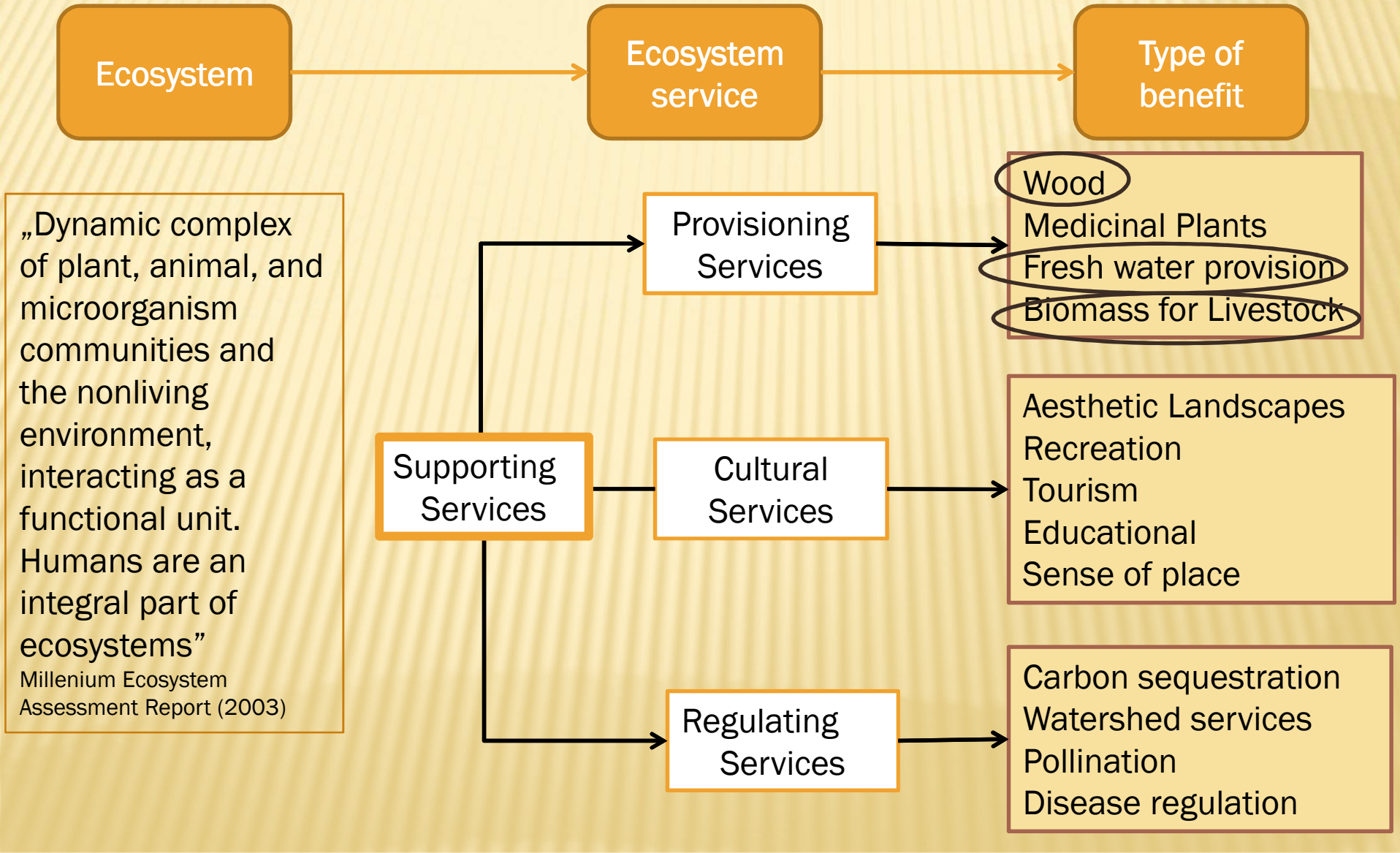
RESTORING NAMIBIA'S BUSH ENCORACHED SAVANNA

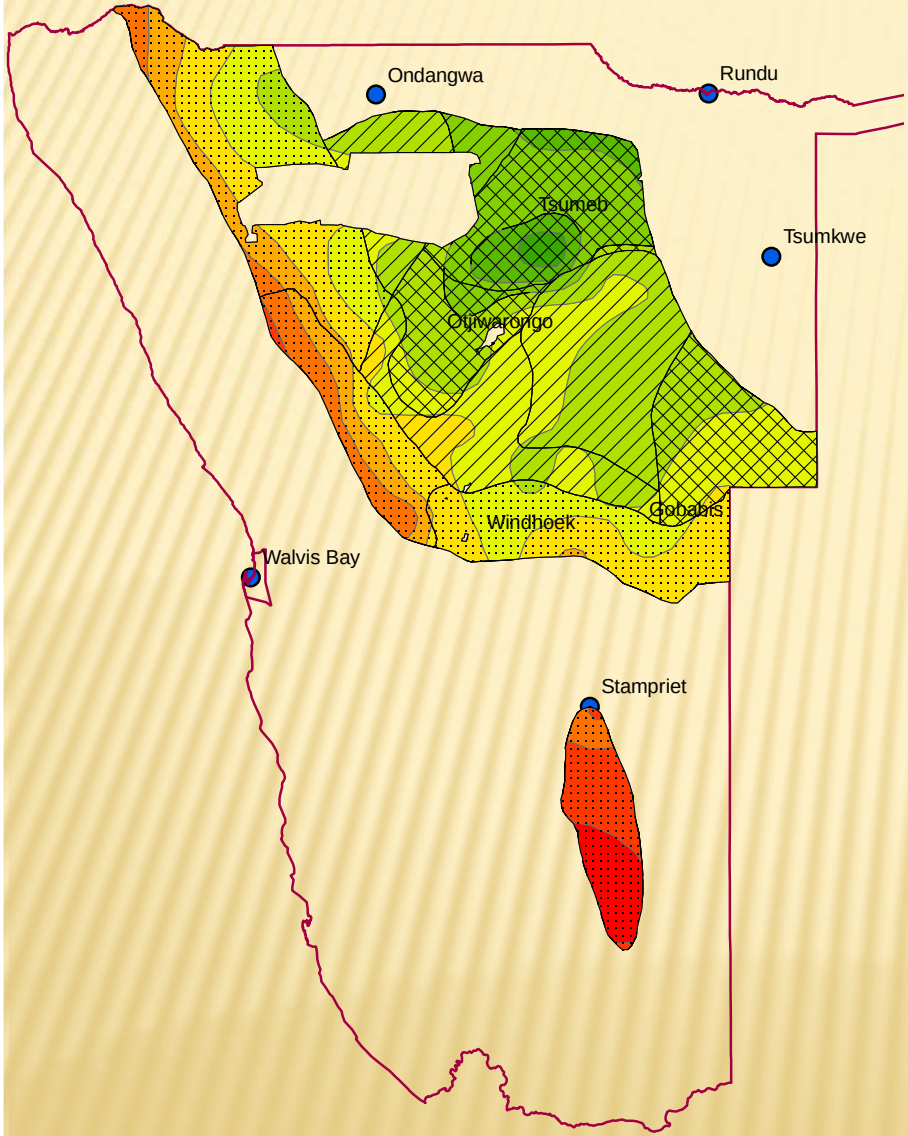
An economic showcase for ecosystem service rehabilitation

Hannes Etter,
The Economics of Land Degradation (ELD) Initiative /
GIZ Sectoral Project to combat desertification (CCD)

ECOSYSTEM SERVICES OF SAVANNAS



ECONOMIC BENEFITS: LIVESTOCK PRODUCTION



Tripling of carrying capacity

(under 450mm rainfall
uncleared: 3,9 kg meat/ha
→ 440.000 N$/a

cleared: 10,2 kg meat/ha
→1.382.000 N$/a)

Benefits vary with rainfall distribution

Spatially diverse benefits from restoration

Legend

Bush encroachment

DENS_HA

- 0
- 2000
- 3000
- 4000
- 5000
- 8000
- 12000

Lifestock benefits

Add. Annual tax income

- 7
- 10
- 12
- 16
- 18
- 22
- 24
- 28
- 31
- 35

Uncleared: 5,13 kg/mm/ha
Cleared: 9,10 kg/mm/ha

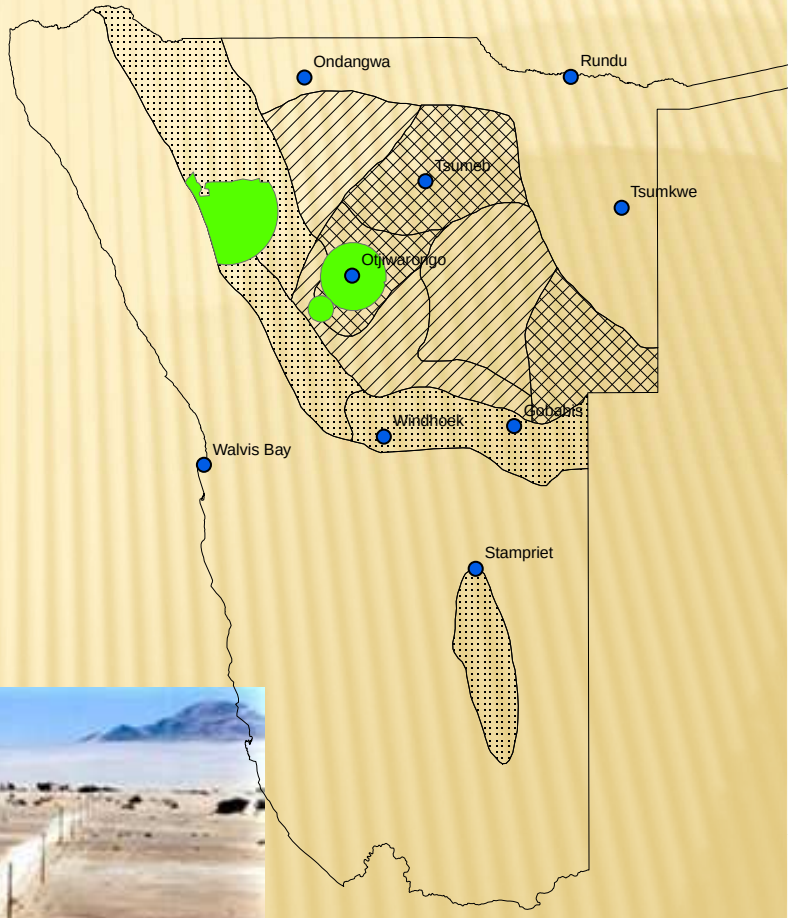
ECONOMIC BENEFITS: WATER PROVISIONING

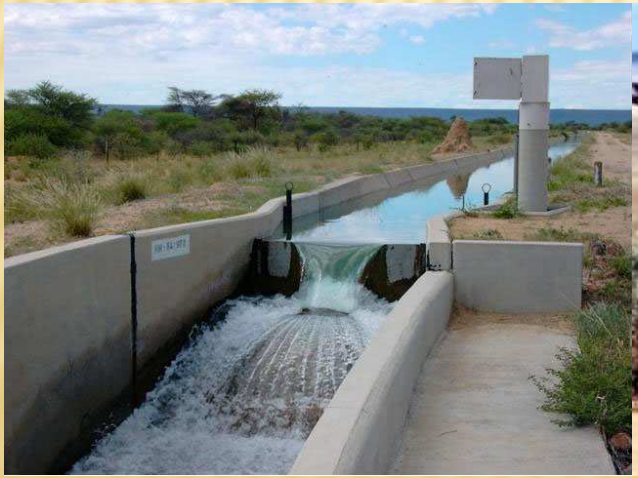
giz

THE ECONOMICS OF LAND DEGRADATION
A Global Initiative for Sustainable Land Management

Rehabilitation & water provision:

- Geographically fixed abstraction points
- Enhanced recharge & reduced plant evapotranspiration increase groundwater availability
- Reduction of water infrastructure expansion
- Securing a scarce resource in a arid / semi-arid country



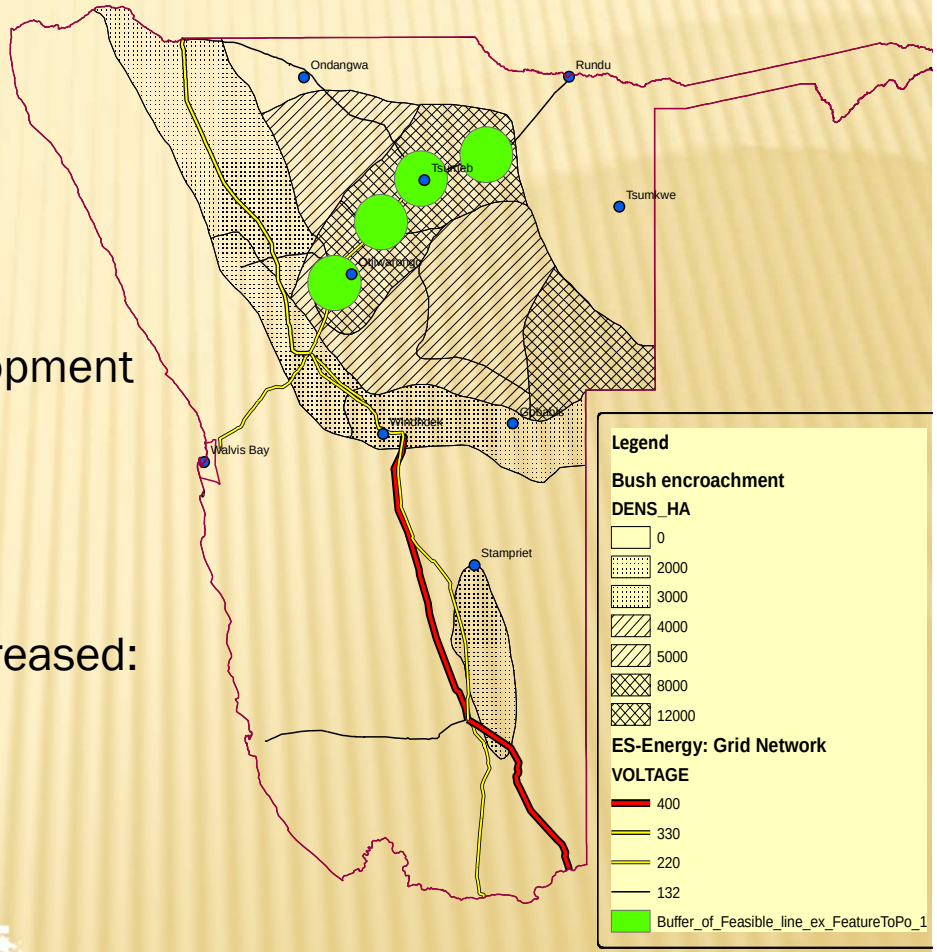


ECONOMIC BENEFITS: ENERGY WOOD PROVISION

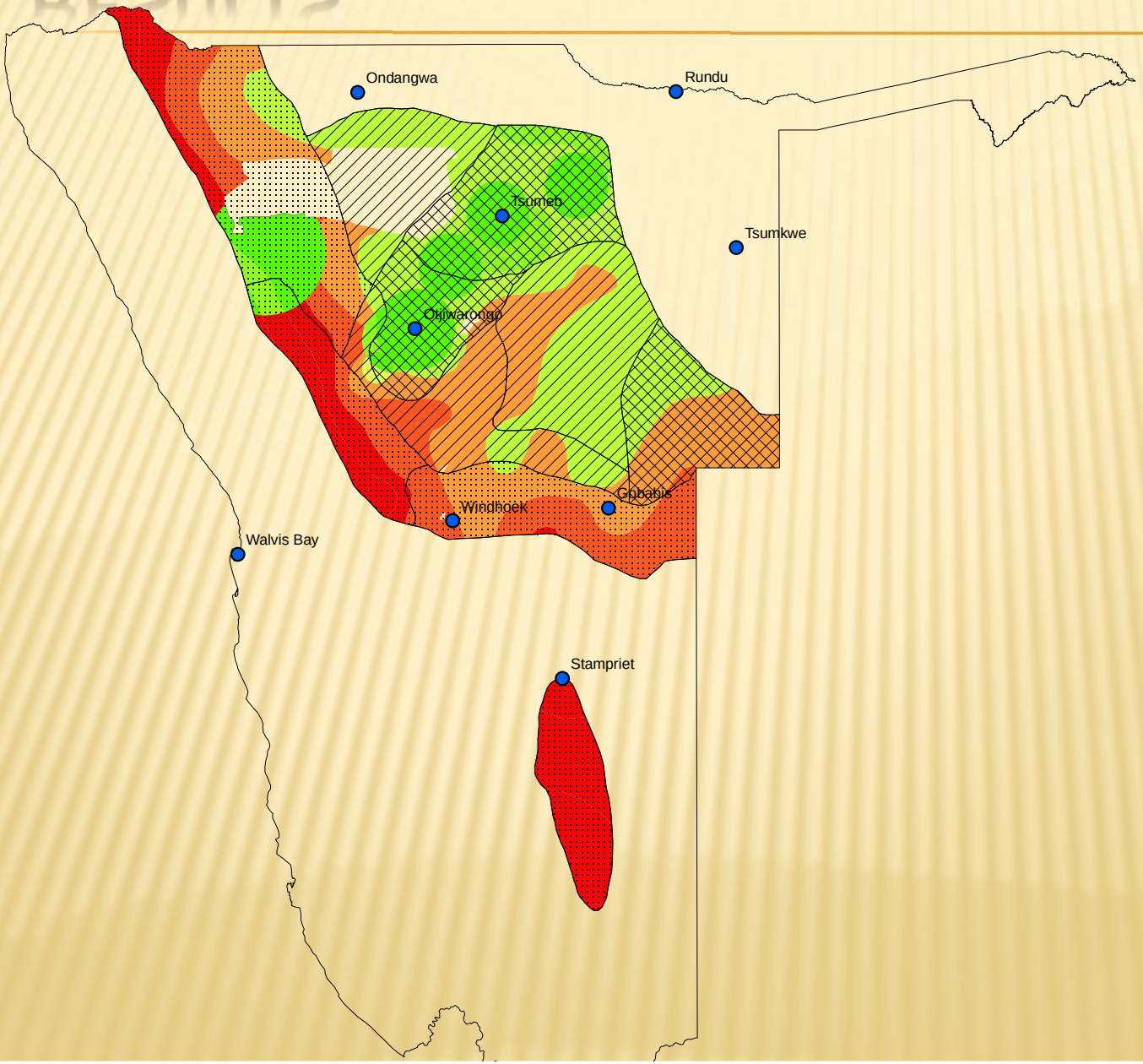
THE ECONOMICS OF LAND DEGRADATION
A Global Initiative for Sustainable Land Management

Energy production (Wood combustion plant):

- ~86.000 ha per plant reclaimed in 10 years producing 54.000 MWh/a
- Additional gains: employment & local development
- Public subsidy: required to meet the selling electricity price
- Cost for de-debushing are substantially decreased: 86,00 ha at 4% of the original costs (calculated over 10a)



RESULTS



Legend

Bush Encroachment

Density

- 0 - 2000
- 2000 - 5000
- 5000 - 12000

Benefits (after 10a)

Return per ha

- -80 - -70
- -69 - -60
- -59 - -50
- -49 - -40
- -39 - -30
- -29 - -20
- -19 - -10
- - 9 - 0
- > 0

RESULTS

- Very specific scenario → needs to be generalized
- Wide range of benefits
  - Water infrastructure expenses very useful for subsidizing debushing
  - Livestock tax returns positive value after >10yrs
  - Large benefits especially in densely encroached areas
- Cross-subsidizing debushing areas with benefits from ES:

	Costs/ha (US$)	Bulk-Sum (US$)
Without ES benefit	80	2.143.873.300
Including ES benefit	47	1.260.718.363

DISCUSSION

- Bush encroachment is known to substantially reduce the ecosystem service flow → degraded ES
- Other relevant ecosystem services:
  - Carbon sequestration
  - Touristic value
  - Biodiversity
  - CC adaptation
- Several spin-off benefits are possible
- Integration into local livelihoods is essential

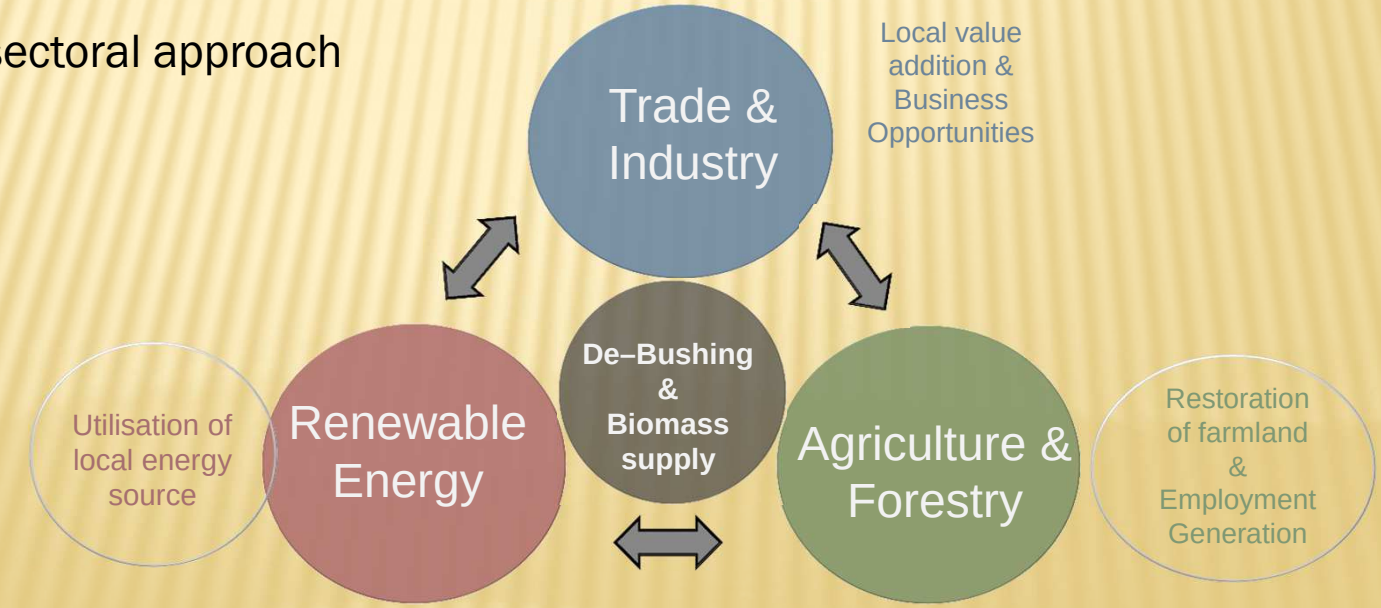
The economic implications are an important component of efforts to encounter bush encroachment

LOCAL FOLLOW-UP

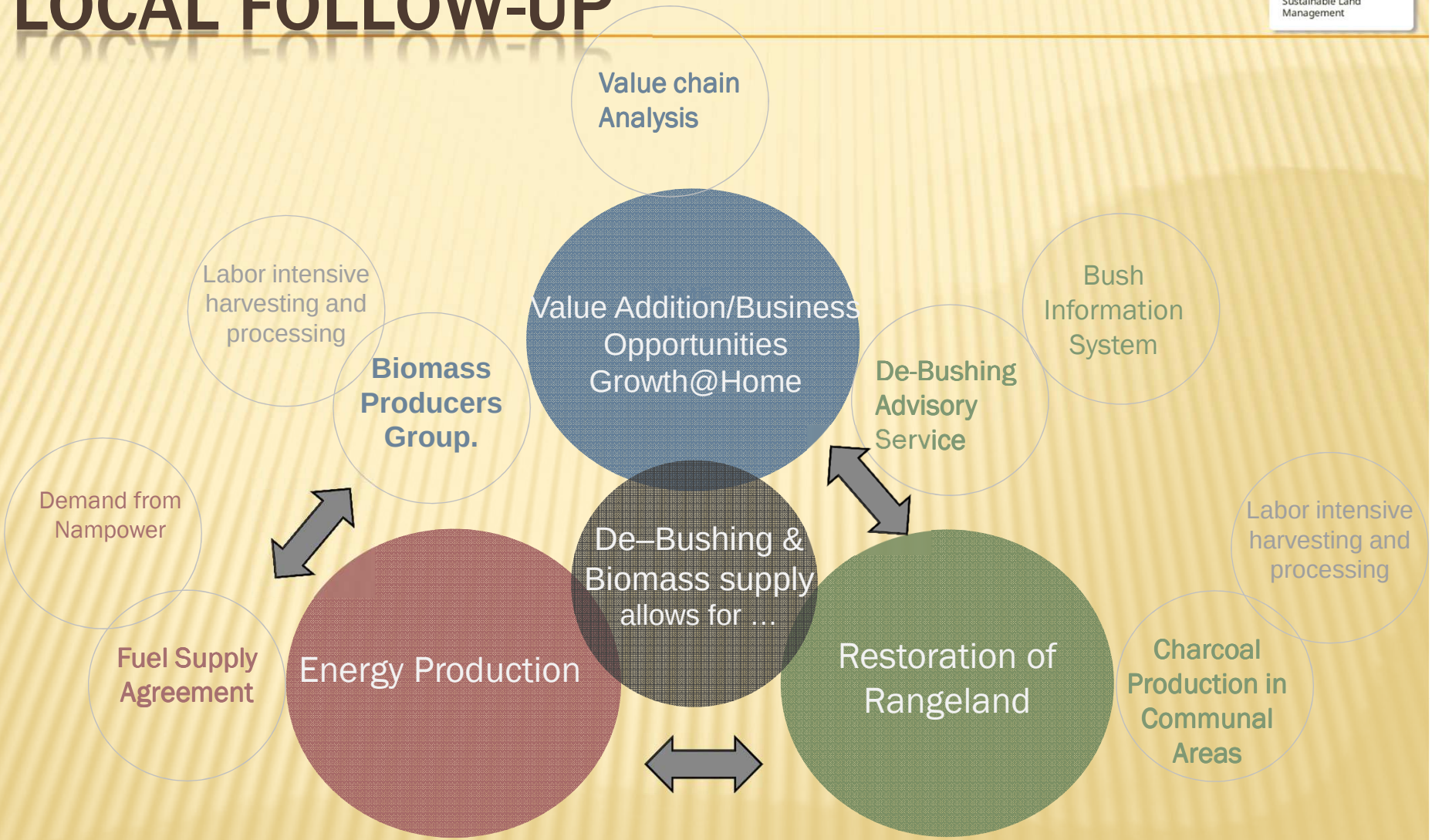
- Project title: **Supporting de-bushing efforts in Namibia (2014-2017)**

- Overall goals:
  - Increase political and organizational framework
  - Develop advisory services for communal and commercial farmers through the establishment of an “De-bushing advisory service”
  - Development of a sustainable value chain for the utilization of the biomass

- Cross-sectoral approach



LOCAL FOLLOW-UP



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GENERAL OUTLOOK & VISION

- **The Economics of Land Degradation Initiative**

is global initiative on the base of an economic study, created by a network of partners thinking and working for a joint vision:

→ *to create a global framework for measuring the economic costs of land degradation and to create greater awareness for the benefits from sustainable land use management*

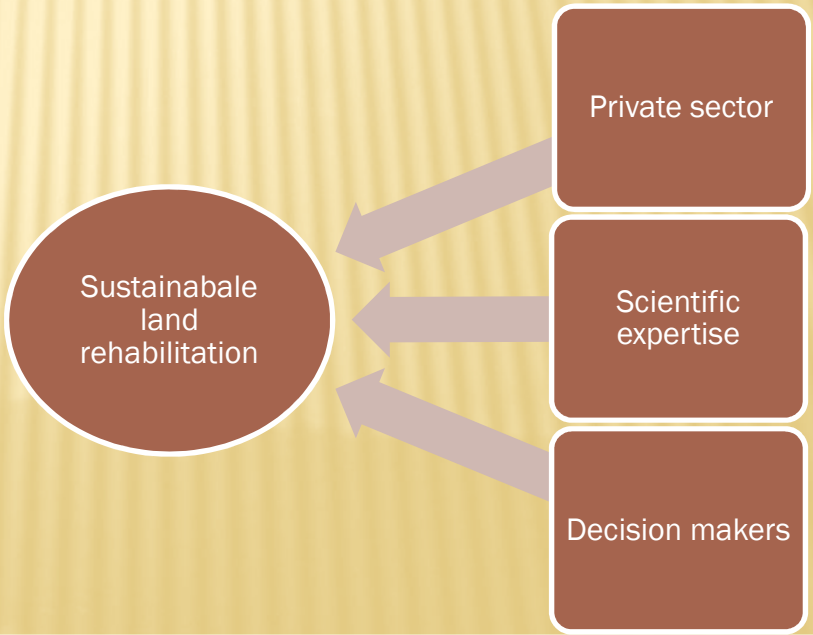
- Multi stakeholder-approach

- Methodological background:

Costs of inaction

vs.

Benefits of action



More info: www.eld-initiative.org

Thank you for your attention!