

FIELD VISIT

 LIFE
NADAPTA
BOSQUES / BASOAK / FORESTRY

C3.5.4 “Studies related to alternative species in the Atlantic area”

VII Meeting of LIFE-IP NAdapta-CC project ELMEN EEIG monitoring visit

INTRODUCTION

The field trip will focus on the C3.5.4 activity “Studies related to alternative species in the Atlantic area”. Chestnut declined in the Baztan-Bidasoa area (north of Navarre) at the end of XIX century due to root rot (*Phytophthora* sp.) and blight (*Cryphonectria parasitica*) and was frequently substituted by the radiata pine (*Pinus radiata*). Nevertheless, during the late 2020s, this exotic species was severely affected by fungal diseases on a large scale in the Atlantic region of Navarre. Additionally, great advances to obtain chestnut clones tolerant to root rot and blight have been lately achieved, making chestnut a good candidate for radiata pine replacement. In this context, two work lines were opened to assess the aptitude of chestnut as an alternative to that exotic species under a climate change (CC) scenario: for wood production and for fruit production.

Wood production work line

In 1984-85, 13.5 ha were planted in Aritzakun (Baztan) with the complete chestnut collection of Lourizán, composed of 177 different clones. Two thinning from below have been carried out since then selecting those trees tolerant to the aforementioned health problems. Since the LIFE-IP NAdapta-CC started, several actions have been developed (see Fig. 1), such as:

-  Selection, characterization and genotyping (genetic characterization of organisms) of PLUS trees (best phenotypic features) in Aritzakun.
-  Seed harvesting from selected PLUS trees, germination in nursery, plant regrowth and acclimatization.
-  Installation of seven experimental plots to assess the behaviour of those regrowth plants and comparison with other commercial chestnut clones under a CC scenario.

Fruit production work line

The chestnut market is nowadays on the rise thanks to new dietary products made from this fruit, apart from the traditional uses. Local chestnut varieties are a local historic heritage that must be preserved and revaluated for many reasons, including its adaptation to local seasonal conditions. There is some information gathered at the end of last century about local chestnut varieties in the Atlantic Region, but, in order to select the appropriate genetic material, the creation of a collection of local varieties is highly needed. To this aim, we conducted a survey among local people to localize and characterize the local chestnut varieties, which were afterwards genotyped. Finally, we installed a germplasm bank to preserve the genetic variability of local chestnut varieties in Bertiz, two more plots in Elizondo and Oskotz to include the most interesting varieties, and one experimental site where the scions from selected local varieties from Bortziziak were already grafted in Arantza (see Fig. 2 Fig. 1). Three more sites have been also recently prepared with that last aim.

Related D2 Indicator

One of the D2 indicators related to the C3 area focusses on the monitoring of the area of radiata pine plantations or other exotic species affected by CC-related health problems which is replaced by other species [*“Superficie de plantaciones de Pinus radiata u otras especies alóctonas afectadas por patologías forestales relacionadas con CC sustituidas por otras especies”*]. In those plantations, different forest tree species are used, taking into account their ecological requirements as well as their response to CC effects. In this sense, mixtures are prioritized to monocultures in order to increase their adaptation to CC.

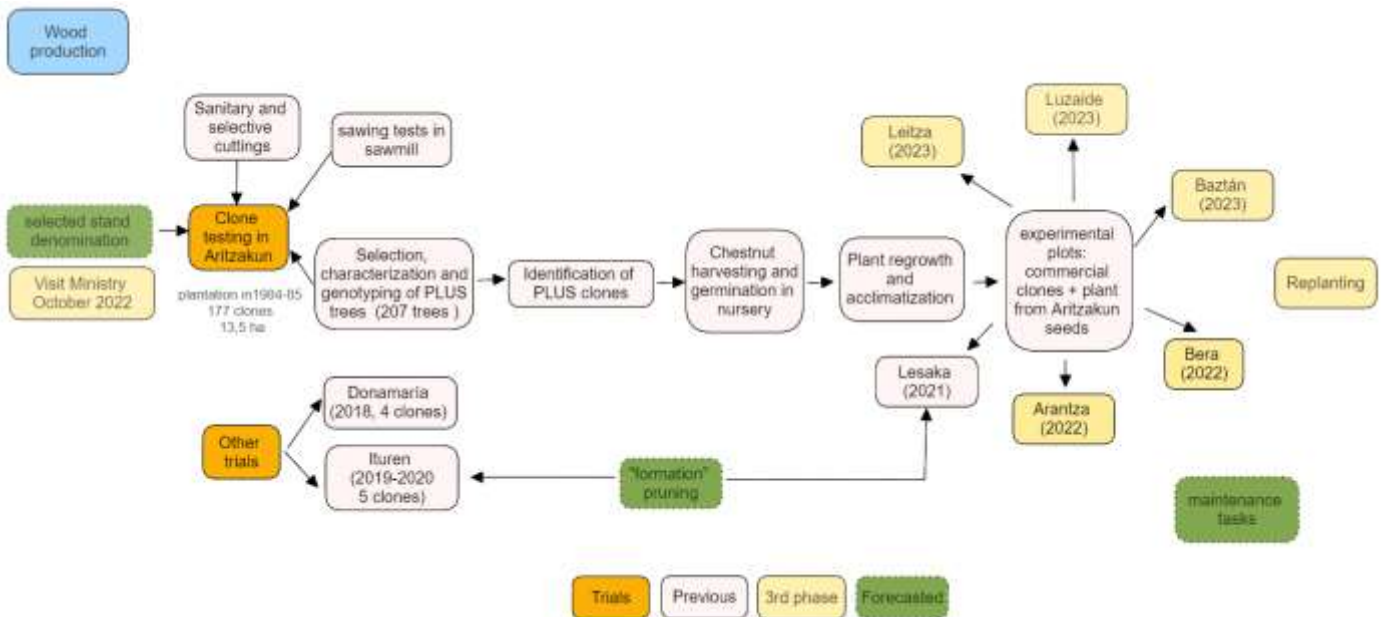


Fig. 1 Sketch of the activities carried out in the wood production work line.

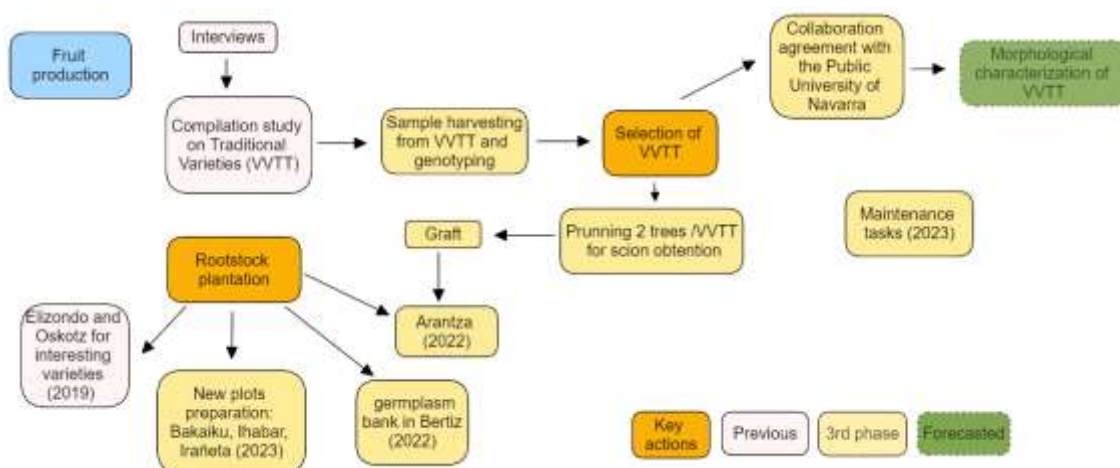


Fig. 2 Sketch of the activities carried out in the fruit production work line.

Table 1 Summary of experimental plots installed during the LIFE-IP NAdapta-CC:

Year	Location	Plant	Objetive
Wood production work line			
2023	Luzaide	6 Clones + Aritzakun plants + <i>C.sativa</i>	Wood
	Leitza	6 Clones + Aritzakun plants + <i>C.sativa</i>	Wood
	Baztan	6 Clones + Aritzakun plants + <i>C.sativa</i>	Wood
2022	Bera	6 Clones + Aritzakun plants	Wood
	Arantza	6 Clones + Aritzakun plants	Wood
2021	Lesaka	6 Clones + Aritzakun plants	Wood
2020	Ituren	5 Clones	Wood
2018	Donamaria	4 Clones	Both
Fruit production work line			
2019	Elizondo_Baztan	Rootstock clones 111 and 7521	Fruit
	Oskotz_Imotz	Rootstock clones 111 and 7521	Fruit
2022	Bertiz	Rootstock clone 111 with 18 VTT grafted	Fruit
	Arantza	Rootstock clone 111 with 8 VTT from Bortziriak	Fruit

FIELD TRIP

Timetable

08:30 Meeting point in Arantza.

09:00 Visit of the experimental site located in Bulartxiki which includes six commercial clones and plants regrowth from the selected PLUS trees from Aritzakun.

10:30 Visit to old chestnut trees in the Urdingoborda farmhouse where samples from local fruit varieties were harvested.

11:30 Visit of the graft experimental site of traditional varieties from Bortziriak located in Argatasoro.

13:00 Visit to one radiata pine plantation affected by CC-related health problems which has been replaced by alternative species in the Zerradoko farmhouse.

14:30-15:00 Lunch in Arantza.

17:00-17:30 Return to Pamplona-Iruña.

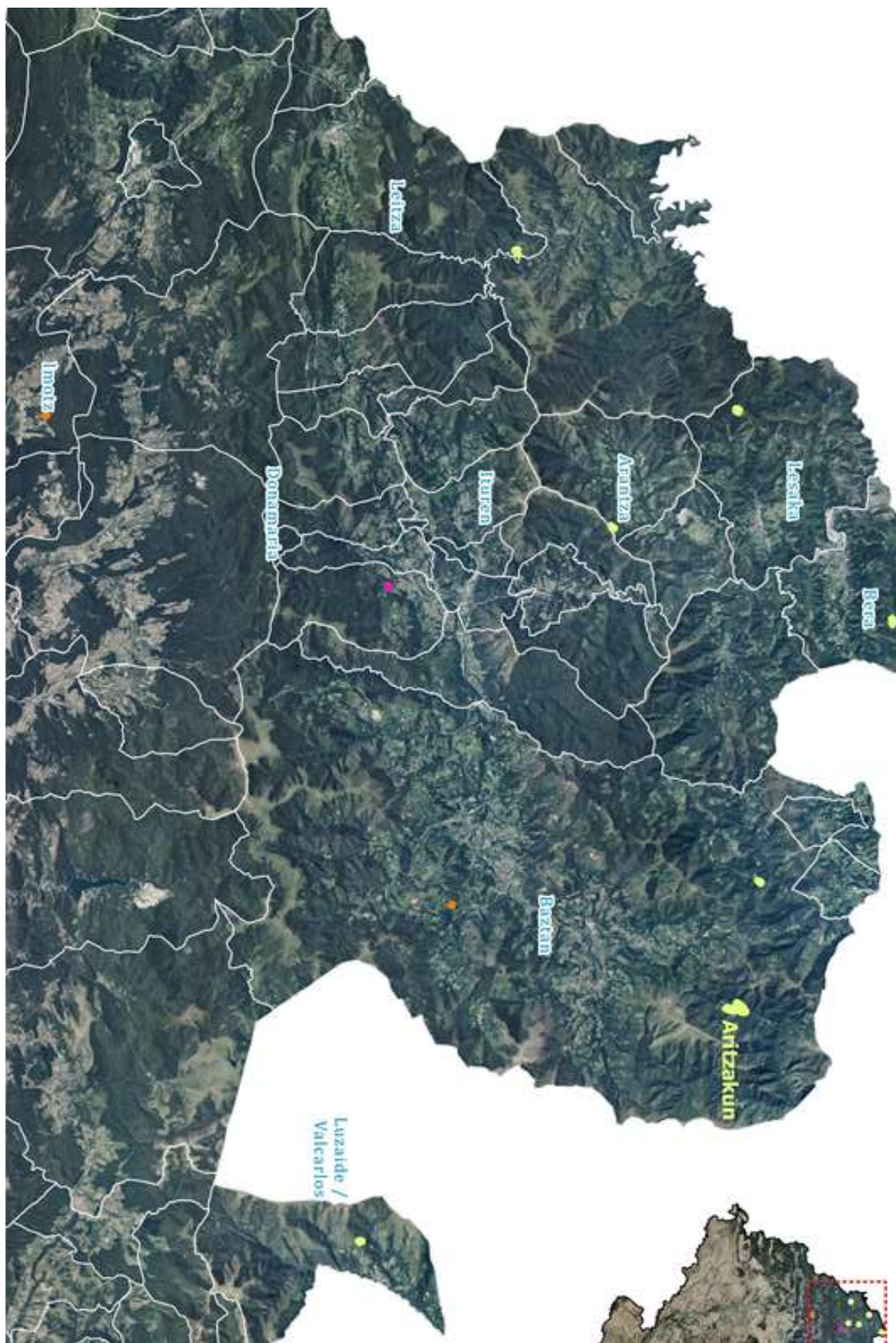


Fig. 3 Location and objective of experimental sites.

Fig. 3 Experimental site and replacement plantation in Arantzua and croquis of the experimental site.

