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# The Neglected Value of Agroforestry in the Small-scale Farming Sector in KwaZulu-Natal, South Africa

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# Agroforestry

- Definition
  - “Agroforestry is a collective name for land-use systems and practices where woody perennials are deliberately integrated with crops and/or animals on the same land management unit. The integration can be either in spatial mixture or temporal sequence. (ICRAF, 2017)”







# Agroforestry

- Used worldwide by both less developed and developed countries e.g. India, Uganda, Kenya, USA etc.
- Combines traditional agriculture + conventional forestry
- Different from social forestry, how? No agric.
- Use of planned **technology** system
  - Animals + forestry (e.g. bees + fruit orchard)
  - Crops + forestry (birds on trees + bollworms)
  - Animals + crops + forestry (cattle + forage + tree)





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# Benefits

- Benefits (protective / productive)
- Social
- Economic
- Environmental



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# Benefits

- Environmental benefits
  - reduce surface runoff
  - reduce erosion
  - improve ecological systems
  - increase soil nutrients and structure (fertilizer trees)
  - reduce pressure on forestry



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# Benefits

- Economic benefits
  - increase productivity
  - increase fodder production for livestock
  - increase crop productivity
  - increase income



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# Benefits

- Social benefits
  - improves standard of living
  - improves nutrition
  - improves health
  - improves community landscapes





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# Agroforestry

- Monocultural practices are dominant vs polyculture
- Policies are the key
- DAFF busy with national strategy development
- All specialists in different stakeholders have a major role to play



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# Challenges

- Key Strategic Challenges
  - **Institutional Strategy:** Missing link between provincial, municipal, private sector, NGOs, community levels
  - **Technical Strategy:** Limited research output in SA
  - **Economical Strategy:** Globally – no/little incentives

(Guiney, 2016)



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# Success Stories

- In Uganda, 50 000 trees of vanilla mix with avocado and jack fruit by 500 farmers and 1 technician in 2015. Uganda.
- Shea nut seedling production for the community project
- *Eucalyptus grandis* and bean project (4-6 poles, 6-10 for timber)



# Success Stories

- In Kenya, 2 million people suffered from low yields and milk production.
- Private companies funded 30 000 dairy farmers
- **Agroforestry was the backbone** (fodder, reduced erosion, food for humans, soil fertility). Thirty percent increase to crop yields, and five times milk in 5 years, 1200 groups and 15 cooperatives. NGO and private dairy company, 2 billion Kenyan Shillings (repurchase)





# Agroforestry

- In Zambia – fertilizer trees
- Sesbania sp.
- Faidherbia sp.
- Gliricidia sp.
- Tephrosia sp.
- More than 160 000 farmers have benefited from Faidherbia sp. It sheds leaves rich in N during rainy season no competition for water.



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# Success Stories

- Guatemala
  - Though agroforestry they planted 5 million trees cardomum oil (from seed) used in perfumes and number one producer in the world.
- In China, tea tree insect pests prayed on by birds attracted by wild fruit on intercropped trees solved the pest problem.



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# Success Stories

- In Niger, 5 million ha of farmland restored through *Faidherbia sp.* dominated agroforestry.
- In Malawi, more than 300% gain yield gain reported by Malawian researchers when maize was intercropped with *Faidherbia sp.*
- Kenya, Ethiopia, Tanzania, Mali and 14 other countries adopt fertilizer trees.



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# KwaZulu-Natal

- We share similar challenges with provinces of the countries above (natural resource dependency, droughts, floods , needs to improve economy, high CO<sub>2</sub> emission, poverty, hunger, lack of employment opportunities, etc.)





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# KwaZulu-Natal

- Involvement of other stakeholders that may share similar interests in dealing with such challenges)
- Revisit to policies/strategies in order to incorporate and support agroforestry ?



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# KwaZulu-Natal

- Alignment of community needs with agroforestry outputs
- Alignment of research to agroforestry for improved outcomes and benefits to the province of KwaZulu-Natal



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# KwaZulu-Natal

- NB: Through agriculture and improved agroforestry adoption, there is a huge potential in the province.



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# Conclusion

- Clearly millions are benefiting worldwide
- Allows farmers to produce food
- Protects the environment
- Provides employment opportunities
- Provides economic benefits
- Provides social benefits
- Needs organizational mandates to support it





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**Thank you**