

Managing rangelands in arid and semi-arid areas: Options for raising productivity under a changing climate



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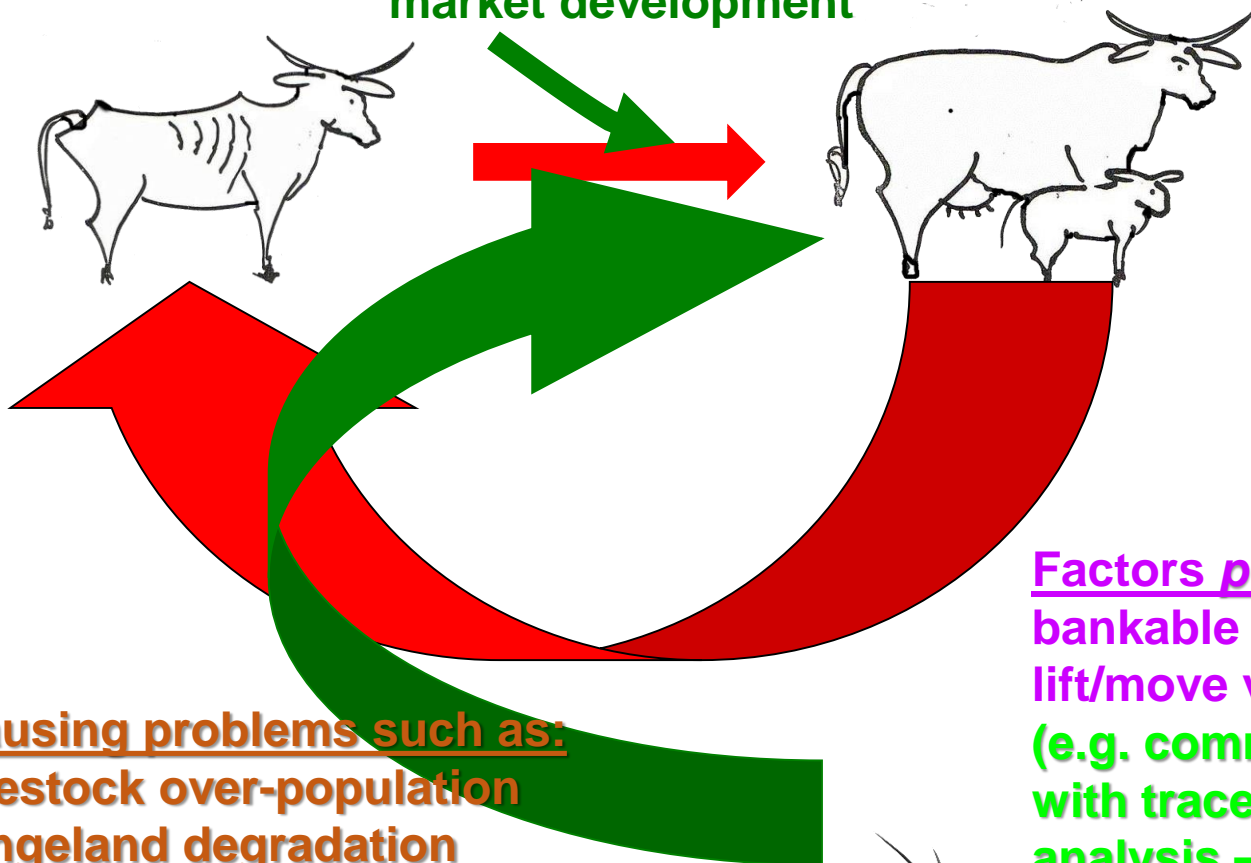


Dilemma of Namibia's northern agro-pastoralists:

Factors pushing production:

technical advice
farmer training
mentoring
farmer organization
market development

Too few "pull" factors,
especially limited
markets & prices



Causing problems such as:

livestock over-population
rangeland degradation
desertification
rural poverty

Factors pulling production:

bankable tenure
lift/move veterinary cordon
(e.g. commodity-based marketing
with traceability and HCCP
analysis – MCA study 2014)
diversify export markets
influence planning, decision-making





Climate change adaptation/mitigation by Namibia's northern agro-pastoralists:



Dry-land cultivated pastures of indigenous, perennial climax grasses



- Vertical expansion of livestock production
- Integrate grass leys into crop rotation to improve soil fertility and stability
 - Shift grazing pressure to cultivated pasture to rehabilitate native range
 - Create drought fodder bank of hay
 - Grass-based feedlots



Climate change adaptation/mitigation by Namibia's communal farmers:



Stud-breed genetics of indigenous livestock: water-wise, heat- & parasite-tolerant



- **Counter desertification of arid regions (by rural electrification)**
- **Sustainable rangeland management (NRMP&S) and rangeland rehabilitation**
 - **Conservation tillage of crop fields**
 - **Better land use zoning: farming and conservancy areas**
 - **Re-forestation with valuable indigenous tree species**
- **Alternative livelihoods to agro-pastoralism: industrialization, service industries**



Climate change adaptation/mitigation by Namibia's commercial ranchers:

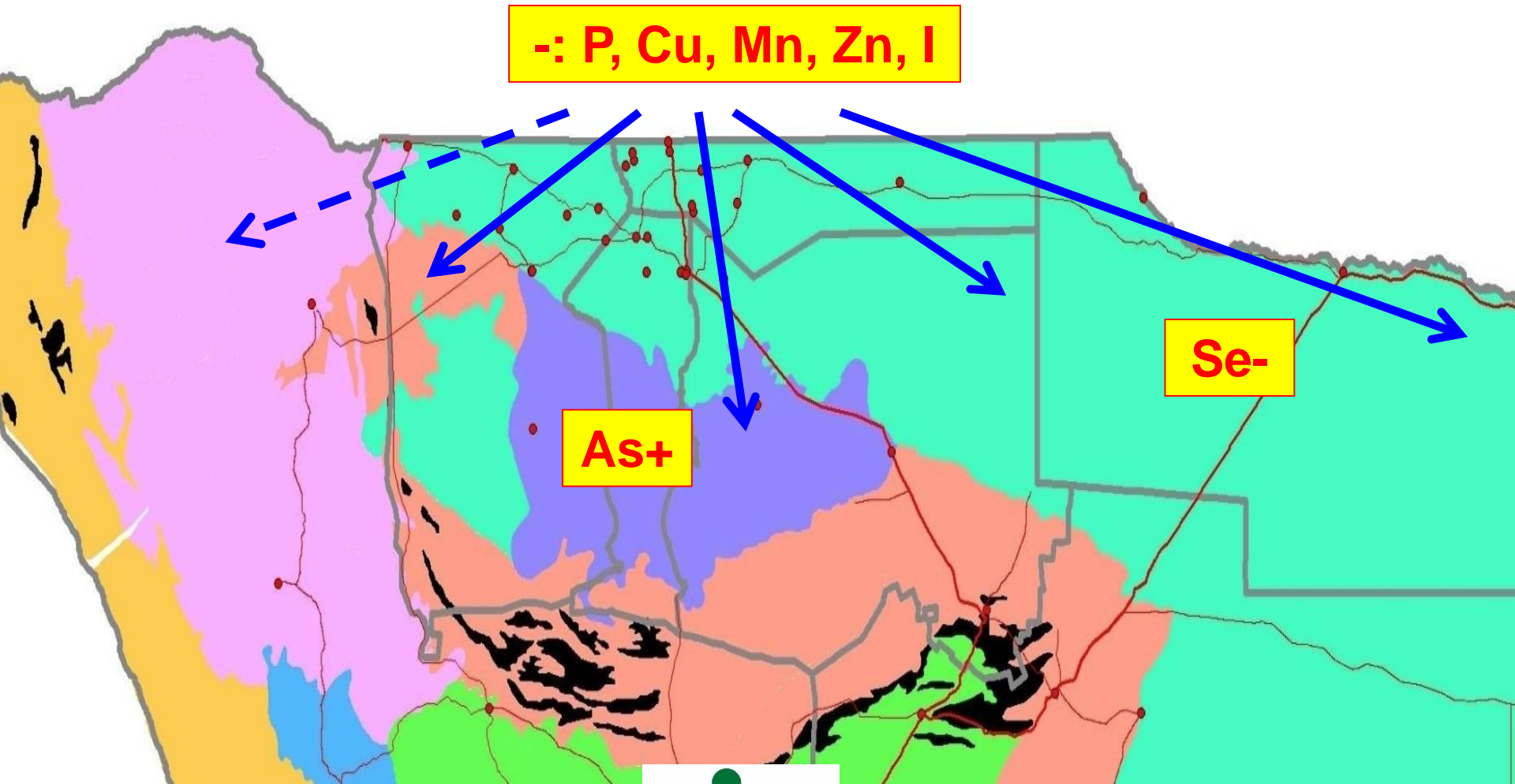


- Apply resources to farm sustainably and holistically on 44% of land area!
- Re-vitalize grazing land: control encroacher bush, add value to extracted wood, actively strengthen perennial grass sward (NRMP&S)



- Farm more ecologically-adapted animals: goats, karakul sheep, game
- Adapt zoo-sanitary measures to promote game ranching (e.g. buffalo)
 - Add value to livestock products
- Regional, experiential climate-smart training of farmers' associations (SACAU?)

Mineral deficiencies of cattle and goat in the Northern Communal Areas: Baseline Survey of Animal Nutrition

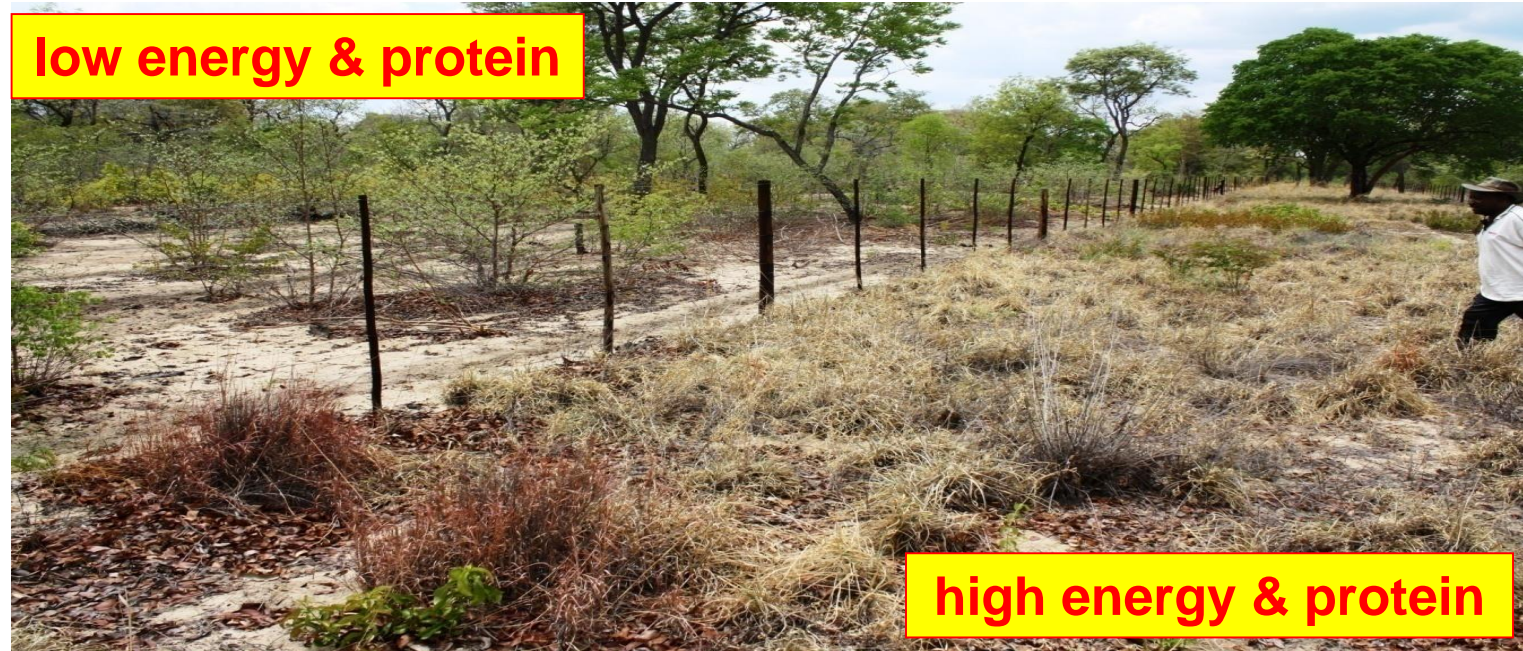


-: P, Cu, Mn, Zn, I

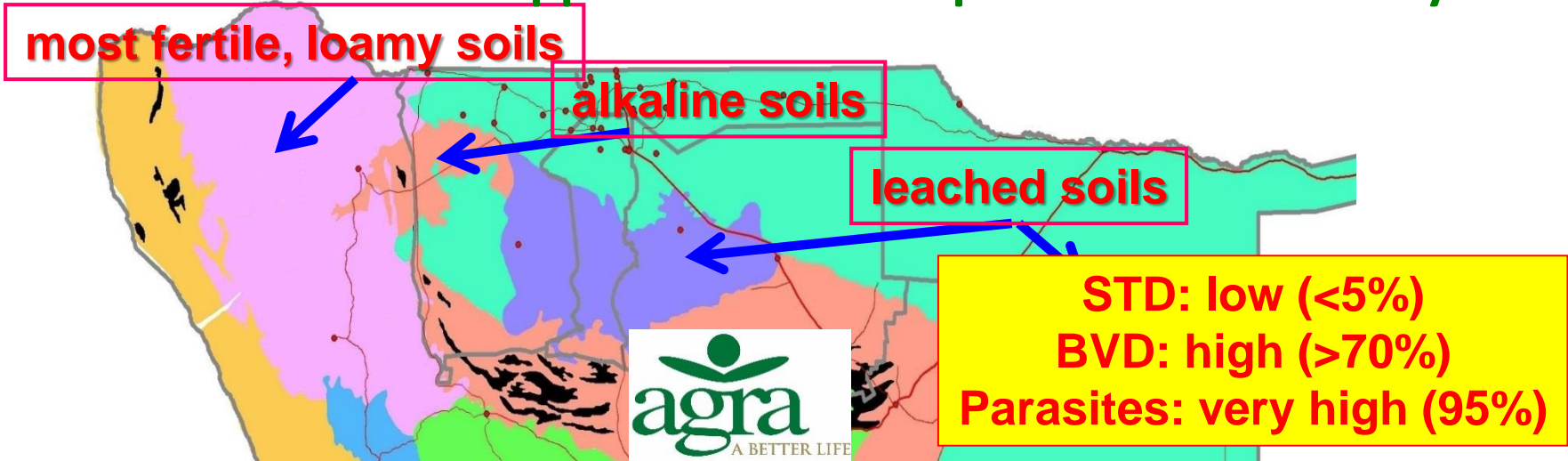
Se-

As+

Need for energy, protein supplementation depends on rangeland condition:



Need for mineral supplementation depends on soil fertility:





Climate change adaptation/mitigation by Namibia's commercial ranchers:



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- Farm more ecologically-adapted animals: goats, karakul sheep, game
- Adapt zoo-sanitary measures to promote game ranching (e.g. buffalo)
 - Add value to livestock products
- Regional, experiential climate-smart training of farmers' associations (SACAU?)
 - Improve productivity of workers: living conditions, training
- Generally mobilize farmers to participate in planning & decision-making (SACAU?)



Thanks! 😊