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Future research: Potentials of the baobabs for improving health and food security.

By

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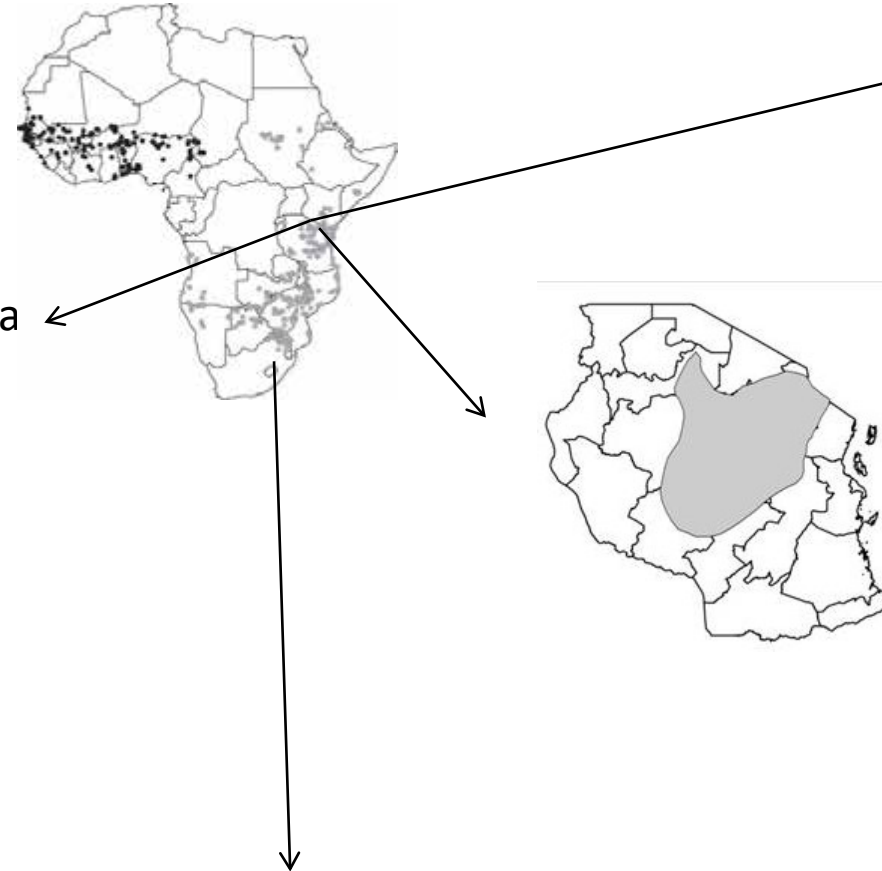
Research experience in African ecosystems



Southern Kenya-Northern Tz borderlands: African elephant genetic metapopulation dynamics



Semi-arid areas of Tanzania: African baobab distribution, population abundance and structure
Tarangire-Manyara ecosystem Tanzania: Ecology and biology of African savannah

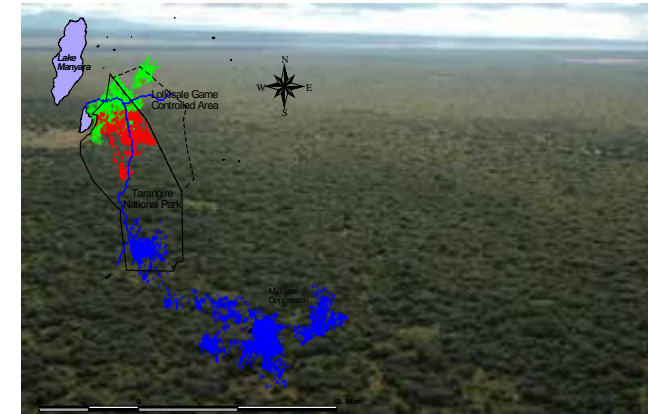


Serengeti-Ngorongoro: Drivers of IAPs and their management using Nature-based Approach (NbA)



- **Serengeti-Ngorongoro-Kilimanjaro:** Modelling scenarios of LULCC
- Monitoring of large mammal movements and dietary patterns using isotopes

Addo Elephant National Park South Africa: African elephant Genetics and Family group size dynamics



Contents of the presentation



- **What we know about African baobabs**-main focus in semi-arid areas of Tanzania
- Current livelihoods and ecosystem benefits and challenges of African baobabs
- **Future research:** including propagation and improved breeding for agronomic and domestication potential.

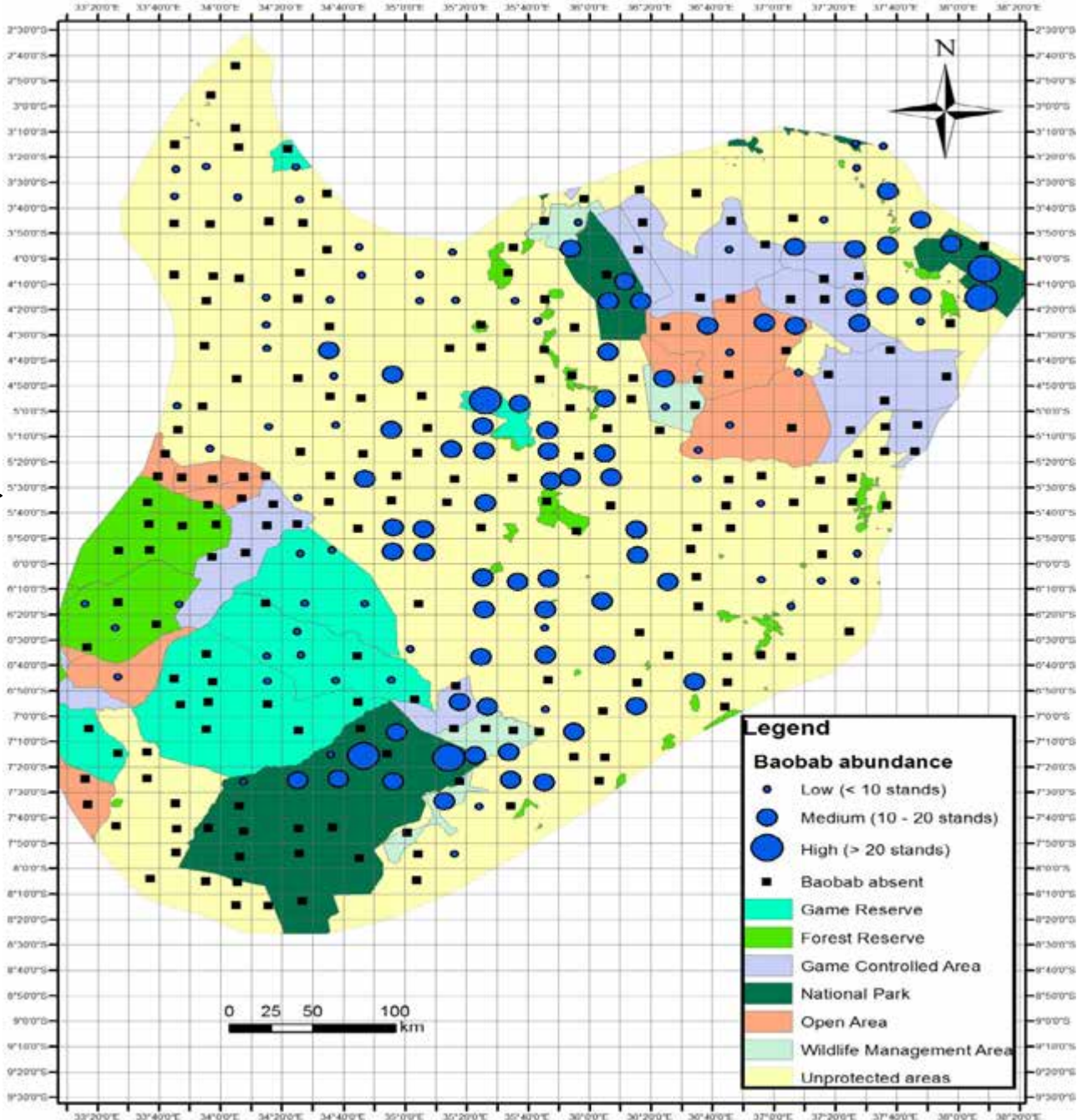
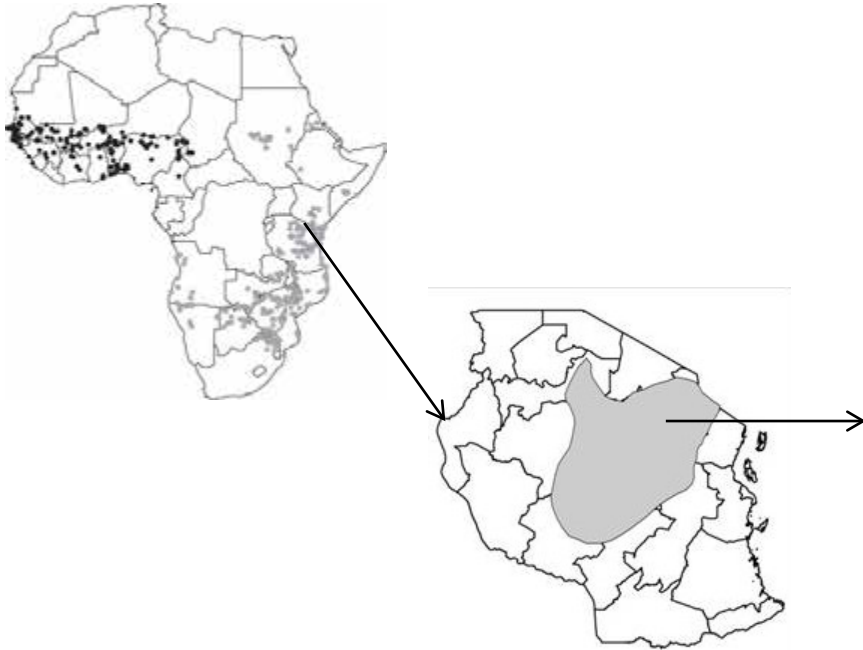
The African baobabs

Family **Malvaceae**

- Deciduous tree up to 23m, native to different Sub-Saharan regions
- Medium to low altitudes in semi-arid areas.
- Number of species-9
- Baobab has been used extensively since ancient times in food and traditional medicine



We know: about baobab distribution, abundance and population structure



Overall mean density ranged 1.52–2.45 baobab stems per ha

We know: Uses of African baobabs as *natural environmental and food capital*

The fruit pulp

Seeds

Leaves

Flowers

Roots

Bark of baobab



Have been studied by scientists for their useful nutritional and medicinal properties



Making more than 300 baobab products available in the market

Vegetable

Food/Fodder

Cover/Shelter

Medicinal

Firewood

Cultural

We know: Major threats to Baobabs



Elephant damage



Bushfire



Land clearance



Grazing by wildlife and livestock

Future research

- Recently, African baobab has been reported in Tanzania as one of the neglected and underutilized species (NUS) with high propagation, agronomic and economic potential that can be intensively grown in semi-natural areas (Msalilwa et al., 2020a&b) and thus needs immediate sustainable conservation utilization attention

In the phase of increased global challenges such as climate change, food insecurity and global pandemic (including Covid-19), how can we use baobabs and their potentials to address these challenges?.



Future Research

- **Research potential:** “To what extent can baobab be used to address health, food and environmental challenges in the SDG framework?”
- **Research Potential:** “How can we scale up sustainable baobab conservation and utilization practices?” – (Currently *some communities/areas are better with sustainable land management and utilization of baobab and their products than others*)
- “Which sub-(species) of baobab can be grown in different agro-ecologies for promoting agroforestry practices in semi-natural areas in Tanzania?”
- **Can economic and cultural incentives from baobabs be used to promote sustainable future livelihoods and ecosystem conservation from the current challenges?**

Future research

- **Research potential:** “How can we tap agronomic and domestication potentials of baobab as a means for sustainable intensification of the species?”
- WHY are African baobabs not accepted till now as species to be grown agronomically or domesticated?

(need for a study on baobab species on their ecology and biology, conservation genetics, ethnobotany, pharmacognosy and domestication potentials to generate future opportunities towards addressing poverty, food and nutrition insecurity and land degradation in Africa)

Future Research

Research potential: Can baobab be used as alternative adaptation crop to climate change and mitigation?

Also, further study: cost-benefit evaluation of management strategies for baobabs in Tanzania



Thank you



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