

# Harvesting traditional coppice: a review



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# Coppice harvesting & COST

- Lots of R&D devoted to coppice in the EU
- Largely unknown
- COST: compile/coordinate existing research
- FP1301: 35 countries represented
- Ideal opportunity

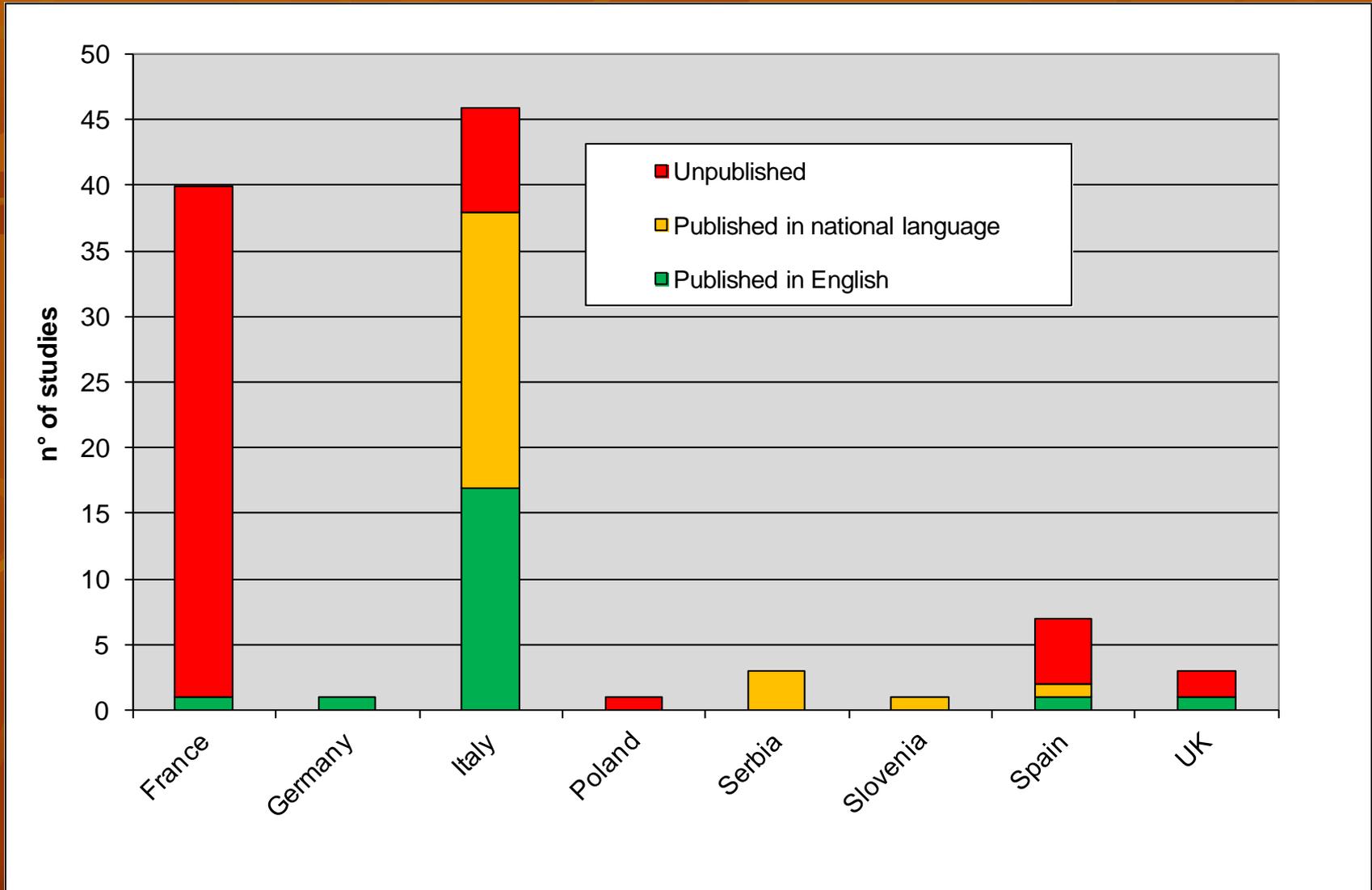


# Bibliography review

- European (14 Countries, valid studies from 8)
- 1970 to present



# Database (102 studies)



# Data analysis

- Extract main productivity and stand data

- Divide by task type

Felling, processing and harvesting = 155 data points

Extraction = 222 data points

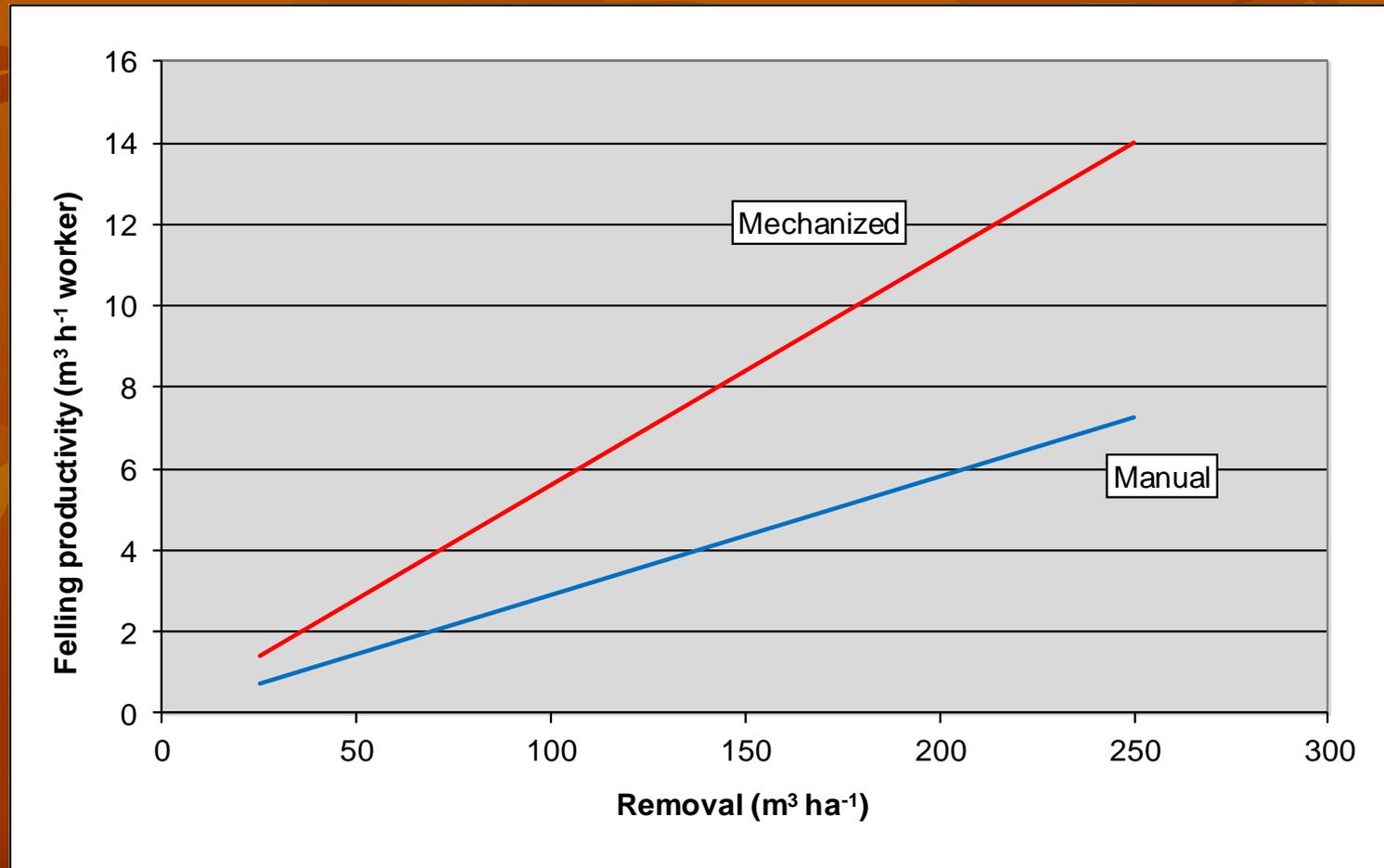
- Statistical analysis

Differences (e.g. species, mech vs. manual etc.)

Relationships (e.g.  $\text{m}^3/\text{h}$  vs. tree size, distance etc.)

# Felling, processing & harvesting

- Expected:  $\text{m}^3/\text{h} = f$  (tree size,  $\text{m}^3/\text{ha}$ )

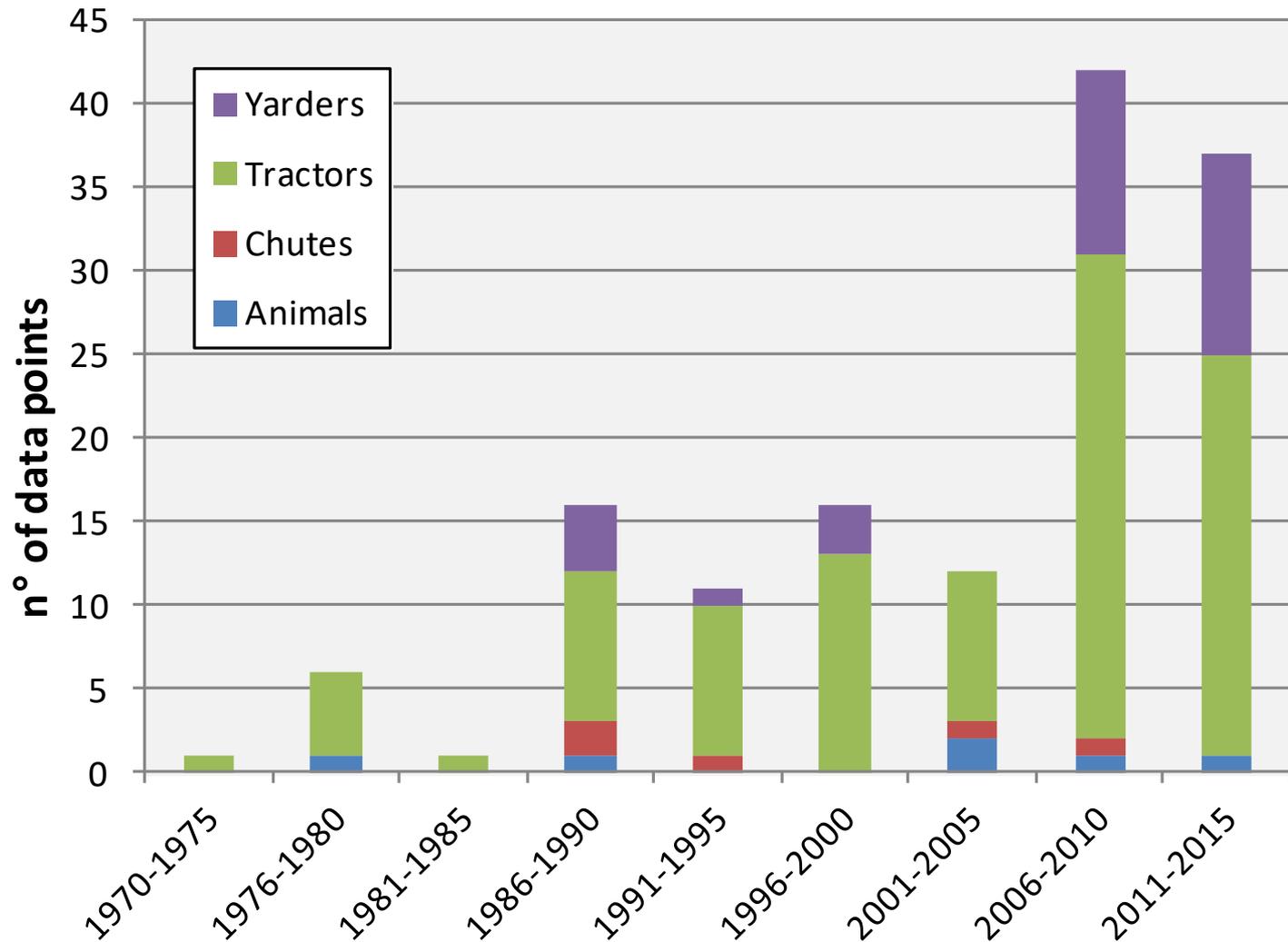


# Felling, processing & harvesting

- Mechanization ups worker prod. by factor 2 – 7
- Mech. x larger tree size, not larger removals
- Mech. x more sorts
- Mech. esp. chestnut



# Extraction

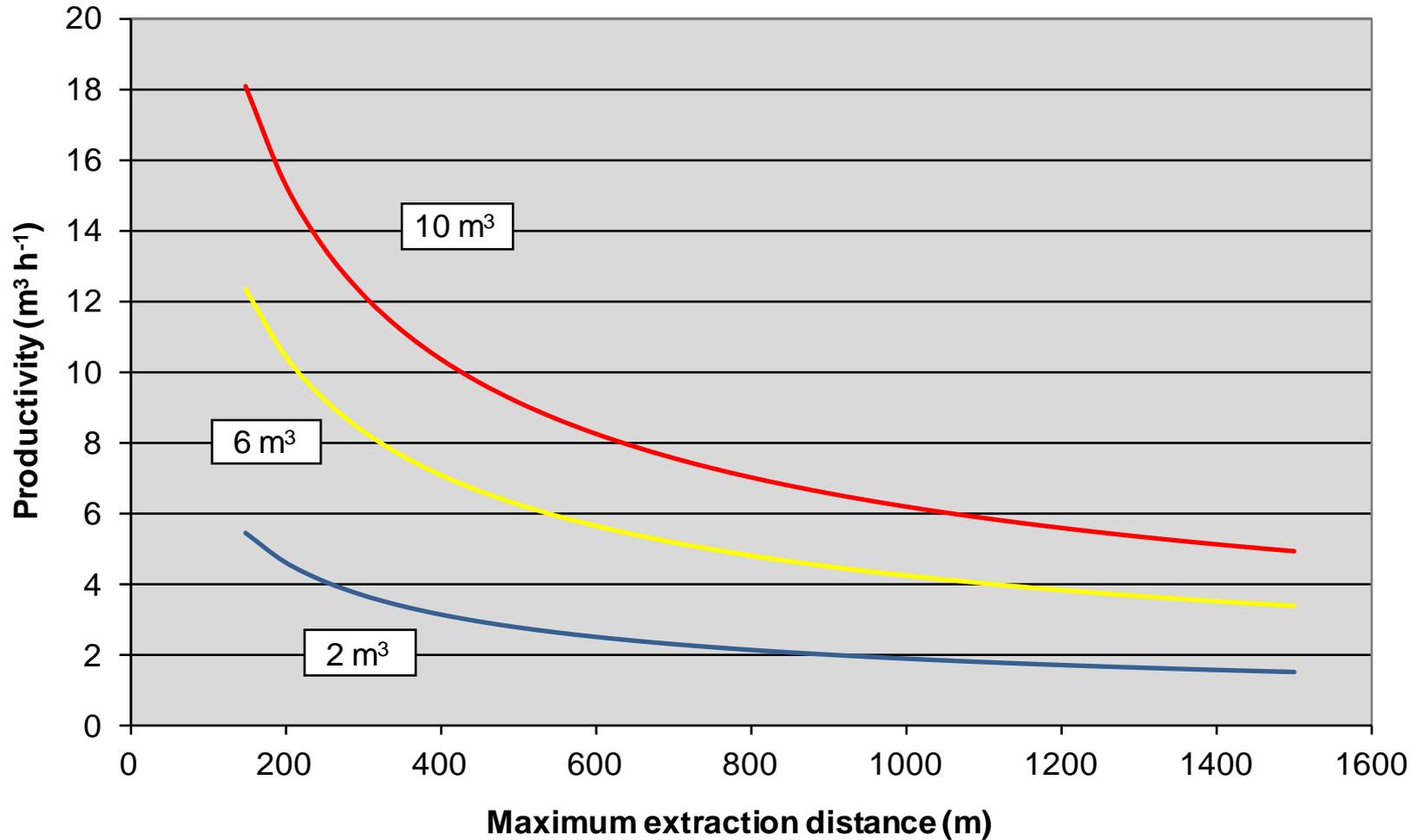


# Extraction

- Large labor inputs & low utilization (rest)
- Technique, slope and species are related
- Distance and payload =  $f$  (technique)
- Marked productivity increase over time
  - skidding: larger removals
  - forwarding and yarding: better technologies
- Functions



# Example: forwarding



# Study limitations

- Country and technology unbalance
- Different study methods
- Popularity in research may not reflect practice
- Old technology in new studies = control



# Mechanization

- Strong trend in coppice, not just high forest
- Lighter versions of HF machines needed...  
....but unattractive to manufacturers & users
- Single-stem vs. Multi: tree size and system
- Drive to longer logs
- Species dependent
- Industrial vs. Rural: market & concentration

# Conclusions

- Check this database and bibliography before the next regional replicate!
- Removal intensity important...
- Integrate silviculture and harvesting
- Biomass the new market w/huge potential

