹	1 096 854	990 210	1 299 288	1 120 233	1 123 524	873 355	1 113 759	1 029 708

¹ An agricultural household may engage in more than one agricultural activity.

² 'Other' refers to any other agricultural activity not mentioned, e.g. fruit production, beekeeping.

What African farmers currently control

	Commodity	Hectares - (2010/11)	Hectares (2018/19)	Expansion 2012-2019	NDP 2030 growth target	Commercial Employment	Black farmer share
8	Maize	2,373,000	2,300,000	-73,000	356,980	30,809	3.1%
9	Soybeans	418,000	730,000	312,000	376,200	9,131	2.4%
10	Cotton	7,000	42,566	35,566	25,000	2,625	4.4%



Sweet spots where they contribute-Agriculture and Agroprocessing Master Plan (AAMP)

		Tons - (2010/11)	Tons - (2018/19)	Expansion 2012-2019	NDP 2030 growth target	Commercial Employment	Black farmer share current (%)*
11	Poultry	1,422,286	1,693,000	270,714	663,500	37,246	4.2% (9%)
12	Beef	628,000	763,000	135,000	282,600	18,541	34.0%
13	Wool	45,500	51,600	6,100	20,475	35,000	11.0%
14	Mohair	2,230	2,080	-150	N.A	6,054	12.8%
15	Goats		43,562		N.A		82.0%
16	Dairy	2,685,302	3,341,000	655,698	522,735	33,410	7.0%
17	Pork	186,763	240,510	53,747	25,715	5,291	4.4% (10%)

Source: BFAP modelling platform

What they farm-trends of last 5 years

- Crop farming is the biggest drop countrywide, 20 percent compared to 10 percent for livestock
- They produce 3 percent of the countries grain
- They own 10 percent of the countries chickens
- 12 percent of South Africa's sheep
- 31 percent of South Africa's cattle
- Over 84 percent of South Africa's goats

**So the future is leaning to livestock
.....not so fast!**

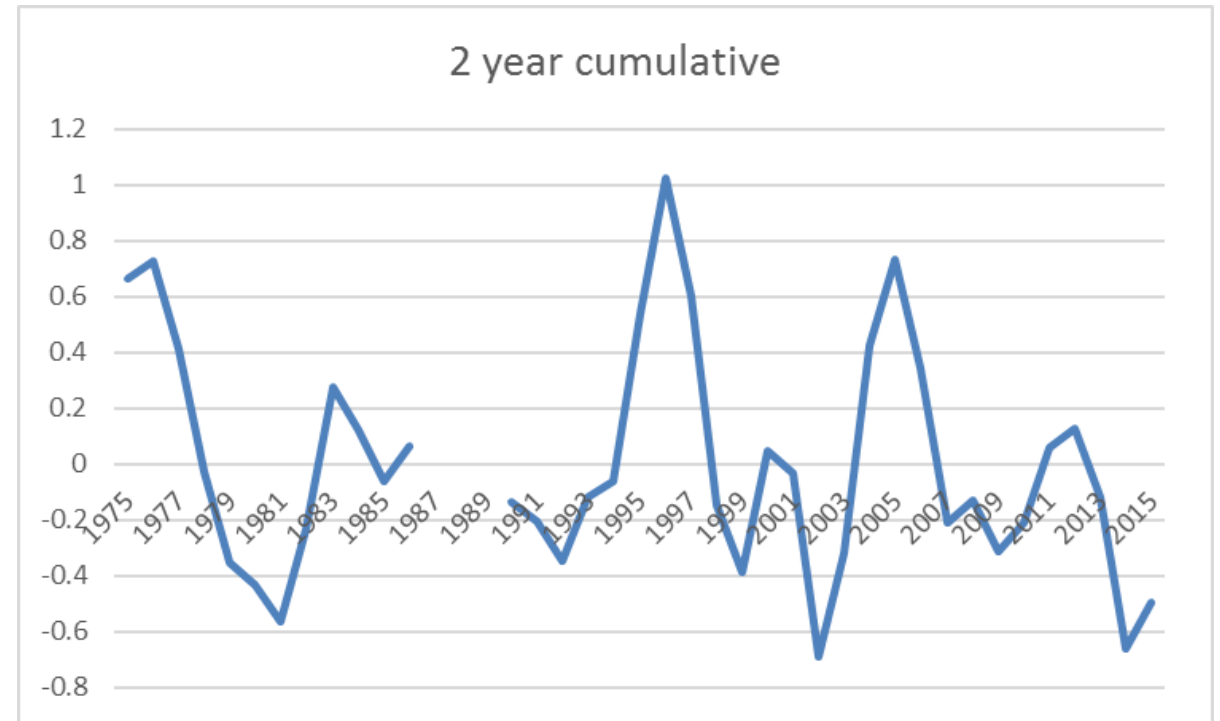
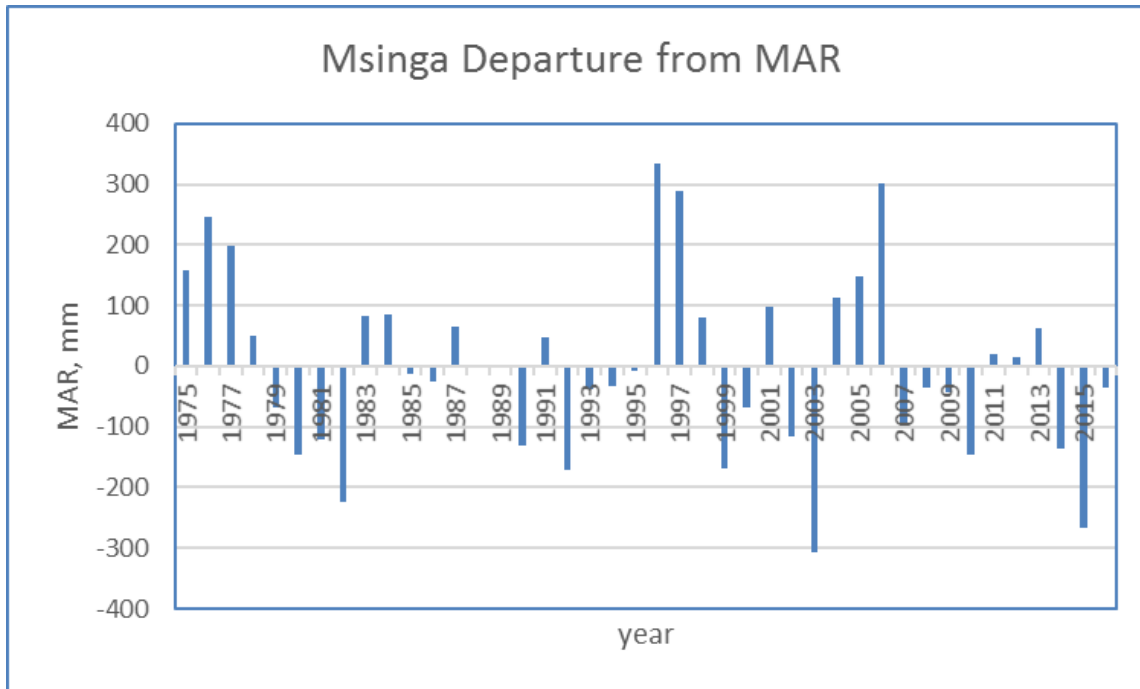




**Is livestock safe from climate change
a case study**

Rainfall figures past and present

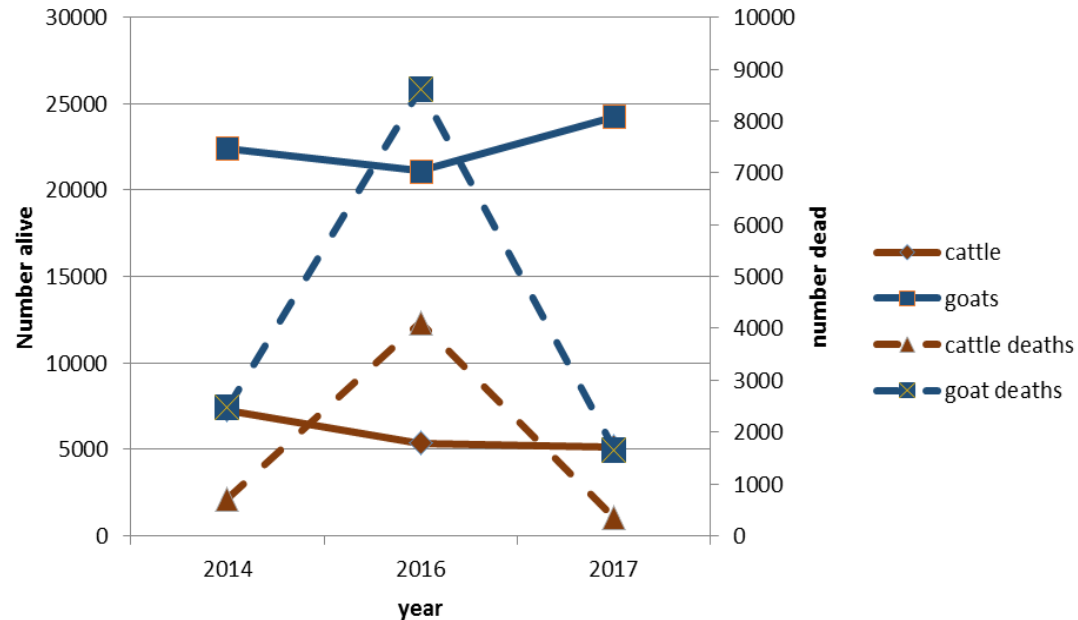
Rainfall data for these areas show the worst drought years were 1979-1982, 2002-2003 and 2014-2016.



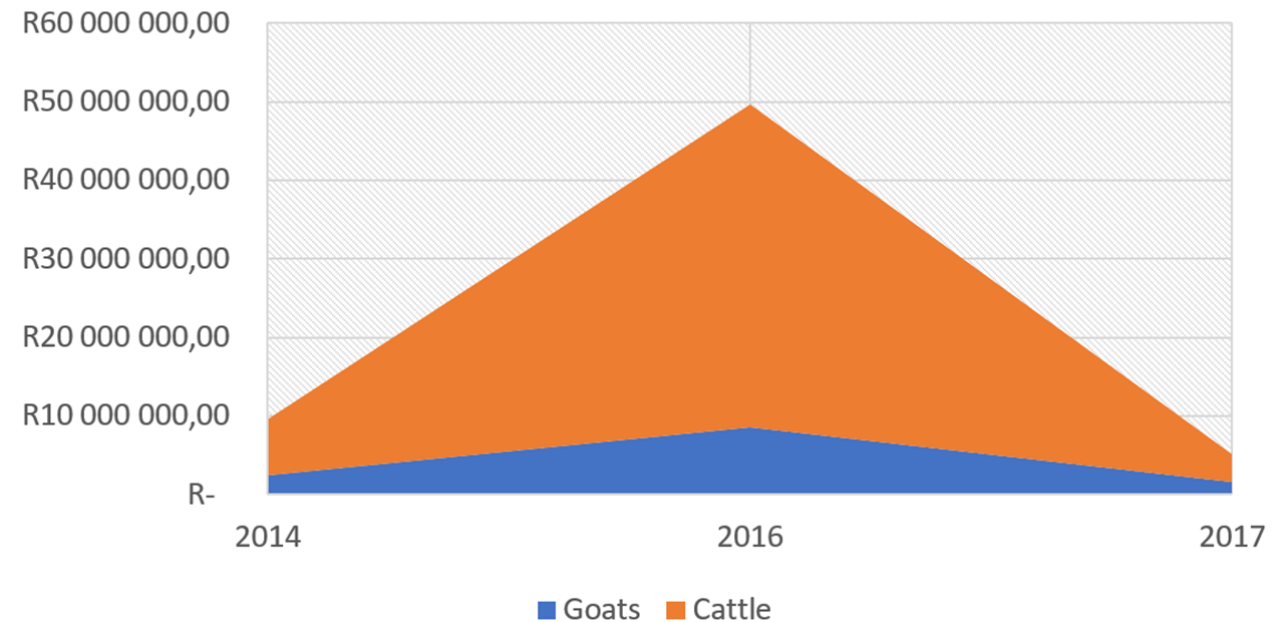
William and Creina Bond

The losses of cattle and goats 2014 to 2016

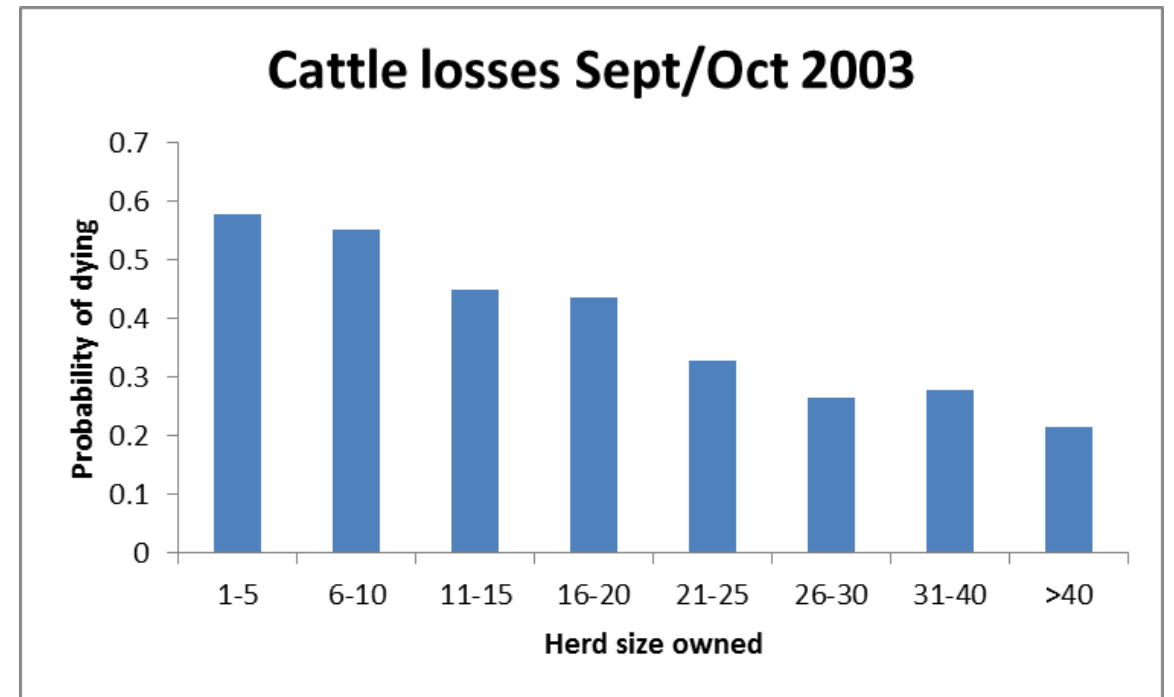
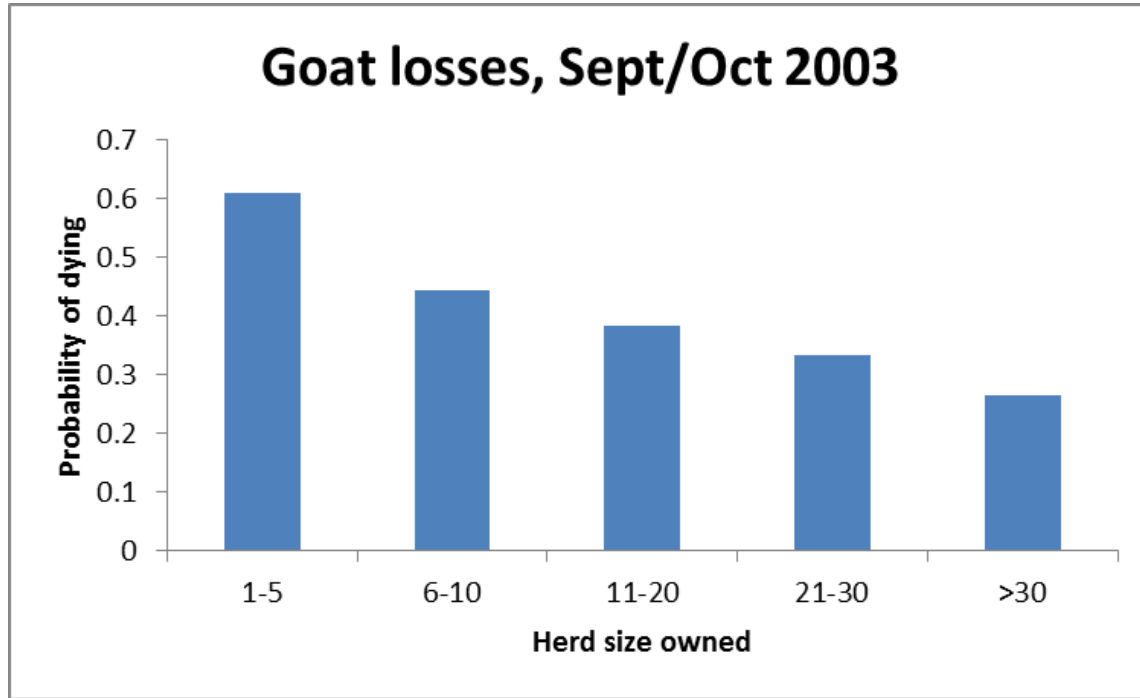
Msinga livestock numbers



Value of Losses Caused by 3 year drought



Livestock losses by ownership size



Peak livestock losses in Msinga and KZN

Estimated totals for the province						
Year	Cattle deaths	Goat deaths	Chicken deaths	Cattle values lost	Goat values lost	Chicken values lost
2014	144 000	492 800	1 646 400	R 1 500 million	R 740 million	R 246 million
2015	800 000	1,8 million	3 million	R 8 000 million	R 2 500 million	R 500 million
2016	68 800	331 200	428 800	R 5 500 million	R 497 million	R 64 million



Conclusions

- Livestock die off in very high numbers in a short time span not spread across a drought event
- Cattle farmers have come off worse losing 42% of the herd compared to 28% for goats with a monetary loss 10 times the value of losses to goat farmers and this is a pattern that is true of the last two droughts
- Small stock herds recover more quickly



So what does it mean for future farmers



Who are farmers



Can we accept this as the future farmer...

- Female
- Unmarried?
- Head of household
- Small stock owner
- Uses farming to supplement grant income
- But also using grant funding to invest in farming
- Plants a home garden
- Has access to dryland fields to grow crops to supplement livestock



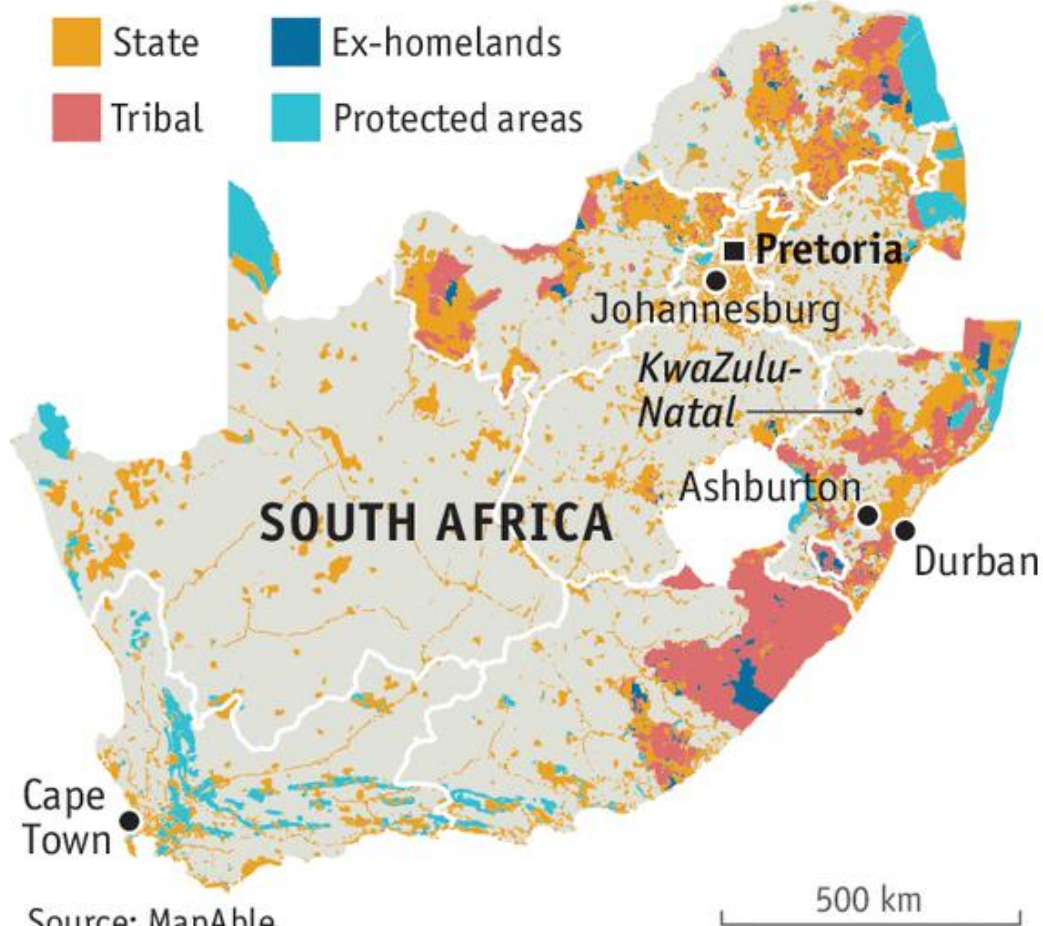
- 3 million agricultural livestock households in SA (StatsSA)
- Commercial farmers 30 000 according to SARS
- 40 percent are women headed homesteads



Land reform and poverty

South Africa, land not in private ownership

- State
- Ex-homelands
- Tribal
- Protected areas



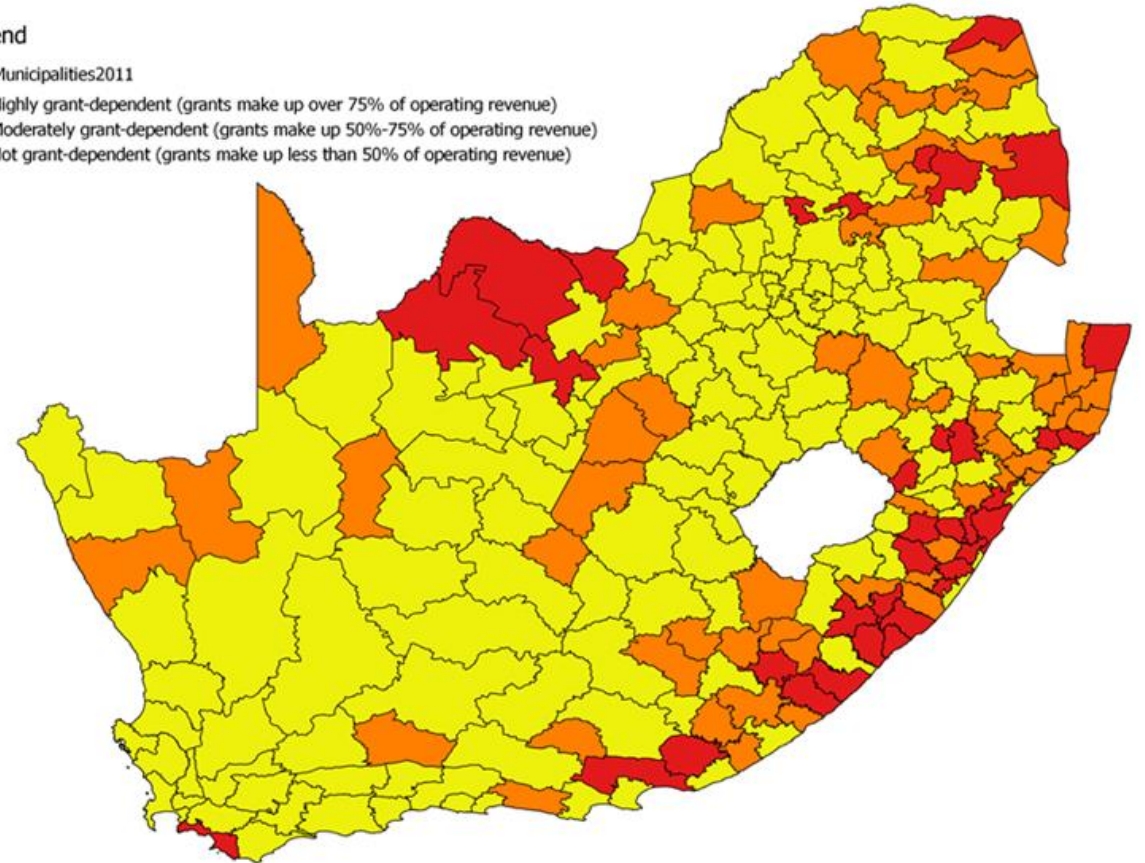
Source: MapAble

The Economist

Legend

Local Municipalities 2011

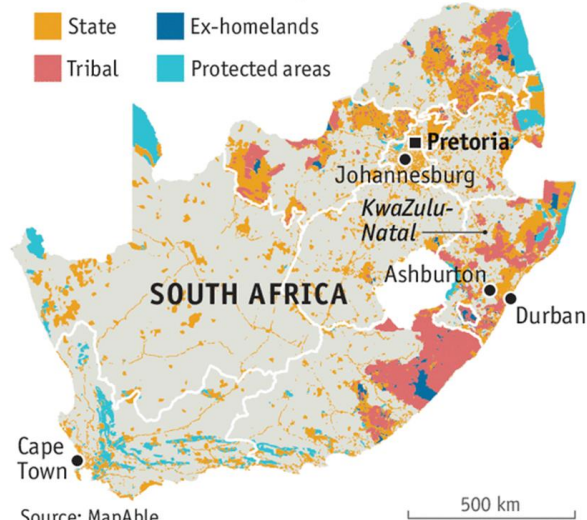
- Highly grant-dependent (grants make up over 75% of operating revenue)
- Moderately grant-dependent (grants make up 50%-75% of operating revenue)
- Not grant-dependent (grants make up less than 50% of operating revenue)



And then overlay livestock

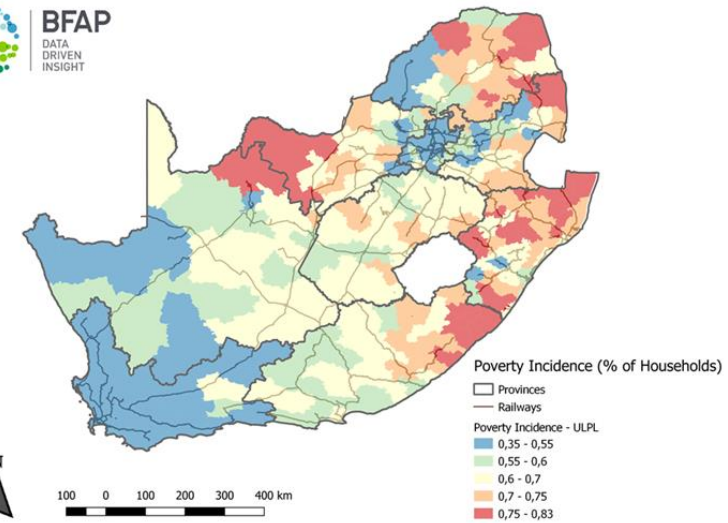
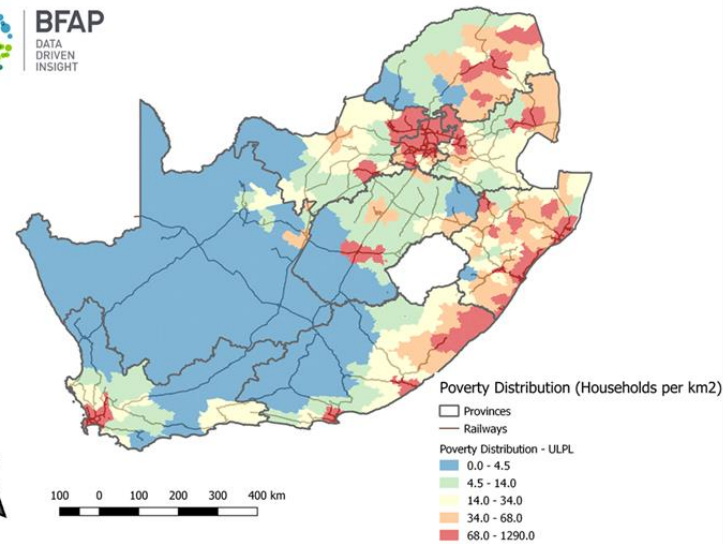
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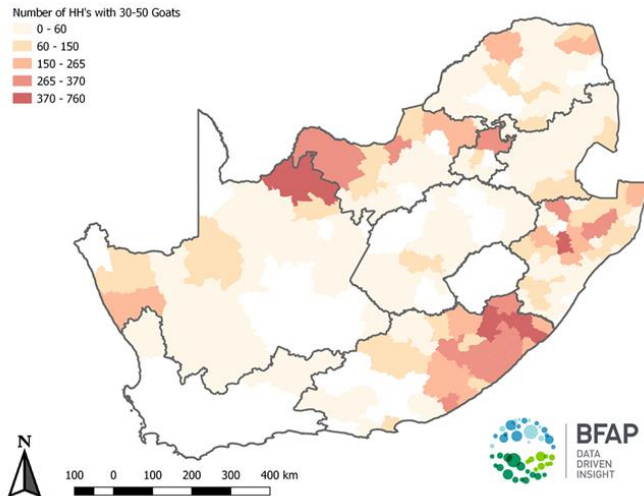


Source: MapAble

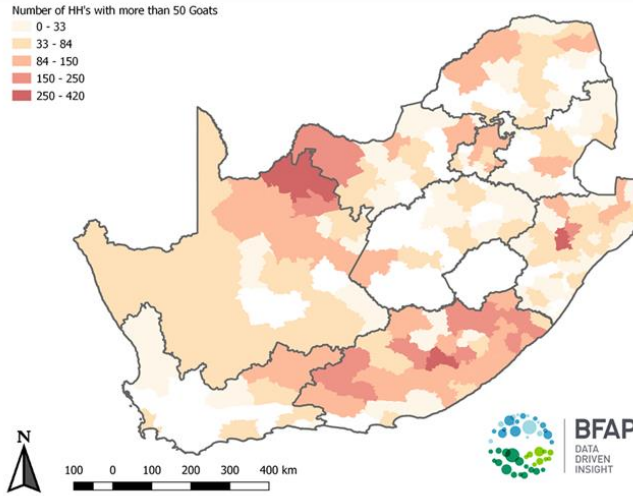
The Economist



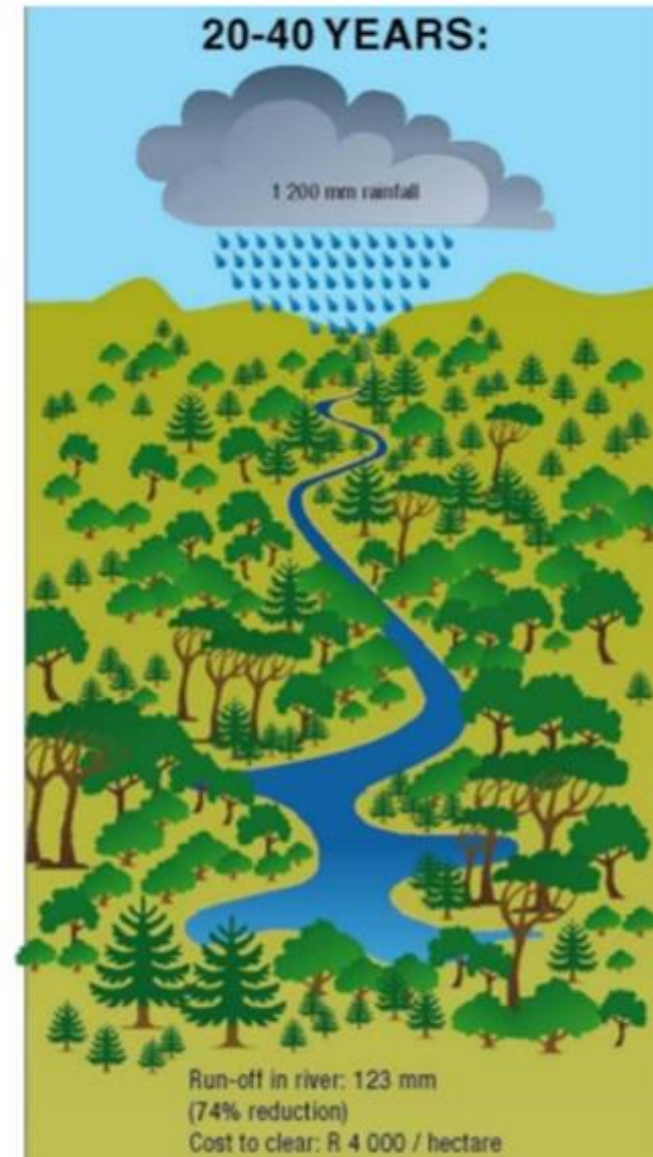
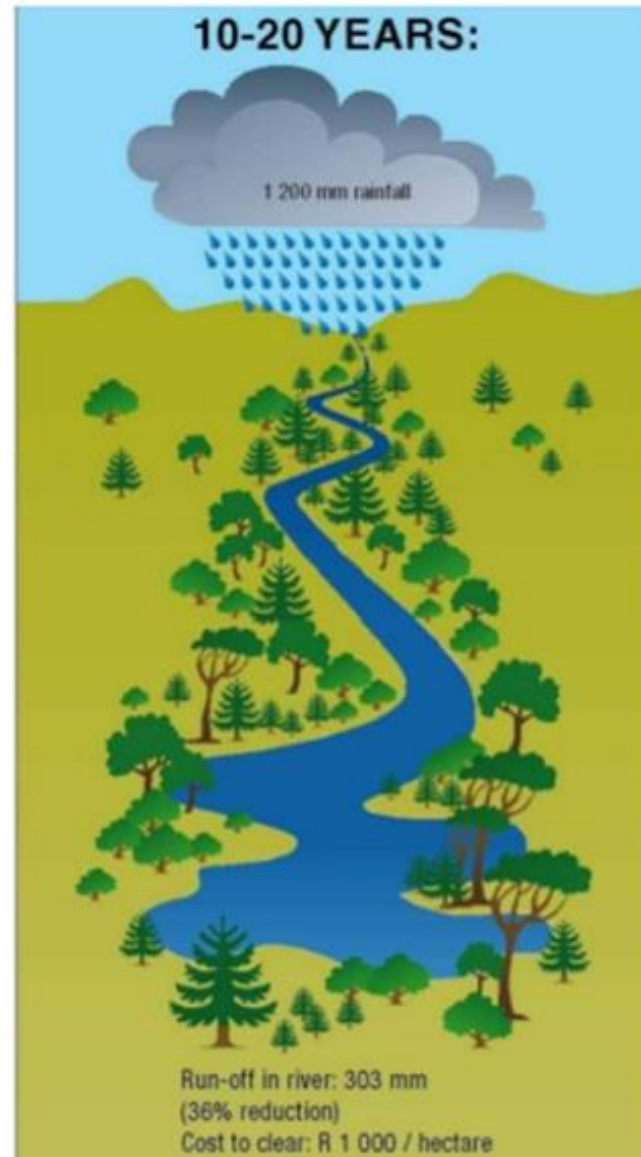
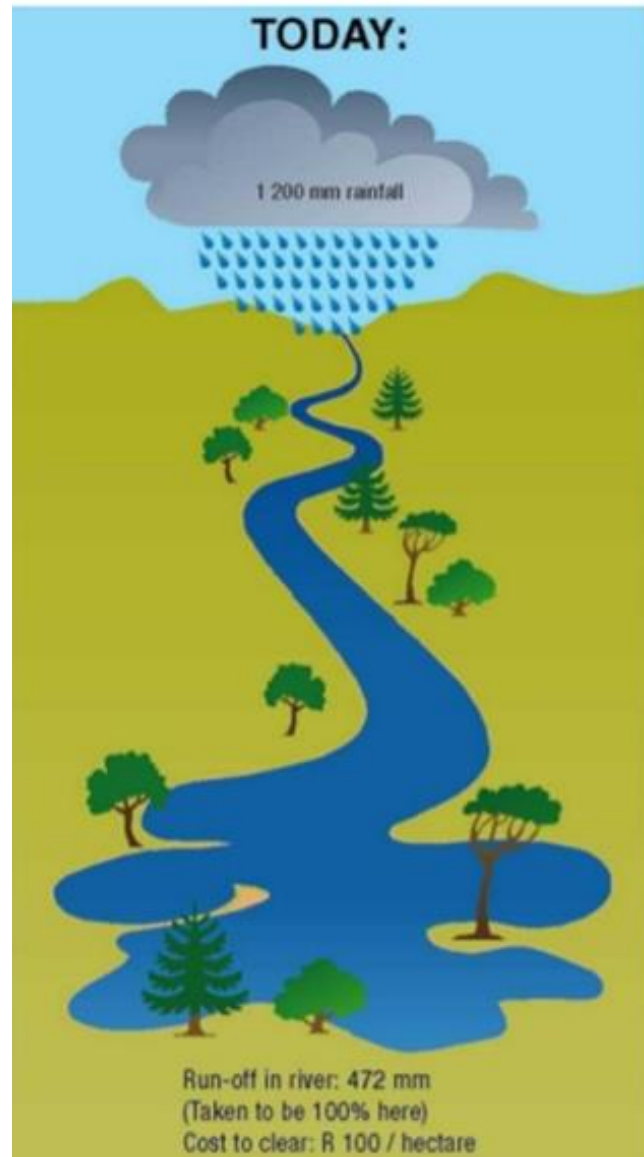
- Number of HH's with 30-50 Goats
- 0 - 60
 - 60 - 150
 - 150 - 265
 - 265 - 370
 - 370 - 760



- Number of HH's with more than 50 Goats
- 0 - 33
 - 33 - 84
 - 84 - 150
 - 150 - 250
 - 250 - 420



Bush encroachment



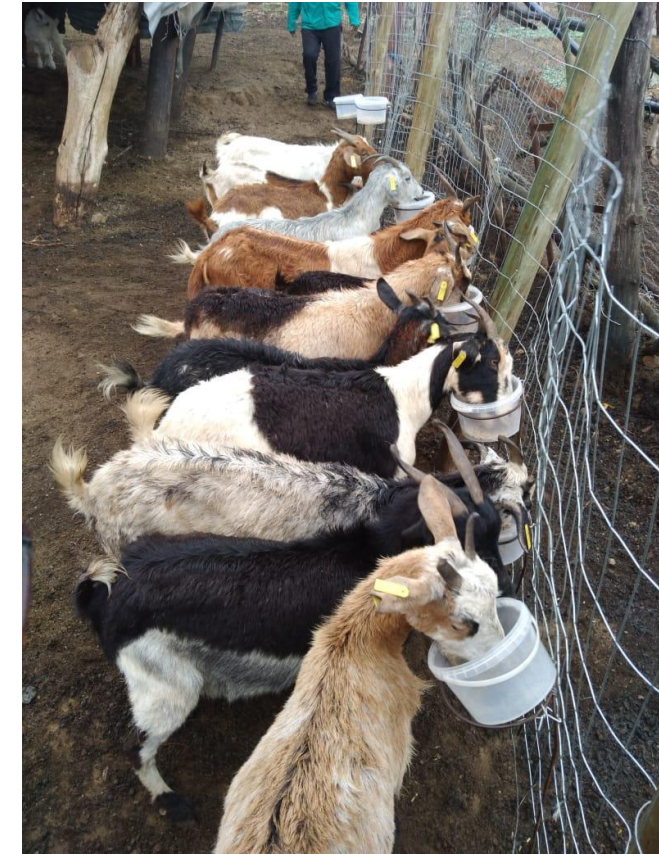
Food from thorns

Dichrostachys cinerea ...used as a surrogate representation of climate change in Namibia as invaded at least **75 million hectares** of commercial land and close to **15 million hectares** of communal land. For comparison South Africa has a total surface area of **122 million hectares**.

Clearing can be done by machines or chemicals. The only other method proven to work is fire and goats.



Dichrostachys cinerea seed pods are reaped in summer, processed added to low quality field residue and fed to goats in winter. This increases survival of mother and kids through winter.



If you want cattle keep goats

- Global warming also creates more regular drought events, making goat farming a successful alternative to cattle which are less tolerant of drought.
- The state must demand huge increases in goat numbers on every farm in the country to save the commercial beef and dairy industry which is collapsing without grasslands due to bush encroachment
- These increased goats will 'recreate grasslands' while feeding the growing population



The new normal enviroment

- Disease moving with climate –rift valley
- Locust outbreaks
- Invasive species
- Changes in timing of ‘summer’ and ‘winter’
- Dry mid summers



The new normal continued...

- Shorter more intense weather events
- Shortened growing seasons
- Transhumance following the rains
- Droughts go from 7 wet 2 dry years to 3 wet 2 dry years



And the rural youth in agriculture?

- About 70.7% of youth indicated that they have access to agricultural land
- 64% of youth are unemployed
- At least 48% of the youth say that agriculture is laborious
- Most of the rural unemployed youth (61%) are female
- And what does this mean to the future of agriculture in terms of education, training and investment?
- These youth are the focus of this project

South African Journal of Economic and Management Sciences and StatsSa



Discussion

- How we support future farmers?
- How do we get a million jobs out of agriculture?
- How we get youth employed?
- How do we slow urbanisation?
- Can we change fast enough?





MDUKATSHANI
RURAL DEVELOPMENT PROJECT

