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# Exploring the role of provisioning services in households' response to vulnerability in the dry woodlands of Venda, South Africa

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# Introduction:

- ▶ Rural HH in South Africa described as inherently vulnerable - exposed to a wide range of stressors
- ▶ Increasing recognition of how climate change may exacerbate existing vulnerabilities
- ▶ At the same time, many HH are considered adept managers of vulnerability, coping and adapting to shifts in their vulnerability context
- ▶ Most rural HH derive some benefits from their surrounding ecosystems
- ▶ The Millennium Ecosystem Assessment grouped ecosystem services into 4 broad categories:
  - ▶ Supporting (e.g. crop pollination)
  - ▶ Regulating (e.g. carbon sequestration)
  - ▶ Cultural (e.g. spiritual benefits)
  - ▶ **Provisioning (e.g. food, water, energy, raw materials, medicinal resources, genetic resources & ornamental resources)**
- ▶ *This research explores the role of these provisioning services in the livelihood, coping and adaptation strategies of HH in Venda?*

Vulnerable  
ecosystems  
(to land-use  
change,  
degradation,  
CC, etc.)

*Degraded services*

Vulnerable  
society  
(to CC and other  
exposure)

*Unsustainable management*

Sustainable  
and resilient  
ecosystems

*Ensured provision of  
ecosystem services*

Resilient  
society  
(to CC and other  
exposure)

*Sustainable & Adaptive  
management*



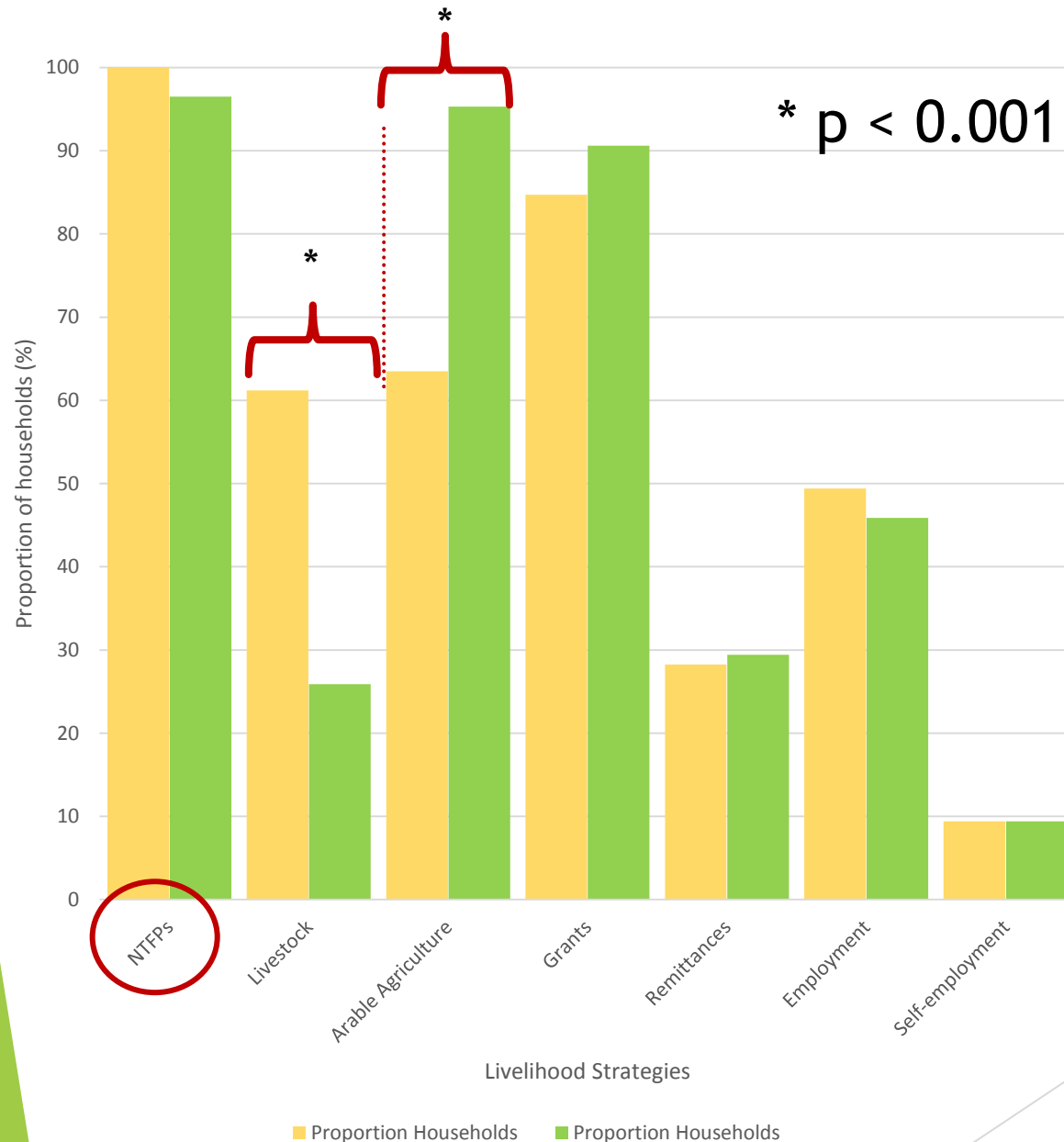








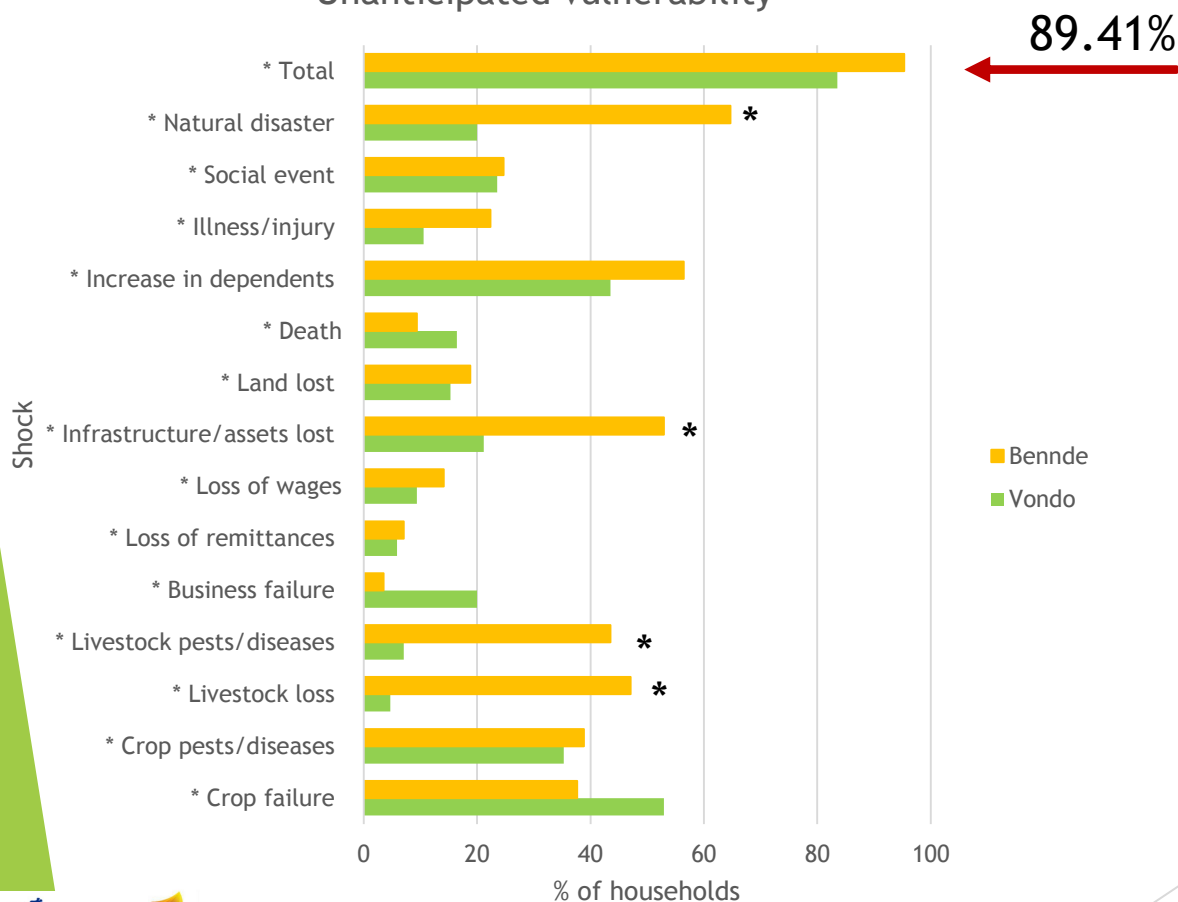
# Local livelihoods - past adaptation?



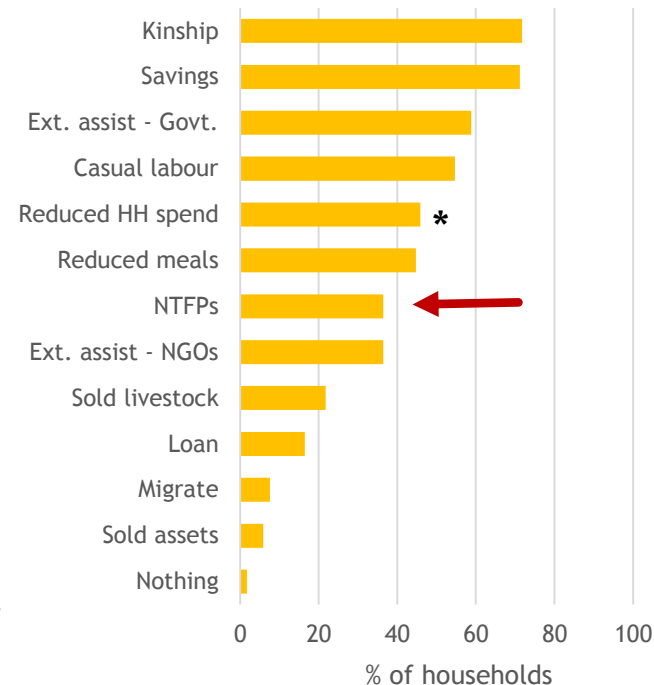
# Vulnerability & coping - an example

- ▶ Various aspects of household & community vulnerability were explored
- ▶ Coping strategies were explored

## Unanticipated vulnerability



## Coping strategies



# Example



E.g. shortage of drinking water → **internal intervention** → people dig wells (TEK) OR hire water tankers

**What role for provisioning services:** Medicinal plants, wild foods, fuelwood & fodder

1. NTFP availability affected esp. medicine, fruit, reeds
2. Grass dies (fodder & roofing material), exacerbated by overgrazing & increased wild fires  
→ risk to KNP
3. Collecting wild foods difficult - energy expenditure



# Possible solutions to drought & flood impacts

Hazard	Impact	Adaptation	External	Internal
Drought	Crop failure	Install shade nets	Y	N
	Crop failure	Improved seed storage	N	Y
	Crop failure	Dry & store crops & <u>NTFPs</u>	N	Y
	Crop failure	Irrigate, mulch, etc.	N	Y
	Livestock death	<u>Collect &amp; store fodder</u>	N	Y
	Livestock disease	<u>Use medicinal plants</u>	N	Y
	No drinking water	Install/dig boreholes (TEK)	Y	Y
	No drinking water	<u>Maintain trees near water sources</u>	N	Y
Flood	Roads & bridges washed away	Govt. needs to improve construction - ask community on flood levels	Y	Y
	Houses collapse	Improved building construction & materials	Y	Y
	Malaria	Improved run-off (puddles)	N	Y
	Soil erosion & landslides	<u>Maintain trees</u> & control burns	<sup>9</sup> N	Y

# Some preliminary take home messages:

- ▶ Provisioning ecosystem services, including NTFPs, contribute to rural livelihoods: day-to-day & during periods of increased vulnerability (incl. droughts & floods)
- ▶ There are constraints to the contribution of provisioning ecosystem services - e.g. over-harvesting, land conversion & expropriation, loss of TEK, seasonal availability, illegality, lack of markets, etc.
- ▶ Provisioning services are not sufficient in isolation but rather as a suite of responses
- ▶ Provisioning services & their contribution to vulnerability reduction, need to be kept in mind when planning for adaptation - **adaptation for ecosystems and ecosystems for adaptation**
- ▶ People have experience & knowledge that needs to be used → past adaptation, existing strategies, future options
- ▶ Internal (household & community) adaptation needs to be recognised & supported by external inputs
- ▶ Ongoing, incremental adaptation may be a short-term solution to a long-term problem...



DO NOT DEFOREST  
VHA SONGO REWA MIRI

Care for the environment  
Kha vha tsireledze mupo

Approved by:  
Zwo tenelwa nga:  
Traditional Leaders

## Acknowledgements

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LLDF



CT-B

