How do local agro-pastoralists judge their forage resources?
Using quantitative ethnoecological approach in West Africa

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Introduction & research objective

- Around the world, more than 40% of the terrestrial landmass is covered by drylands[1].
- About 38% of the arid zones are located in West Africa's savanna ecosystems[2].
- However, studies on how local agro-pastoralists valuate their forage resources for cattle, goats & sheep have still been vastly under-documented.
- Therefore, this study aims to find out how local agro-pastoralists judge forage plants for livestock production.

Materials & methods

- I performed 526 ethnobotanical interviews among local agro-pastoralists via **stratified random sampling** based on ethnicity, gender & age variables of local agro-pastoralists.
- This research was also conducted along a **steep climatic aridity gradient** covering 16 villages (7 villages in Ghana & 9 villages in Burkina Faso; Fig.1).
- I used Cognitive Salience Index (CSI)[3] and descriptive statistics via Anthropac 4.0 and SPSS vs 23 soft wares respectively for the analyses.
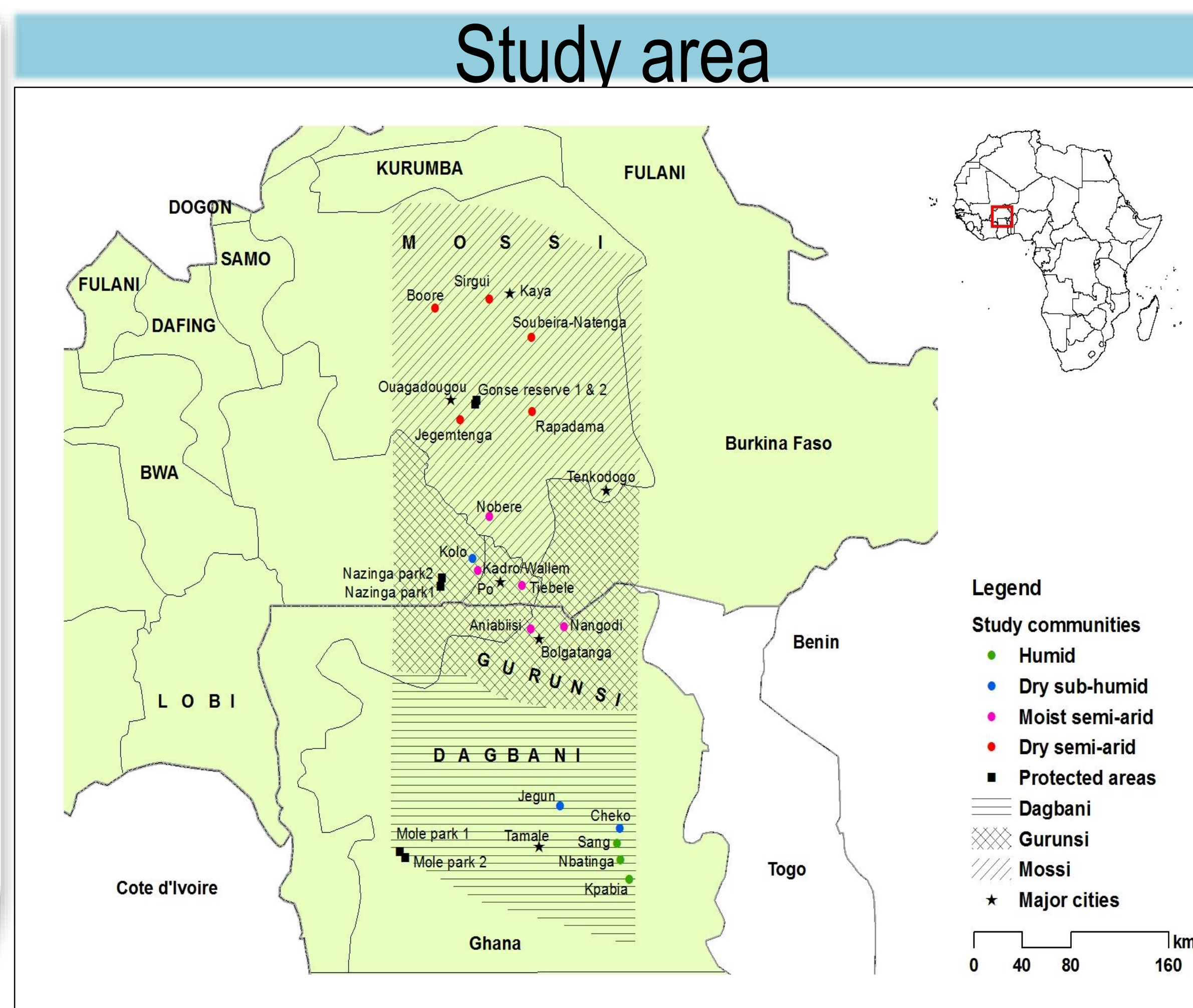
Study area

Fig.1: Ethnic map depicting major ethnic groups (Dagbani, Gurunsi and Mossi) situated within a gradient of increasing climatic aridity from south to north. Map edited by G. Forkuor.

Results & Discussion

- **Seasonal preference**:
- ➤ **Rainy season**: Herbaceous plants perceived as most suitable.

- ➤ **Dry season**: Crops and woody vegetation regarded as most palatable.

- **Livestock preference**:
- ➤ **Cattle**: Grasses & forbs most important.

- ➤ **Goats & sheep**: Crop residues and leaves of trees & shrubs.

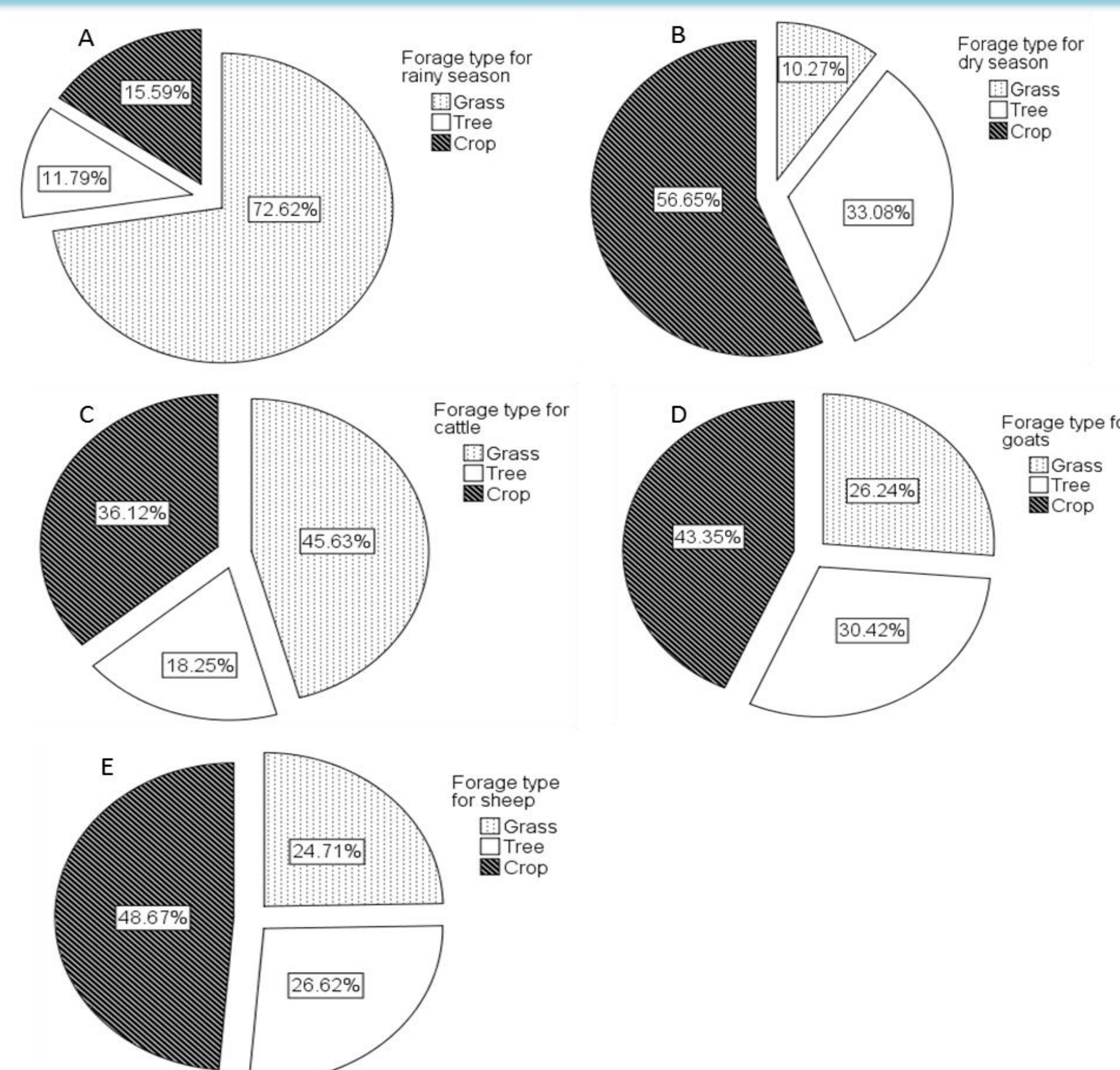- ❖ This may be attributable to their phenological stage & availability.

Fig.2: Proportions of forage plant types ranked by local farmers as most palatable in different seasons and for cattle, goats and sheep production.

- *Species preference:*
- ➤ *Pennisetum pedicellatum* **Trin** was most salient for the rainy season and cattle (CSIs: 0.413 and 0.301) respectively.

- ➤ *Arachis hypogaea L.* was highly salient for the dry season, goats and sheep (CSI: 0.318, 0.275 and 0.297) respectively.

- ❖ Due to their nutritional quality for good animal health.

- ❖ Also have high digestibility profiles.

Conclusion

- This research underlines the need for integrated use of forage resources for susainable livestock production and management among local agro-pastoralists to enhance their resilience to impacts of climate change.
- Further research is recommended for various aspects of local ecological knowledge.

Acknowledgements

References

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