

Application of Land Degradation Neutrality target
setting in Natural Resources Planning and
Management to meet Climate change, Biodiversity
Conservation and Land degradation objectives in
Uganda

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Land degradation neutrality

- the concept of “zero net land degradation” was proposed at the 2012 UN Conference on Sustainable Development (Rio+20).
- reformulated as “strive to achieve a land degradation neutral world”
- Adopted as part of SDG target 15.3

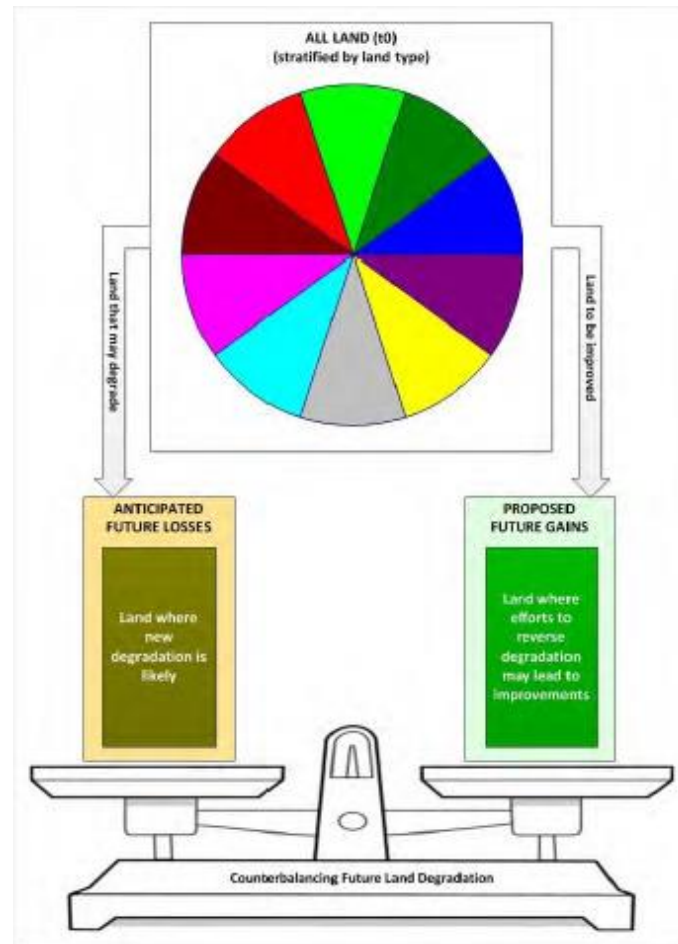
Land degradation neutrality

- Land degradation neutrality (LDN)
 - “a state whereby the amount and quality of land resources necessary to support **ecosystem functions and services** and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems”.
- LDN achievement is monitored using land based indicators:
 - Land cover, Land productivity, Soil organic carbon

LDN = Balancing future losses and proposed future gains

Anticipated losses

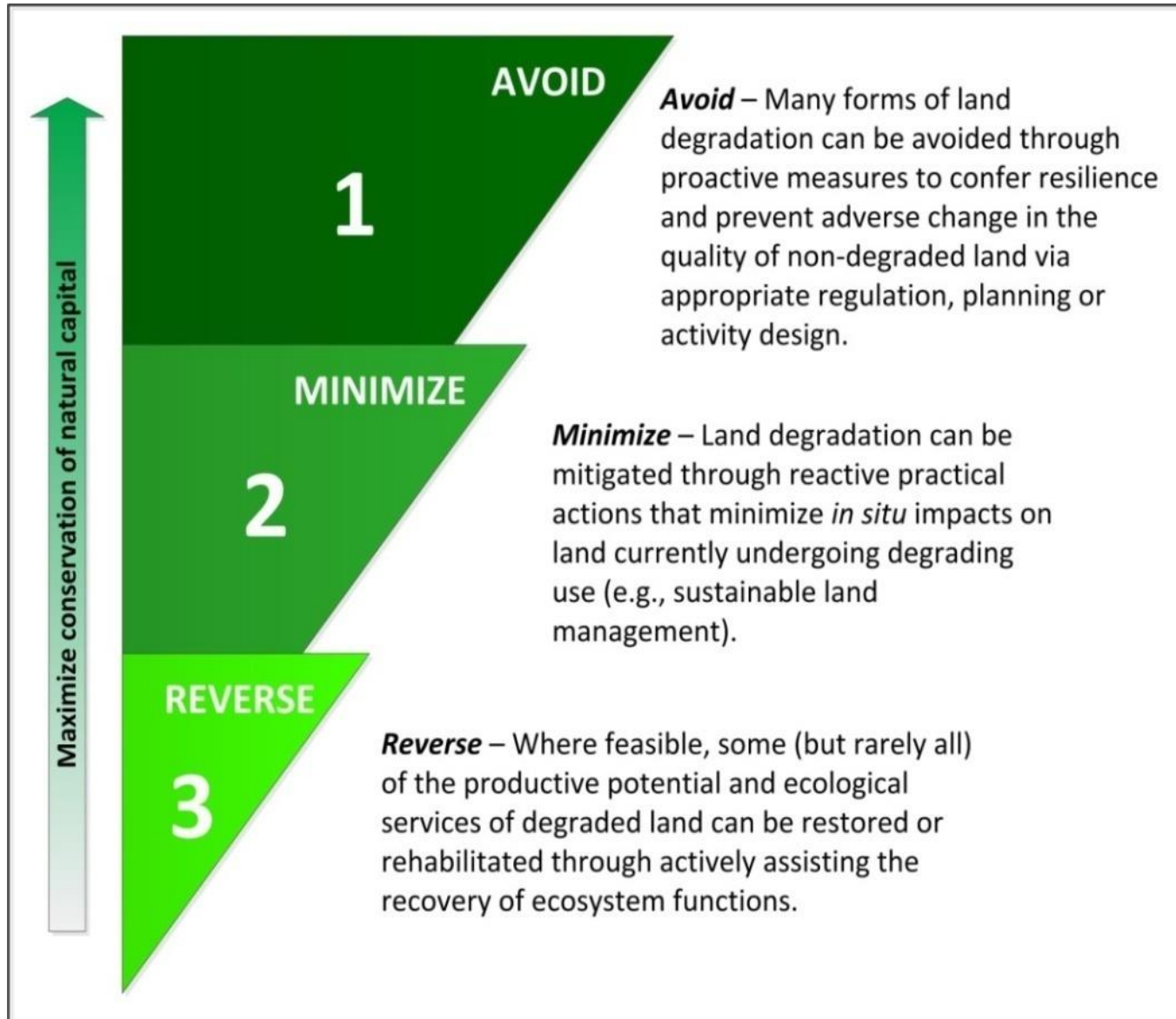
- Unsustainable land mgt
- land use change
- Natural causes
- Indirect anthropogenic causes



Proposed gains:

- Avoid degradation
- Reduce degradation
- Reverse degradation

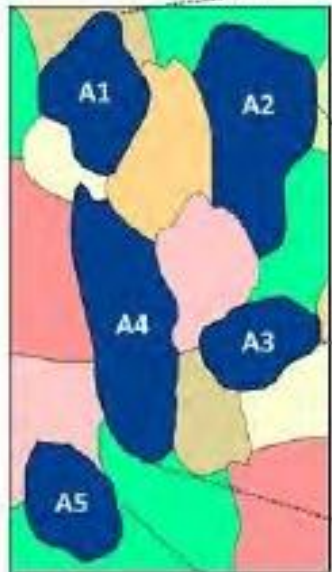
LDN response hierarchy



Neutrality Mechanism Balance Sheet	
(a hypothetical example for an administrative unit with multiple land types)	Land Area (ha)**
A. Proposed Future Gains (where increases in natural capital are anticipated)	
<i>Degradation avoided</i>	
Managed land to be protected and improved	50,000
<i>Sub-total of proposed new actions to avoid land degradation and increase natural capital</i>	50,000
<i>Degradation reduced</i>	
Unsustainable agriculture to be put under sustainable land management (SLM)	400,000
Unsustainable forestry to be put under sustainable forest management (SFM)	100,000
Other mitigation initiatives	100,000
<i>Sub-total of proposed new actions to reduce land degradation</i>	600,000
<i>Degradation reversed</i>	
Proposed restoration projects	125,000
Proposed rehabilitation projects	225,000
<i>Sub-total of proposed new actions to reverse land degradation</i>	350,000
A. Total Proposed Gains	1,000,000
B. Anticipated Future Losses (where natural capital is anticipated to decline)*	
<i>Land management that may lead to a decline in natural capital</i>	
Estimated new losses from unsustainable land management	400,000
<i>Sub-total of anticipated new losses due to land management</i>	400,000
<i>Land use changes that may lead to a decline in natural capital</i>	
Estimated conversion from natural vegetation to agriculture	200,000
Estimated conversion of natural and production lands to urbanization	200,000
Estimated conversion of natural and production lands to mining	50,000
Other land use change that could lead to degradation	50,000
<i>Sub-total of anticipated new losses due to land use changes:</i>	500,000
<i>Non-anthropogenic and indirect anthropogenic losses</i>	
Estimated losses from non-anthropogenic and indirect anthropogenic factors (e.g., wildfire, flood, drought)	100,000
<i>Sub-total of non-anthropogenic and indirect anthropogenic losses</i>	100,000
B. Total Anticipated Losses	1,000,000
C. Net loss or gain (A - B)	0

A Map of Land Types

(Land Type "A" = Grassland)



Context*

- A1**
Land Area: 15,000 ha
Use: short grazing period
Status: Not Degraded
- A2**
Land Area: 25,000 ha
Use: grazing excluded
Status: Not Degraded
- A3**
Land Area: 10,000 ha
Use: long grazing period
Status: Degraded
- A4**
Land Area: 40,000 ha
Use: med. grazing period
Status: Degraded
- A5**
Land Area: 10,000 ha
Use: short grazing period
Status: Not Degraded

Preparation for Integrated Land Use and Management Planning (t0)

Assessment of land potential, condition, resilience and socio-economic status, including the baseline (t0) measurement of the metrics of land-based natural capital.

Decisions

- Grazing period extended
- Livestock exclusion maintained
- Long grazing period continued
- Sustainable grazing management introduced
- Urban expansion

Anticipated Change in Metrics (t1)

- Negative change anticipated
- No change anticipated
- Negative change anticipated
- Positive change anticipated
- Negative change anticipated

Projected Gains vs. Losses (t1 - t0)

- Loss: 15,000 ha degradation anticipated
- Stable: 25,000 ha no change anticipated
- Loss: 10,000 ha degradation anticipated
- Gain: 40,000 ha improvement anticipated
- Loss: 10,000 ha degradation anticipated

Legend

- All metrics are anticipated to remain stable
- Positive change anticipated (in at least one metric, others stable)
- Negative change anticipated (in at least one metric)

- Stable (no change)
- Degraded land or anticipated negative change
- Not degraded land or anticipated positive change

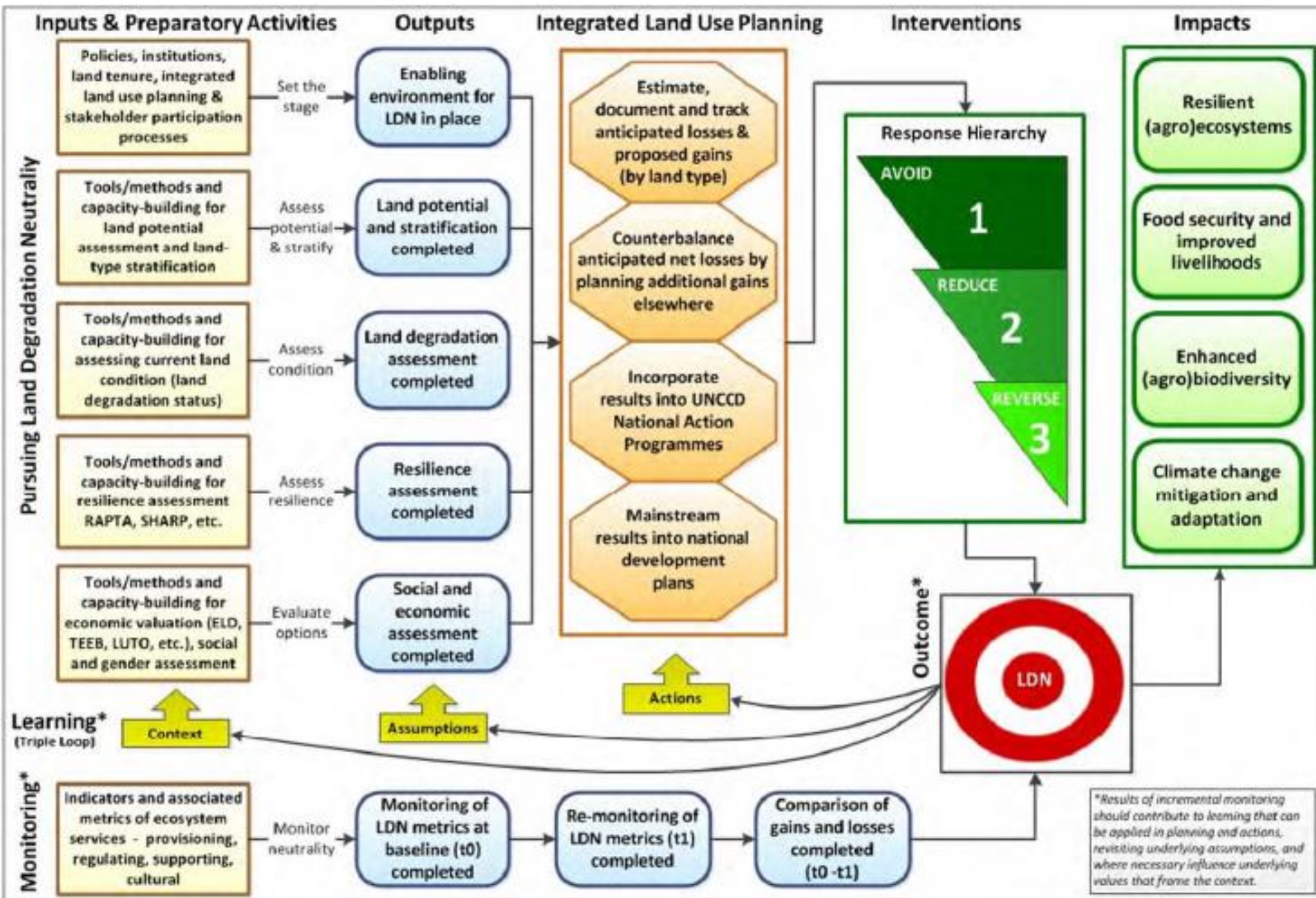
Land Degradation Neutrality Status Anticipated
Net Gain: 5,000 ha

*This hypothetical example is designed to show how land use and management decisions affect metrics of land-based natural capital, and how these changes should be anticipated in planning for Land Degradation Neutrality (LDN). This example illustrates a grassland grazed by livestock.

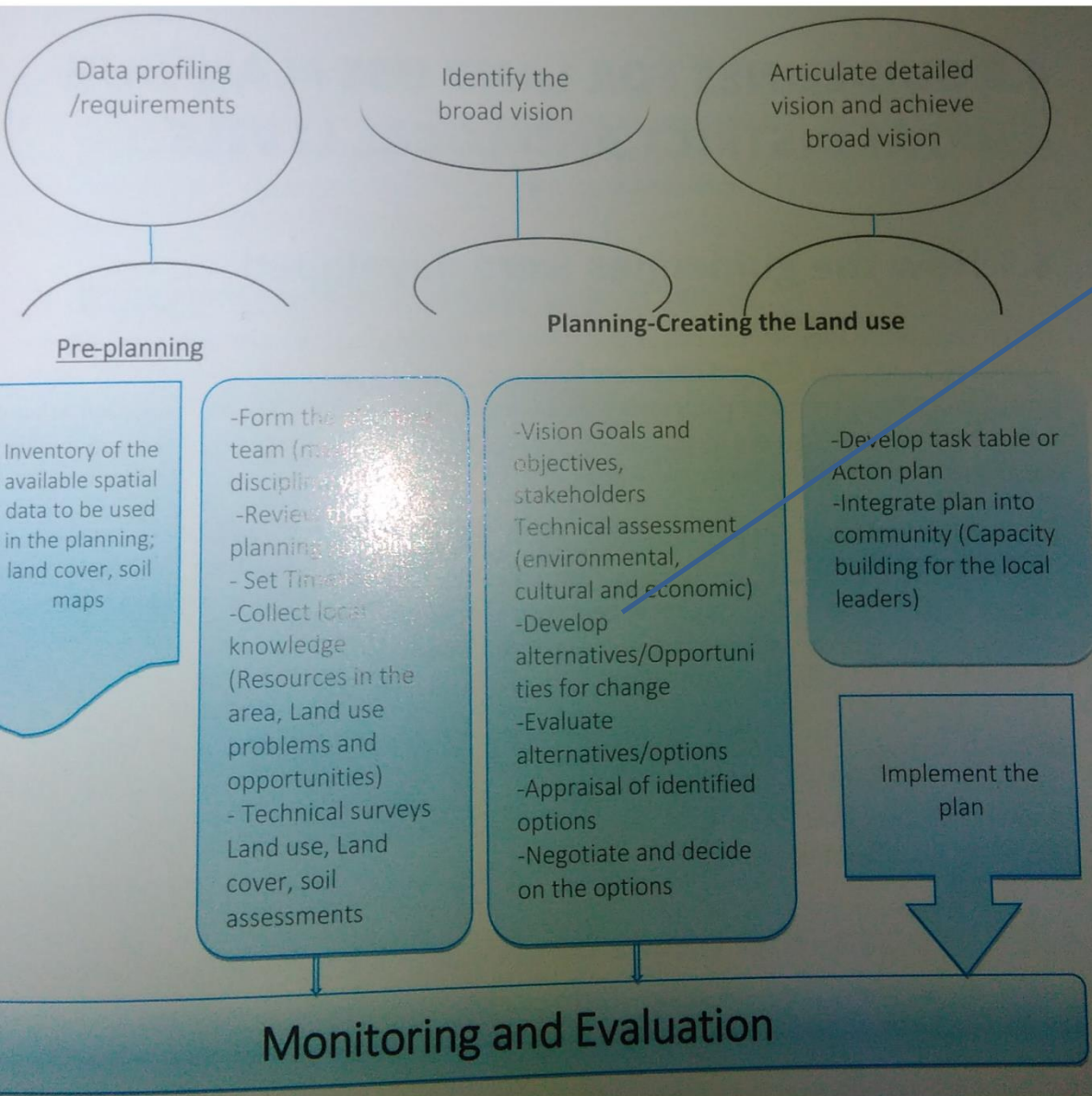
Integrated Land Use Planning

- Land use planning assists land resource users in selecting land use options:
 - that increase productivity,
 - that are sustainable
 - that meet the needs of society
- LDN planning and implementation should be embedded into existing planning processes

Integrated land use planning for LDN

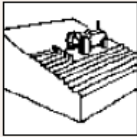


Land use planning framework- Ug



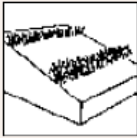
Place for planning and implementing LDN

Within the context of “Avoid, reduce reverse” Interventions are identified and selected from WOCAT SLM archives to achieve neutrality



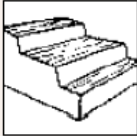
agronomic measures

- are associated with annual crops
- are repeated routinely each season or in a rotational sequence
- are of short duration and not permanent



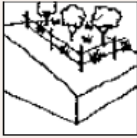
vegetative measures

- involve the use of perennial grasses, shrubs or trees
- are of long duration



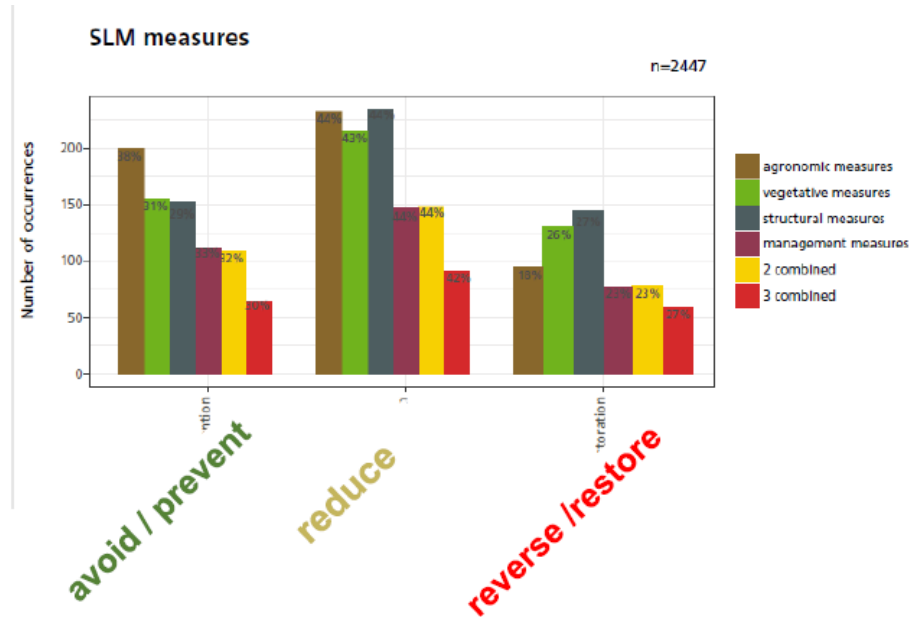
structural measures

- often lead to a change in slope profile
- are of long duration or permanent



management measures

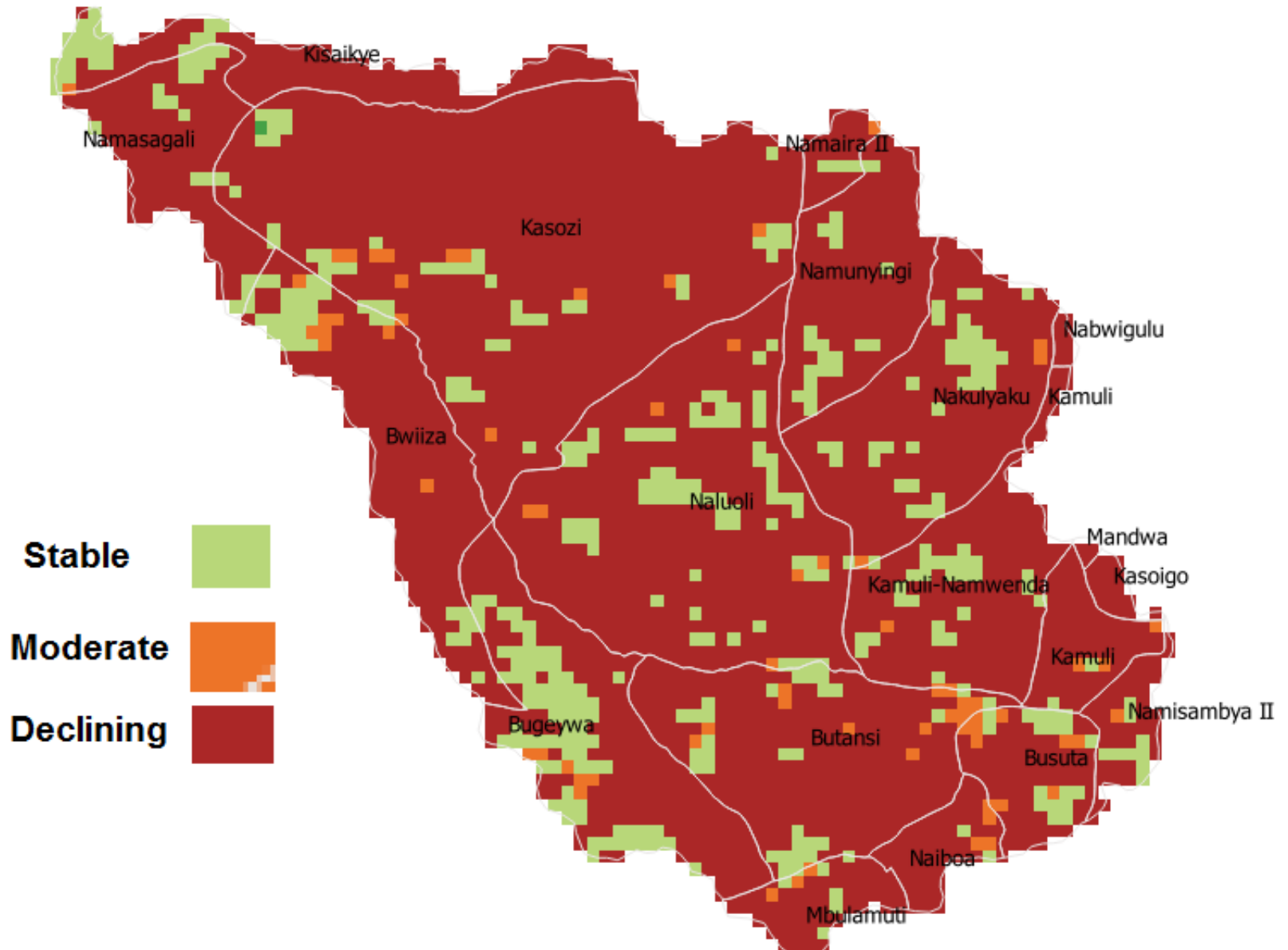
- involve a fundamental change in land use
- involve no agronomic and structural measures



- Prior to implementation, the LU options are appraised- socially, environmentally, economically, and physically.

- Monitoring of the LDN plan should be mainstreamed into the the overall monitoring and evaluation mechanism of the Integrated land use plans
- Indicators for monitoring LDN include:
 - Land cover change
 - Land productivity
 - Soil organic carbon

Example: Land productivity condition for Nalwekomba catchment, Kamuli



Land cover / productivity trends in Nalwekomba catchment, Kamuli

			Productivity category (ha)				
Land cover					Degraded		
	Baseline (ha)	% Change	improving	stable	stressed	Moderate decline	Declining
Forest	74	0	0	50	0	5	19
Grasslands	254	-0.07	0	37	0	0	217
Croplands	21447	-0.003	6	2533	0	441	18467
Wetlands	0	0	0	0	0	0	0
Artificial areas	12	700.01	0	0	0	0	12
Other lands	0	0	0	0	0	0	0
Total	21787		6	2620	0	446	18703
% on Total land			0.03	12.02	0	2.0	85.8