Pathway to Prosperity:

The use of agroforestry to improve people's livelihoods and preserve environmental services in the Congo Basin

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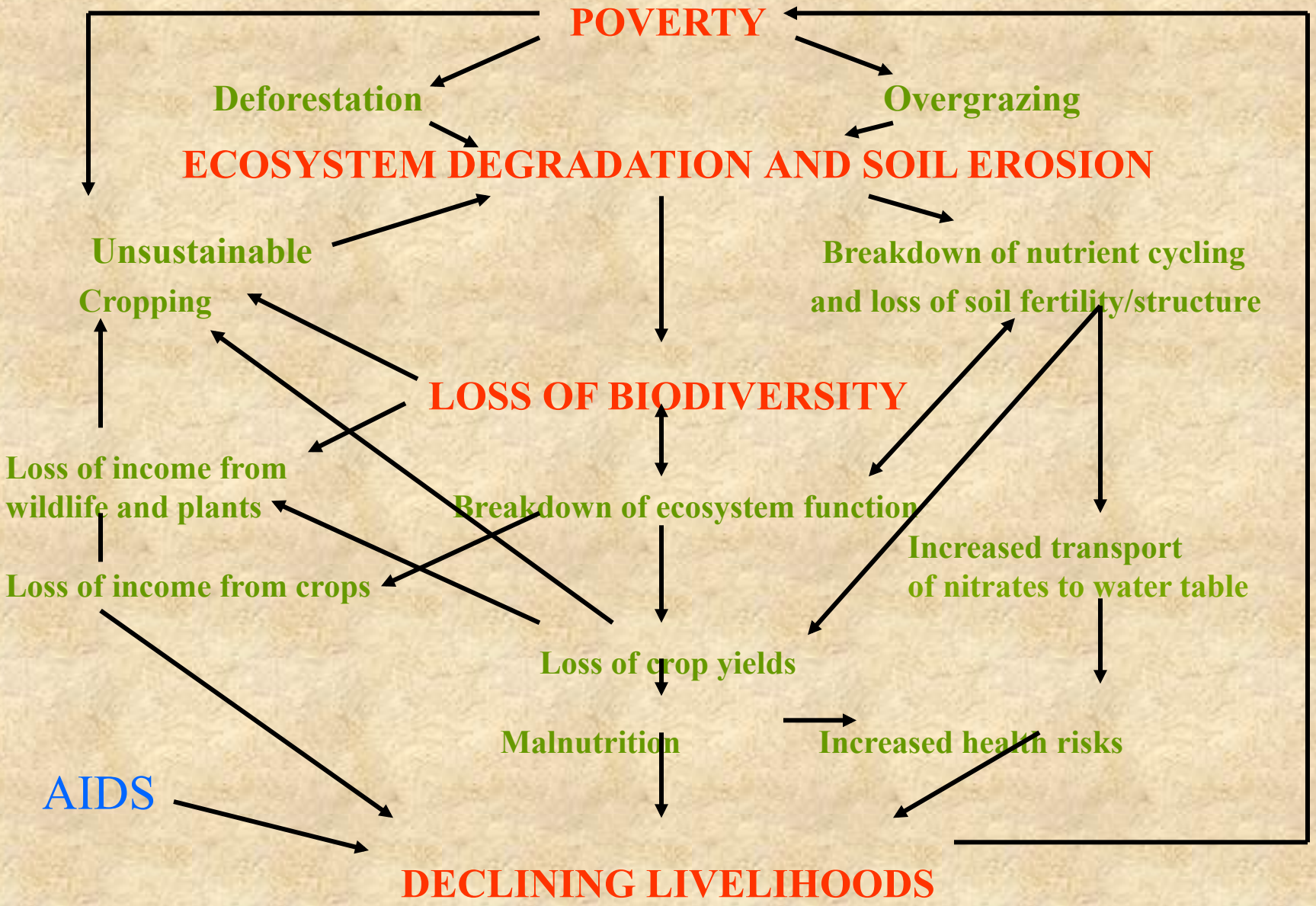
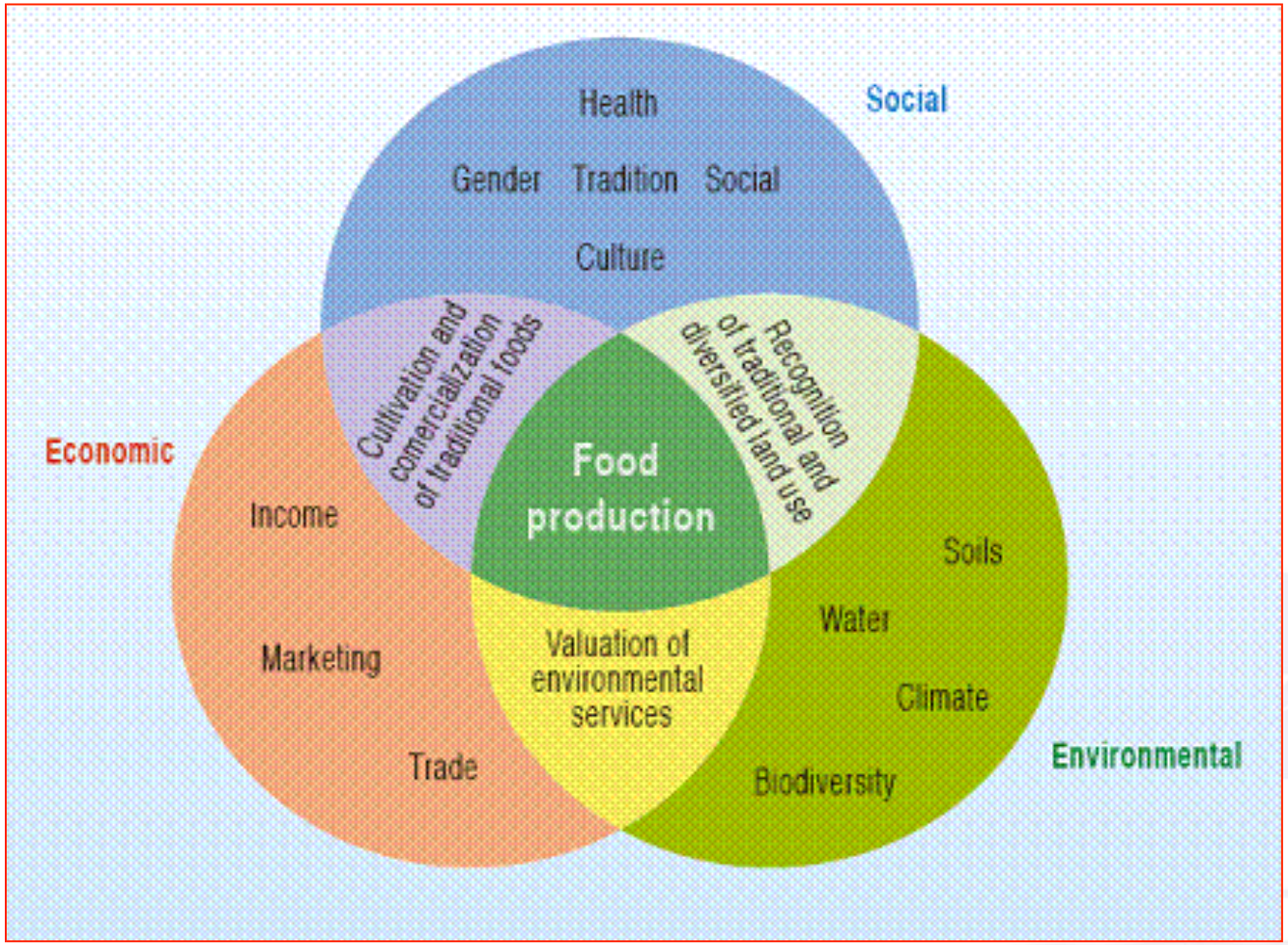
Presentation outline

- Landscape degradation Cycle
- Agroforestry for environmental services in the Congo basin
- Summary

Landscape Degradation Cycle



Benefits of Agroforestry
Multi-functionality of Agriculture & Landscapes



Diversification of cocoa and coffee AF systems with indigenous and exotic fruit trees

Cocoa Agroforestry in Cameroon

The benefits

- Reduces land degradation and provides beneficial shade cover to cocoa plants
- Plays an important role in stocking carbon, thus climate change mitigation
- Provides alternative sources of income when other main cash crops are not in production, thus contributing to regulate and stabilize income
- Most of the fruit tree based cocoa and coffee systems are aging and need to be renewed for optimum benefits
- Technologies exist but need to be adapted to different species and disseminated to farmers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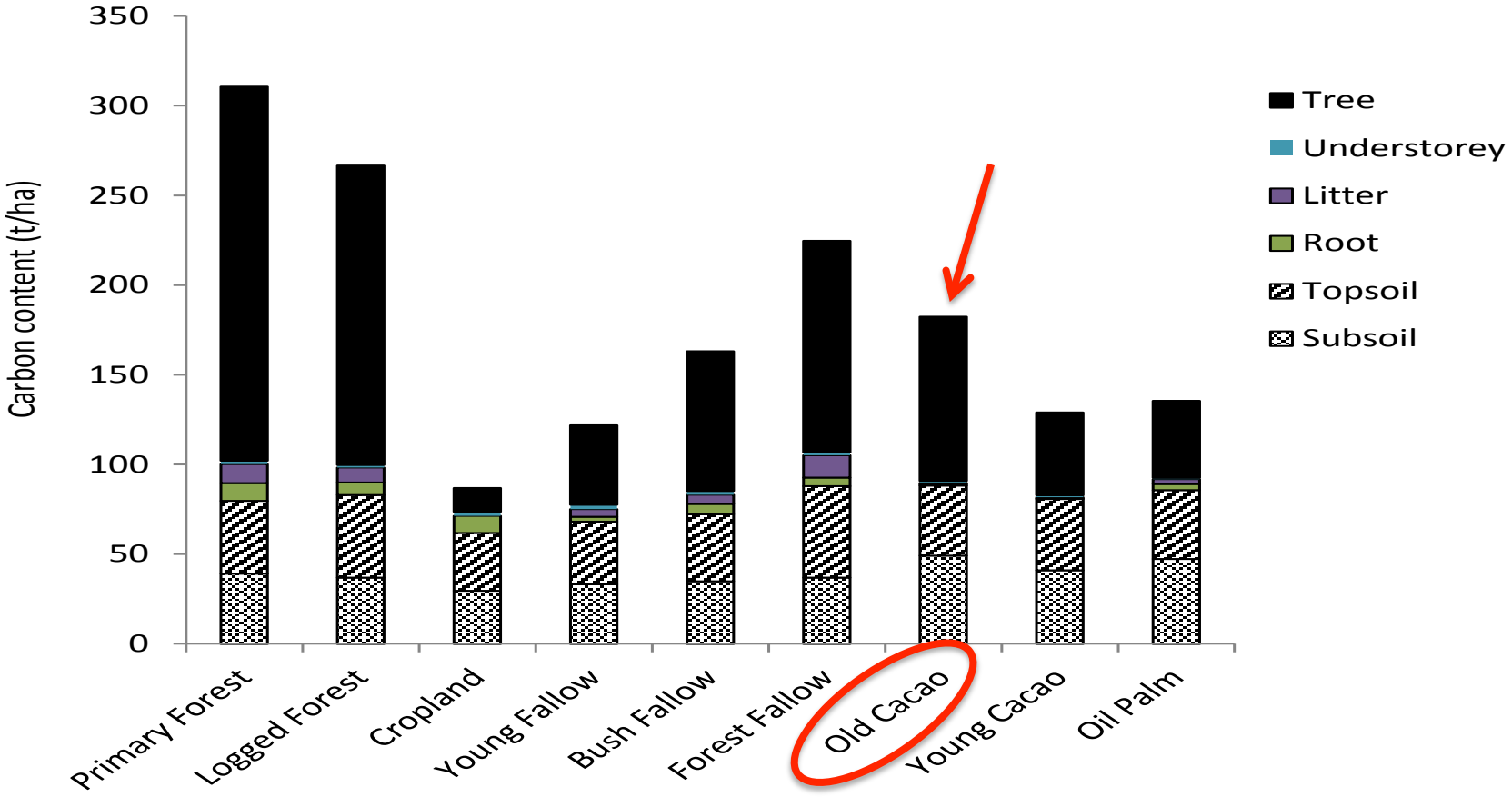
World Agroforestry Centre

WORLD AGROFORESTRY CENTRE

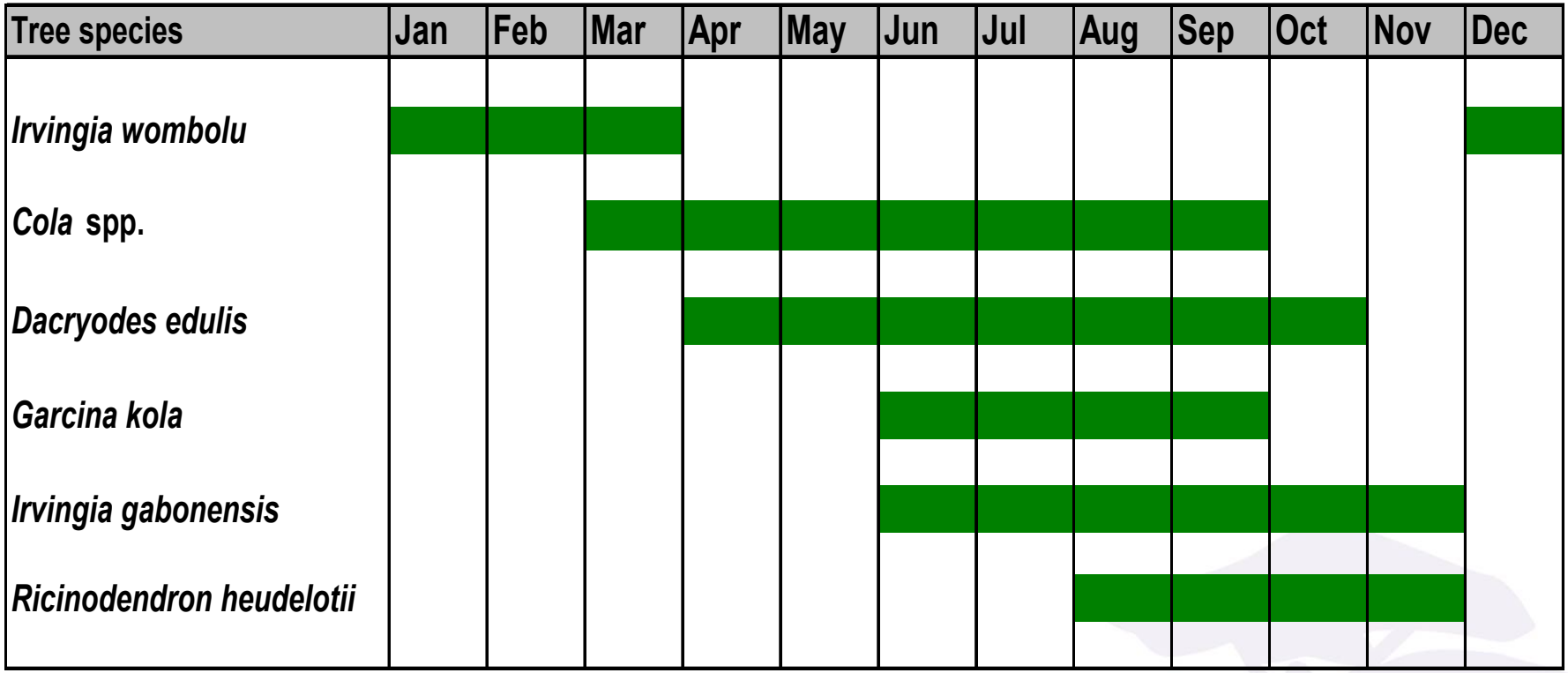
Agroforestry for biodiversity and ecosystem services

Carbon sequestration potential of different land use types



Total carbon stock in various land uses types in Efoulan, South Cameroon [Yemefack *et al.*, 2013]

Fruiting calendar of some indigenous fruit trees in West & Central Africa



Tree species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irvingia wombolu	■	■	■									■
Cola spp.			■	■	■	■	■	■	■			
Dacryodes edulis				■	■	■	■	■	■	■		
Garcina kola						■	■	■	■			
Irvingia gabonensis						■	■	■	■	■	■	
Ricinodendron heudelotii								■	■	■	■	

Safou variants

Early maturity: April - May

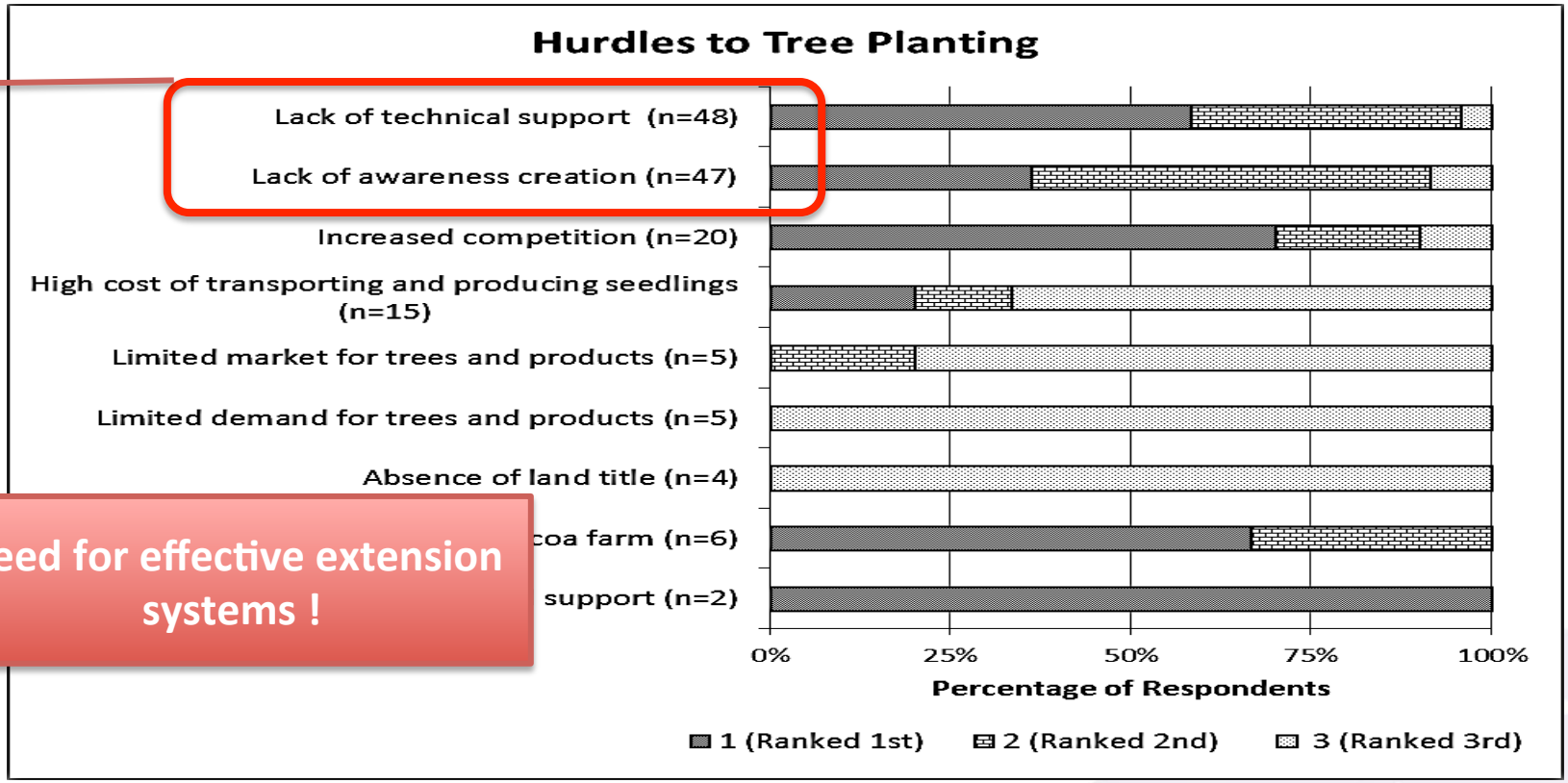
Normal: June - September

Late maturity: October - March

Impact of agroforestry interventions on farmers' livelihoods: building assets

- **Financial:** Household income from AFTPs increased; also relative contribution of AFTPs to household income is higher
- **Human:** increased knowledge and skills through capacity building programme
- **Social:** enhanced coherence, better functioning groups, better conflict management even within families
- **Physical:** progressive shift in use of AFTP income from fulfilling primary needs to investments in housing and agricultural, and increased savings
- **Natural:** increased pressure on trees providing NTFPs and loss of genetic diversity can be avoided through participatory tree domestication, by which local tree products, previously collected from the wild are now cultivated on farm

Farmers' perception of constraints to tree planting case of Efoulan, South Cameroon



Need for effective extension systems !

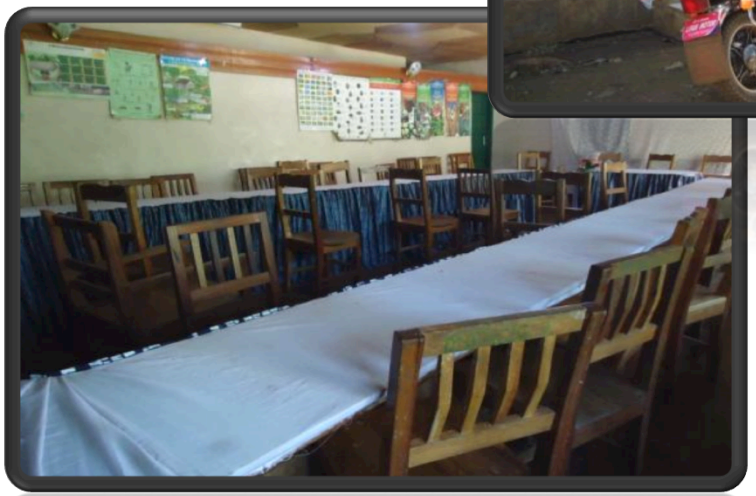
Proportion of respondents ranking the various hurdles associated to tree planting

[Alemagi *et al.*, 2014]

Effective extension methods are needed

The concept of Rural Resource Centres

ICRAF has been experimenting the concept of **Rural Resource Centers** for dissemination of agroforestry technology in the last 8 years in Cameroon, DRC and Nigeria



- Training and Demonstration Hubs
- Learning and Knowledge Sharing Platforms

Enabling agroforestry policies and institutions are needed

Agroforestry in the Congo basin is often impeded by:

- Legal, policy and institutional constraints from other sectors, e.g. forestry
- Investments discouraged by time lag between investment and returns; trees take time to grow

N/B tree planting policies e.g. reforestation policies may exist but are different from agroforestry policies!

Specific policies are thus needed to promote the benefits of agroforestry

Summary

- Manage agricultural landscape for full range of production, ecosystem and social benefits
- To achieve landscape goals requires complementary use and management of on-farm and non-farm lands
- Building eco-agriculture landscapes need new skills, capacities, tools and policies taught at IBAYSUP/UCLA/ DREXEL/WISCONSIN
- Manage farm field to produce more food with ecosystems and climate benefits, ie: agroforestry, crop diversity, rotational grazing, enrich soil organic matter etc.
- Mange conservation areas to benefit farmers as well as ecosystem & climate: PES, Carbon storage & sequestration, minimize pollution in agriculture

Summary

- To protect the Congo basin forests, a **multifunctional landscape approach** is needed
- Sustainable intensification of **food crop systems** could reduce the need to clear new forestland,
- Farmers are willing to manage **diverse multi-strata systems** if they are profitable and provide a range of products for food, income, medicine, wood, etc.
- **Reward schemes** for farmers that maintain land-use systems that provide environmental services need to be considered,
- Need for effective **extension systems** adapted to the specificities of agroforestry, e.g. the RRC
- Need for **institutions and policies** that take into account the multi-sector dimension of agroforestry at all levels

Many thanks for your attention