

**FALLOWS,  
AGRO-FORESTS AND  
FORESTS:  
SHOULD TROPICAL  
SILVICULTURE GO  
BEYOND THE FOREST  
MARGIN?**



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**“Research Priorities in Tropical Silviculture: Towards New paradigms?”  
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# Outline

## 1. Background

Forest coverage and land use at the tropical forest margin

National timber production

Farmland timber resources

## 2. Knowledge gaps

Assessment of Timber stock: Preliminary insights from case studies in the Central Region

Analysis of barriers to on-farm timber adoption

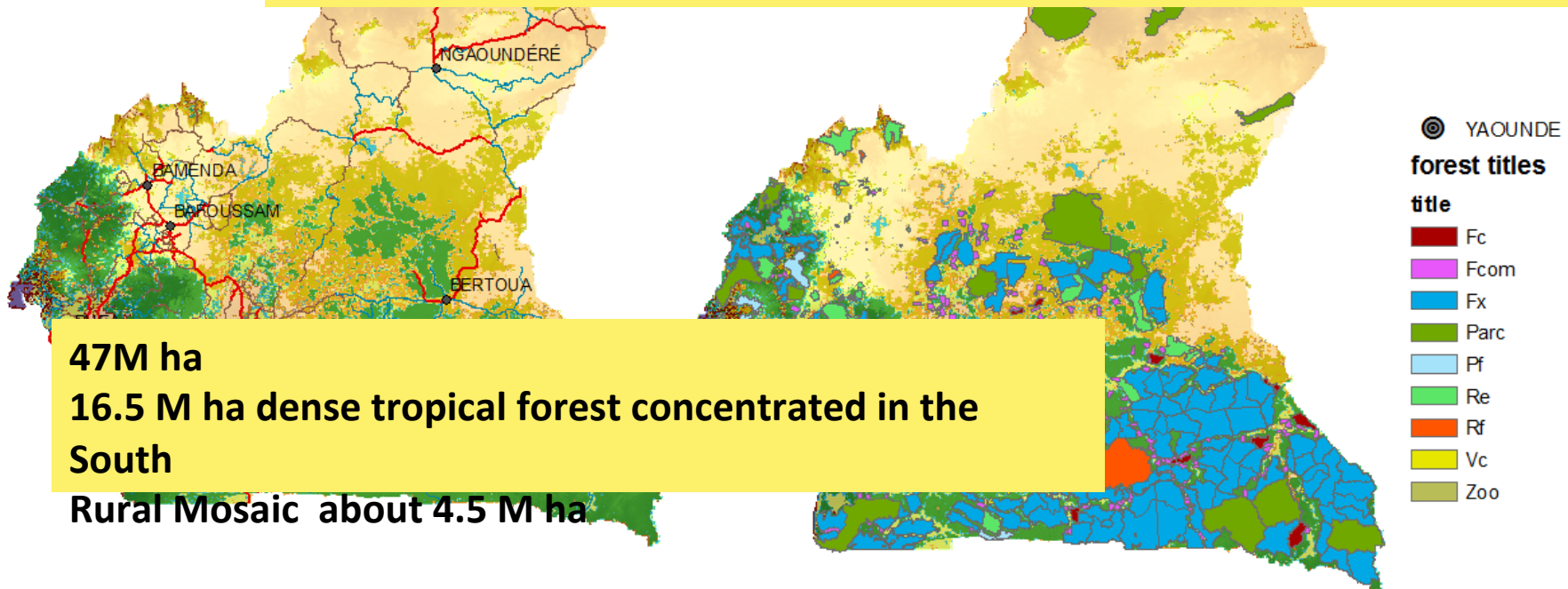
## 3. The way forward

**CAMEROON**

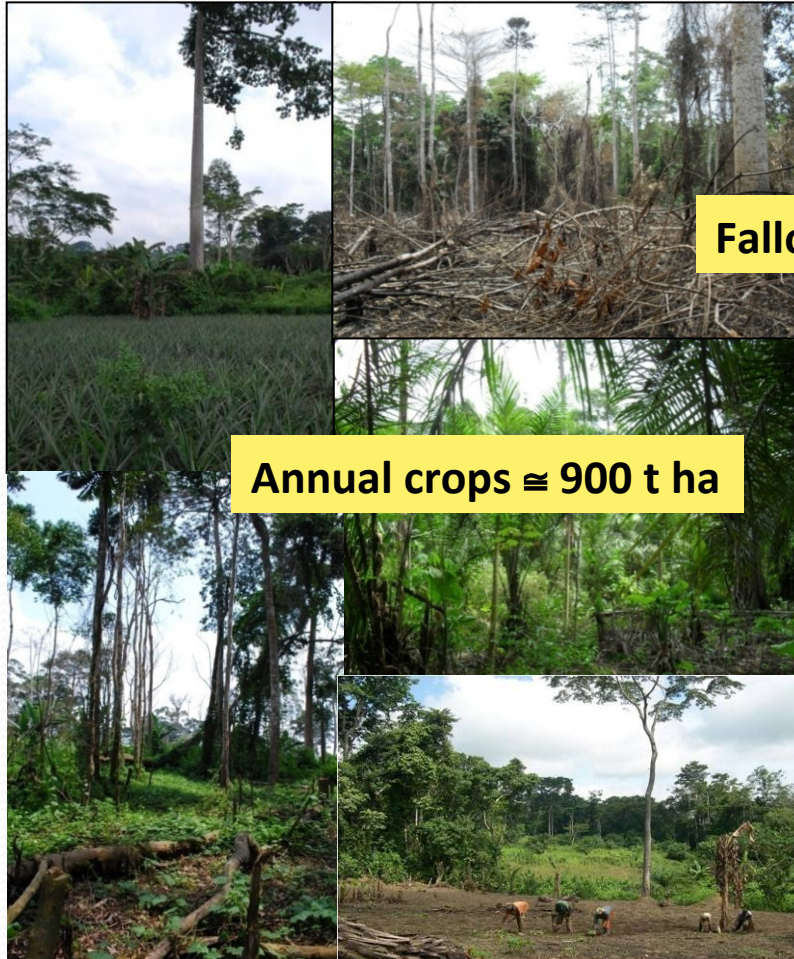
**Forest management units**

**Dense tropical forest**

PFD: 12M ; { protected: 4.5 M ha  
production : 7.5 M ha  
NPF: 5 M ha liable to be allocated/converted  
to other land uses



## Agricultural components in the rural mosaic



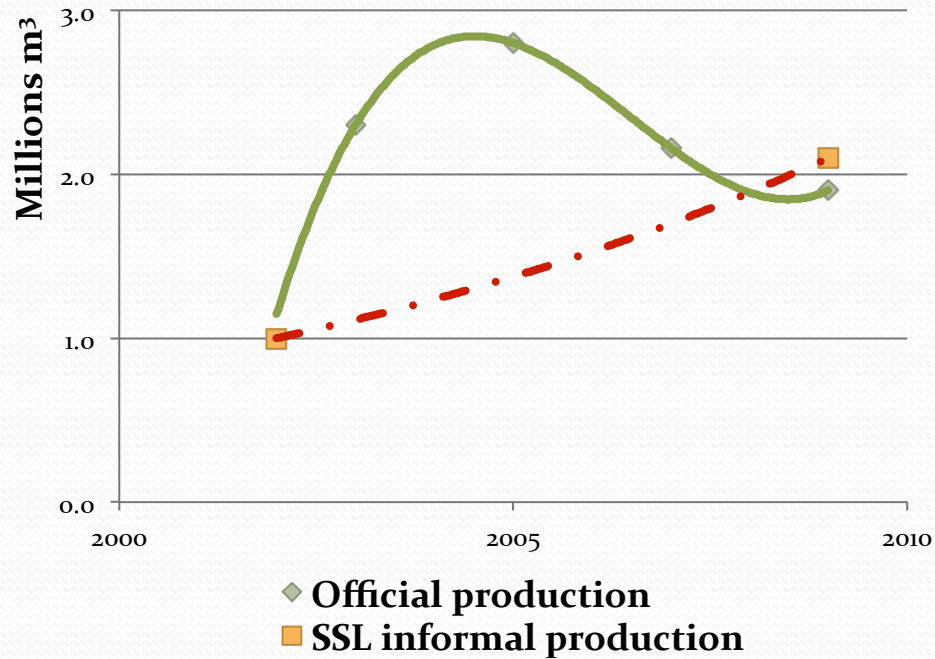
**Annual crops  $\cong$  900 t ha**

**Fallow Units and secondary forests  $\cong$  5 M ha**



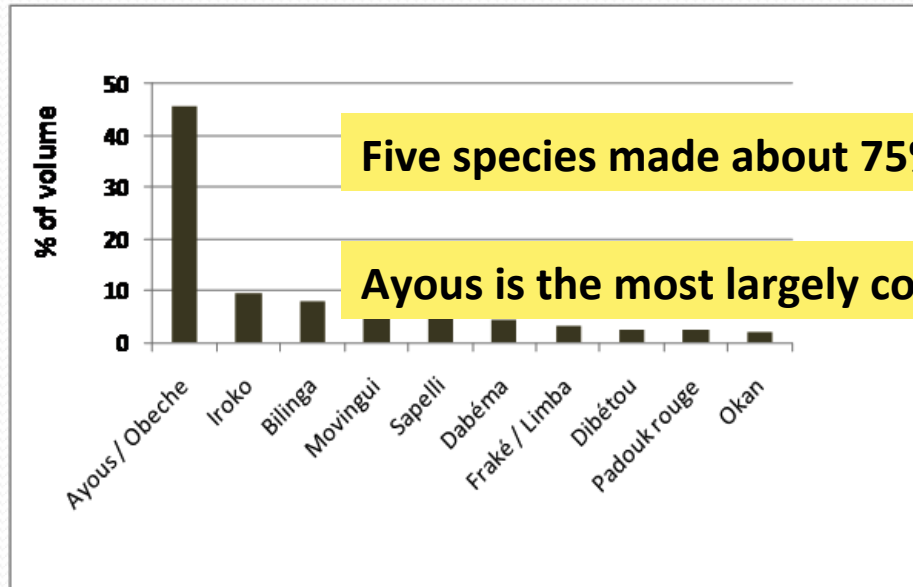
**Cocoa Agro-forests  $\cong$  500 t ha**

# a flourishing domestic timber sector...



**Once SSL production is included the overall value of national timber production doubles!**

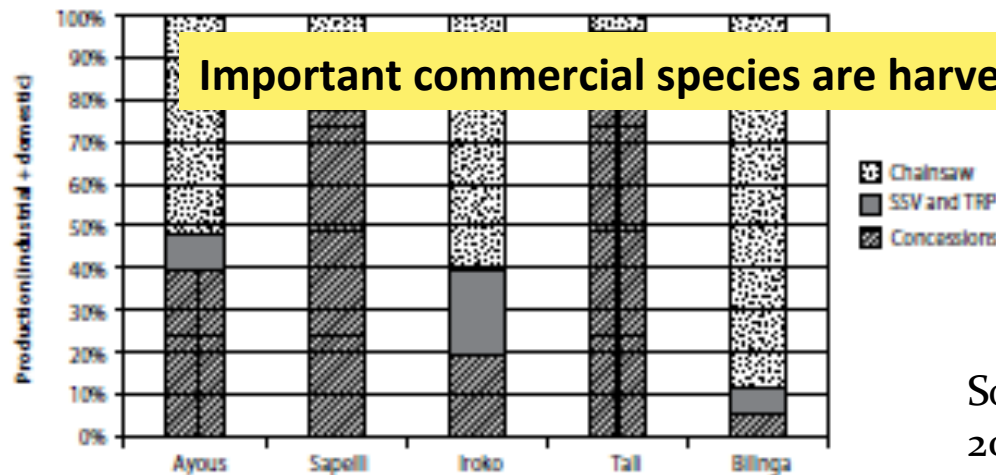
## ...targets a handful of species harvested ...



Five species made about 75% of total sales in Yaounde .

Ayous is the most largely commercialised

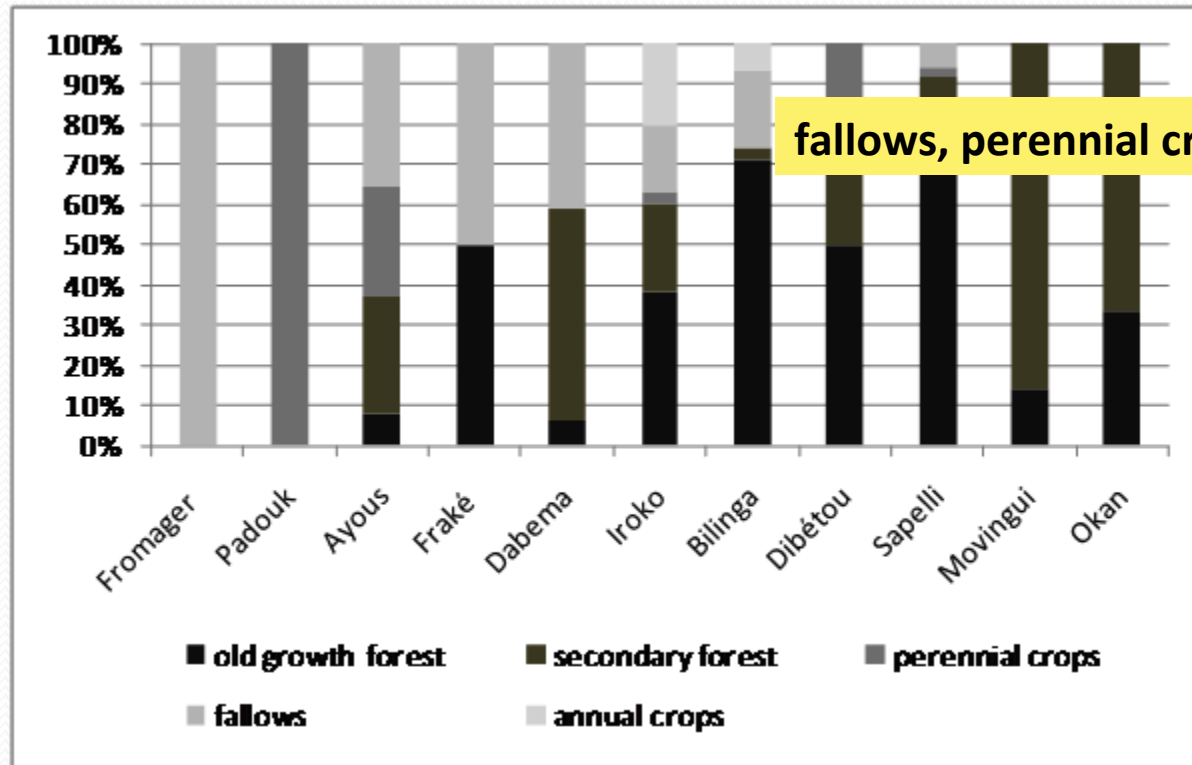
Source: Robiglio et al. submitted to Small Scale Forestry (2011)



Important commercial species are harvested more in the NPFD

Source: Cerutti and Lescuyer 2010

## ...in the agricultural land use units



fallows, perennial crops and annual crops

Source: Robiglio et al. submitted to Small Scale Forestry (2011)

## What are on-farm trees in the rural mosaic?

Farmers traditionally maintained selected forest species on their farms

**SSL benefits of a stock of trees that were preserved by farmers for reasons other than timber production**

cycling, management of light and moisture, protection from wind);

2. provide valuable products (food

medi **On-farm trees in Cameroon are not managed by farmers for timber production.**

etc.) for household consumption and income diversification.





## Towards an assessment of the opportunity to develop management options for the on-farm timber stock

- Are there significant variations in tree species distribution in the different land use systems?
- What are the factors influencing trees species distribution?
- How will the evolution of agricultural land use systems affect future timber production?
- Can timber production from farmland become a livelihood option for smallholders?



## Farmland timber Stock and species

### P and NPLD species regenerate and grow in fallow based and permanent tree crop systems

Species inventoried. The most abundant were the Pioneers and

### Density depends on the type of LUT, the length of the fallow rotation and on the species

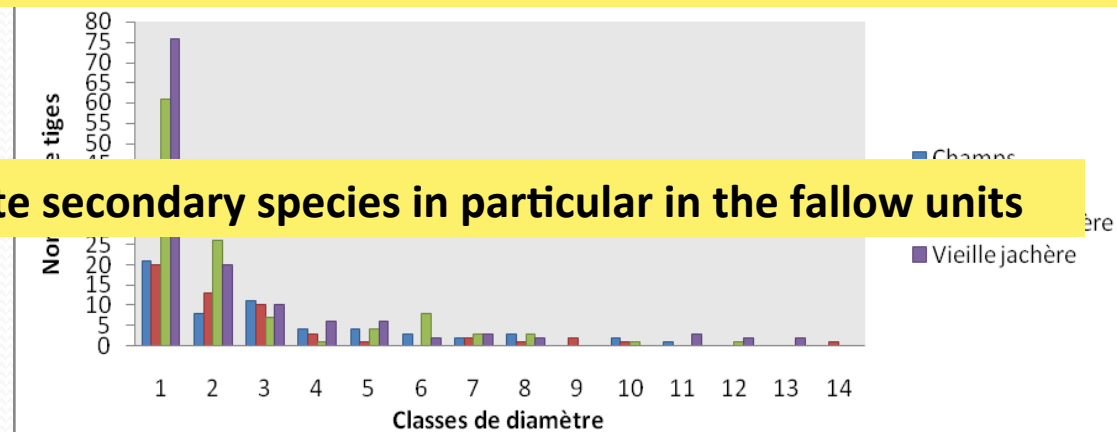
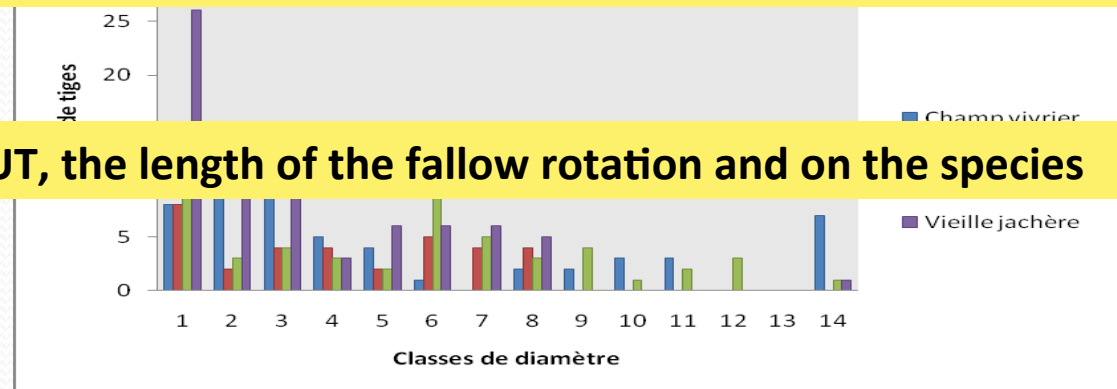
Species;  
Larger volumes and higher density values were found in the fallow units (medium and old)

### Agricultural expansion and intensification coupled to logging has significantly reduces the availability of farmland trees

Trees density varied across sites;  
Within sites trees density varied across Land Use Units:

### There is a high potential to promote secondary species in particular in the fallow units

was significant only for one species in one site (Iroko,  $F=2.79$ ,  $p=0.026$ ). It was not comparable for other species.



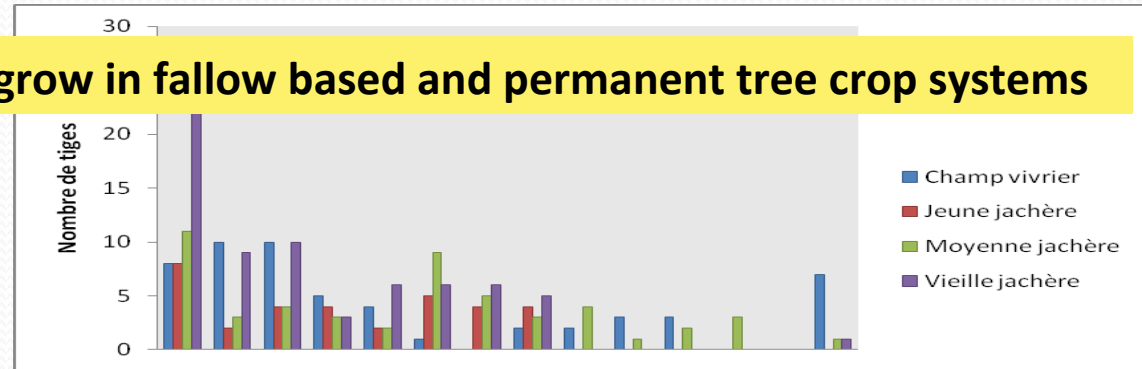
Mevo Mevo, medium and long fallow rotations are dominant, low population pressure

# Farmland timber Stock and species

About 49 over 51 commercial

## P and NPLD species regenerate and grow in fallow based and permanent tree crop systems

abundant were the Pioneers and Non Pioneer Light Demanding Species;  
Larger volumes and higher

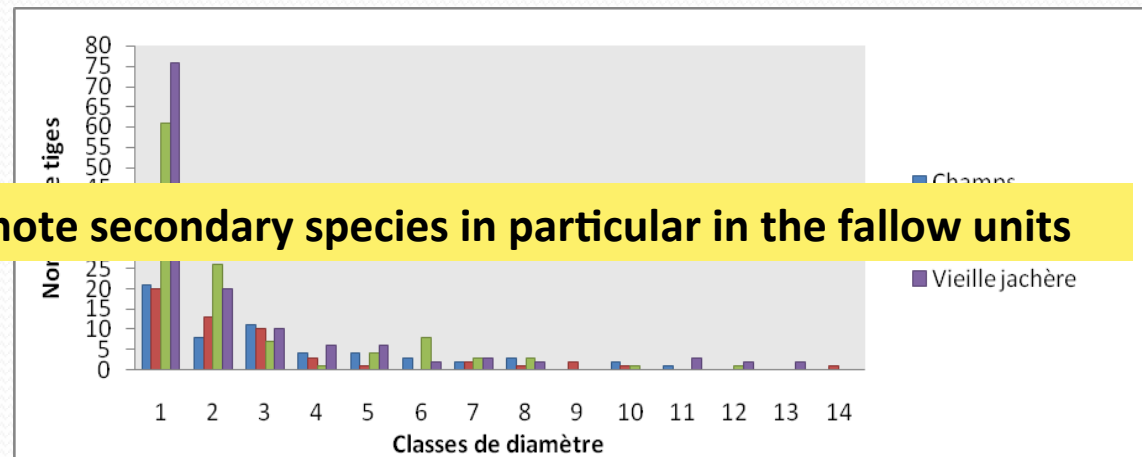


## Density depends on the type of LUT, the length of the fallow rotation and on the species

FALLOW UNITS (medium and old) and for secondary species,

*Nkolabang, intensively cultivated, short rotations are dominant, high population pressure*

Trees density varied across sites; Within sites trees density varied across Land Use Units:



## There is a high potential to promote secondary species in particular in the fallow units

was significant only for one species in one site (Iroko,  $F=2.79$ ,  $p=0.026$ ). It was not comparable for other species.

*Mevo Mevo, medium and long fallow rotations are dominant, low population pressure*

# How will the evolution of agricultural land use systems affect future timber production?

## **Tenure and use right restriction**

In particular the **interdiction to sell**, that is the impossibility of fully benefit of their use right on trees growing on their customarily owned land is perceived as a barrier to get involved in planting and better managing timber trees.

Tenure insecurity becomes an issue in relation to the **time** needed by the trees to grow and become exploitable.

## **Low profitability**

Farmers feel they have a low power of negotiation and get low returns for a valuable product. Not aware of the economical value of the timber they consider the low price justified by the lack of investment in production.

## **Technical restrictions: lack of management skills and information**

Farmers' knowledge about managing timber trees regeneration and growth is limited to very basic techniques and fully depend on natural regeneration.

## General conclusions

- evidence of the importance of “spontaneous”/informal farm timber marketing to meet domestic wood demand (species/surface);
- Not sustainable in the long term
- NEED for a shift towards a new paradigm of timber resources management that recognizes the role of on-farm trees to the national forest and timber production .





# THANK YOU !

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