



PINEA PROJECT

Modelling growth and pine nuts production for *Pinus pinea* under changing environmental conditions

PTDC/AGR-FOR/3804/2012

01-07-2013 | 30-06-2015

Proposed format of the meeting

1. Project Participants
2. Objectives & Tasks
3. Budget
4. Chronogram
5. Participation & views/suggestions (AOB)



Abel Rodrigues	INIAV
Alexandra Correia	ISA
António Gonçalves Ferreira	UNAC
Carlos Arruda Pacheco	ISA
Encarnação Marcelo	INIAV
Francesco Minunno	ISA
Francisco Caiado Falcão de Campos	Forest Owner
Isabel Carrasquinho	INIAV
Javier Vázquez Piqué	UH
João Freire	ISA
João Soares	Forest Owner
Joe Landsberg	UNSW
José Tomé	ISA
Juan Guerra	ISA
Luís Fontes	ISA
Margarida dos Santos Hall d'Alpuim	ex-INIAV
Margarida Tomé	ISA
Maria Augusta Vacas de Carvalho	ex-ICNF
Maria da Conceição Matos dos Santos Silva	APFC
Marta Baptista Coelho	ISA
Nuno Calado	UNAC
Nuno Coimbra	Forest Owner
Paula Soares	ISA
Pedro Jordão	INIAV
Pedro Silveira	ANSUB
Peter Savill	UO
Rafael Calama	INIA
Rui Igreja	ACHAR
Sven Mutke	INIA

Main objectives

- i. the calibration and validation of a process-based model for *Pinus pinea* in Portugal;
- ii. to evaluate the effects of water and nutrient availability on *Pinus pinea* growth and nut yields;
- iii. to improve existing *Pinus pinea* modeling equations regarding growth and nut yield.

Specific objectives

- i. to analyze several fertilization alternatives in the establishment and early growth of *Pinus pinea* stands;
- ii. to assess the success of grafting in response to several fertilization treatments;
- iii. to analyze shifts in allocation of root, leaf and stem biomasses in response to water and nutrient availability;
- iv. to develop a methodology to include the fraction of cone biomass within the carbon allocation of a process-based model;



Tasks

- i. Stakeholders, planning, coordination and dissemination;
- ii. Establishment and monitoring of an irrigation and fertilization trial for stone pine;
- iii. Monitoring of a *Pinus pinea* fertilization trial;
- iv. *Pinus Pinea* Permanent Sample Plots: biometric, climate and soils data collection;
- v. *Pinus pinea* databases for biometric, climate, soils and site data;
- vi. Data analysis for *Pinus pinea* irrigation and fertilization guidelines;
- vii. Carbon allocation in *Pinus pinea*;
- viii. Improving existing Portuguese *Pinus pinea* modelling equations;
- ix. Adaptation and calibration of a process based model for *Pinus pinea*



Coordinators for Tasks – a proposal

- i. Stakeholders, planning, coordination and dissemination (Luis Fontes);
- ii. Establishment and monitoring of an irrigation and fertilization trial for stone pine (Carlos Arruda);
- iii. Monitoring of a *Pinus pinea* fertilization trial (Pedro Jordão);
- iv. *Pinus Pinea* Permanent Sample Plots (Isabel Carrasquinho);
- v. *Pinus pinea* databases (Marta Baptista Coelho);
- vi. Data analysis for *Pinus pinea* irrigation and fertilization guidelines (Paula Soares);
- vii. Carbon allocation in *Pinus pinea* (José Tomé);
- viii. Improving existing *Pinus pinea* modelling equations (João Freire);
- ix. Adaptation and calibration of a process based model (Margarida Tomé)



T1 - Stakeholders, planning, coordination and dissemination

- PINEA Project meeting with stakeholders;
- Every 6 months there will be a milestone meeting which will be organized with the researchers who are in the tasks involved in that milestone;
- Website will be updated at least every 6 months and more often if necessary;

T2 - Irrigation and fertilization trial

- Esteveira – non grafted site
- Machoqueira do Grou – grafted site
- Vendas Novas - grafted and non grafted site – what to do?



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NEXT STEPS:

- Gather all existing site and stand data (maps, soils, climate, stand silviculture, etc.)
- Visit sites
- Experiment design, protocol for measurements, etc
- Trial establishment, cone collection



T3 - Monitoring fertilization trial

- *Pinus pinea* fertilization trial at Vale Porquinho (Chamusca)

NEXT STEPS:

- **Gather all existing site and stand data (maps, soils, climate, stand silviculture, etc.)**
- **Visit site**
- **Agree on the next steps**

T4 - PSPs: biometric, climate and soils

- Biometric, climate and site data collection will be carried out from established stone pine Permanent sample plots (PSPs). In principle the data to be collected:
 - 1 biometric measurement
 - 2 years of cone collections
 - 1 soil data measurement/assessment
 - Climate data from the Portuguese National Weather Service.
 - **NEXT STEP: confirm what is the data already in the databases within the team and fix dates to start collecting PSPs data**

Budget - ISA

Description	2012	2013	2014	2015	2016	Total
Human resources	0	17433	21088	3487	0	42008
Missions	0	2918	3500	583	0	7001
Consultants	0	5555	6667	1111	0	13333
Service procurement and acquisitions	0	9368	8652	1874	0	19894
Patent registration	0	0	0	0	0	0
Adaptation of buildings and facilities	0	0	0	0	0	0
Overheads	0	13135	7983	1411	0	22529
Equipment	0	30387	0	0	0	30387
Total	0	78796	47890	8466	0	135152

8000

16000

23263



Budget - INIAV

Description	2012	2013	2014	2015	2016	Total	
Human resources	0	0	0	0	0	0	
Missions	0	2400	2400	0	0	4800	5300
Consultants	0	0	0	0	0	0	
Service procurement and acquisitions	0	4100	4000	0	0	8100	
Patent registration	0	0	0	0	0	0	
Adaptation of buildings and facilities	0	0	0	0	0	0	
Overheads	0	1300	1280	0	0	2580	2680
Equipment	0	0	0	0	0	0	
Total	0	7800	7680	0	0	15480	

Participation & views/suggestions (AOB)

- Views/suggestions from you...



Thank you!

