



Operational  
Group PEI

# SPNA - Precision Sylviculture in Nouvelle-Aquitaine (FR)

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# SPNA - Presentation outline

## Presentation of the SPNA project

- What are the regional issues ?
- How SPNA is supposed to address them ?
- Who are the partners ?
- What is the Programme of activities ?

## Synergies with the actual workshop

- EIP-AGRI on forest sector and Rural development program
- Cross-border cooperation and Opportunities through other relevant EU programmes / instruments

# Regional context (1/3)

- **Regional forest = 2.8 millions hectares**  
34 % of regional surface
  - **62 % Deciduous** (Oaks, chestnut)  
1,73 millions ha
  - **38 % Coniferous** (pines, spruce, douglas,...) :  
1,08 millions ha
- **Privately owned at 90 %**  
250 000 forest owners of more than 1 ha
- + 900 000 ha under sustainable management plan  
**>>> one of CNPF duties**



# Regional context (2/3)

## Maritime pine

- + 800 000 ha with 87 M m<sup>3</sup> in stand
- 6 M m<sup>3</sup> harvested annually and 2,6 bn € turnover (same level as Wine market)
- 3rd seed orchard generation

Since 19<sup>th</sup> century, Maritime pine is claimed to be the best adapted so far to the local conditions (sand dunes)

## Weaknesses and Threats

- Storm Klaus 2009 (+320 000 ha damaged)
- Fire risks mastered by prevention of forest fire protection
- Biotic risks and Higher with climate change



SPNA shall provide foresters with a decision tool helping continuous improvement of silviculture with new technology !

# Regional context (3/3)

## Chestnut

France has 50% of the world surface

- + 250 000 ha (2<sup>nd</sup> species after oaks)
- 38 400 m<sup>3</sup>/year of raw timber (35% national harvest)
- 21 500 m<sup>3</sup> /year of sawn timber (64 % national harvest)



## Weaknesses and Threats

- Important dieback increased by climate change
  - Drought risk higher since 2003
  - Favourable conditions for pests and diseases
  - Lack of active silviculture
- Biotic risks
  - Chestnut blight (*Cryphonectria parasitica*)
  - Chestnut ink (*Phytophthora cinnamomi* and *cambivora*)
  - Chestnut gall wasp (*Cynips*)

SPNA shall improve and boost chestnut silviculture with a set of decision tools !



# SPNA in a nutshell

- **3-year program** from 01/06/2019 to 31/05/2022
- 493 123 €
- 10 partners
- Funding *via* **Rural Development Program (RDP)** in Nouvelle-Aquitaine :
  - EAFRD : 209 508 €
  - Council of Nouvelle-Aquitaine Region : 185 790 €
  - Self-financing : 98 825 €



- Focus on 2 tree species relevant for regional economy and landscape in a climate change context.
- **Maritime pine**, the objective is to develop a smartphone app that will help foresters after some field measurements, deciding whether or not it's time for thinning.
- **Chestnut**, the aim is to provide foresters and communities with a set of innovative and digital tools in order to boost silviculture

# SPNA consortium



Research institutes and academics

Regional /Local Councils



Operationnal group

National State for Forest Health monitoring



Public /Private forest managers and developers



Private forest owners group

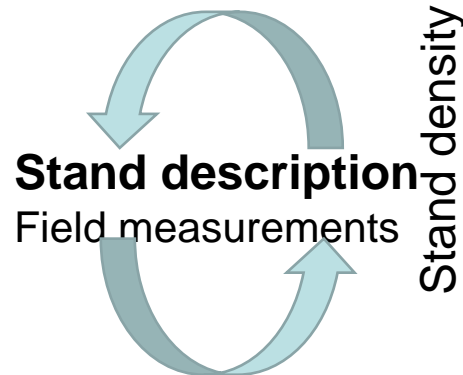
Groupement de développement forestier (GDF) Sud-Dordogne

To bring together multiple actors to advance innovation in the forestry sector for the benefit of end-users and consumers.

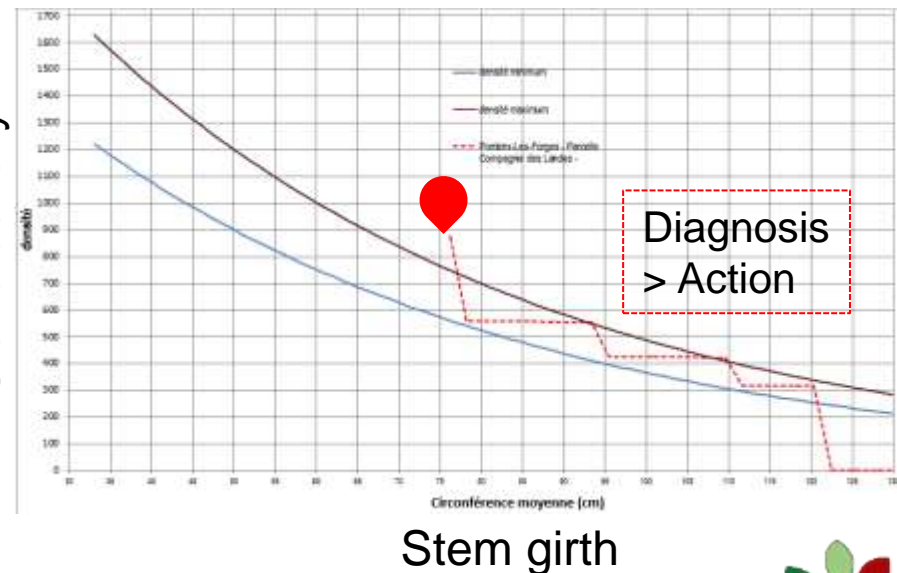


# Focus on Maritime pine

- Create a **smartphone application** that will help foresters after some field measurements, deciding whether or not it's time for thinning
- Develop from this app a **participative silviculture database** in different Maritime pine planted forests
- Improve the growth model used and created by INRA and FCBA



Stand density



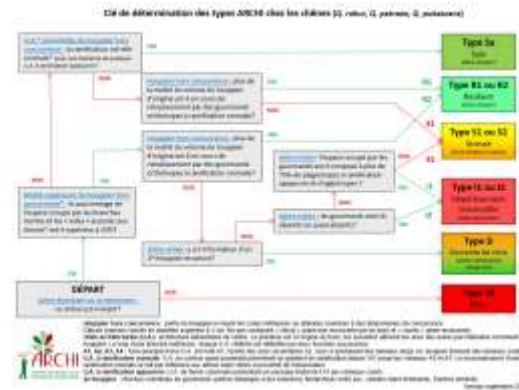
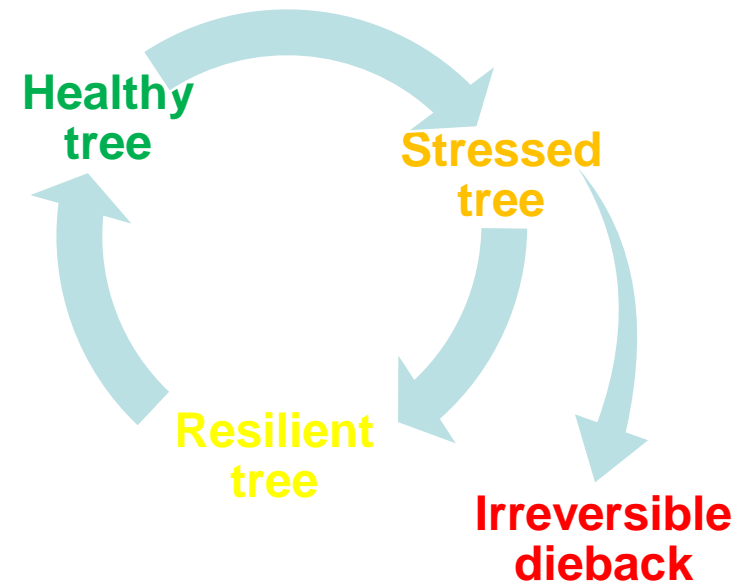
Stem girth



# Focus on chestnut (1/6)

At local /tree scale

- Train foresters to the **ARCHI** chestnut tool to diagnosis tree's health status



Dichotomous /identification key integrated in a smartphone app for trained foresters

# Focus on chestnut <sup>(2/6)</sup>

At local /tree scale

- Apply and test the **BIOCLIMSOL** application

**BIOCLIMSOL** 

- **Bio** stands for biological data such as tree health,
- **Clim** stands for climatic data such as temperature, wind, and droughts,
- **Sol** stands for soil and its positive or negative effects on water availability.



**Diagnose the forest, soil and climate conditions of the local site to assess which tree species are suitable regarding the climate change.**

# Focus on chestnut <sup>(3/6)</sup>

At local /tree scale

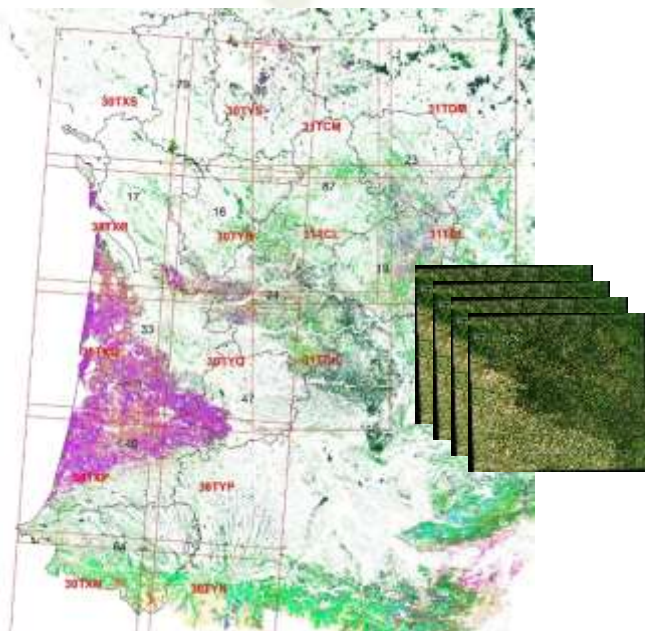
- Set up **marteloscopes** with the goal of training foresters to silviculture.



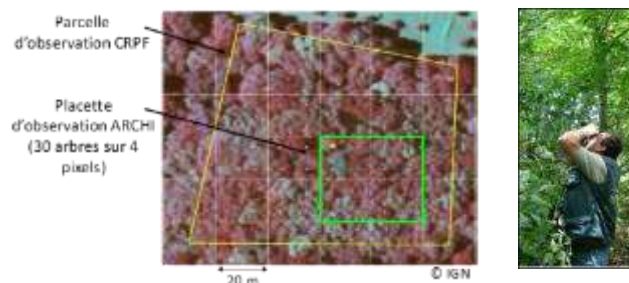
# Focus on chestnut (4/6)

## At macro /forest massif scale

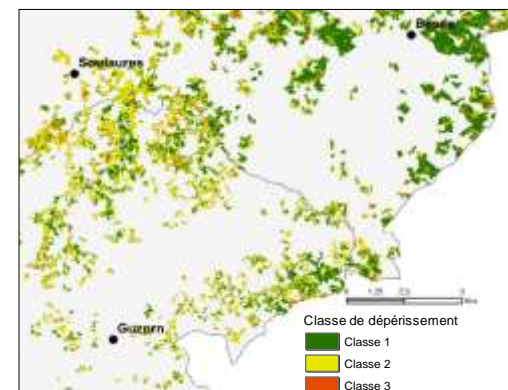
- Better assess the forest stands on an annual basis in quantity and quality regarding health risks and using **remote sensing tools**.



From satellite data



Field observation (ARCHI)  
for calibration and validation



Mapping of chestnut  
dieback

# Focus on chestnut <sup>(5/6)</sup>

## At local /tree scale

- Train and test the **Vigil'encre** app (by INRA) to signal any diseased chestnut tree by promoting citizen surveillance *via* the use of a collaborative reporting tool.
- Disseminate knowledge on the ink disease caused by *Phytophthora cinnamomi* and *P. cambivora* .



Vigil'encre application :  
Web interface

[http://ephytia.inra.fr/fr/P/157/Vigil\\_encre](http://ephytia.inra.fr/fr/P/157/Vigil_encre)



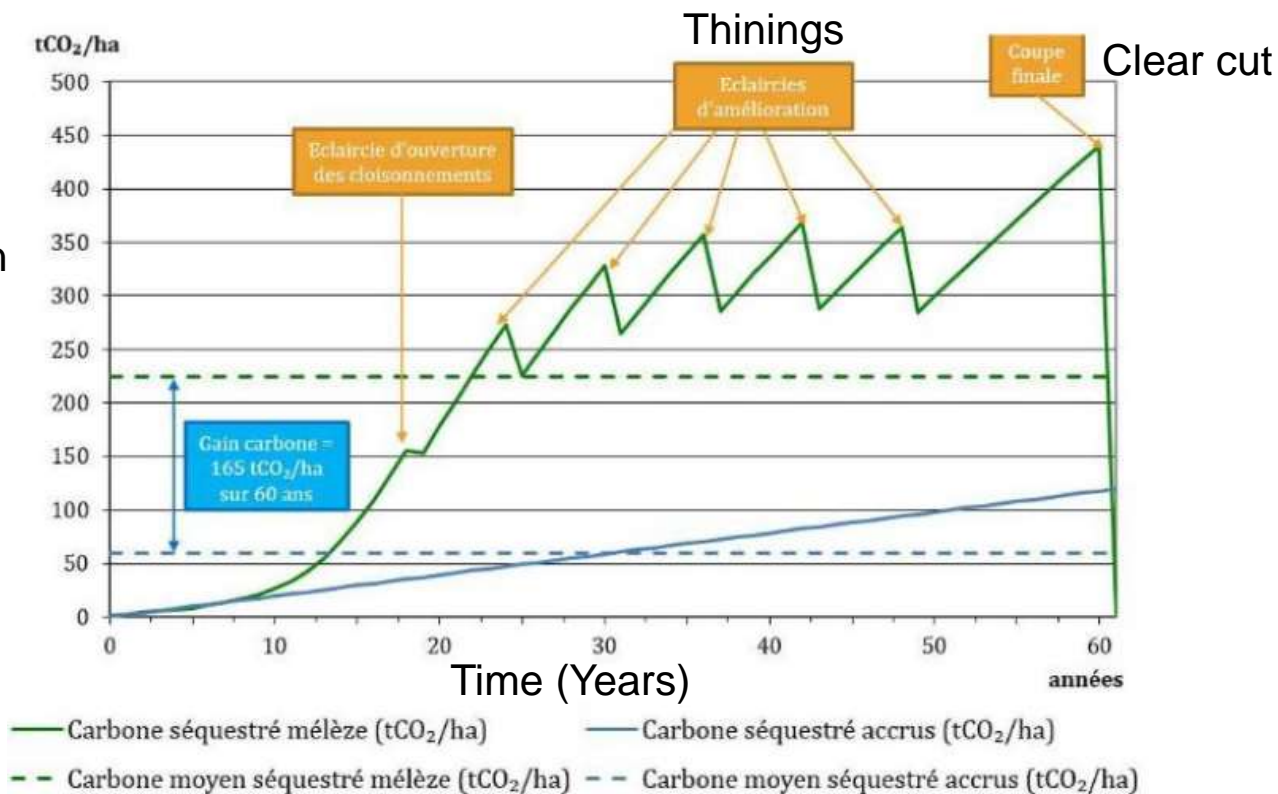
Reporting form

# Focus on chestnut <sup>(6/6)</sup>

## At macro /forest massif scale

- Develop a **CLIMAFOR** tool to evaluate the carbone stock of chestnut tree stands according to different sylvicultures.
- Extension workshops and local meetings for the implementation of these sylvicultural itineraries (local community of Fumélois)

CO2 sequestration  
/ha



# Synergies with the actual workshop

(1/2)

## EIP-AGRI on forest sector and Rural development program

Projects - Operational groups <https://ec.europa.eu/eip/agriculture/en>

Fulltext search: Contains any of these words ▾  
Geographical location: Choose some options  
Keywords: Forestry ✕

Search Reset

Results after a quick request on Operational Groups on “forestry” topic :

- SPNA is not listed yet ?
- 2 OGs seem relevant for SPNA :
  - e.g.: New techniques for monitoring the carbon balance and the state of health of wood and fruit chestnut trees - Talking Chestnuts (contact [r.ranieri@openfields.it](mailto:r.ranieri@openfields.it))
  - e.g.: Technical innovation and carbon capture on management of state-owned forests of Alto Appennino Modenese (contact [direttore@parchiemiliacentrale.it](mailto:direttore@parchiemiliacentrale.it))

➔ The EIP-AGRI Service Point could organise thematic workshops and invite project leaders like today.

# Synergies with the actual workshop

(2/2)

## **Cross-border cooperation and Opportunities through other relevant EU programmes / instruments**

The EIP-AGRI Service Point in combination with National /Rural Network could help forest actors:

- ➔ • Inventory and update the different projects (EIP or any EU project) on forestry and sub-thematics
- ➔ • Organize workshops according to geography (cross-border or interregional) and thematics (specific thematic) relevance for cooperation.



# Thank you for your attention !

## Merci !

Please, check out our websites :

CNPF: <https://www.cnpf.fr/n/international-and-european-cooperation/n:1993>

CNPF Nouvelle-Aquitaine: <https://www.nouvelle-aquitaine.cnpf.fr/>

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