FUTURO

O projecto das 100.000 árvores

FUTURE – the 100,000 trees project in Porto Metropolitan Area | Report 2011-2013

11.09.2013 | Marta Pinto, Conceição Almeida | Catholic University of Portugal

Project

CRE porto
Centro Regional de Excelência
Educação para o Desenvolvimento Sustentável
ÁREA METROPOLITANA DO PORTO

Coordination

amporto

CATÓLICA PORTO
BIOTECNOLOGIA

Co-financed

ON.2 O NOVO NORTE

QREN QUADRO DE REFERÊNCIA ESTRATÉGICO NACIONAL

UNIÃO EUROPEIA
Fundo Europeu de Desenvolvimento Regional

we want to plant and care for 100,000 native trees by 2016

and we have in the metropolitan area territory in need of restoration

with native species of the Portuguese flora

Sweet Chestnut
(*Castanea sativa*)

English Oak
(*Quercus robur*)

Bay Laurel
(*Laurus nobilis*)

European Nettle
(*Celtis australis*)

Sycamore Maple
(*Acer pseudoplatanus*)

Birch
(*Betula celtiberica*)

Hawthorn
(*Crataegus monogyna*)

Montpellier Maple
(*Acer monspessulanum*)

Field Elm
(*Ulmus minor*)

Ash
(*Fraxinus sp.*)

Cork Oak
(*Quercus suber*)

Strawberry Tree
(*Arbutus unedo*)

Stone Pine
(*Pinus pinea*)

Holly
(*Ilex aquifolium*)

Alder
(*Alnus glutinosa*)

we know that native trees are essential

Favour Biodiversity
(Manuel, Forest Engineer)

Reduce urban noise
(Francisco, Student)

Sequester carbon dioxide from the atmosphere
(Fedra, Designer)

Re-establish connections to our ancestors
(Rute, Civil Engineer)

Reduce the risk of fire spreading
(Iva, Engineer)

Contribute to the formation of soil and protect it from erosion
(Manuela, Biologist)

Stimulate our senses and decorate the “exteriors”
(Ana, Journalist)

Infiltrate and filter water by increasing its quality
(Artur, Environmental Engineer)

Promote psychological well-being and encourage physical activity
(Luísa, Psychiatrist)

Have positive impacts on the health and welfare of children
(Ana, Full-time mom)

Stimulate the senses, the minds and hearts of children
(Joana, Manager)

Retain pollutants from the atmosphere reducing respiratory diseases
(Fernando, Retiree)

Increase our well-being and personal productivity
(Pedro, Manager)

Facilitate adaptation to climate change
(Soraia, Environmental Engineer)

Reduce the effects of stress and anxiety
(José, Lawyer)

FUTURO

www.embaixadadafloresta.blogspot.pt

and so in the project FUTURE we


Plant

trees and shrubs native to the areas

Care

for our trees and areas with natural regeneration



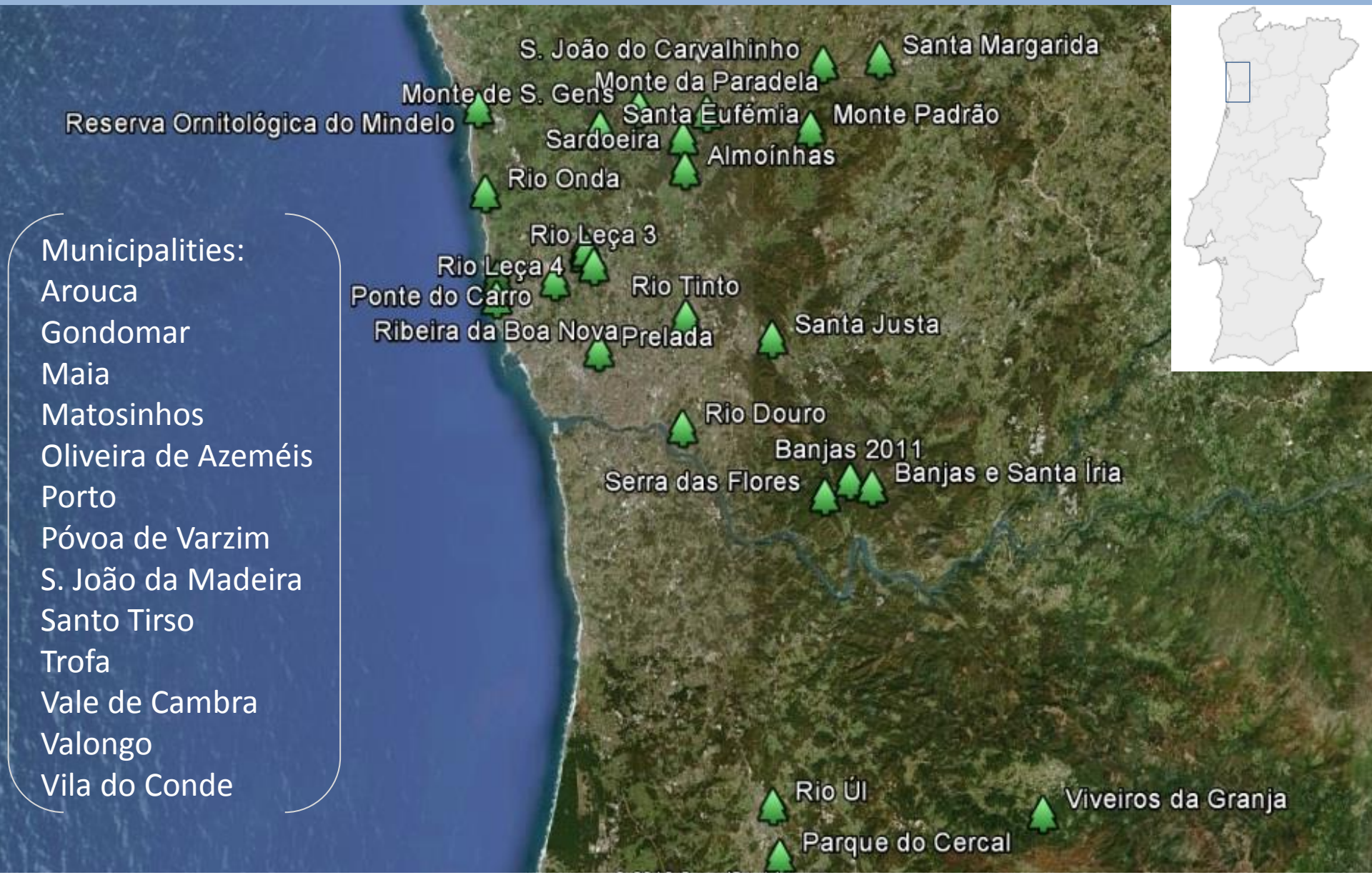
Monitor

the state of our trees

Educate

about forest and trees


in this geographical area



Municipalities:
Arouca
Gondomar
Maia
Matosinhos
Oliveira de Azeméis
Porto
Póvoa de Varzim
S. João da Madeira
Santo Tirso
Trofa
Vale de Cambra
Valongo
Vila do Conde

our primary goal

Plant and care for 100,000 native trees by 2016

and we have already achieved the following [2011-2013]

FUTURO
O projecto das 100.000 árvores

25,228 trees planted on **88.6** hectares
= planting area equivalent to 90 soccer fields

75% survival rate
= 7.5 in every 10 trees planted survive

384 hours of activities held
= 4 hours of volunteer work per week

3,914 volunteer participation
= 38 citizens planting and caring for forests per week

11,598 volunteer hours
= total of 16 volunteer hours per day

128 tons of CO_2 per year[1]
= annually our trees capture the equivalent of 600g of CO_2 per resident of the city of Porto[3]

€1,000,000 in ecological services per year[2]
= annually our trees 'give back' to each citizen[3] of the Porto Metropolitan Area €0.60 in ecological services

Note 1: Potential for carbon retention: annual average for a 40 year expectancy for the number of trees planted to date
Note 2: Estimate based on the ability of the (adult) trees to capture CO_2, atmospheric pollutants and intercept rainwater.
Note 3: Total of 227,535 residents in the city of Porto and 1,663,277 residents in the Metropolitan Area of Porto (Census 2011)

FUTURO
CRE porto

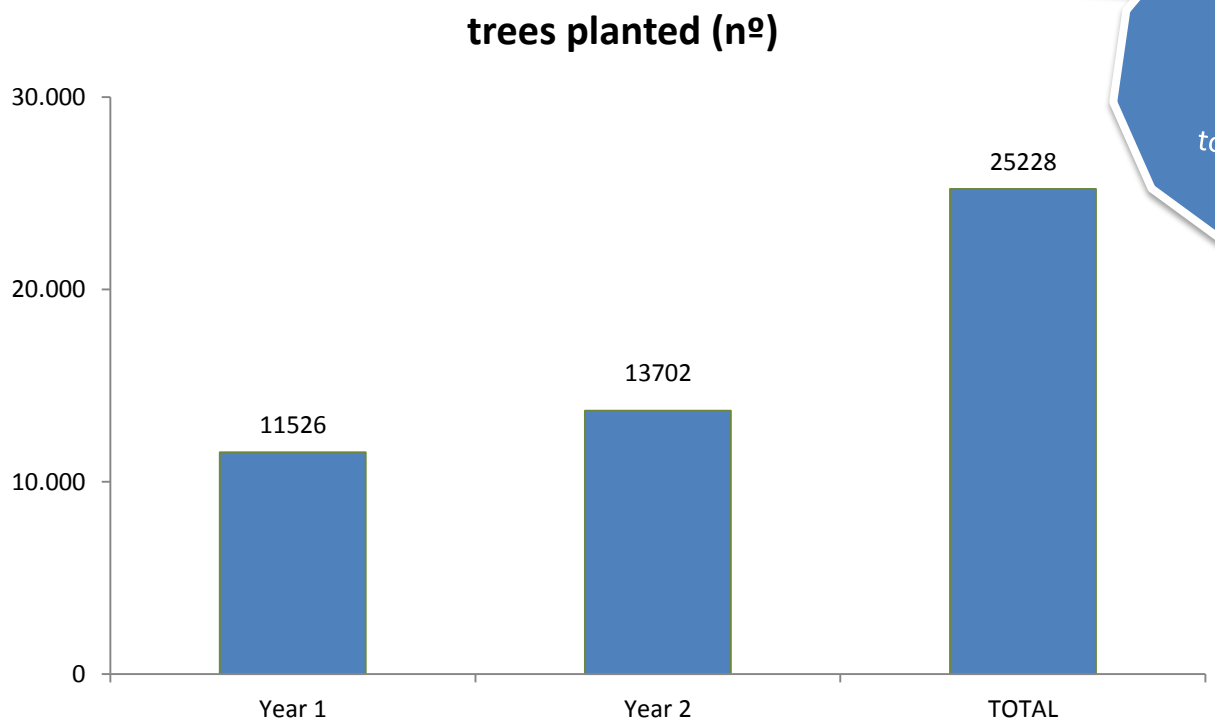
www.embaixadadafloresta.blogspot.pt

overall results [2011 - 2013]

fulfilled **68%** of the annual planting target

planting carried out in **10** municipalities

trees planted capture **128** tonnes CO_2 per year[1]



Year 1 = season 2011/12
Year 2 = season 2012/13

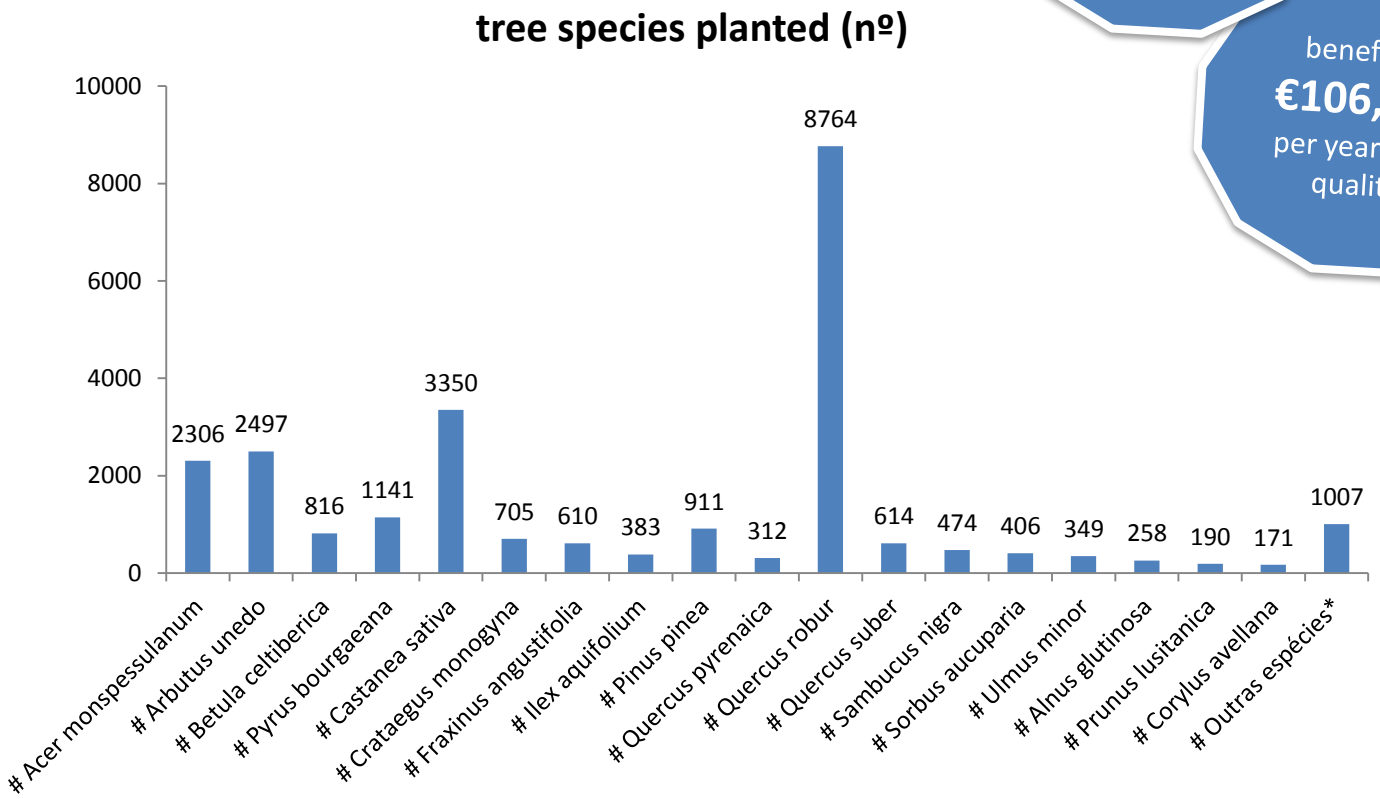
Note 1: Potential for carbon retention: annual average for a 40 year expectancy for the number of trees planted to date

overall results [2011 - 2013]

benefit of **€941 ,585** per year in water regulation[1]

24 native species planted

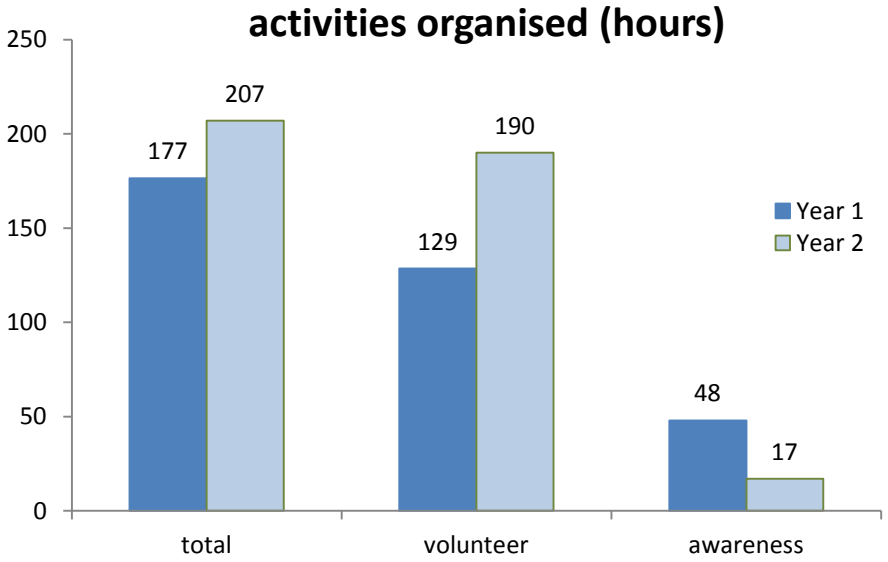
benefit of **€106,260** per year in air quality[1]



** Laurus nobilis, Celtis australis, Salix sp.*, etc.

Note 1: Economic benefit of trees in improving air quality by retaining pollutants, capturing carbon dioxide and reducing water runoff after rain episodes resulting from the presence of 25,228 (adult) trees, calculation based on the study of valorisation of services rendered by trees in the urban context (Soares et al. 2011)

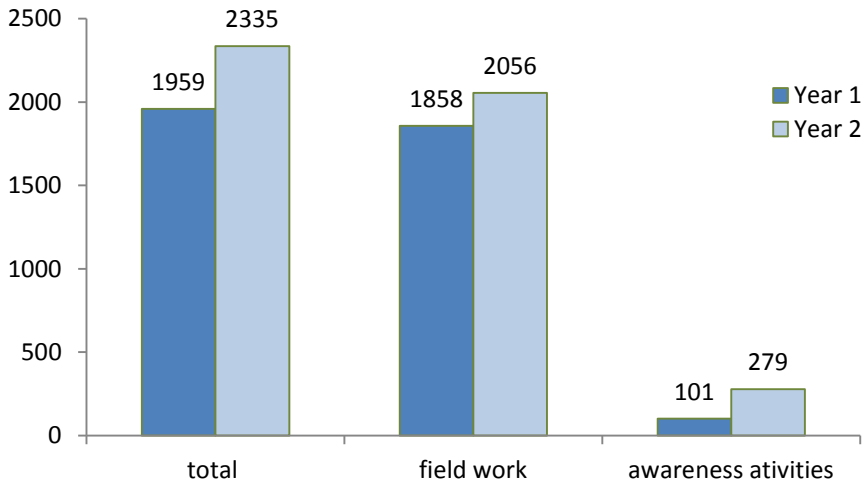
overall results [2011 - 2013]

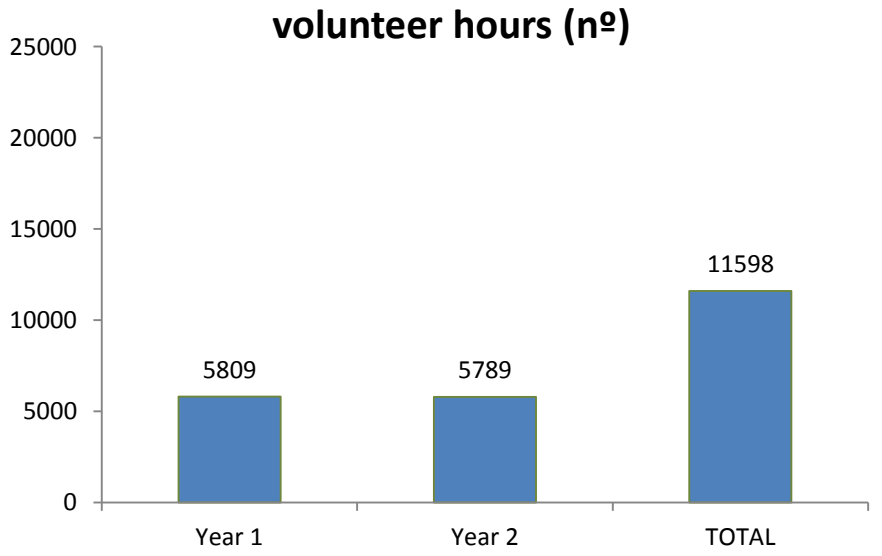


3,914 field participations

11,598 volunteer hours

130 activities organised





www.embaixadadafloresta.blogspot.pt

overall results [2011 - 2013]

75%
survival rate[1]

English oak (*Quercus robur*) planted on the 28/01/2012. State on 14 /05/2013.

Hawthorn (*Crataegus monogyna*) planted on the 09/02/2012. State on 08 /06/2013.

English oak (*Quercus robur*) planted on the 23/11/2012. State on 04 /06/2013.

Common Hazel (*Corylus avellana*) planted on the 29/10/2011. State on 04 /06/2013.

Note 1: Estimated average based on:
1. monitoring survival rates studies; and
2. observation of the state of the plants during field visits for maintenance activities.

www.embaixadadafloresta.blogspot.pt

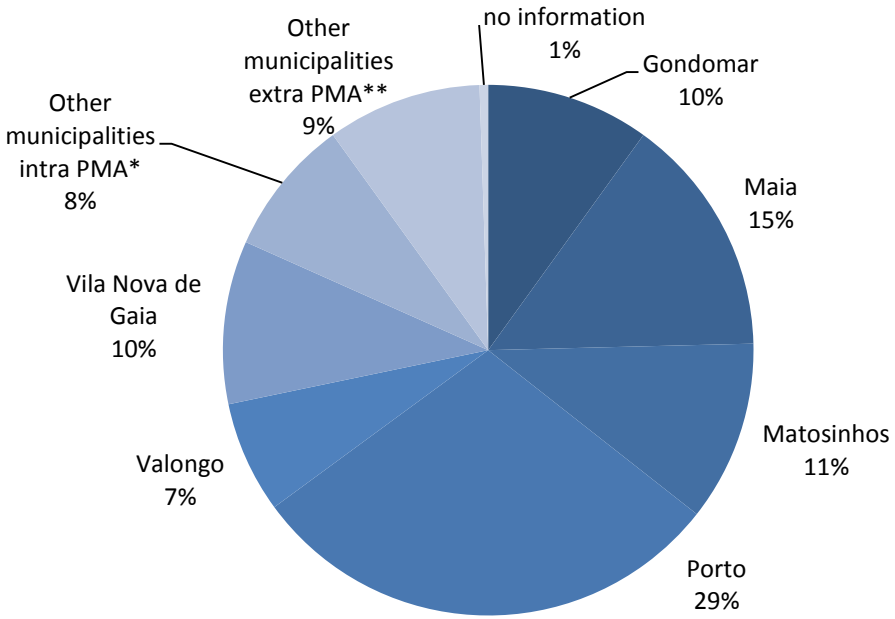
overall results [2011 - 2013]

90% live in PMA***

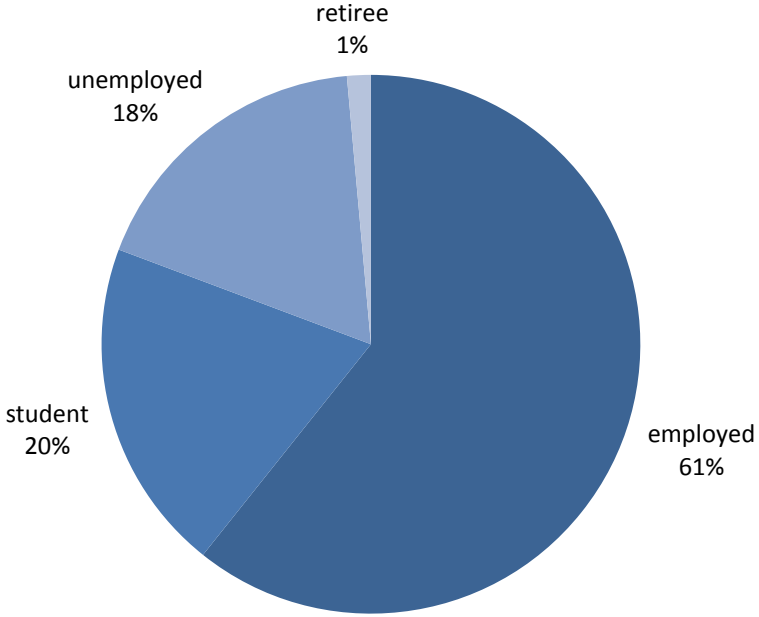
15% of the volunteers gave more than 10h[2]

32% of the volunteers participated in more than one activity[2]

volunteer´s municipality of residence[1]



volunteer´s occupation[3]



*Espinho, Oliveira de Azeméis, Vila do Conde, Trofa, Póvoa de Varzim, S. João da Madeira, Santa Maria da Feira, Santo Tirso
** Paredes, Esposende, Lousada, Paços de Ferreira, Braga, Aveiro, Vila Nova de Famalicão, Estarreja.
*** PMA – Porto Metropolitan Area
Note 1: N=191, volunteers registered as Trustees and Friends of the Forest
Note 2: N= 350, volunteers registered in 47 activities
Note 3: N=140, volunteers registered as Trustees of the Forest

www.embaixadadafloresta.blogspot.pt

results aggregated by municipality [2011-2013]

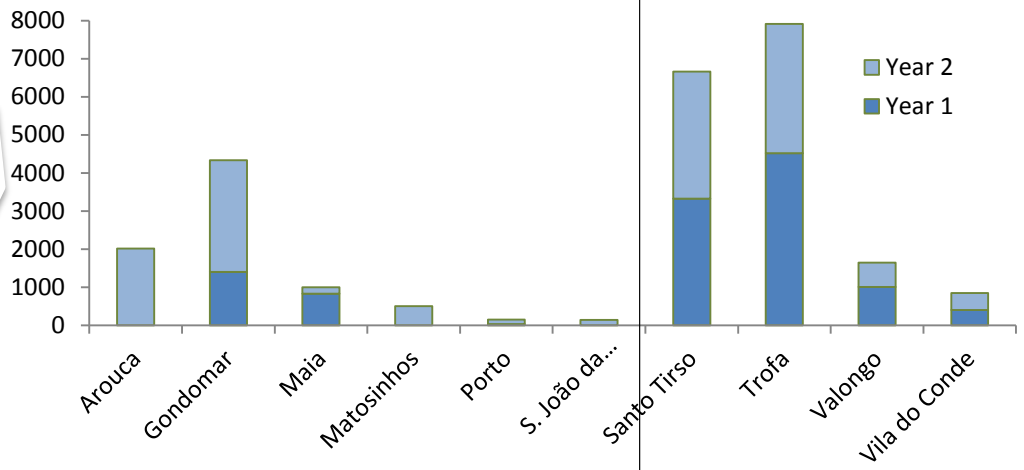
results aggregated by municipality [2011-2013]

in year 1
77%
of the annual target was fullfilled

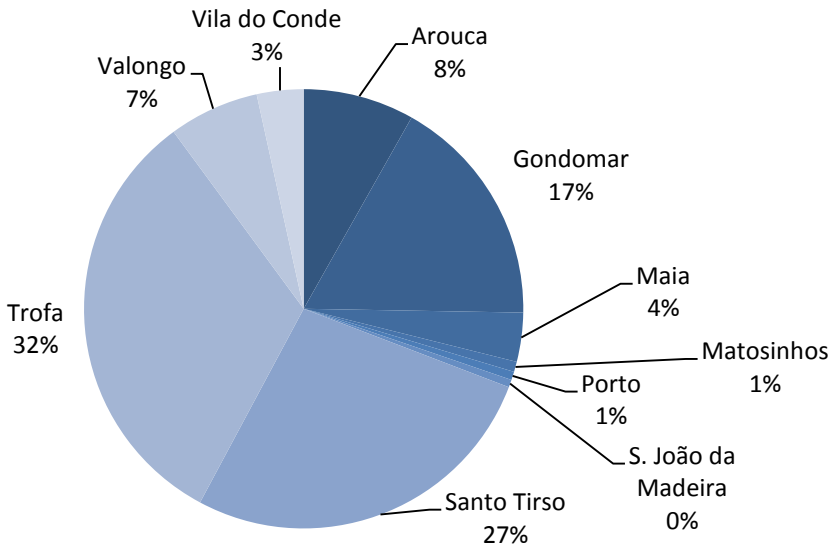
in year 2
62%
of the annual target was fullfilled

19%
more trees planted in year 2

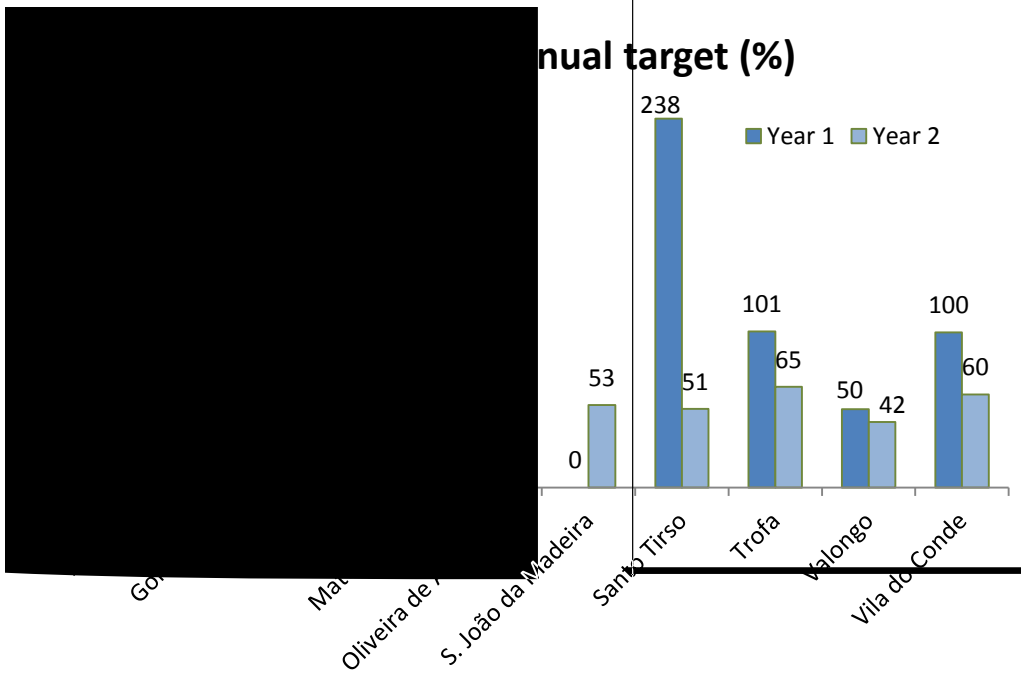
trees planted per municipality per season (nº)



trees planted per municipality (nº)

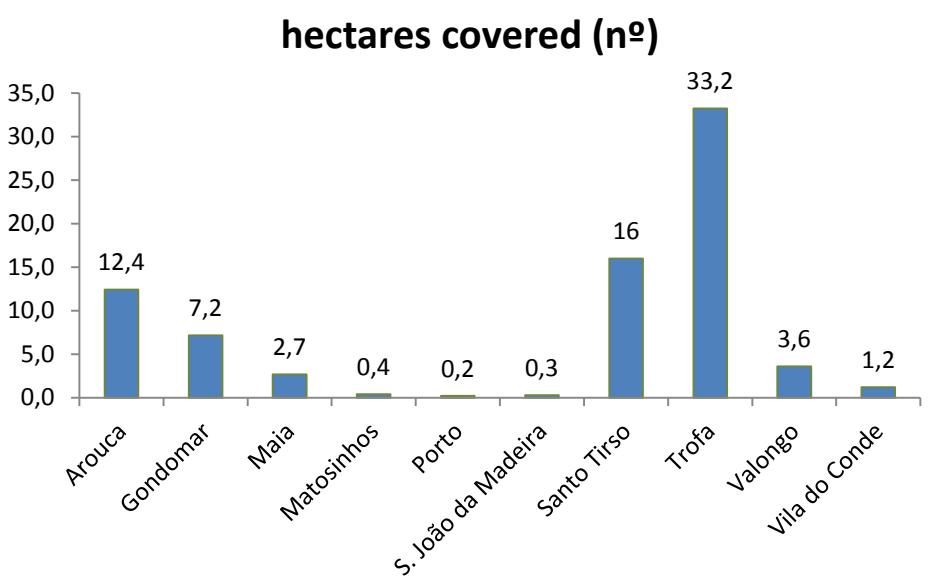


nual target (%)



www.embaixadadafloresta.blogspot.pt

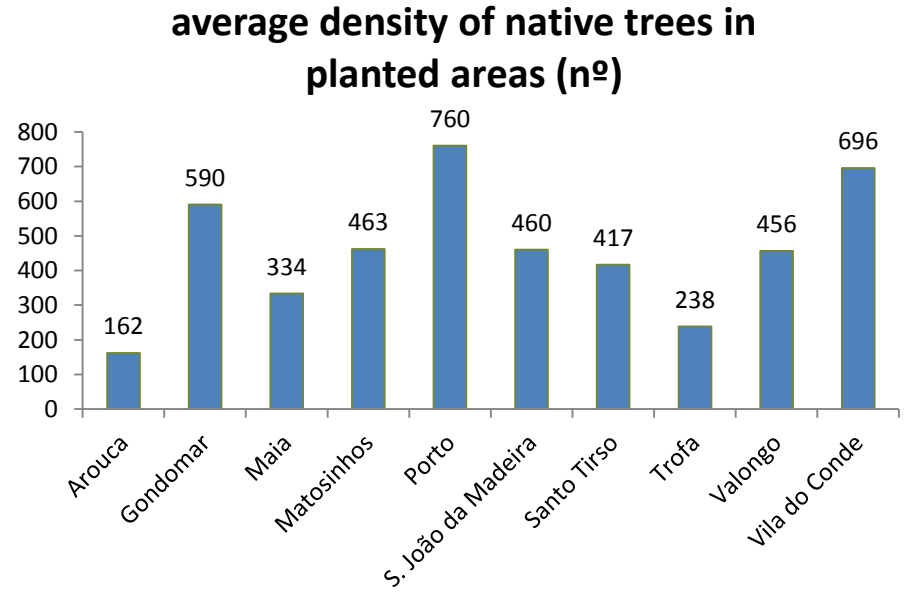
results aggregated by municipality [2011-2013]

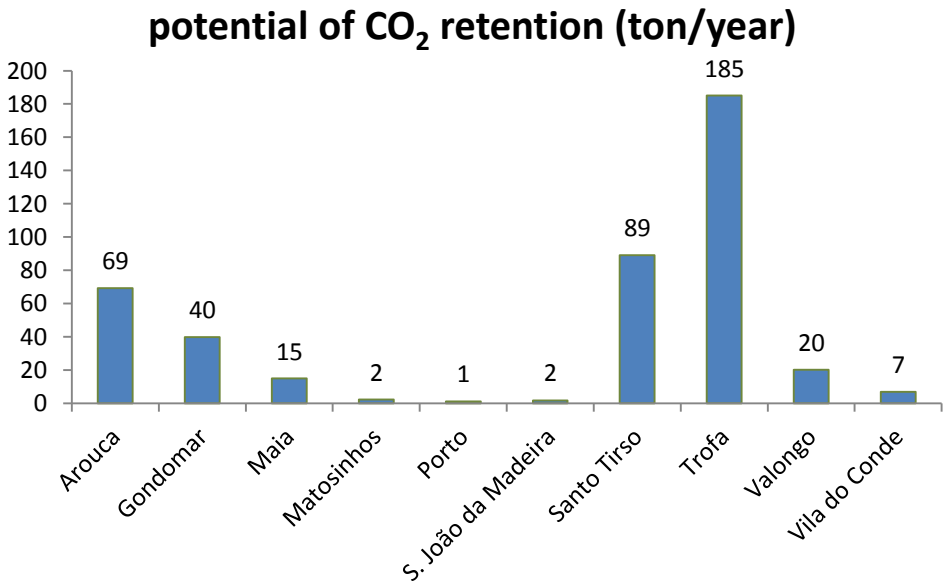


total of **88,6** hectares in intervention

454 trees planted per hectare (average)

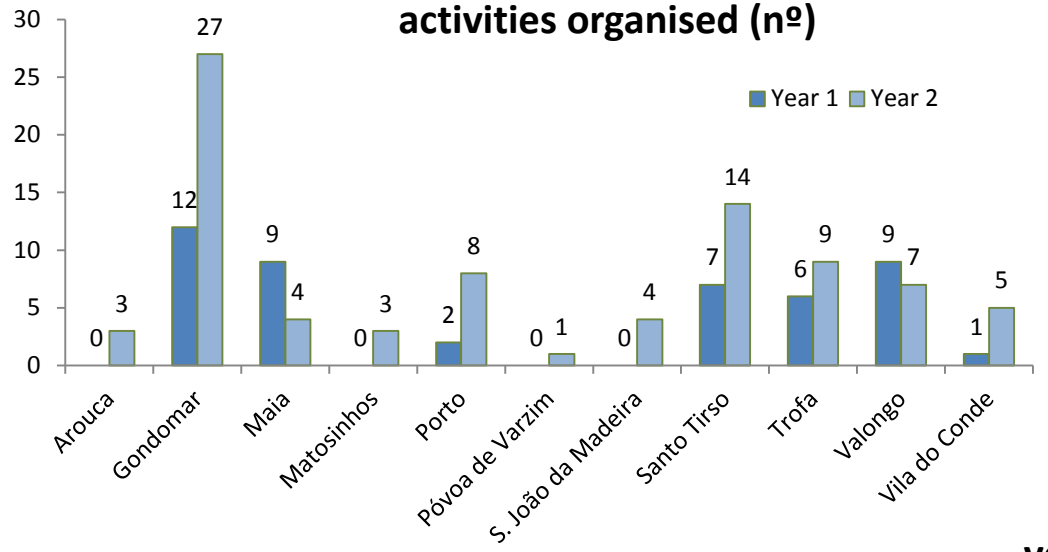
128 tons of CO_2 per year[1]





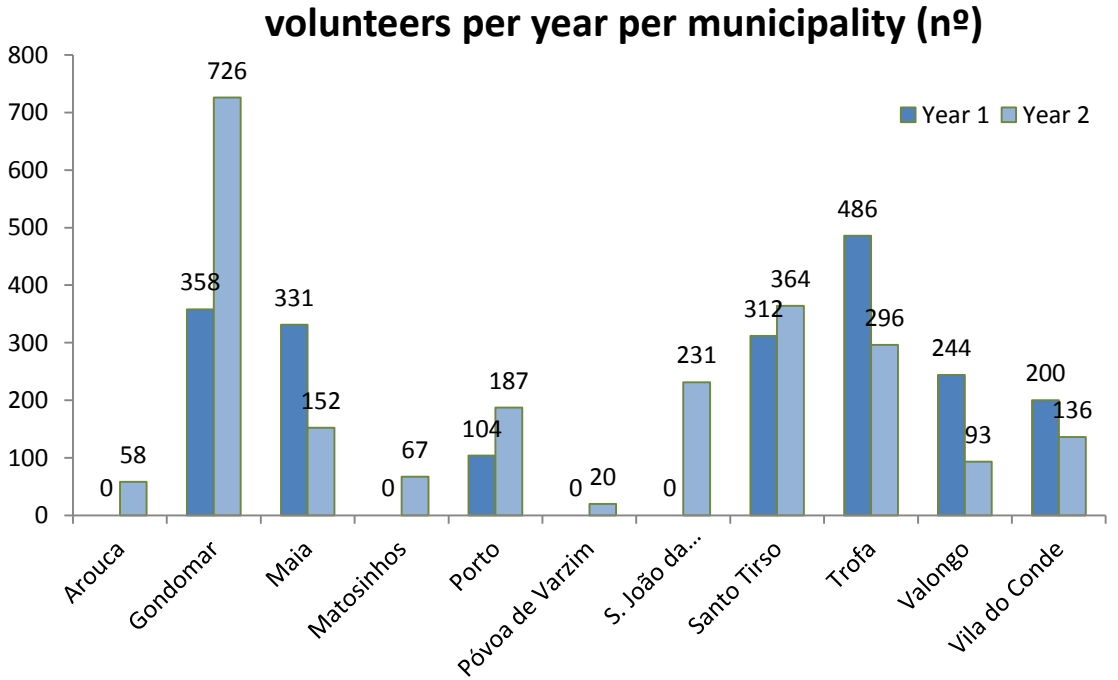
Note 1: Potential for carbon retention: annual average for a 40 year expectancy for the number of trees planted to date

results aggregated by municipality [2011-2013]



85% more activities than in year 1

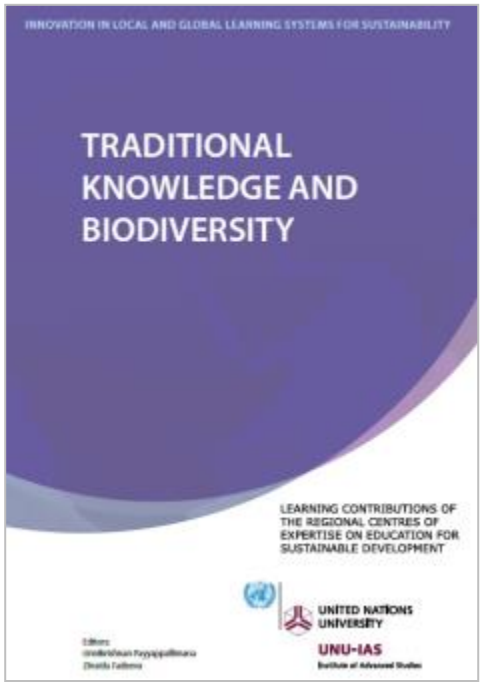
15% more participation in year 2



www.embaixadadafloresta.blogspot.pt

these results were achieved thanks to the following partners

our project has been recognized beyond borders



The case study of the FUTURE – the 100,000 trees project in Porto Metropolitan Area is included in the book "Traditional Knowledge and Biodiversity" published by the United Nations University (2013).

FUTURE – the 100,000 trees project in Porto Metropolitan Area received the Award *'Terre de Femmes*' Yves Rocher Foundation (2013) for first place (Portugal).

YVES ROCHER
FONDATION
SOUS L'ÉGIDE DE L'INSTITUT DE FRANCE

FUTURO
CRE porto

www.embaixadadafloresta.blogspot.pt

thank you!