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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*

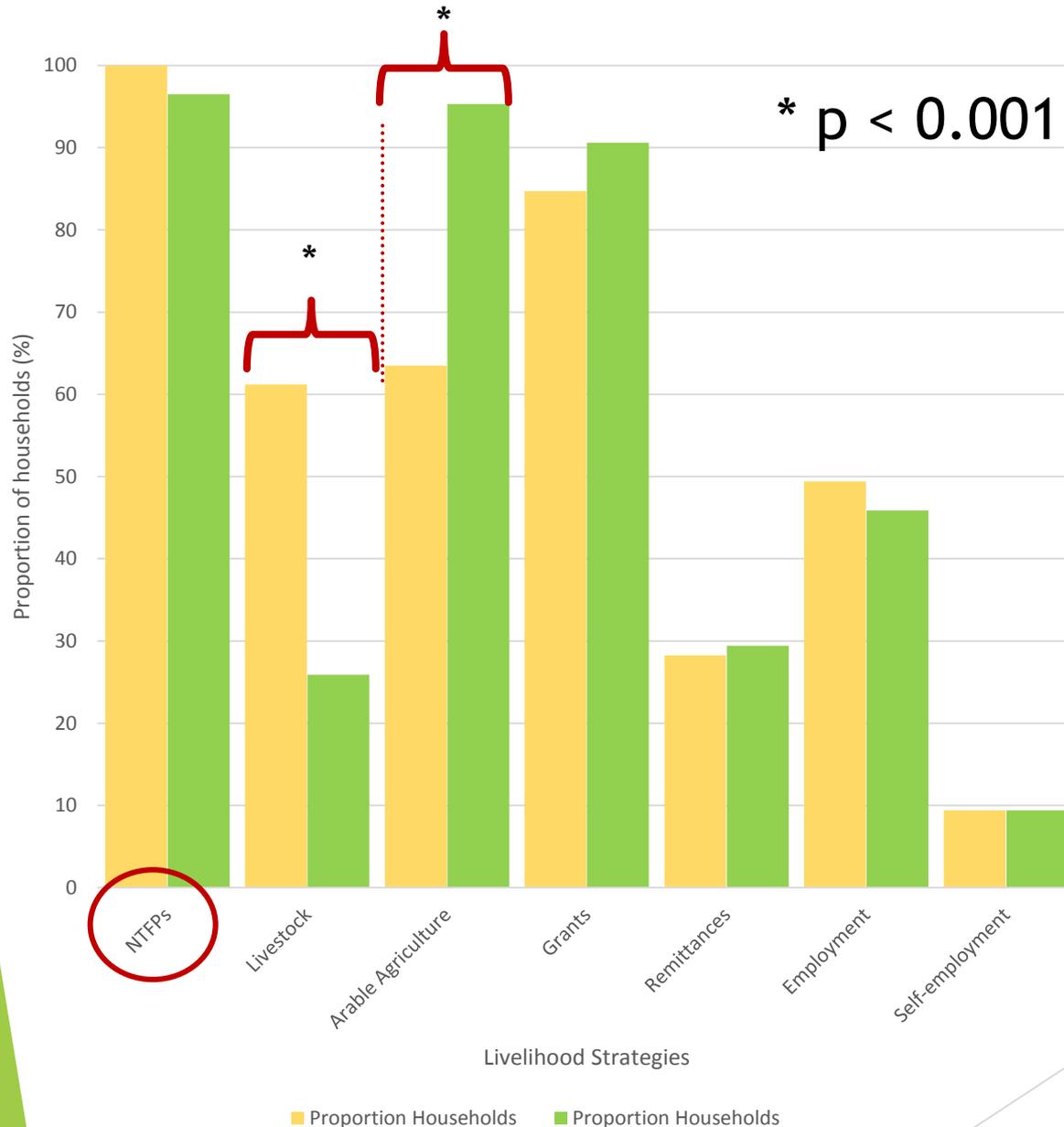
Resilient society
(to CC and other
exposure)

*Sustainable & Adaptive
management*





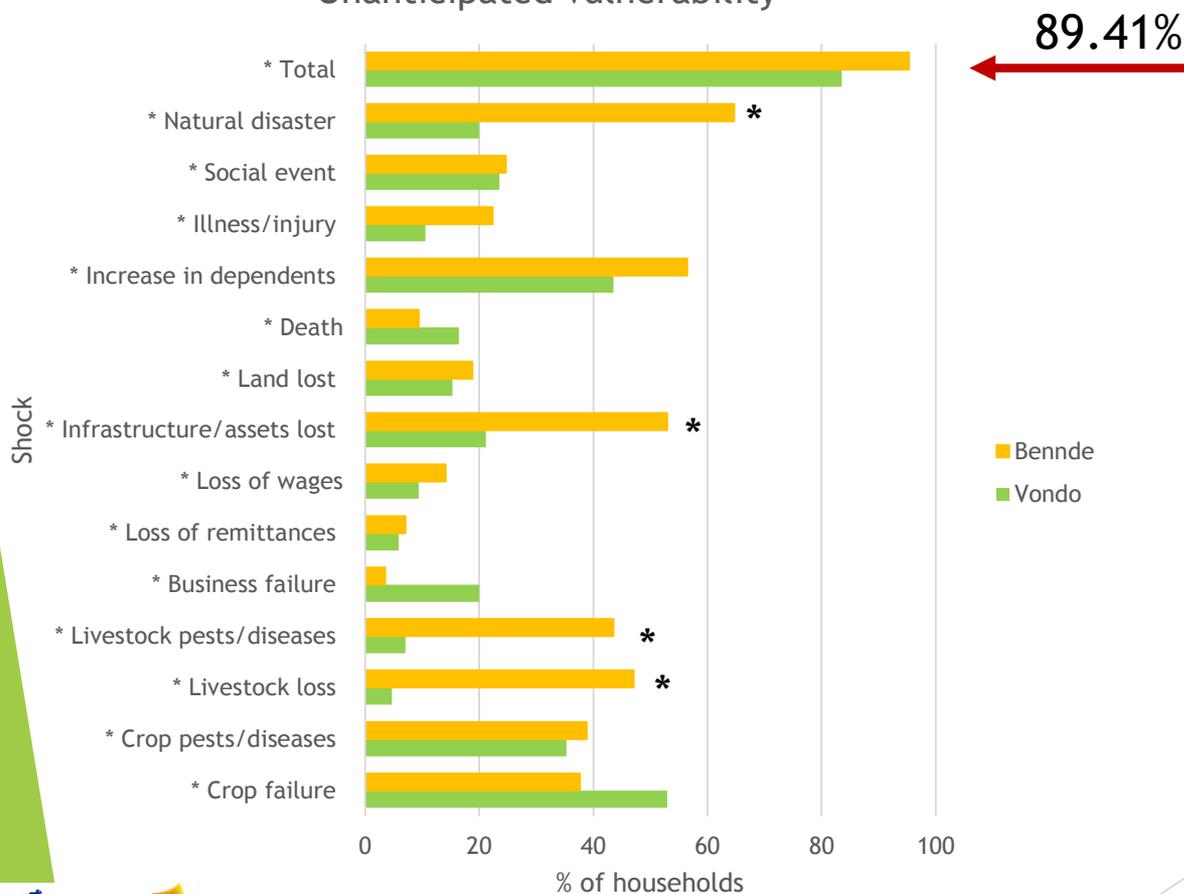
Local livelihoods - past adaptation?



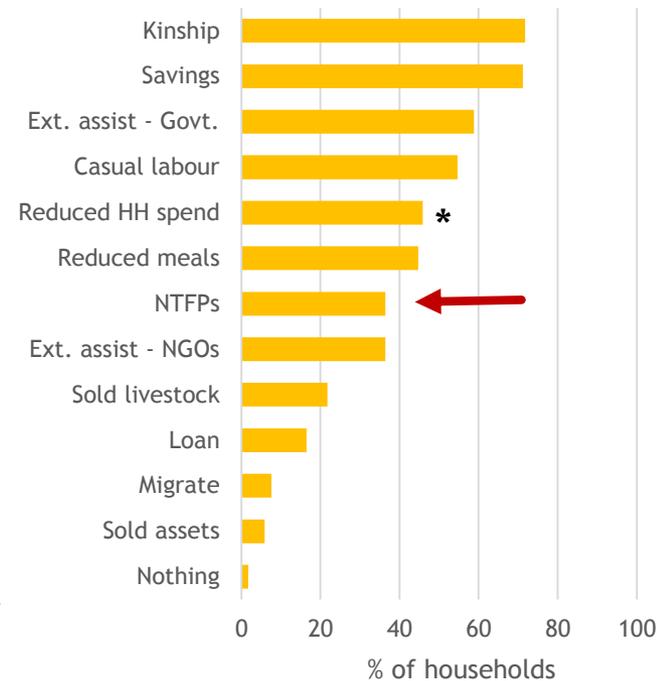
Vulnerability & coping - an example

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

Unanticipated vulnerability



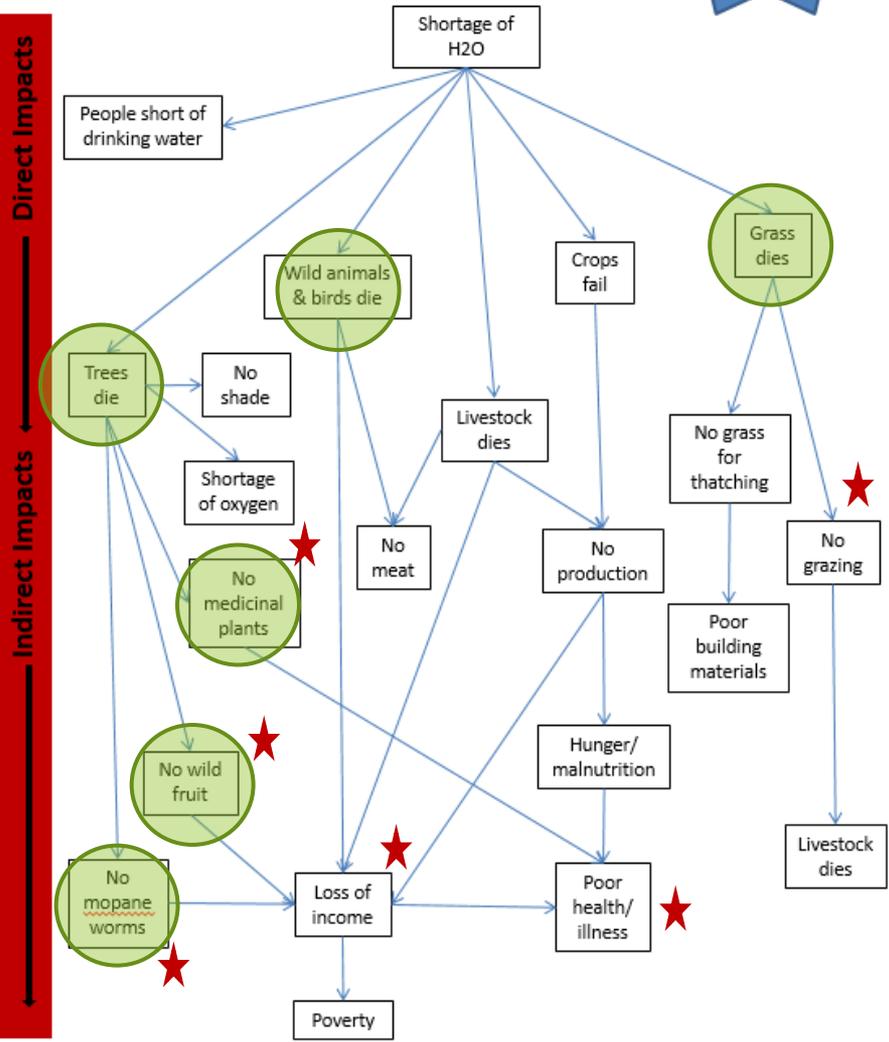
Coping strategies



Vulnerability & coping - an example

IMPACT CHAIN BENNDE - DROUGHTS

Drought years:
* 1982-1984
* 1992-1993



Impact chain exercise conducted together with problem & solution tree exercises. Allows for identification of the impact, it's causes & possible solutions.

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

E.g. shortage of grazing → *internal intervention* → cut fences for Madimbo & KNP OR *external intervention* → apply for govt. fodder (insufficient)

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

Challenges:

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 & 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	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 MURI

Care for the environment
Kha vha tsireledze mupo

Approved by:
Zwo tenelwa nga:
Traditional Leaders

Acknowledgements

SANCO
LLDF

