



HWP modeling and reporting in France

Workshop, Harvested Wood Products in the context of climate change policies

UN, Geneva

9, 10 September 2008



THE STUDY

- **First study done by FCBA in 2003**
- **New study : 2005 HWP contribution to the French GHG inventory sent to UNFCCC**
- **Commissioned by the French Ministry for Agriculture and Fishery**
- **Undertaken by FCBA with a support from Jean Malsot Consultant and Ernst & Young**



SUMMARY

- 1- Main methodological choices**
- 2- Results and sensitivity analyses**
- 3- Alternative to stock change approach**
- 4- Conclusion and way forward**



1 - Methodological Choices



OUTLINES

- **Consistent with IPCC 2006 guidelines on HWP**
- **TIER 3 used for the HWP in use**
- **TIER 2 for HWP in disposal sites**
- **Five sectors:**
 - **Housing,**
 - **Furniture,**
 - **Packaging,**
 - **Energy,**
 - **Pulp and paper.**

CALCULATION METHOD

- **HWP in use: Intermediate stocks**
 - $\Sigma \text{ Production}_{2005} * \text{Storage length}$
 - $\text{Variation}_{2005/2004} = \Sigma \text{ Production}_{2005} * \text{Storage length} - \Sigma \text{ Production}_{2004} * \text{Storage length}$

- **HWP in use: Final stocks**
 - $\text{Increase}_{2005} = \text{Apparent Consumption}_{2005}$
 - $\text{Decrease}_{2005} = \text{Apparent Consumption}_{(2005 - \text{Lifetime})}$
 - $\text{Variation}_{2005/2004} = \text{Increase}_{2005} - \text{Decrease}_{2005}$

- **HWP in landfills**
 - 50% of carbon placed in landfill is considered as oxidised; 50% is stored
 - $\text{Variation}_{2005/2004} = 50\% * \text{Carbon placed in landfill}_{2005}$



SOURCES

- **Construction, furniture and packaging**
 - **Production** : SESSI, UFC (plywood producers association), UIPP (wood panels producers association), SYPAL (pallet manufacturers association)
 - **Imports and Exports** : AGRESTE
- **Paper and Board**
 - **Production, imports and exports**: COPACEL (paper & board producers association)
- **Energy**
 - **Industrial consumption**: ADEME/ EACEI
 - **Household consumption**: INSEE/ CEREN
- **Waste**
 - **Volumes from industry and household**: ADEME
 - **Volumes from rehabilitation and demolition**: IFEN



LIFETIMES

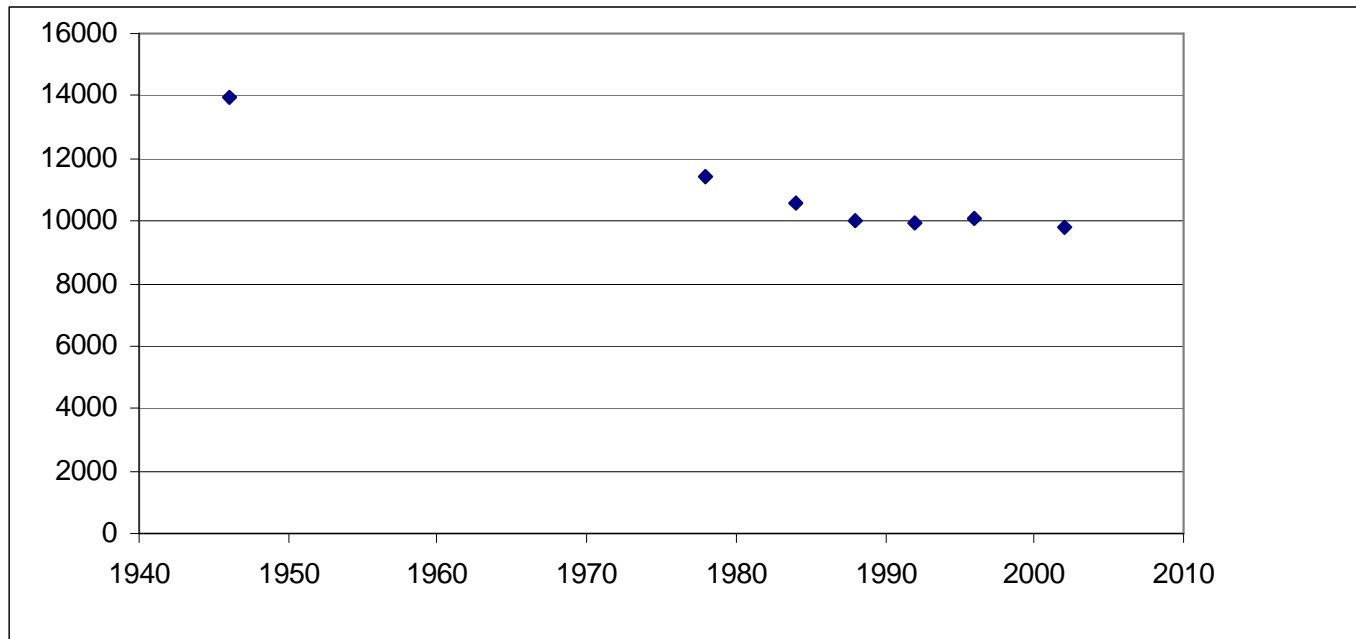
Construction	
Structure	75 years
Flooring	40 years
Interior arrangement	15 years
Joinery	20 years
Sidings	40 years
Sleepers	40 years
Poles	30 years
Wood energy	
Firewood (household)	2 years
Wood chips	2 months
Black liquor	0 months
Wood for industrial boilers	1 month
Sawmill chips	2 months

Furniture	
Seats	13 years
Office furniture	10 years
Kitchen cabinet	25 years
Furniture	20 years
Outdoor furniture	5 years
Bedding	13 years
Packaging	
Pallet and crates	1 month
Heavy duty packaging	5 years
Barrel	8 years
Paper & Board	
Corrugated cardboard	6 months
Graphic use	16 months
Others	1 month



LIFETIMES FOR STRUCTURAL ELEMENTS

Number of buildings built before 1949



- **In 2002, 30% of buildings built before 1949 had been demolished (half life of 105 years, average lifetime 150 years)**
- **Conservative assumption: 75 years lifetime**

2 Results and sensitivity analyses

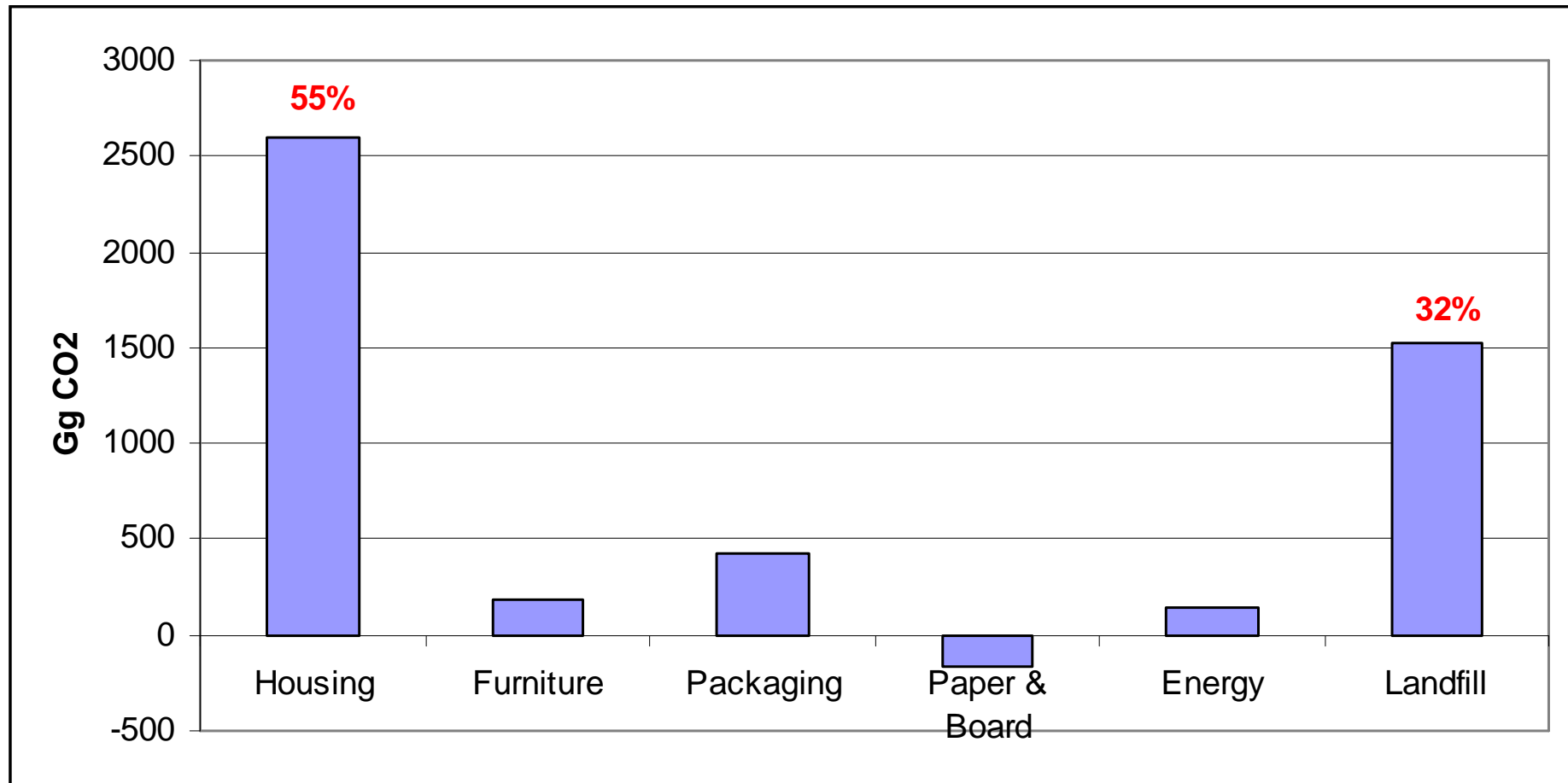
RESULTS

	Gg CO ₂ /an
Stock change approach	-4 709
Production approach	-3 457
Atmospheric flows approach	452

- **No assessment of simple decay approach: considered as less promising than the others**
- **Atmospheric flows: negative contribution because exports < imports**
- **Stock change > production:**
 - Variation of stock in landfill outside France not included (permitted in the IPCC guidelines)
 - Wood for glulam and frames mainly imported

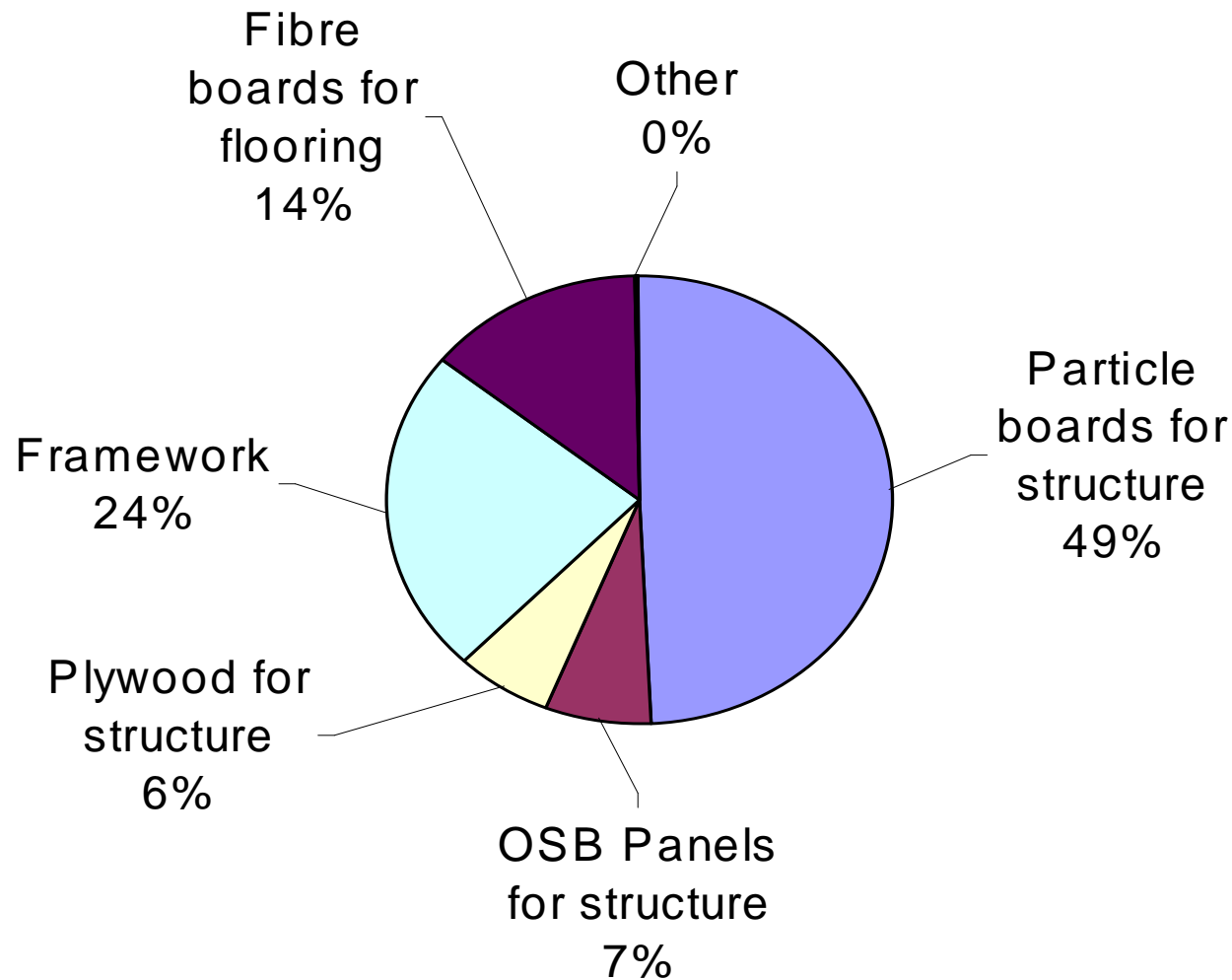


STOCK CHANGE APPROACH: WHICH SECTOR CONTRIBUTES THE MOST?



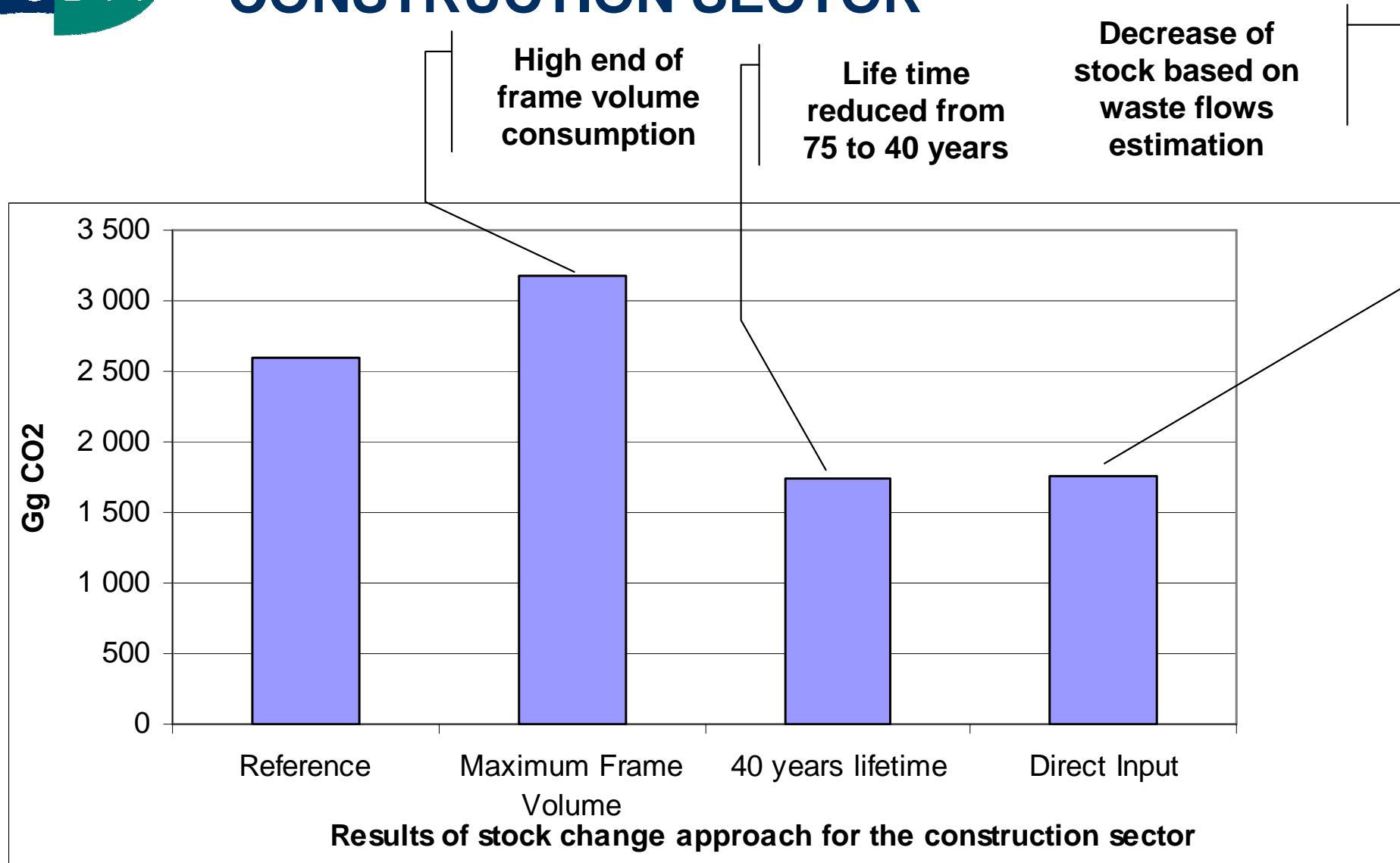


FOR THE CONSTRUCTION SECTOR, WHICH HWP CONTRIBUTE THE MOST?





SENSITIVITY ANALYSIS FOR THE CONSTRUCTION SECTOR



Impact on the overall stock change results →

+12% of total








-18% of total

-18% of total

3 An alternative approach based on the stock change approach



STRENGTHS/WEAKNESSES OF THE 3 APPROACHES

Stock change	<p> Easy to implement</p> <p> Risk of taking into account wood from illegal logging or from forests not managed in a sustainable way</p>
Production	<p> No risk of taking into account wood from illegal logging or from forests not managed in a sustainable way</p> <p> The fate of exported products is not well known</p> <p> Carbon rate for the exporting country and wood property for the importing country: limitation of property right (consistency with WTO rules?)</p>
Atmospheric flow	<p> Reflects what the climate sees</p> <p> Not compatible with the current methodologies for the ghg inventory in the LULUCF sector</p>



ALTERNATIVE APPROACH

- **For Annex 1 countries which have included Forest Management (FM) as a 3.4 activity, gains of carbon in HWP and decrease of carbon stock in forest are partially reported (CAP)**
- **Tracking of carbon trade-off between FM and HWP could be improved with some accounting options for FM (e.g. net-net instead of gross-net)**
- **Based on a conservative assumption, exclusion of HWP imported from non Annex 1 countries or Annex 1 countries which have not elected FM lead to a 33% decrease of the contribution of HWP**



4 CONCLUSION AND WAY FORWARD

- **Reporting of HWP feasible at national scale with a transparent & consistent methodology**

- **Way forward could include:**
 - **A further evaluation of the volume of wood used for framework,**
 - **Further sensitivity analyses on models (using first order decay instead of average lifetime) and lifetime using other countries experience,**
 - **The use of figures on demolition and rehabilitation wastes from surveys that could take place in 2009 to evaluate the decrease of the stock.**