



**8th Annual Meeting of the
European Integrate Network.**
Mediterranean perspective:
Experiences from Spanish forest
managers

***Perspective after 13 years
using marteloscopes in Spain***



David Lasala

Knowledge I

- Started in 2009 with 7 marteloscopes installed. First ones in Spain?
- 5/7 marteloscopes renewed after 10 years & included in Integrate network.
- Others: INSTALLATION OF MONITORING PLOTS IN FOREST STANDS IN CASTILLA Y LEÓN MANAGED UNDER "PROSILVA" CRITERIA.

Knowledge II

- 21 years of experience as forestry consultancy
 - I. Mobilisation of forest resources
 - II. Management of forest properties
 - III. Inventory of forest resources
 - IV. Climate change
 - V. Forestry technology
 - VI. Training

Knowledge III

• Mediterranean experience



Knowledge IV

- Course in Continuous Cover Forest Management. Irregular Silviculture In The Lowlands (England). Using marteloscope training.
- Visited several marteloscopes in Poland
- Help to establish a marteloscope in Vietnam. “Virtual forests” (by UVa).
- Dron in 3 marteloscopes. “COMFOR-SUDOE”

Thanks to:

- Junta Castilla y León



**Junta de
Castilla y León**

Consejería de Fomento y Medio Ambiente



UVa

- University of Valladolid
(UVA)

CONSEJERÍA DE MEDIO AMBIENTE
Y ORDENACIÓN DEL TERRITORIO



Comunidad de Madrid

- Comunidad de Madrid

Marteloscopes
in
mediterranean
zone



Marteloscopes in mediterranean zone



13 years using
marteslosopes
in Spain

MAINLY USES IN THESE YEARS

TO WHAT:

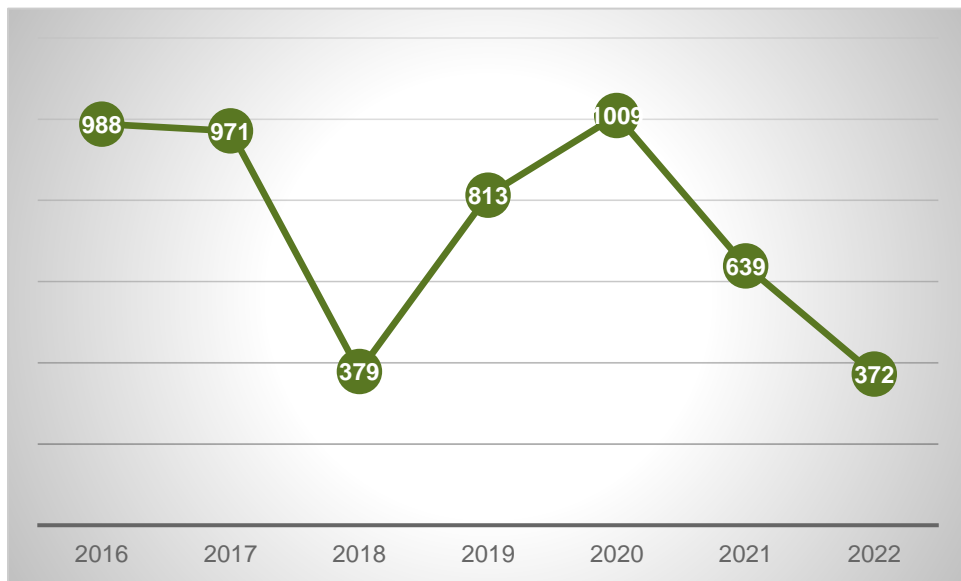
- Education: as university classroom.
- Training: for professional technicians.
- Development of inventory or assessment applications

WHO:

- ❖ Universities or vocational schools : teachers and students
- ❖ Forest administration

13 years using martesloscopes in Spain

- Number of visit to website of jcyl (from 2016 to 2022)



When an action is performed, the usage increases.

*there is no data from 2009-2016

13 years using marteloscopes in Spain

KEY IDEAS

- Use the marteloscopes to discuss silviculture and exercise tree marking and day-by-day management decisions -in field-. For the seek of “forester eye” and the practice of managers. FEAR of overtaking other uses.
- ¿Climate change could make future conditions in central-north Europe more similar to current conditions in the Iberian Peninsula?. Then, having the marteloscopes in Spain can be a very good tool.
- Amplify the users of the marteloscopes

PROBLEMS

13 years using marteloscopes in Spain

- Renovation/re-measurement of marteloscopes:
 - I. Lack of funding?
 - II. Lost of interest?
 - III. lack of maintenance foresight?
- ¿Do we make any silvicultural treatment in marteloscopes? ¿Do we wait 10, 20, 50 years?
- Most of them are underused.
- Mark on the tree where the DBH was measured & to where was facing.
- Make sure that exists an signaled buffer around the marteloscope.

13 years using martesloscopes in Spain

PROBLEMS

- Careful with small trees





13 years using martenoscopes in Spain

PROBLEMS

- Losing the identification mark
(after 5-6 years)



POTENCIAL

13 years using martesloscopes in Spain

- Tree marking training and silviculture talks.
 - ❖ Understand the forest but also the tree.
 - ❖ Identify and integrate microhabitats and others diversity parameters.
 - ❖ Improve knowledge of the timber quality. Make connection with loggers, the forest industry.+++++
 - ❖ MAKE "FOREST EYE"

POTENCIAL

13 years using martesloscopes in Spain

- “forest education classrooms” (aulas de educación forestal) for primary and secondary education. Put in practice “forest pedagogy”
 - ❖ “Marteloscope” in Spanish language is difficult to understand.
 - ❖ Alternatives: “aulas de señalamiento” or “martelodromo”



POTENCIAL



13 years using
marteslosopes
in Spain

- HUGE POTENTIAL TO IMPROVE FOREST TECNOLOGIES AND COMPLEMENT EACH OTHER
- ❖ Apply and use actual remote sensing.....Dron, terrestrial LIDAR, aerial LIDAR, others.



13 years using martesloscopes in Spain

- POTENCIAL. FOREST
TECNOLOGIES

Enrich file and reports
of martelosscopes



13 years using martesloscopes in Spain

POTENCIAL



- HUGE POTENTIAL TO IMPROVE FOREST TECNOLOGIES AND COMPLEMENT EACH OTHER
- ❖ TEST AND DEVOLOPE **new forest technologies** to come with the suporte of marteloscospes. There for, marteloscope as a treasure



13 years using
martesloscopes
in Spain

POTENCIAL



- RENEWAL WITH RE-MESUREMENT: EVOLUTION, CHANGES
- MUCH MUCH BETTER IF MANAGEMENT DATA IS INCLUDED
 - Treatments carried out.
 - Investemts (expenses) €
 - Incomes €
 - True wood quality obtained
 - Destination of wood.
 - Deviation from planned vs results.

.... To know ¿are going in the right direction?

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THANKS FOR YOUR ATTENTION!

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