



Support Tools for Africa

Zimbabwe Initiative

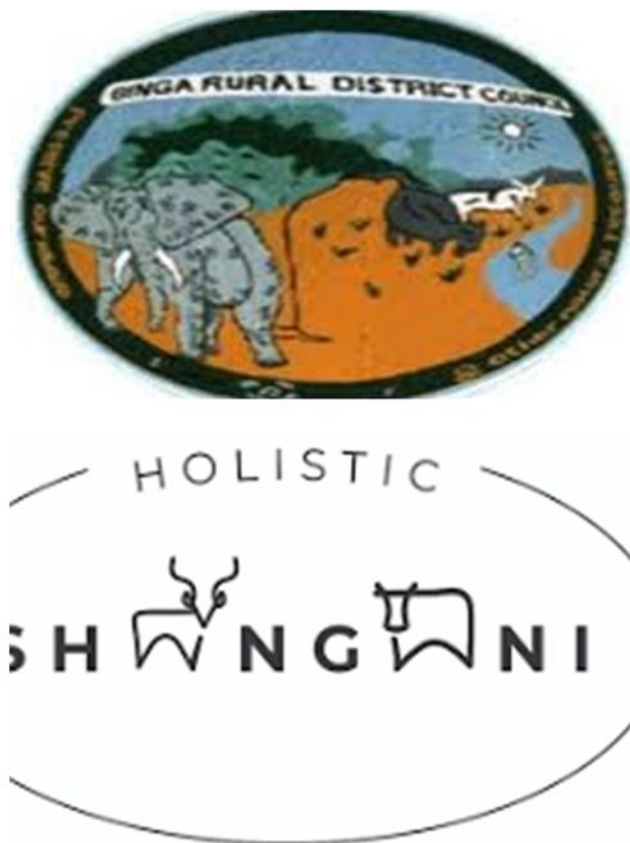
**Presented by:
WWF- Zimbabwe**



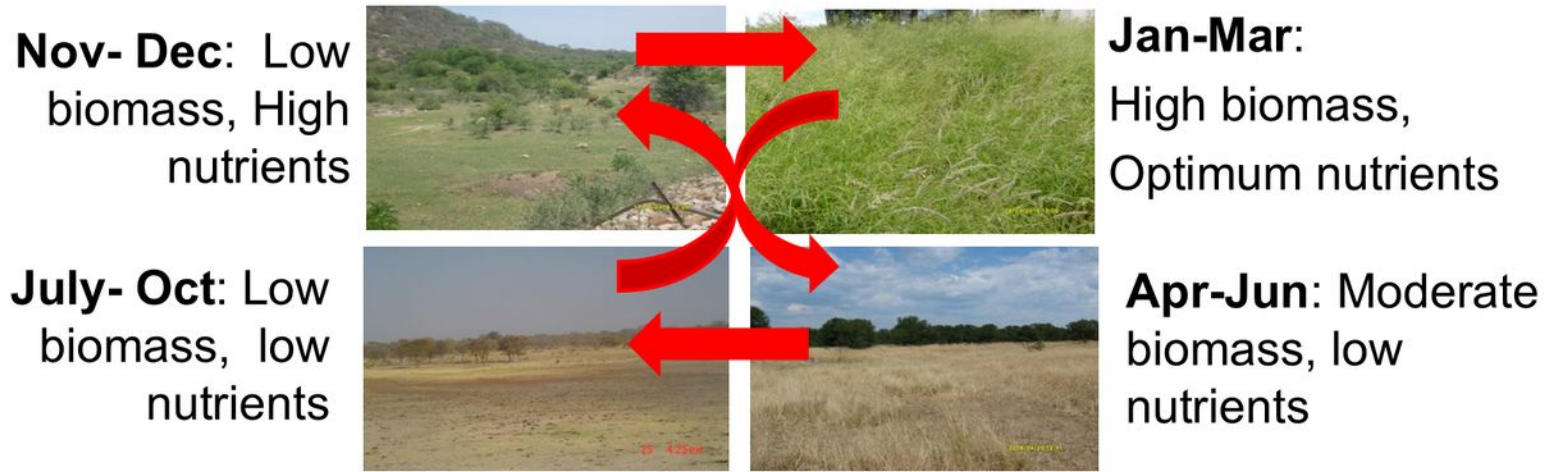
**time²
graze**



Partners and Stakeholders



Livestock production system in Zimbabwe



- Beef production characterized by mixture of communal, semi intensive and commercial farming systems
- Rangelands contribution to beef production and productivity
- Current efforts aim to enhance rangelands gross primary productivity (GPP) to improve livestock production and productivity

Seasonal feed availability

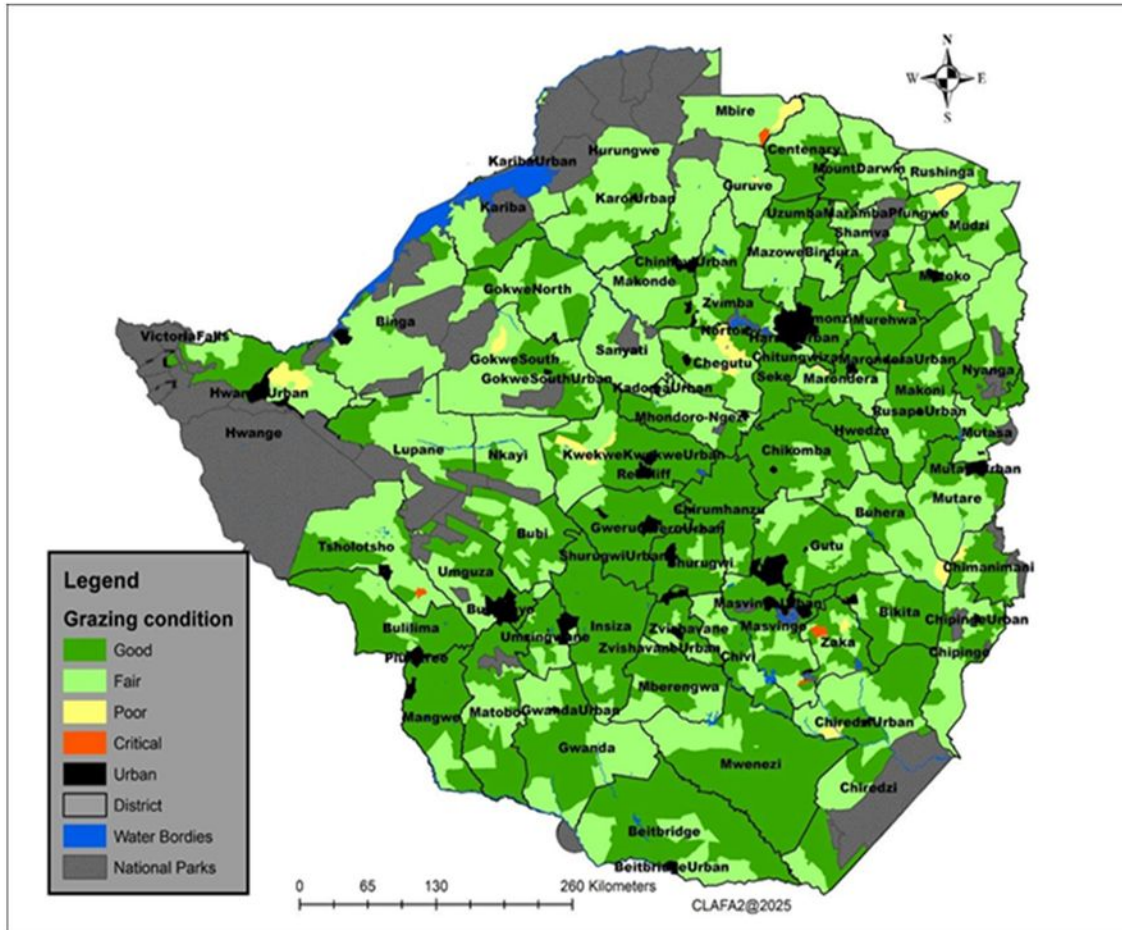
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Grass												
Browse foliage												
Browse pods												
Cereal crop residues												
Legume crop residues												
Root tubers												

Key

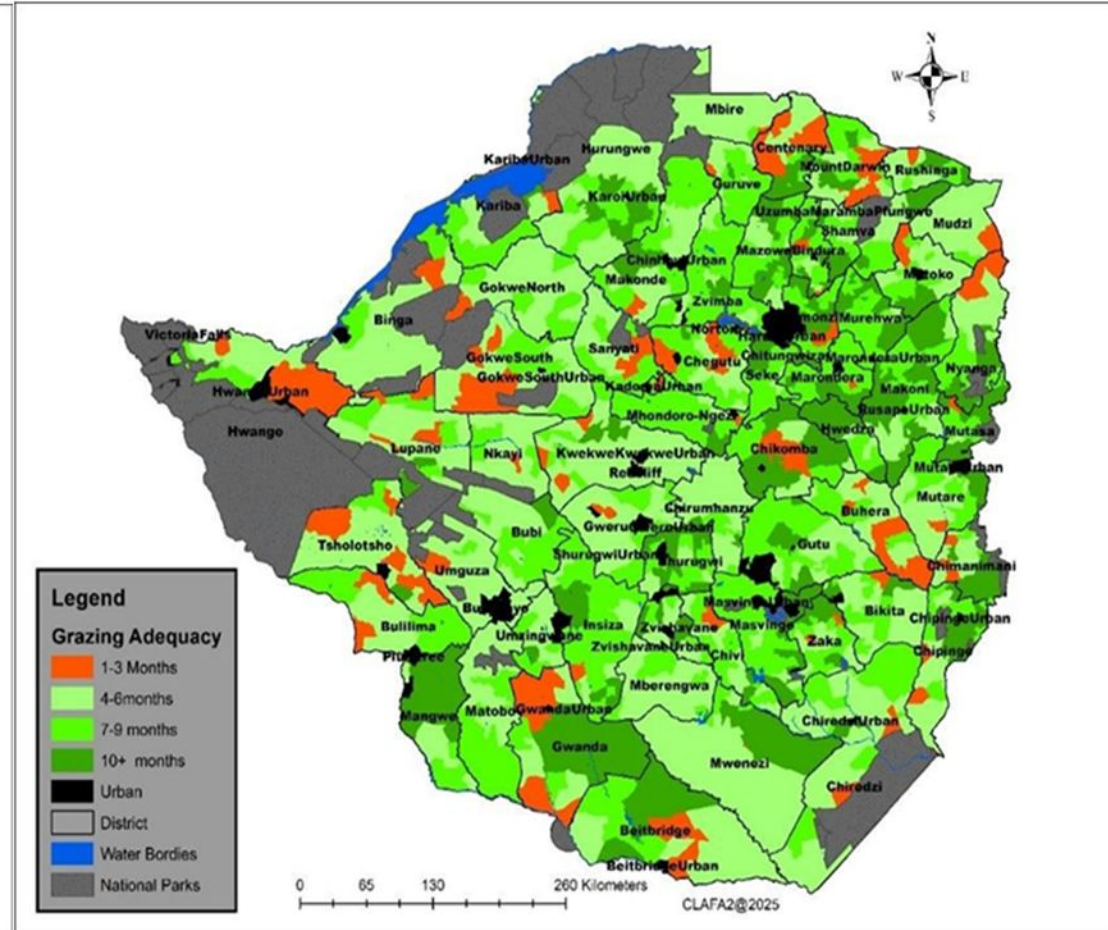
	Available, high nutritive value
	Available, low nutritive value
	Non-availability

Rangelands seasonal feed availability

Grazing status



Rangelands capacity



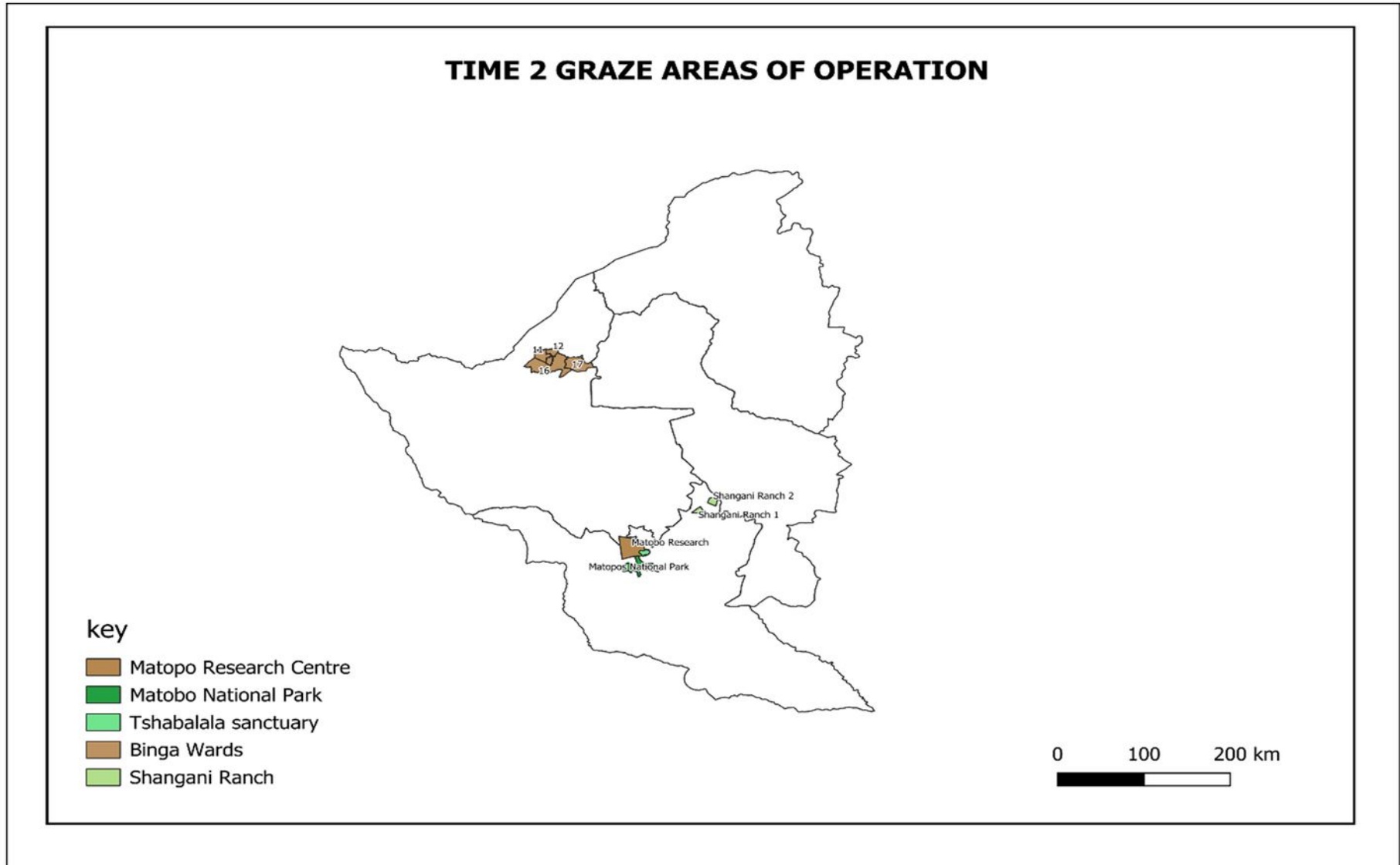
Project pilot approach

Participatory Communal
rangeland management –
Binga (three (3) wards)

Commercial holistic
rangeland management site
- Shangani Ranch (Three
different land use sites)

On station / on farm
rangeland evaluation
Management – Matopos
Research Institute (three
farm sites)

Baseline study site locations in Zimbabwe



Guidelines for study site selection

Bush encroached



Overgrazed



Eroded with gullies



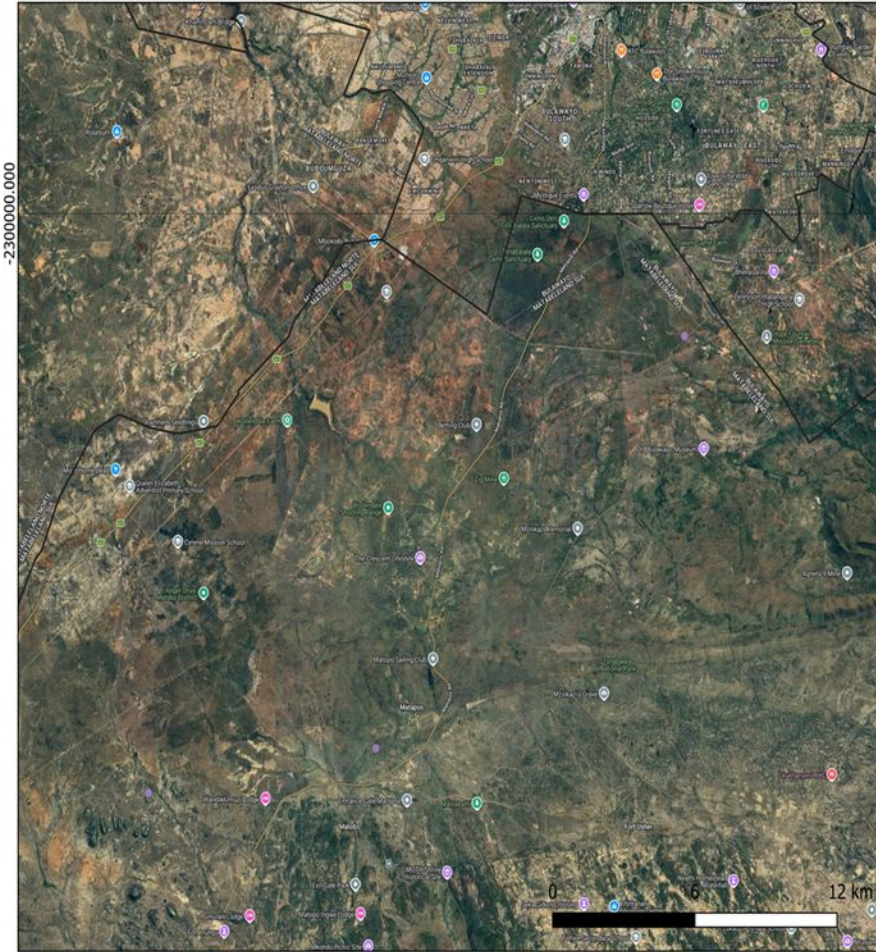
Death of tree species



Degraded wetlands



RS imageries for study site sampling points



Matopo Fields

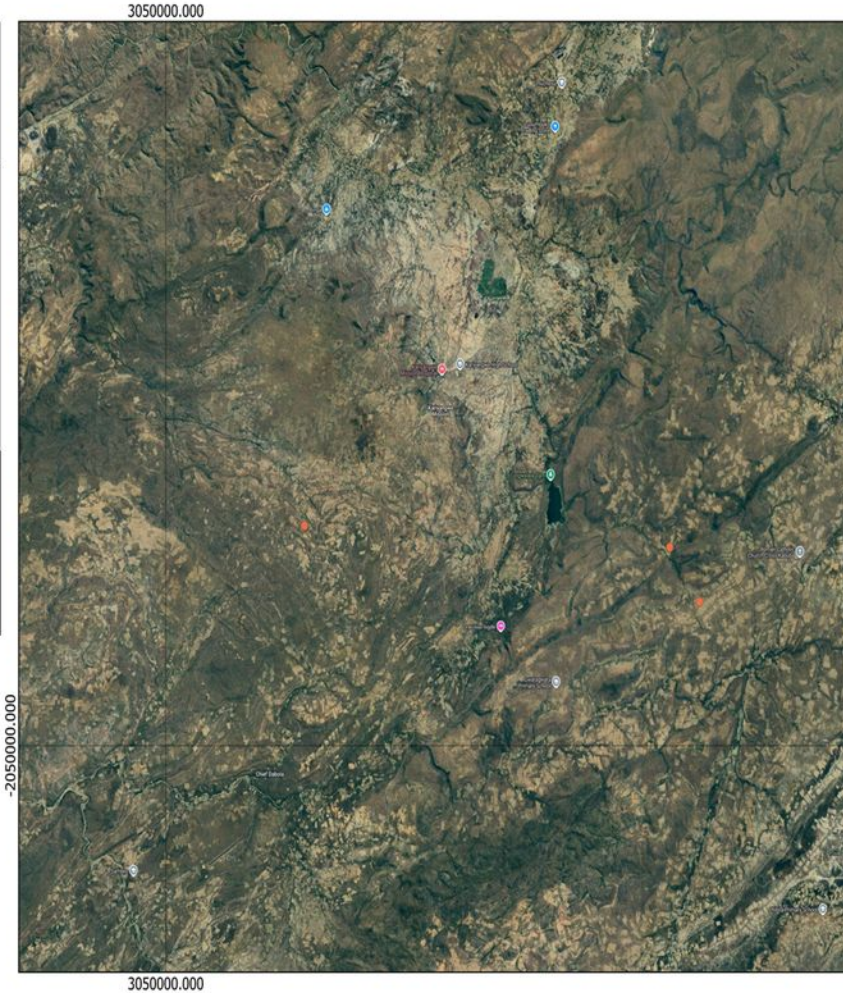


Zimbabwe Districts

- Zimbabwe Districts
- Matopo_Fields

Projected Coordinate System
WGS 84

Source: humdata & WWF



Binga Fields



Zimbabwe Districts

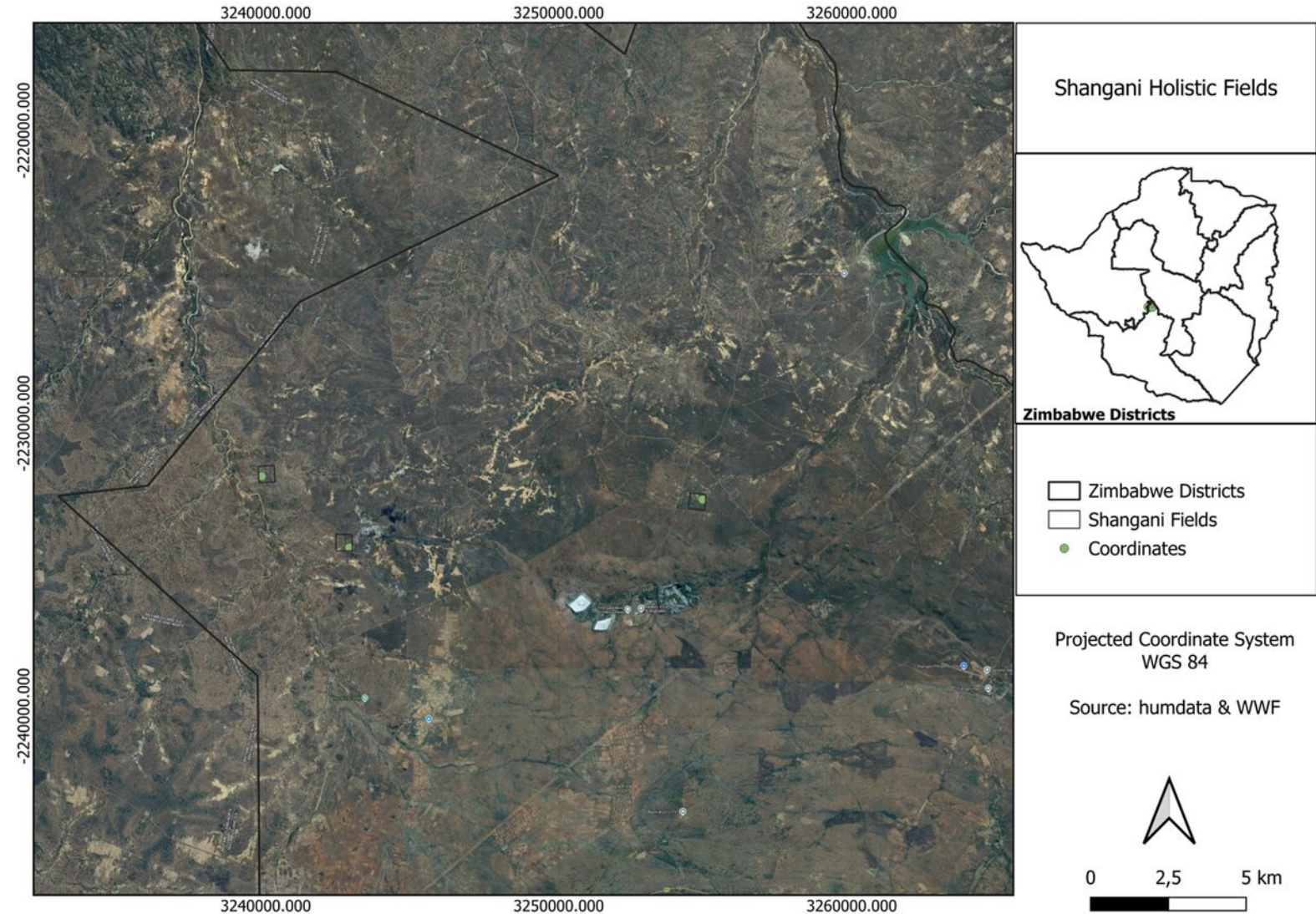
- Zimbabwe Districts
- Binga Fields

Projected Coordinate System
WGS 84

Source: humdata & WWF



RS imageries for study site sampling points



Ground truthing exercise

Shangani Holistic Management



Matopos Research Institute





Baseline Data collection

Preliminary baseline research highlights



Soil reaction (pH): Shangani Ranch and Matobo Research are mildly acidic to near-neutral (pH ~5.7–5.8 on average) while Binga is distinctly more acidic (pH ~4.7). This is the most statistically robust difference in the dataset ($p < 0.0001$).



Fertility indicators (OC, OM, Ca, Mg, K, Cu, Zn, CEC): all trend lowest in Binga and highest in Shangani Ranch/Matobo Research. Organic carbon and organic matter in Binga are roughly half the level seen in the other two areas.



Electrical conductivity (EC) is far more variable in Shangani Ranch (very high maximum values, large SD), suggesting a subset of plots there with salt/mineral accumulation not seen elsewhere.

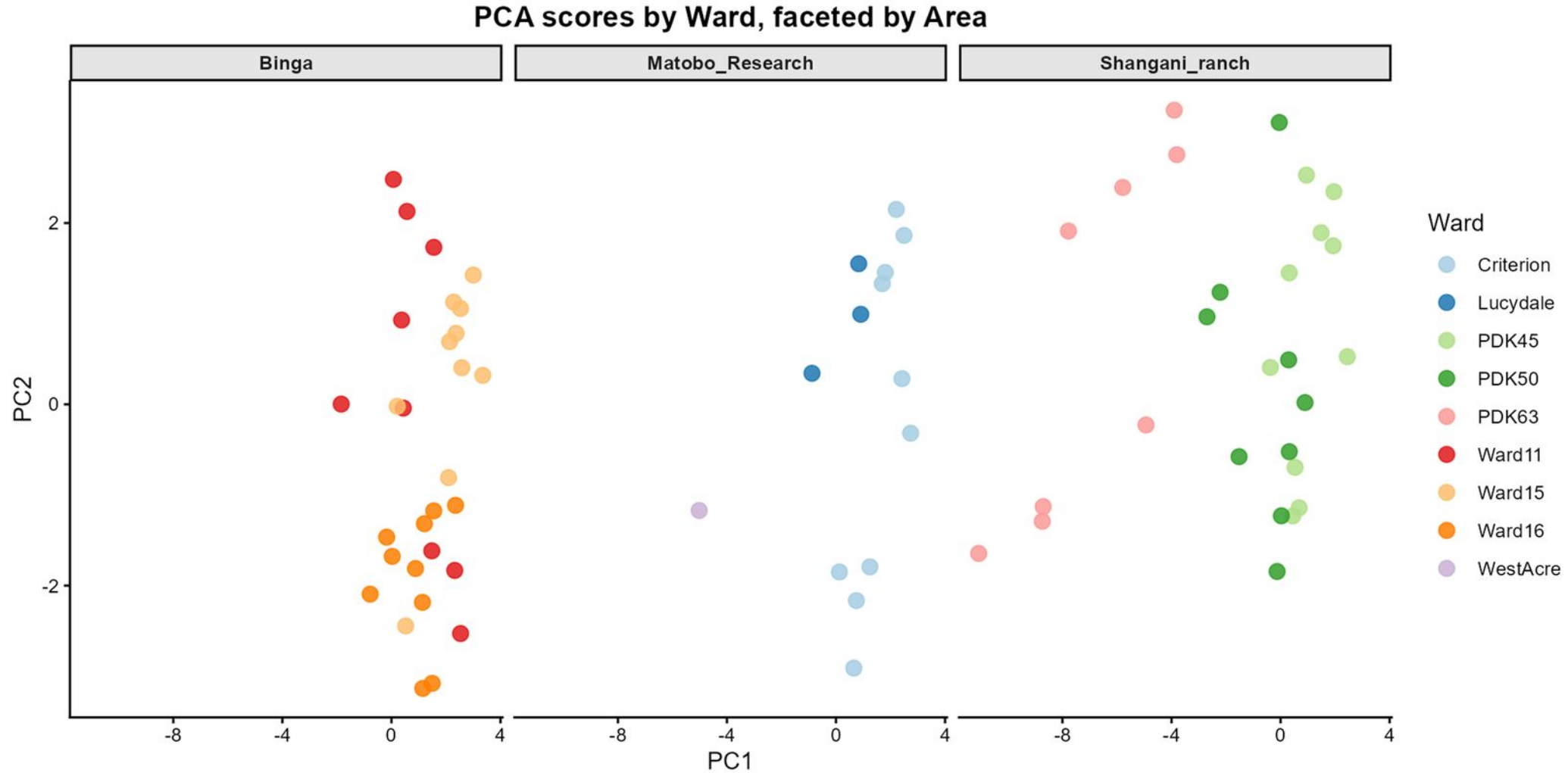


Texture: Binga soils are the sandiest on average (~81% sand), while Matobo Research has the widest spread of textures, including the only sandy clay loam samples.

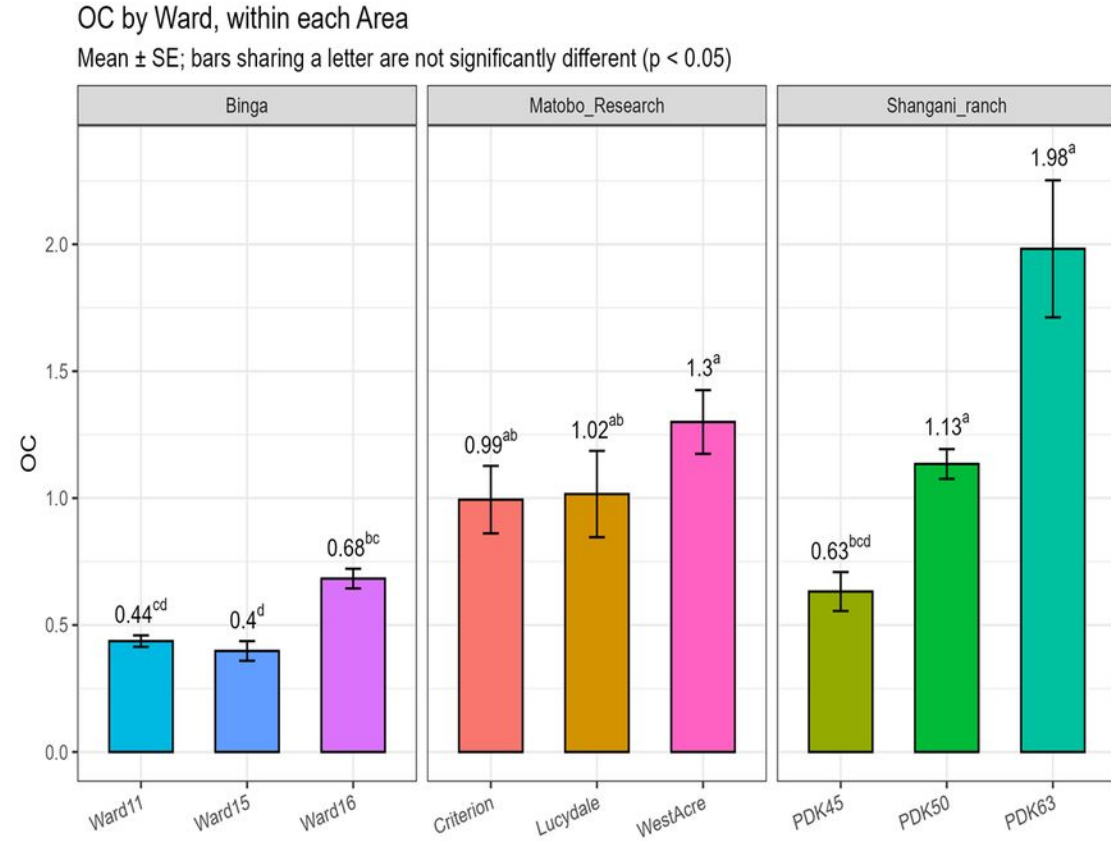
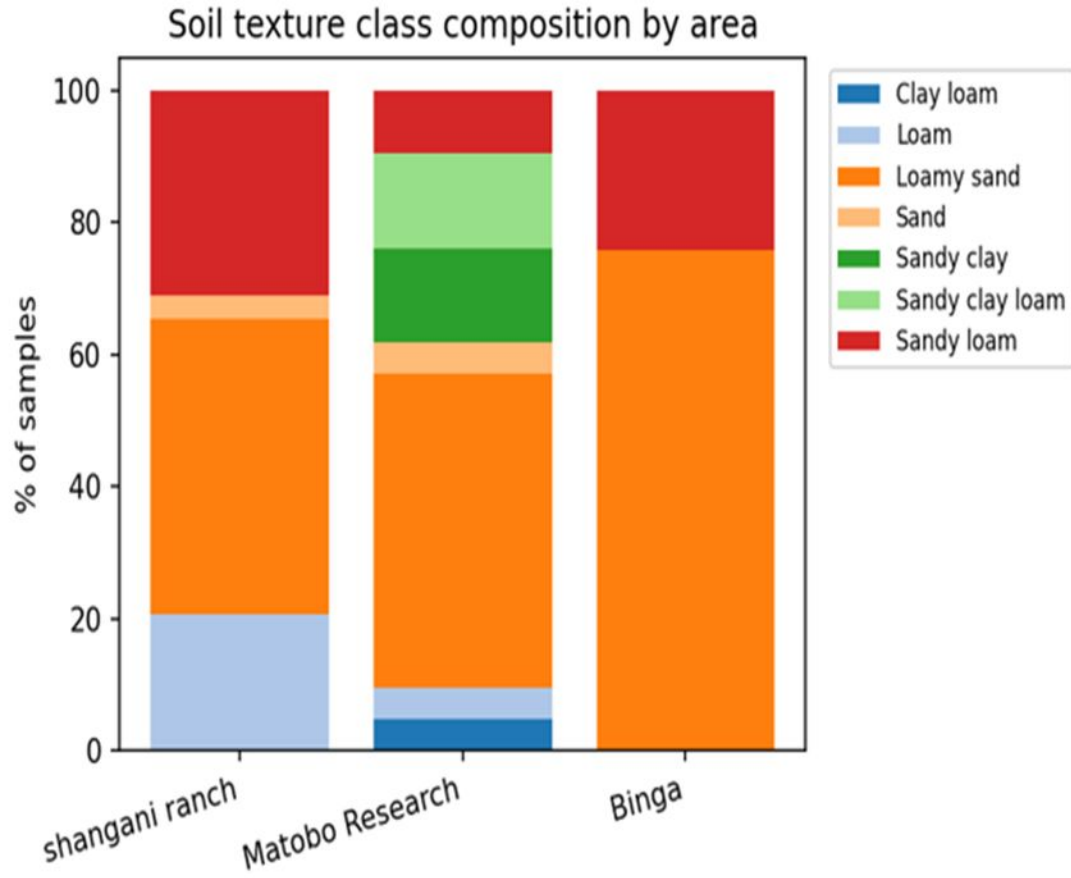


Variables that do NOT differ significantly by area: Buffer pH, Bray P, Fe, % Ca saturation, % Na saturation – these appear broadly similar regardless of location.

Study site interactions



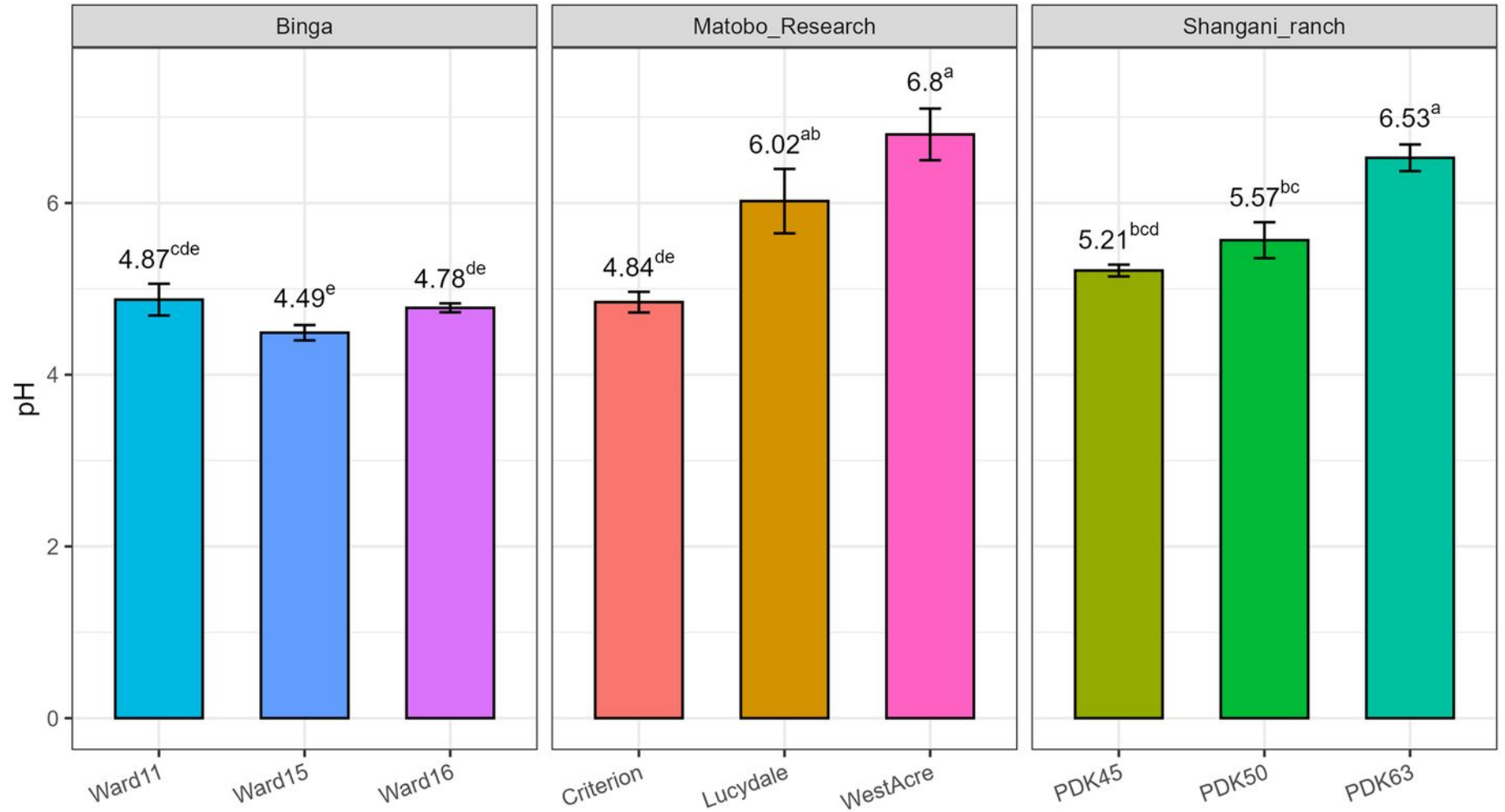
Soil physico – chemical variables



Soil pH

pH by Ward, within each Area

Mean $\pm$ SE; bars sharing a letter are not significantly different ($p < 0.05$)



Strategic interventions

Binga - rangeland management model

- The community ownership of rangeland restoration was strengthened.
- The community developed their own restoration plan.
- The project introduced the concept of restoration through paddocking system in Binga(Rotational grazing)
- 12 sites were established of 2hac each. 4 sites in each ward (1st natural regeneration and 2nd site Re-seeding)
- Paddocking materials were procured by the project
- Six (6) grazing committees have been established in 3 wards



Strategic interventions

Matopos Research Institute (MRI) - rangeland management model

- **West acre farm** - highly productive veld grasses
- **Lonsdale farm**- overgrazed paddocks (The veld is dominated by *Mopane* tree spp with some *Grewia* on a few places.
- There is moderate grass cover with re farm – well managed rangeland (High biomass yield of few bare patches with some occupied by rock boulders)
- **Criterion farm**- bush encroached paddock (the land has dense thickets made up of mixed *Acacia* spp, *Dychrostachys cinerea* ,*Lantana camara*, *Terminalia serecia*)



Restoration models

Westacre farm	Lonsdale farm	Criterion farm
Action: ❖ Periodic monitoring of the paddock to track seasonal changes in species richness and water availability. ❖ Hay harvesting was done on 3 hectares	Action: ❖ Reseeding of bare patches with natural veld grasses ❖ Reintroduction of grass species using root tufts during rainy days and cover with brushwood. ❖ Introduction of reinforcing legumes such as sirato and silver leaf in the grasslands. ❖ Protecting the reseeded areas with brushwood fences	Action: The paddock demarcated into 3 treatments ❖ Limpopo aboricide to kill trees as treatment 1 (3ha) ❖ Physical bush clearance and stumping treatment 2 (2 ha)
To date: ❖ Unfortunately the area was gutted down by a veld fire and we will assess the veld in the rainy season to track the changes caused by the fire using the baseline data.	To date: ❖ We harvested veld grass seed for reseeded bare patches ❖ Planning to do veld re seeding with veld grasses and desmodium legume in mid October . ❖ We have requested the desmodium seed from Henderson Research.	To date: ❖ Bush clearance has been done on 1 hectare using JCB machinery ❖ Employment of casual workers working on the hand bush clearance

Project milestones:

1. Project launched

- <https://www.newsday.co.zw/local-news/article/200046056/wwf-zimbabwe-global-methane-hub-launch-project-to-develop-satellite-guided-grazing-to-cut-livestock-emissions>

2. Community sensitisation conducted

- Sensitization involved local traditional leadership, councilors, cattle farmers, ward based committee members

3. Baseline data collection completed

4. Baseline draft report completed

5. Data collected and in place to domesticate DST (Biomass i.e. woody and herbaceous species parameters, soil properties, biomass nutritive profiles, methane emissions, livestock data, feed basket, productivity data, manure management etc.)



Thank you

- When we care for our rangelands, we are not just managing land, we are safe guiding livelihoods, biodiversity and the future

