

PLANT WILD GRUNDTVIG PROJECT

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4th meeting Killis, Turkey - May, 9 2013

WILD HARVESTING BUSINESS OF MEDICINAL AND AROMATIC PLANTS (BWH)

Portugal

- > Resource description and distribution
- > Production and use estimation
- > Value Chain
- > Training needs
- > Swot Analysis on the business related to plants WH

Methodology support for BWH

- Consultation of reliable and official sites on the net
- Data presentation in conferences
- Consultation of papers and reports

(a) Type of vegetation

- > Raunkjær (1934) The Life Forms of Plants and Statistical Plant Geography, Oxford University Press
- > Dansereau, P. 1951. Ecology 32: 172-229
- > <http://www.flora-on.pt>

(B) Biogeographical region

(C) Altitude range

- > Costa, J. C , C. Aguiar, J. H. Capelo, M. Lousã & C. Neto (1998). Biogeografia de Portugal Continental. Quercetia 0: 5-56
- > <http://jb.utad.pt/flora>
- > <http://www.flora-on.pt>
- > 5.º Inventário Florestal Nacional. Apresentação do Relatório Final. Direcção Nacional de Gestão Florestal, SEFDR | 7 de Setembro de 2010
- > Regiões de Proveniência Portugal. Projecto – Defor “The contribution of research for the development and competitiveness of Southwest European forest sector”, INTERREG III B SUDOESTE DEFOR SO2 /1.3/F64, 2008
- > <http://www.icnf.pt/portal/naturaclas/rn2000/resource/implem/reg-biogeog-terr/view>

Methodology support for BWH

<http://www.icnf.pt/portal/naturaclas/rn2000/resource/implem/reg-biogeog-terr/view>



(B) Biogeographical region

Production and use estimation

- ✓ Ana Cristina Figueiredo (2012). Valorização de Plantas Aromáticas e Medicinais (PAMs): Investigação no Centro de Biotecnologia Vegetal (CBV – IBB). Apresentação no I Encontro Ibérico de Plantas Aromáticas e Medicinais (EIPAMs), Auditório do Instituto Politécnico de Beja, 18 de Maio. (note: the production and use estimation are based on 2010 values)

Resource description and distribution



Methodology to support for BWH

Main market

Elaborated products and services

- A. Proença da Cunha, Alda Pereira da Silva, Odete Rodrigues Roque (2003). Plantas e produtos vegetais em fitoterapia. Fundação Calouste Gulbenkian, Serviço de Educação e Bolsas. Lisboa, 701 pags.
- A. Proença da Cunha, José Alves Ribeiro, Odete Rodrigues Roque (2009). Plantas aromáticas em Portugal. Caracterização e utilizações. 2ª Edição. Fundação Calouste Gulbenkian, Serviço de Educação e Bolsas, Lisboa, 328 pags.
- A. Proença da Cunha, Odete Rodrigues Roque, Natália Gaspar (2011). Cultura e Utilização das Plantas Medicinais e aromáticas. Fundação Calouste Gulbenkian, Serviço de Educação e Bolsas. Lisboa, 472 pags.
- Ana Cristina Figueiredo (2012). Valorização de Plantas Aromáticas e Medicinais (PAMs): Investigação no Centro de Biotecnologia Vegetal (CBV – IBB). Apresentação no I Encontro Ibérico de Plantas Aromáticas e Medicinais (EIPAMs), Auditório do Instituto Politécnico de Beja, no dia 18 de Maio.

Resource description and distribution



Ten (10) most important MAP species (in terms of volume) wild collected in Portugal for commercial use.

Species	Type of vegetation	Biogeographical region	Altitude range (m)	
<i>Eucalyptus globulus</i> Labill Eucalipto	Phanerophyta	Atlantic and Mediterranean	5	700
<i>Pinus pinaster</i> Ait. Pinheiro bravo	Phanerophyta	Atlantic and Mediterranean	0	1229
<i>Cistus ladanifer</i> L. Esteva	Phanerophyta	Mediterranean	0	949
<i>Equisetum telmateia</i> Ehrh. Cavalinha	Geophyte	Mediterranean	16	102
<i>Pterospartum tridentatum</i> L. Willk. Carqueja	Phanerophyta Chamaephyta	Atlantic and Mediterranean	13	1310
<i>Centaurium erythraea</i> Rafn Fel da Terra	Hemicryptophyta Terophyte	Atlantic and Mediterranean	10	703

Resource description and distribution



Ten (10) most important MAP species (in terms of volume) wild collected in Portugal for commercial use.

Species	Type of vegetation	Biogeographical region	Altitude range (m)	
<i>Tilia platyphyllos</i> Scop. Tília	Mesofanerófito	Mediterranean	50	1700
<i>Fraxinus angustifolia</i> Vahl Freixo	Phanerophyta	Atlantic and Mediterranean	9	1141
<i>Matricaria recutita</i> L. Camomila	Terophyte	Mediterranean	0	1000
<i>Malva sylvestris</i> L. Malva	Hemicryptophyta	Atlantic	10	815
<i>Sambucus nigra</i> L. Sabugueiro	Phanerophyta	Atlantic and Mediterranean	10	1099
<i>Chamaemelum nobile</i> (L.) All. Macela; Camomila romana	Hemicryptophyta	Atlantic	8	1251

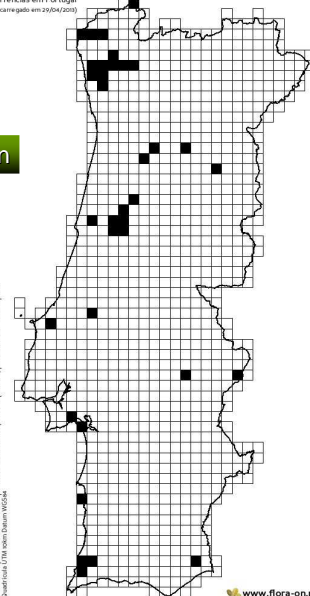
Resource description and distribution



Eucalyptus globulus Labill



Eucalyptus globulus Labill.
ocorências em Portugal
(actualizado em 29/04/2019)



Dados: A. Caragante, P. Vazallo, D. Almeida, J. Lourenço, M. Pardo, E. Carneiro, A. Silva, J. Formigal, M. Pardo, A. J. Pereira, H. Lopes, P. Carriço, E. Marabato, H. Gonçalves
ocorências em Portugal
actualizado em 29/04/2019

Resource description and distribution

Production and use estimation

Collected part	Leaves
Associated surface (ha)	739.515
Total production (t)	48,3
Production Evolution	Increase
Land property	Private

<http://www.infopedia.pt/%Eucalipro,2>

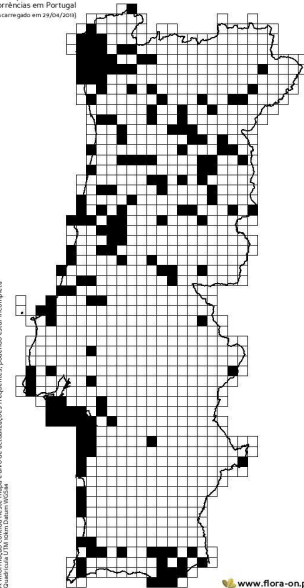
www.flora-on.pt



Pinus pinaster Ait.



Pinus pinaster Aiton
ocorências em Portugal
(actualizado em 29/04/2019)



Dados: A. Caragante, P. Vazallo, D. Almeida, J. Lourenço, M. Pardo, E. Carneiro, A. Silva, J. Formigal, M. Pardo, A. J. Pereira, H. Lopes, P. Carriço, E. Marabato, H. Gonçalves
ocorências em Portugal
actualizado em 29/04/2019

Resource description and distribution

Production and use estimation

Collected part	Buds Needles (Leaves)
Associated surface (ha)	885.019
Total production (t)	30
Production Evolution	Decrease
Land property	Private

<http://jb.utad.pt>

www.flora-on.pt

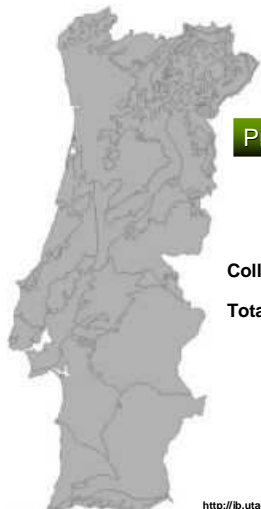


Cistus ladanifer L.



Production and use estimation

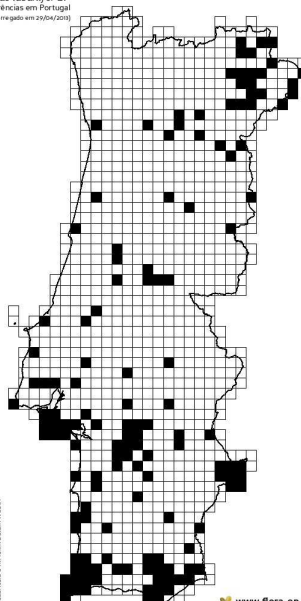
Collected part	Flowering shoots
Total production (t)	7,5



<http://jb.utad.pt>

Cistus ladanifer L.
ocorrências em Portugal
(descarregado em 29/04/2019)

Diogo A. Cardoso, António C. Aguiar, A. J. Almeida, A. Ferreira, F. Caldeira, J. Lourenço, M. Gaspar, P. C. Alves, J. Gonçalves, A. Clemente, J. D. Almeida, B. Orthey, C. I. Gonçalves
O sistema de informação geográfica de distribuição de plantas vasculares em Portugal



www.flora-on.pt



Equisetum telmateia Ehrh.

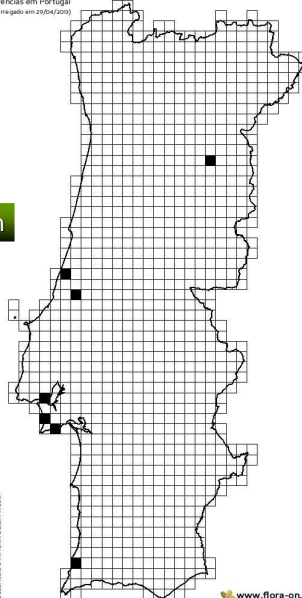


Production and use estimation

Collected part	Sterile stems
Total production (t)	4,45

Equisetum telmateia Ehrh.
ocorrências em Portugal
(descarregado em 29/04/2019)

Diogo A. Cardoso, António C. Aguiar, J. D. Almeida, P. C. Alves, A. Ferreira, F. Caldeira, J. Lourenço, M. Gaspar, P. C. Alves, J. Gonçalves, A. Clemente, J. D. Almeida, B. Orthey, C. I. Gonçalves
O sistema de informação geográfica de distribuição de plantas vasculares em Portugal




www.flora-on.pt

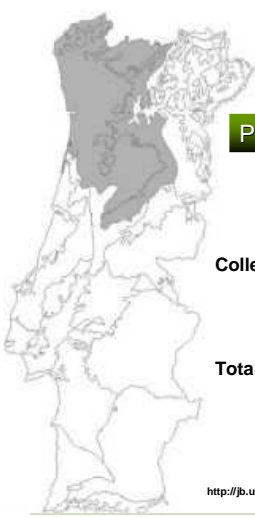


Resource description and distribution

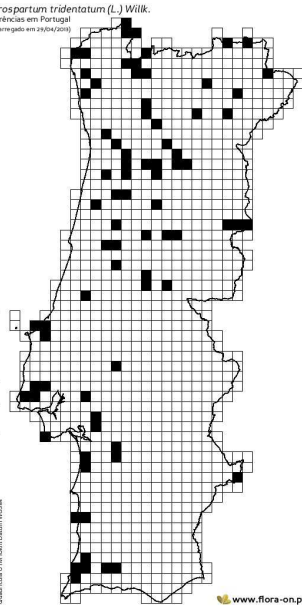
Pterospartum tridentatum L. Willk.



Pterospartum tridentatum (L.) Willk.
ocorrências em Portugal
(Bessa, 2004/2005)




Production and use estimation




Collected part	Flowering shoots
	Flowers
Total production (t)	3,3

<http://jb.utad.pt>
www.flora-on.pt




Resource description and distribution

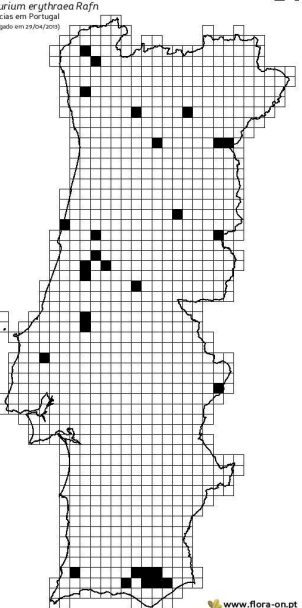
Centaurium erythraea Rafn



Centaurium erythraea Rafn
ocorrências em Portugal
(Bessa, 2004/2005)




Production and use estimation



Collected part	Flowering shoots
Total production (t)	1,07

<http://jb.utad.pt>
www.flora-on.pt



Tilia platyphyllos Scop.



Resource description and distribution

Production and use estimation

Collected part	Inflorescences Inner bark
Total production (t)	0,85



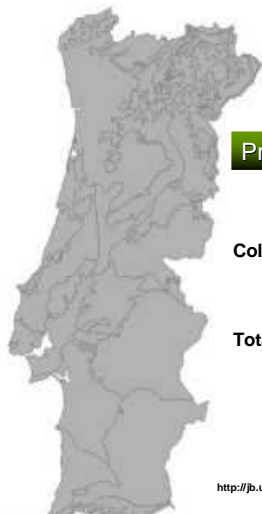
Fraxinus angustifolia Vahl



Resource description and distribution

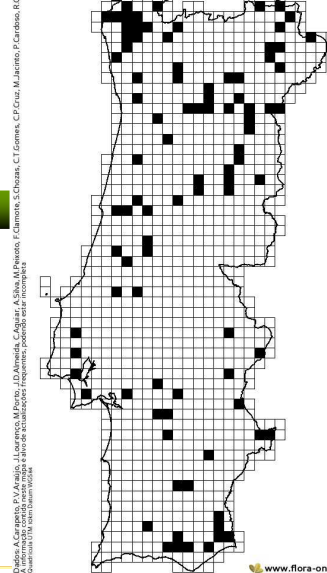
Production and use estimation

Collected part	Leaves Bark
Total production (t)	0,42



Fraxinus angustifolia Vahl subsp. *angustifolia*

ocorências em Portugal
(adaptado de www.inioV.com)



<http://jb.utad.pt>

www.flora-on.pt



Resource description and distribution

Matricaria recutita L.




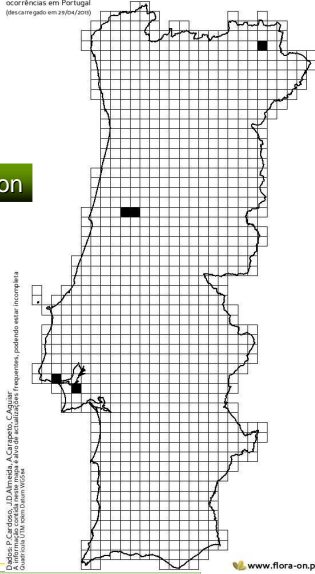
Production and use estimation

Collected part	Flower heads
Total production (t)	0,41



Resource description and distribution

Malva sylvestris L.

Production and use estimation


Collected part	Leaves Flowers
Total production (t)	0,31

<http://jb.utad.pt>

Malva sylvestris L.
ocorências em Portugal
(recenseado em 20/06/2009)


Diogo P. Cardoso, J.D. Almeida, A. Casapico, C. Aguiar,
Guilherme A. Pereira, J. Pereira, J. Pereira,
Distribuição e conservação da
malva (Malva sylvestris L.)

www.flora-on.pt



Resource description and distribution

Sambucus nigra L.

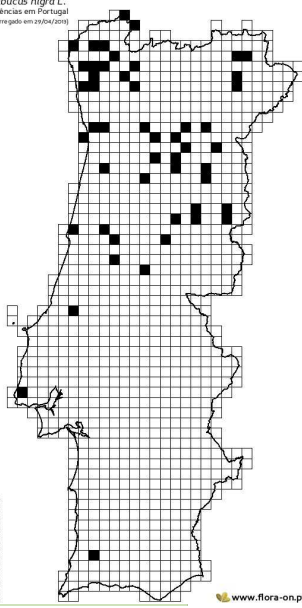


Production and use estimation

Collected part	Flowers Fruits Bark
Total production (t)	0,20


<http://jb.utad.pt>

Sambucus nigra L.
ocorrências em Portugal
(descargado em 29/04/2015)




Dados: J.D. Almeida, J. Lourenço, P.V. Araújo, A. Carapeto, F. Clemente, C. Aguiar, H. Espírito, V. Silva, M. Pinheiro, A. Silva
O conteúdo desta informação é o resultado de trabalhos realizados no âmbito do projeto "Sistema Nacional de Informação em Recursos Genéticos e Melhoramento Genético" financiado pelo INIAV.

www.flora-on.pt



Resource description and distribution

Chamaemelum nobile (L.) All.

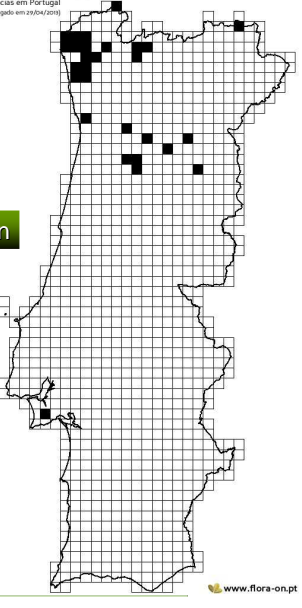


Production and use estimation

Collected part	Flower heads
Total production (t)	0,09


<http://jb.utad.pt>

Chamaemelum nobile (L.) All.
ocorrências em Portugal
(descargado em 29/04/2015)

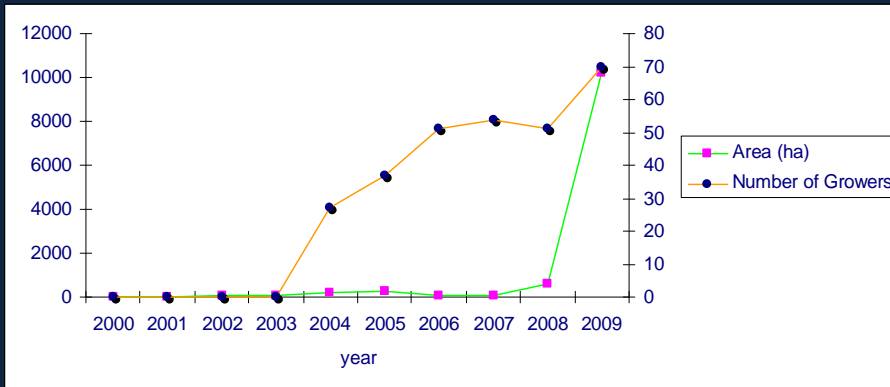


Dados: J. Lourenço, J.D. Almeida, P.V. Araújo, J. Pinheiro, C. Aguiar, C. Carapeto, F. Clemente, C. Aguiar, H. Espírito, V. Silva, M. Pinheiro, A. Silva
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www.flora-on.pt



Medicinal and aromatic plants organic production area and number of growers for the period 1994 to 2009, in Portugal.



Source: Based on data kindly provided by Gabinete de Planeamento e Políticas (GPP) do Ministério da Agricultura do desenvolvimento Rural e das Pescas, 2011. Modo de produção Biológico. <http://www.gpp.pt/Biologica> - updated in 02 May 2011.

epam EMPREENDER NA FILEIRA DAS plantas aromáticas e medicinais EM PORTUGAL

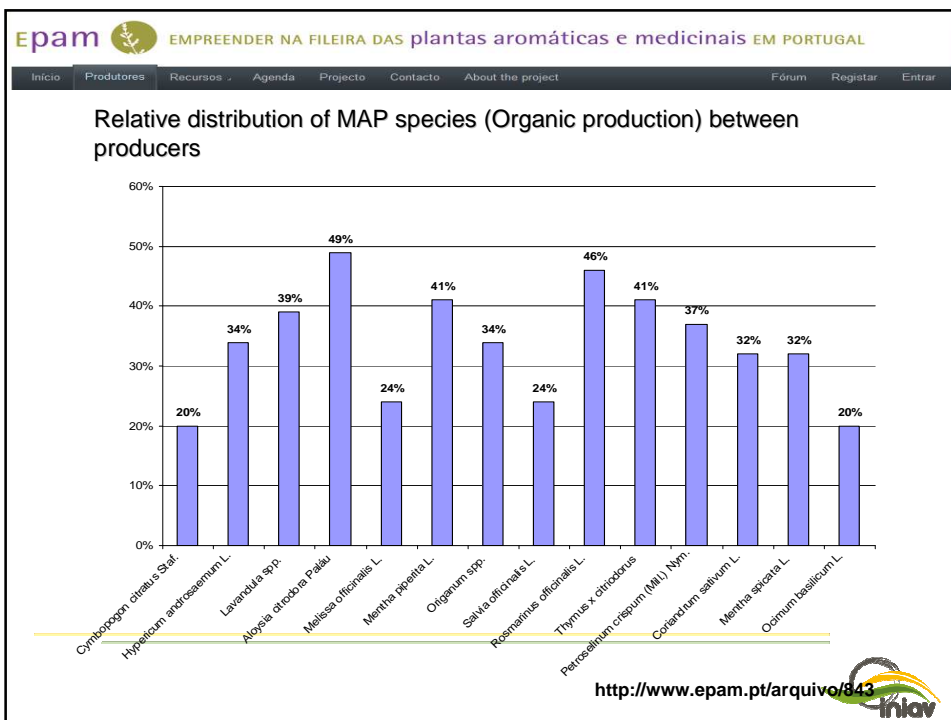
Início Produtores Recursos Agenda Projecto Contacto About the project Fórum Registrar Entrar



- ✓ 58 Producers identified
- ✓ Planalto Dourado, Quinta Essência – Wild Harvest
- ✓ MAP Production surface : 79 Ha
- ✓ Most of the producers are located in the North and Center of the country
- ✓ The most representative species in production are:
 - Mentha piperita* L. (Hortelã-pimenta),**
 - Thymus vulgaris* L. (Tomilho vulgar),**
 - Aloysia citrodora* Paláu (Lúcia-lima),**
 - Thymus x citriodorus* (Tomilho-limão),**
 - Rosmarinus officinalis* L.(Alecrim),**
 - Satureja Montana* L. (Segurelha),**
 - Melissa officinalis* L. (Cidreira),**
 - Cymbopogon citratus* Staf. (Erva Príncipe),**
 - Thymus mastichina* L. (Tomilho bela luz)**
 - Mentha spicata* L. (Hortelã comum)**

<http://www.epam.pt/produtores-mapa>





ervital naturalmente.

2012

Species	Common name	Installed area (ha)	Total Production (Kg dry matter)	Cultivated	Wild	Imported
<i>Agastache foeniculum</i> (Pursh) Kuntze	Agastache	0,25	850			
<i>Agrimonia eupatori</i> L.	Agrimónia	0,15	300			
<i>Camellia sinensis</i> (L.) Kuntze	Chá Verde		110	x		x
<i>Chamaemelum nobile</i> (L.) All.	Macela		75		x	
<i>Cymbopogon citratus</i> Staf.	Erva príncipe	0,10	350	x		
<i>Echinacea purpurea</i> L. Moench	Equinácia	0,15	400	x		
<i>Equisetum telmateia</i> Ehrh.	Cavalinha		120		x	
<i>Fraxinus angustifolia</i> Vahl	Freixo		40		x	
<i>Gomphrena</i> spp.	Perpétua Roxa		110	x		
<i>Hypericum androsaemum</i> L.	Hipericão do Gerês	0,15	500			
<i>Lavandula</i> spp.	Alfazema		90	x		
<i>Lippia citriodora</i> Kunth./ <i>Aloysia triphylla</i> L. (Hér.) Britton	Lúcia lima		200	x		
<i>Malva sylvestris</i> L.	Malva		65		x	
<i>Matricaria recutita</i> L.	Camomila		220		x	
<i>Melissa officinalis</i> L.	Cidreira	0,25	700	x		
<i>Mentha piperita</i> L.	Hortelã Pimenta	0,30	750	x		
<i>Origanum majorana</i> L.	Manjerona	0,20	300			
<i>Origanum</i> spp.	Orégão	0,30	320	x		x
<i>Pterospartum tridentatum</i> L. Willk.	Carqueja flor		1300			x
<i>Pterospartum tridentatum</i> L. Willk.	Carqueja ramo		150			x
<i>Salvia officinalis</i> L.	Salva	0,15	350			
<i>Sambucus nigra</i> L.	Sabugueiro		50			x
<i>Satureja montana</i> L.	Segurelha	0,25	310			
<i>Thymus</i> spp.	Tomilho	0,55	800	x		
<i>Tilia platyphyllos</i> Scop.	Tília		230	x		x
<i>Vaccinium myrtillus</i> L.	Mirtílo		120	x		
Total			8810			

não é obtida na nossa região mas sim adquirida a empresa que compra a colectores
 alguma (cerca de 50 kg) foi adquirida ao cantinho das aromáticas
 Imported

Production area: 4 ha

Production area: 2,5 ha

Species	Common name
<i>Artemisia dracunculus</i>	Estragão-francês
<i>Cymbopogon citratus</i> Staf.	Erva príncipe
<i>Echinacea purpurea</i> L. Moench	Equinácia
<i>Laurus nobilis</i> L.	Loureiro
<i>Lippia citriodora</i> Kunth./ <i>Aloysia triphylla</i> L. (Hér.) Britton	Lúcia lima/Limonete
<i>Melissa officinalis</i> L.	Cidreira
<i>Mentha piperita</i> L.	Hortelã Pimenta
<i>Origanum majorana</i> L.	Manjerona
<i>Rosmarinus officinalis</i> L.	Alecrim
<i>Satureja montana</i> L.	Segurelha
<i>Thymus mastichina</i> L.	Tomilho bela luz
<i>Thymus vulgaris</i> L.	Tomilho vulgar
<i>Thymus x citriodorus</i>	Tomilho limão
Others	

**Raw material obtained
Production process**



***Eucalyptus globulus* Labill**

Fresh herb, dry herb, essential oils
Distillation is performed with fresh leaves



***Pinus pinaster* Ait.**

Essential oils
Distillation of fresh leaves



***Cistus ladanifer* L.**

Dry herb, essential oils
Distillation using fresh leaves



***Equisetum telmateia* Ehrh.**

Fresh herb, dry herb
The sterile stems are collected, chopped and dried for use in herbal teas

Value Chain

Raw material obtained
Production process



***Pterospartum tridentatum* L. Willk.**

Fresh herb, dry herb

Flowers, branches with flowers, or just branches are collected and dried, in some cases chopped before drying

***Centaurium erythraea* Rafn**

Fresh herb, dry herb

The flowering aerial parts are collected and dried



***Tilia platyphyllos* Scop.**

Fresh herb, dry herb, essential oils

The flowers and bracts are collected and dried

***Fraxinus angustifolia* Vahl**

Fresh herb, dry herb, essential oils

The leaves are collected and dried



Value Chain



Raw material obtained
Production process



***Matricaria recutita* L.**

Fresh herb, dry herb, essential oils

The flowers are collected and dried

***Malva sylvestris* L.**

Fresh herb, dry herb

The plant is collected and dried (in some cases chopped before drying)



***Sambucus nigra* L.**

Fresh herb, dry herb

The flowers are collected and dried. The fruits and bark are used to dye food products (like wine, for instance)

***Chamaemelum nobile* (L.) All.**

Fresh herb, dry herb, essential oils

The flowers are collected and dried



Value Chain



Stakeholders involved Enterprises dealing with MAPs WH

Species	Stakeholders involved	Enterprises dealing with MAPs WH
<i>Eucalyptus globulus</i> Labill	1;2	Segredos da Planta; Green Planet; Socidestilda
<i>Pinus pinaster</i> Ait.	1;2	Socidestilda
<i>Cistus ladanifer</i> L.	1;2	Quinta Essência; Socidestilda
<i>Equisetum telmateia</i> Ehrh.	1;2	Ervital; Segredos da Planta; Green Planet; Socidestilda
<i>Pterospartum tridentatum</i> L. Willk.	1;2	Ervital; Segredos da Planta; Green Planet; Costa Bela Luz; Socidestilda
<i>Centaurium erythraea</i> Rafn	1;2	Segredos da Planta; Green Planet; Socidestilda
<i>Tilia platyphyllos</i> Scop.	1;2	Ervital; Segredos da Planta; Green Planet; Socidestilda
<i>Fraxinus angustifolia</i> Vahl	1;2	Ervital; Segredos da Planta; Green Planet; Socidestilda
<i>Matricaria recutita</i> L.	1;2	Ervital; Segredos da Planta; Green Planet; Planalto Dourado; Socidestilda
<i>Malva sylvestris</i> L.	1;2	Ervital; Segredos da Planta; Green Planet; Socidestilda
<i>Sambucus nigra</i> L.	1;2	Ervital; Segredos da Planta; Green Planet; Socidestilda
<i>Chamaemelum nobile</i> (L.) All.	1;2	Ervital; Segredos da Planta; Green Planet; Socidestilda

1. Local population (work commissioned by a buyer) 2. Group of harvesters (work commissioned by a buyer)

Value Chain



Main market Elaborated products and services

Species	Main market	Elaborated products and services
<i>Eucalyptus globulus</i> Labill	1; 4; 5 (aromatic)	Phytomedicines, pharmacology
<i>Pinus pinaster</i> Ait.	1; 4	Phytomedicines, pharmacology
<i>Cistus ladanifer</i> L.	1; 4; 5 (ornamental; melliferous)	Phytomedicines, pharmacology
<i>Equisetum telmateia</i> Ehrh.	1	Phytomedicines, herbal teas
<i>Pterospartum tridentatum</i> L. Willk.	1; 2; 5 (flavouring liqueurs and wines, ethnographic uses)	Herbal teas
<i>Centaurium erythraea</i> Rafn	1	Herbal teas
<i>Tilia platyphyllos</i> Scop.	1; 3; 4; 5 (ornamental; melliferous)	Herbal teas
<i>Fraxinus angustifolia</i> Vahl	1; 3; 4;5 (ornamental; melliferous)	Herbal teas
<i>Matricaria recutita</i> L.	1; 3, 4; 5 (flavouring liqueurs and wines)	Herbal teas
<i>Malva sylvestris</i> L.	1; 5 (food colorant, flavouring liqueurs and wines)	Herbal teas
<i>Sambucus nigra</i> L.	1; 5 (ornamental; food and wine colorant)	Herbal teas, phytomedicines
<i>Chamaemelum nobile</i> (L.) All.	1; 3, 4; 5 (flavouring liqueurs and wines)	Herbal teas

1. Medicinal 2. Food 3. Cosmetic 4. Perfumes 5. Other

Value Chain



1. Which training needs have the collectors? And wild harvested plants buyers?

COLLECTORS

1. Local population (work commissioned by a buyer)
2. Group of harvesters (work commissioned by a buyer)
3. Professional harvesters (selling to different buyers)
4. Enterprises (auto consumption to elaborate products)
5. Other (Forest owners_)

BUYERS

wholesalers

companies

Training subjects							
A	B	C	D	E	F	G	H
x	x	x	x				
x	x	x	x				
x	x	x	x	x	x	x	
x	x	x	x	x	x	x	
x	x	x	x	x	x	x	
		x	x	x	x	x	
		x	x	x	x	x	

A - Sustainable WH techniques **B** - Good Collecting Practices **C** - Transformation training (drying/distillation...)
D - Good manufacturing practices **E** - Products elaboration **F** - Commercialisation and market aspects
G - Regulations and procedures **H** - Other

Importance 6

Training needs



2. How should be the training to reach these stakeholders?

COLLECTORS

1. Local population (work commissioned by a buyer)
2. Group of harvesters (work commissioned by a buyer)
3. Professional harvesters (selling to different buyers)
4. Enterprises (auto consumption to elaborate products)
5. Other (Forest owners_)

BUYERS

wholesalers



companies


Training actions								
A	B	C	D	E	F	G	H	I
	x		x	x				
x	x		x	x				
x	x		x	x			x	
x	x		x	x			x	
x	x		x	x			x	
x			x					
x			x					

A - Regular training (courses, workshops) **B** - Voluntary training (courses, workshops) **C** - leaflets, posters, CD, DVD **D** - technical documents **E** - open seminars **F** - mobile apps **G** - media actions (TV, press...) **H** - on-line training **I** - other

Training needs




Strengths	Weaknesses
<ul style="list-style-type: none"> • Financial support for training • Human resources prepared for training <p>Strong scientific knowledge</p> <p>MAP Research on going</p> <ul style="list-style-type: none"> • MAP sector has potential to growth • MAP sector produces tradable products with export potential • Linked to tourism and gastronomy • Biodiversity of each country • Juvenile sector with higher education 	<ul style="list-style-type: none"> • Research on wild MAP harvesting is fragile • Lack of monitoring in wild areas and the forest is private <p>International Markets , to support the economy are very weak</p> <ul style="list-style-type: none"> • More concern about the sustainability of resources needed and quality of products • More knowledge about diseases and fires is needed • Weak differentiation, innovation, investment in the sector • Weak representation and agents • Weak response on the demand for non-timber products
Opportunities	Threats
<ul style="list-style-type: none"> • Juvenile sector with higher education • Essential element in rural tourism related to environment • MAP and Gastronomic value • Economic ecological value • There are conditions for domestic and export markets 	<ul style="list-style-type: none"> • Age of collectors • Type of collectors / knowledge of collecting • The existing knowledge especially in elderly populations, fashion, tradition • Crescent complexity of this sector organizations and economic agents
	
	



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**Thank you very much for your
kind attention**



GOVERNO DE PORTUGAL

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