proforbiomed
Promotion of residual forestry biomass in the Mediterranean basin

Projet cofinancé par le Fonds Européen de Développement Régional (FEDER)
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Med
L'Europe en Méditerranée
Europe in the Mediterranean

UNIVERSITAT JAUME·I

Lifelong Learning Programme

Summer course:

Biomass for Sustainable Rural Development

proforbiomed
Promotion of residual forestry biomass in the Mediterranean basin

Región de Murcia
GENERALITAT VALENCIANA
CENTRE FORESTAL TECNOLÒGIC DE CATALUNYA
GOZDARSKI INŠTITUT SLOVENIJE
LEA Spodnje Podravje
ADEP
INFO
ISPRA
FLA Fondazione Lombardia per l'Ambiente
CNPF CENTRE RÉGIONAL PROVENCE ALPES CÔTE D'AZUR
ALGAR Valorização e Tratamento de Resíduos Sólidos, SA
Regione Siciliana Assessorato Risorse Agricole e Alimentari

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General Index

PROFORBIOMED Project

PROFORBIOMED &
"Dirección General del Medio Natural"
(CITMA-Generalitat Valenciana)

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PROFORBIOMED Project

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6. Partners
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1. Background

Humans have always used plants as a main source of fuel. Two centuries ago, the industrial revolution introduced a model of growth and development that has led to mass exploitation of resources, and degradation of the life-support system (UNESCO). Since then we have used and, in fact, we continue to use fossil sources for our heating needs, our industrial activities and to provide light and fuel for our vehicles. In this short time the world has changed immeasurably, but these sources of energy which have taken millions of years to form are now already beginning to diminish. The tremendous changes that fossil fuels have afforded have also bestowed an unfortunate legacy. Nowadays we are facing climate change at an unprecedented rate.

The 'energy crises' of the 1970s encouraged the development of new fuel sources, including those derived from plants. In the 1980s, agricultural surpluses and the need for diversification kept initiatives created by the oil crises in place. In the late 1980s and 1990s, the 'environment' assumed centre stage. The 1992 Rio Conference laid the foundations for protecting the environment.

Renewable Energy Policy

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1. Background

General European renewable energy policy is marked by **Directive 2009/28/EC**:

"20% target for the overall share of energy from renewable sources and 10% for renewable energy in transport by 2020"

The directive is part of the package called European energy and climate change, which establishes the basis for the EU to achieve its **objectives for 2020**:

"A 20% improvement in energy efficiency, renewable energy contribution of 20% and a reduction in emissions of greenhouse gases (GHG) by 20%"

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2. MED Programme & PROFORBIOMED

The **MED programme** is a transnational programme of European territorial cooperation. It is financed by the European Union as an instrument of its regional policy and of its programming period 2007-2013.

OBJECTIVES:

- To improve the area's competitiveness in a way that guarantees growth and employment for the next generations (**Lisbon strategy**).

- To promote territorial cohesion and environmental protection, according to the logic of sustainable development (**Goteborg strategy**).

The **PROFORBIOMED** project is a MED strategic project under objective 2.2. **"Promotion and renewable energy and improvement of energy efficiency"**.

The total potential budget of the project is € 5,587,183; € 4,239,550 (75.88%) cofinanced by the European Regional Development Funds (ERDF).

Period: from February 2011- November 2014

3. Origins

The **promotion of the renewable energy** in rural areas by a **sustainable forest biomass management** is the main issue of the project. It is included in the priorities and strategies of the project partners' activities and a lot of work has been developed in previous years in every partner area. This is the main origin of the project.

On the other hand, the idea of setting up the project comes from the **previous experiences** developed by the different partners in **other European projects** (mainly INTERREG IIIB and IIIC, COST, 7th FP and LIFE+) where some of the partners have already worked together (and some of them are still on progress). Partners decided to take a step forward and try to

- **capitalize** the experiences already developed,
- **share** the knowledge acquired by the different partners,
- **develo**p demonstration activities in order to **promote** the use of forest biomass as an energy source
- **develop** and **carry on** a sustainable forest management model with the inclusion of all public and private actors.

Finally, the partnership and project objectives come from the **merging of three different proposals** related to biomass that were presented in the first stage of the MED strategic projects call (PROFORBIOMED, BIO PRO ENERGY and MEDITMASS). This proposal integrates most of the partners and common interests.

4. Summary

PROFORBIOMED has a **multi-sectorial** dimension, working with public and private stakeholders related to forestry biomass chains at all levels (from European to local) and affecting **5 key policies: industry, energy, forests, agriculture and environment**. It works on the valorisation of the forests as active sources of income that need proper management. The innovative aspects of the Project are related to the involvement of the diverse public and private stakeholders in the development of forestry biomass sector policies and actions.

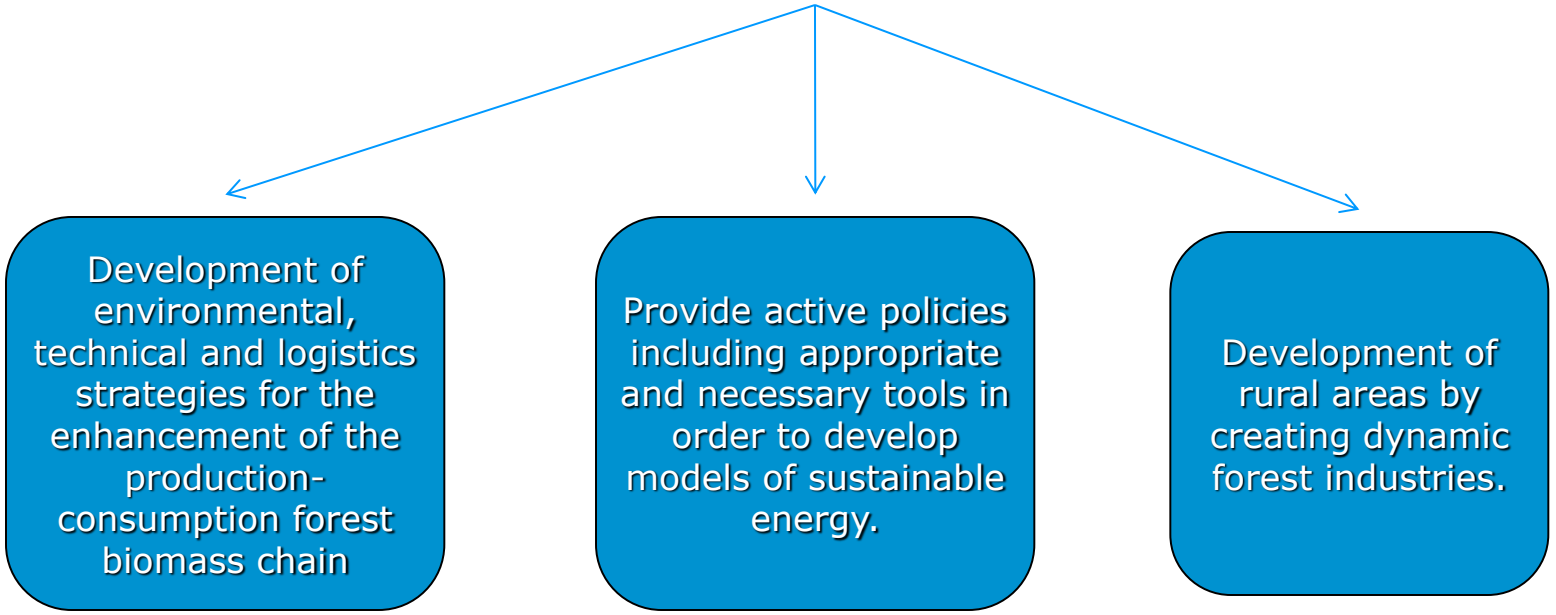
The project works with all the public and private stakeholders related to forestry biomass chains at all levels (from national to regional and local): local and regional administrations, forest owners, energy agencies, farmers, NGO, etc.. This multilevel approach is developed at project level and at country level.

The project involves 17 partners from 6 Mediterranean countries: Spain, Portugal, France, Slovenia, Italy and Greece. **LEADER DGMA of MURCIA**

5. Objectives

MAIN OBJECTIVE:

to promote renewable energies in Mediterranean regions by developing an integrated strategy for the use of the forest biomass as a renewable energy source, recovering the forest biomass potential, developing the fundamental technical and legal aspects and promoting the use of forestry biomass for energy through the involvement of the key stakeholders in a forestry biomass production chain that takes into account sustainability and compatibility with other uses in Mediterranean forests and provides new economic opportunities in rural areas.



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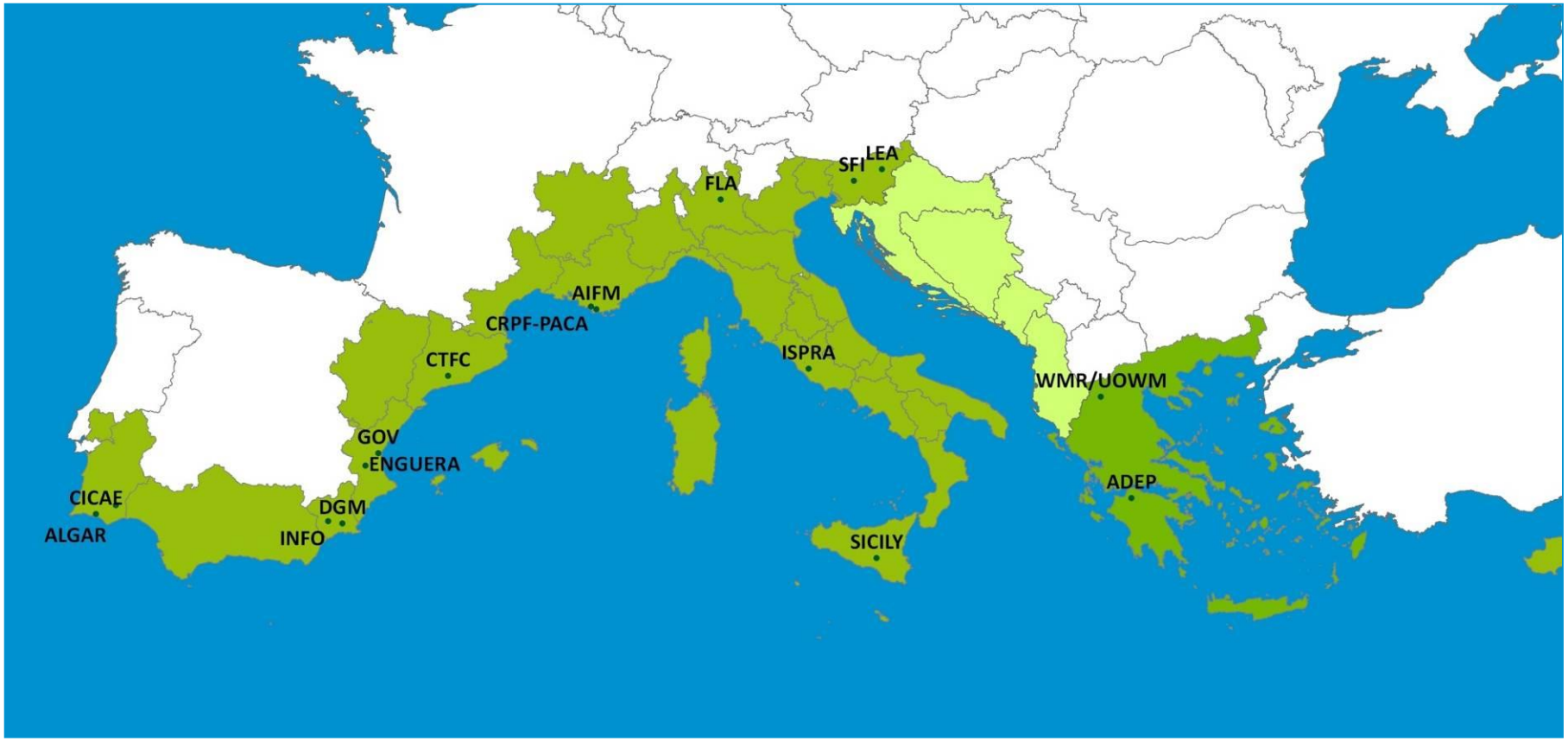
6. Partners

The project involves 17 partners from 6 Mediterranean countries:

Spain, Portugal, France, Slovenia, Italy and Greece.



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6. Partners

LP.- DGMA: Directorate General for the Environment, Murcia Region (Spain)

P2.- GOV: Directorate General for Natural Environment, Valencia Region (Spain)

P3.-CTFC: Forest Sciences Center of Catalonia, Catalonia Region (Spain)

P4.- INFO: Institute for Econonomic Development of the Murcia Region (Spain)

P5.- Enguera: Municipality of Enguera (Spain)

P6.- ISPRA: Institute for Environmental Protection and Research (Italy)

P7.- FLA: Foundation Lombardy for the Environment (Italy)

P8.- AIFM: International Association for Mediterranean Forests (France)

P9.- CPRF:PACA Forest Ownership Regional Centre (France)

P10.- SFI: Slovenian Forestry Institute (Slovenia)

P11.- LEA: Local Energy Agency Spodnje Prodravje (Sloevenia)

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6. Partners

P12.- ADEP: Municipal Enterprise for Planning & Development of Patras (Greece)

P13.- UoWM: University of W. Macedonia (Greece)

P14.- CICAE: Business and Environmental Science Research Center of D. Afonso III University (Portugal)

P15.- ALGAR: Valuation and treatment of solid waste, SA (Portugal)

P16.- AFN: National Forest Authority - Algarve Region (Portugal) Out of the project

P17.- Sicily: Sicily Department of Public Forests Agency (Italy)

P18.- RoWM: Western Macedonia Region (Greece)

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7. Methodology

Implementation through 6 work packages:

HORIZONTAL

WP1
COORDINATION AND MANAGEMENT

MAIN PARTNER: LP DGMA

WP2
INFORMATION AND AWARENESS RAISING

MAIN PARTNER: P8 AIFM

WP3
CAPITALISATION AND LONG-LASTING EFFECTS

MAIN PARTNER: LP DGMA

TECHNICAL

WP4
SETTING UP OF INTEGRATED STRATEGIES FOR THE DEVELOPMENT OF RENEWABLE ENERGIES

MAIN PARTNER: P10 SFI

WP5
RENEWABLE ENERGIES AS AN OPPORTUNITY FOR LOCAL AND REGIONAL ECONOMIES

MAIN PARTNER: P12 ADEP

WP6
SMART GRIDS

MAIN PARTNER: P18 RoWM

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8. Budget by WP

WP1	**940,531 €**
WP2	**943,695 €**
WP3	**465,211 €**
WP4	**2,536,928 €**
WP5	**539,830 €**
WP6	**160,989 €**

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9. Work Packages

WP1 → Coordination and management

WP2 → Information and awareness raising

WP3 → Capitalisation and long-lasting effects

WP4 → Setting up of integrated strategies for the development of renewable energies

WP5 → Renewable energies as an opportunity for local and regional economies

WP6 → Smart grids

WP1 Coordination and management

Coordination is made in cooperation with six countries and seventeen partners through a triple system, at different levels: overall, national and WP level. Responsible for coordination are different entities and cooperation is ensured by means of communication tools and encounters.

Main partner: LP DGMA

Región de Murcia

Lead partner of this work package, DGMA of Murcia, is in charge of the coordination of the whole project. One important issue is the control of the level of expenditure accomplished.

There is a national coordinator in each country

There is a coordinator for each WP, and for each Pilot Action of WP4 and WP5

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WP1 Coordination and management

Overall coordination with all partners is made through **Steering Group Meetings (SGM)**

- 1 SGM: Kick-off meeting. Murcia (Spain). July 2011
- 2 SGM: Ptuj (Slovenia). October 2011
- 3 SGM: Kastoria (Greece). May 2012
- 4 SGM: Faro (Portugal). October 2012
- 5 SGM: Palermo (Italy). March 2013
- 6 SGM: Valencia (Spain). November 2013
- 7 SGM: Marseille (France). June 2014
- 8 SGM: Solsona (Spain). October 2014

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WP2 Information and awareness raising

Actions aimed at **the dissemination** of project results are to be implemented along the project and beyond in order to reach stakeholders of the biomass market and benefit from its results.

Main partner: P8 AIFM

ASSOCIATION INTERNATIONALE FORETS MEDITERRANEENNES

Communication plan

To **promote and to inform on:**
- PROFORBIOMED project: objectives, partnership, actions, results
- Residual forestry biomass: what is it? What are the resources? What are the possible uses?
- Diversity of Mediterranean forest ecosystems and their populations
- Specificities of Mediterranean forests compared to other EU forests
- Challenges (opportunities and threats) for local economy and environment

To **influence target groups (forest, timber and energy professionals; policy-makers from local to** European level; general public) through measurable impact (changes in behaviors and policies for example)

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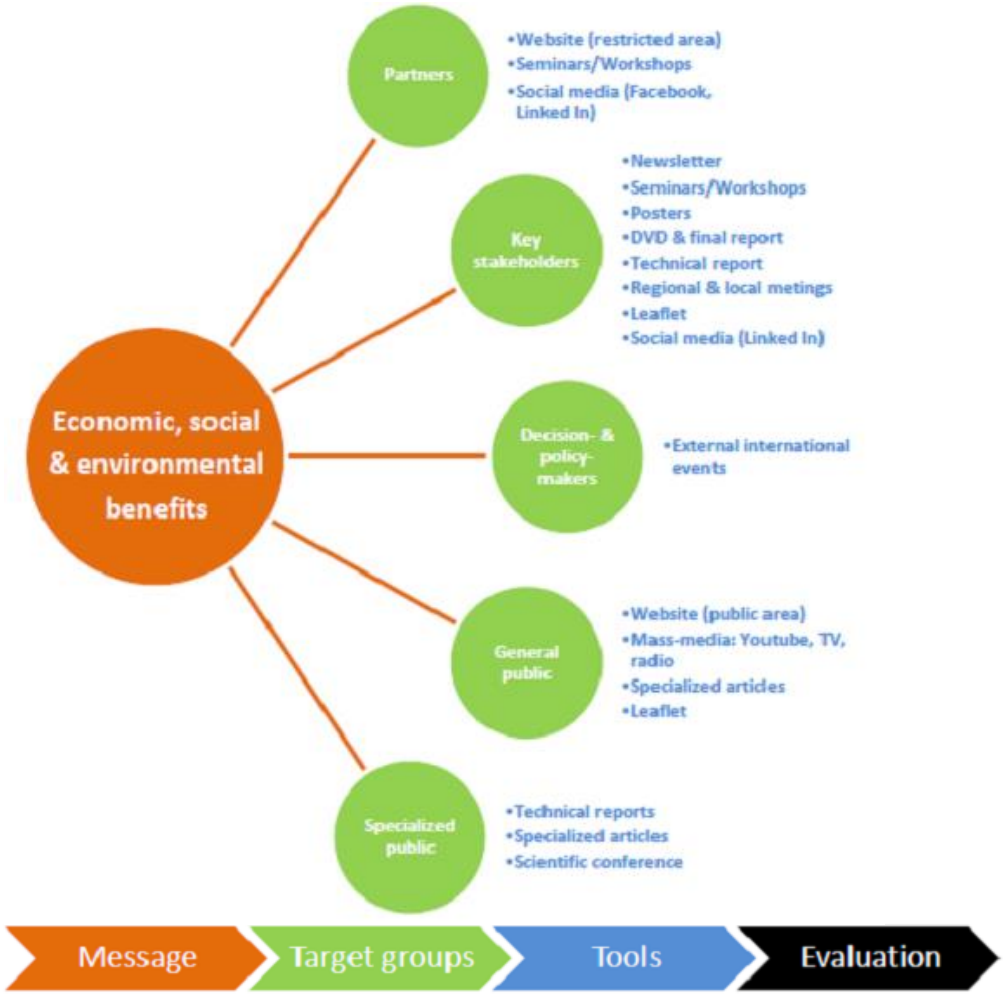
WP2 Information and awareness raising

Strategy for communication



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WP2 Information and awareness raising

Communication tools

Internet

1 Website

www.proforbiomed.eu

6 Newsletter

Social media

Mass media

Press releases, videos, etc in local media

Events

16 main events

40 workshops

Publications

- ✓13 pilot actions technical guides
- ✓Specialized articles
- ✓Report on the events developed
- ✓Guidelines
- ✓Technical reports

Print material

- ✓Leaflets
- ✓Posters
- ✓Final DVD
- ✓Final book

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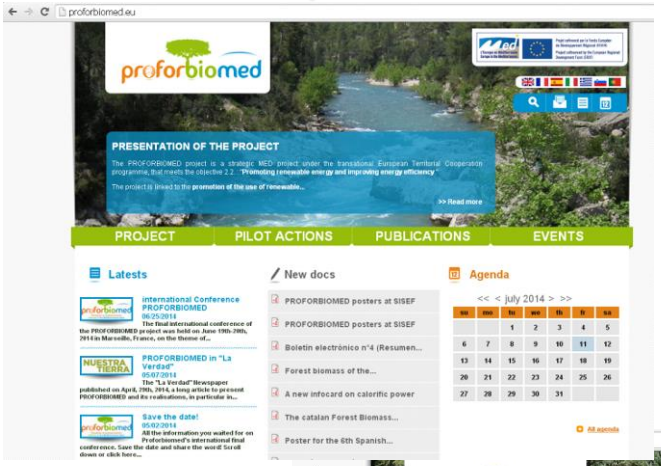
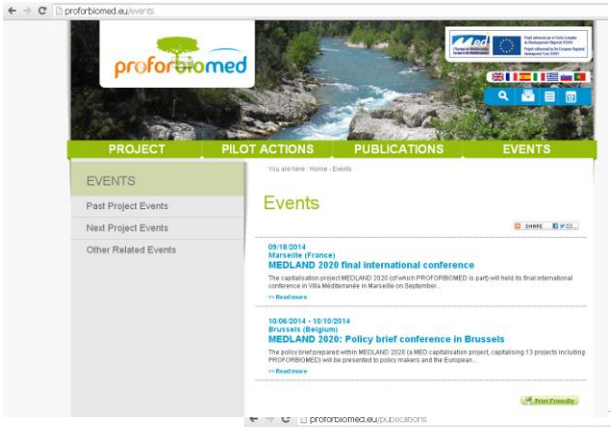
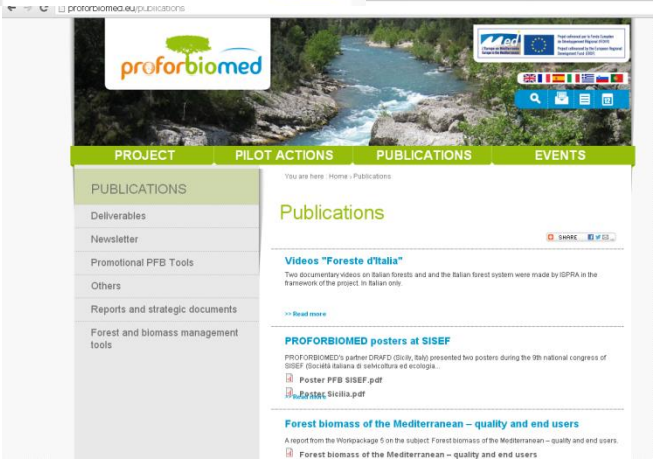
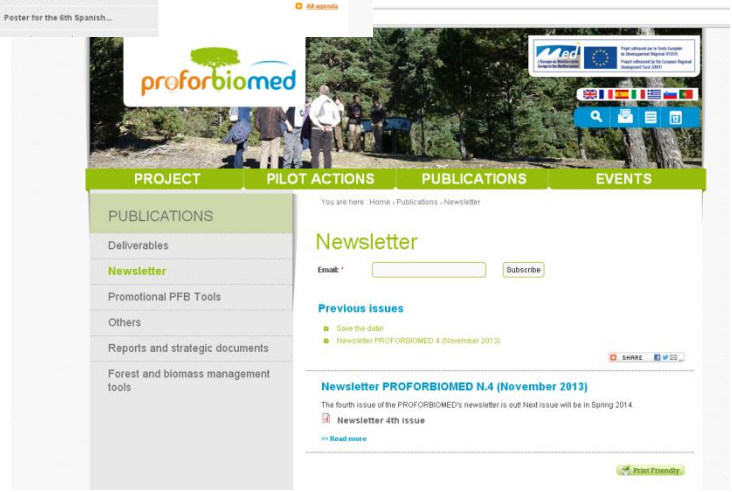
WP2 Information and awareness raising

Website: www.proforbiomed.eu









All information is available in the website!!

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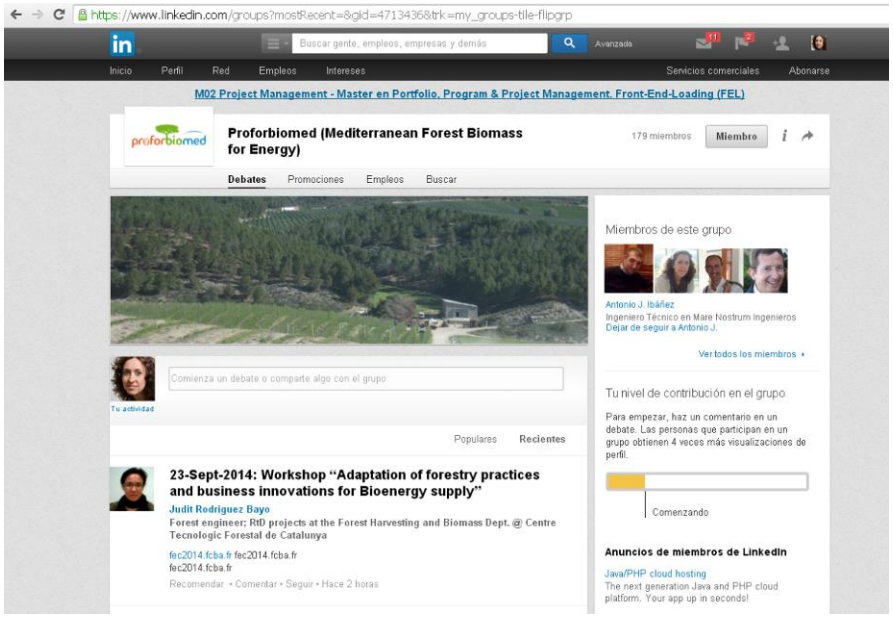
WP2 Information and awareness raising

Communication tools (Social media)



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WP2 Information and awareness raising

Communication tools (Events in **Valencia**)

Biomass in Valencia Region: Present and future. November 2011

More than 100 participants
2 days

I Sustainability Valencian Agroforestry. May 2013

More than 140 participants
Key actors at local level

Capitalization session of MED Strategic Projects Novabuild Fair. November 2013

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WP2 Information and awareness raising

Communication tools (Leaflets/Posters)

WP3 Capitalisation and long-lasting effects

Ensure the sustainable development of the biomass production chain through transnational capitalisation, promotion, setting up of political agreements and identification of financing mechanisms.

Main partner: LP DGMA

- **Amendments** to the "Regulation of the European Parliament and of the Council on support for rural development by the EAFRD within the framework of the new CAP".
- **Guidelines** and operational recommendations for the implementation of a chain of custody for the energy use of forest biomass.
- Report available in the **public aid system** and analysis of funding opportunities.
- **Agreements** with governments, forest owners and associations.
- Development of **clusters.**

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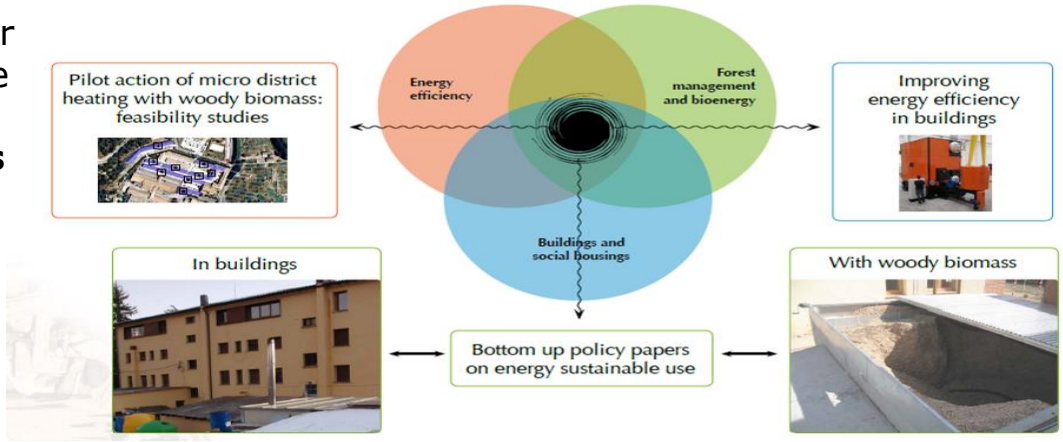
WP3 Capitalisation and long-lasting effects

Agreements:

- With **public administrations** : **5** have been signed
- With **forest owners and associations**: **3** have been signed
- Capitalisation with **6 other projects**: to ensure the knowledge transfer from and to other projects (STEP, FOROPA, BASIS, ALPSTAR, ELIH-MED, MARIE)
- **Collaboration agreement** among PROFORBIOMED, ELIH-MED and MARIE projects: to foster joint actions , disseminate and capitalise their results.
  - **Ljubljana Declaration:** Position Paper that shows the common position of the 3 projects, regarding **Energy Efficiency and Renewable Energies**
- **Biomass for Energy Pact**



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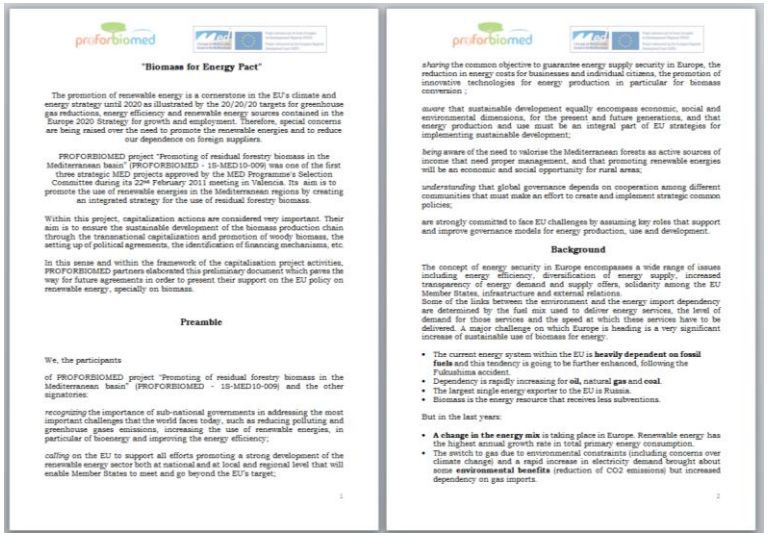
WP3 Capitalisation and long-lasting effects

Biomass for Energy Pact

- It's a **position paper**, a preliminary document which paves the way for future agreements.
- It's a **volunteer international agreement** (bottom up approach) that wants to support the EU policy on renewable energy (biomass).
- Signatories: 17 PROFORBIOMED partners, and different kind of stakeholders



"Biomass for Energy Pact"

The promotion of renewable energy is a cornerstone in the EU's climate and energy strategy until 2020 as illustrated by the 20/20/20 targets for greenhouse gas reductions, energy efficiency and renewable energy sources contained in the Europe 2020 Strategy for growth and employment. Therefore, special concerns are being raised over the need to promote the renewable energies and to reduce our dependence on foreign suppliers.

PROFORBIOMED project "Promoting of residual forestry biomass in the Mediterranean basin" (PROFORBIOMED - 1B-MED10-009) was one of the first three strategic MED projects approved by the MED Programme's Selection Committee during its 22nd February 2011 meeting in Valencia. Its aim is to promote the use of renewable energies in the Mediterranean regions by creating an integrated strategy for the use of residual forestry biomass.

Within this project, capitalization actions are considered very important. Their aim is to ensure the sustainable development of the biomass production chain through the transnational capitalization and promotion of woody biomass, the setting up of political agreements, the identification of financing mechanisms, etc.

In this sense and within the framework of the capitalisation project activities, PROFORBIOMED partners elaborated this preliminary document which paves the way for future agreements in order to present their support on the EU policy on renewable energy, specially on biomass.

Preamble

We, the participants

of PROFORBIOMED project "Promoting of residual forestry biomass in the Mediterranean basin" (PROFORBIOMED - 1B-MED10-009) and the other signatories;

recognizing the importance of sub-national governments in addressing the most important challenges that the world faces today, such as reducing polluting and greenhouse gases emissions, increasing the use of renewable energies, in particular of bioenergy and improving the energy efficiency;

calling on the EU to support all efforts promoting a strong development of the renewable energy sector both at national and at local and regional level that will enable Member States to meet and go beyond the EU's target;

1

sharing the common objective to guarantee energy supply security in Europe, the reduction in energy costs for businesses and individual citizens, the promotion of innovative technologies for energy production in particular for biomass conversion ;

aware that sustainable development equally encompass economic, social and environmental dimensions, for the present and future generations, and that energy production and use must be an integral part of EU strategies for implementing sustainable development;

being aware of the need to valorise the Mediterranean forests as active sources of income that need proper management, and that promoting renewable energies will be an economic and social opportunity for rural areas;

understanding that global governance depends on cooperation among different communities that must make an effort to create and implement strategic common policies;

are strongly committed to face EU challenges by assuming key roles that support and improve governance models for energy production, use and development.

Background

The concept of energy security in Europe encompasses a wide range of issues including energy efficiency, diversification of energy supply, increased transparency of energy demand and supply offers, solidarity among the EU Member States, infrastructure and external relations.
Some of the links between the environment and the energy import dependency are determined by the fuel mix used to deliver energy services, the level of demand for those services and the speed at which these services have to be delivered. A major challenge on which Europe is heading is a very significant increase of sustainable use of biomass for energy:

- The current energy system within the EU is **heavily dependent on fossil fuels** and this tendency is going to be further enhanced, following the Fukushima accident.
- Dependency is rapidly increasing for **oil**, natural **gas** and **coal**.
- The largest single energy exporter to the EU is Russia.
- Biomass is the energy resource that receives less subventions.

But in the last years:

- **A change in the energy mix** is taking place in Europe. Renewable energy has the highest annual growth rate in total primary energy consumption.
- The switch to gas due to environmental constraints (including concerns over climate change) and a rapid increase in electricity demand brought about some **environmental benefits** (reduction of CO2 emissions) but increased dependency on gas imports.

2

→ **Working Groups**

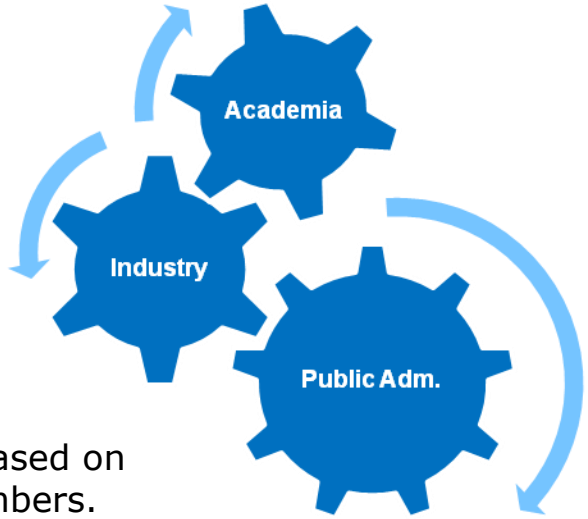
- Identify a problem to solve and Specific objectives to reach .
- Produce a position paper that explicit the request addressed to the institutions.

WP3 Capitalisation and long-lasting effects

Clusters: definition

Clusters are a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities.
Clusters encompass an array of linked industries and other entities important competition…including governmental and other institutions – such as universities, standard setting agencies, think tanks, vocational training providers and trade associations.

(Porter, 1998)



COMPETITIVE TOOL based on cooperation of its members.

Triple Helix Model

Dynamic Interaction

Information provided by Yannis Fallas (Cluster expert)

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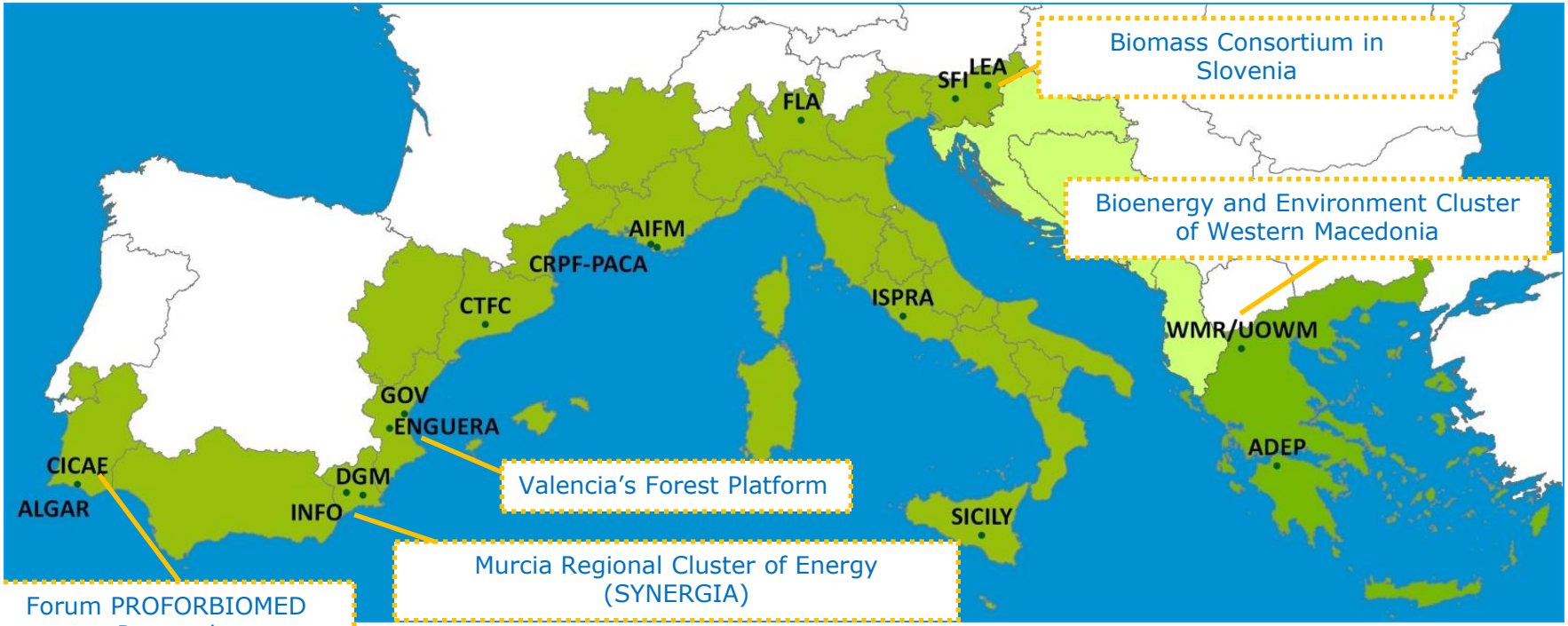
WP3 Capitalisation and long-lasting effects

PROFORBIOMED Clusters

PROFORBIOMED partners have developed **clusters in their regions** that connect companies, administrations, universities and public/private institutions, among others, focused to develop bioenergy sector and promote forest biomass uses.



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WP3 Capitalisation and long-lasting effects

Example:

Valencian Forestry Platform

Is an independent not for profit association, integrating **25 institutions** and organizations representing the entire **forestry value chain and stakeholders** in the Land of Valencia: partnerships of public and private owners, agricultural and forestry trade unions, industry associations of forestry enterprises and forest-based industry, professional bodies and associations, NGOs, public universities and technology institutes.

Working Groups:

- Bioenergy and prevention of large wildfires
- Environmental management plans
- Research and training
- Payments for environmental services
- Legislation
- Forest products and rural development
- Live and build in wood

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WP3 Capitalisation and long-lasting effects

Example:

Bioenergy and Environment Cluster of Western Macedonia

Legal Form: Not for profit Company

Company Name: Cluster in Bioenergy and Environment (CLU.B.E.)

Objective: Development of entrepreneurial and research activity In the fields of Bioenergy and Environment

21 Initial members: public sector, Academia, Business sector and other supporting structures (Regional Development Agency)

Areas of activity:
✓Energetic exploitation of biomass for domestic use
✓Energetic exploitation of biomass for D.H. of towns, neighborhoods, etc
✓Co-firing with lignite
✓Optimization of heating systems
✓Energy saving in household use
✓Energy saving in business and commercial use

Information provided by Yannis Fallas (Cluster expert)

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WP4 Setting up of integrated strategies for the development of renewable energies

Main partner: P10 SFI

GOZDARSKI INŠTITUT SLOVENIJE
SLOVENIAN FORESTRY INSTITUTE

AXIS I. BIOMASS EXTRACTION

To support to biomass producers, forest owners, forest-based companies and local and regional authorities in the implementation of strategies for the promotion of forestry biomass, taking into account environmental, social and economic constraints.

PA 1.1. **Assessment** of the structural diversity of forest **habitats**: databases, technical guides, etc.
PA 1.2. Development of a **GIS** for the management of the potential forest biomass.
PA 1.3. **Assessment** of the **forest biomass production**. Reports and technical guides
PA 1.4. Assessment of the **environmental impact** of forest biomass harvesting and extraction: Assessment protocol.
PA 1.5. Development of a **system for traceability** of forest biomass.
PA 1.6. Demonstration plots with short-rotation **energy crops**: Results report for different species and planting methods.
PA 1.7. **Management plans** for forest biomass.

WP4 Setting up of integrated strategies for the development of renewable energies

Main partner: P10 SFI

GOZDARSKI INŠTITUT SLOVENIJE
SLOVENIAN FORESTRY INSTITUTE

AXIS II. BIOMASS POWER PLANTS: SUPPLY AND FEASIBILITY

To provide technical and economic information to key stakeholders (local and regional administration, forest owners, companies and energy actors).

PA 2.1. Preparation of **pre-feasibility projects** of a small or medium size biomass plant or a district heat/cooling system.

PA 2.2. Presentation of existing **good practice examples**: guide and recommendations.

WP4 Setting up of integrated strategies for the development of renewable energies

1.1. Assessment of the structural diversity of forest habitats

P14 CICAE
Portugal

P6 ISPRA
Italy

P9 CRPF
France

P10 SFI
Slovenia

P18 R. SICILY
Italy

Objective:

To set the know-how about current and old forest management plans and data and provide it to stakeholders

WP4 Setting up of integrated strategies for the development of renewable energies

1.1. Assessment of the structural diversity of forest habitats

Conclusions:

CICAE:

- ✓ **deepening of the forested areas characterization;**
- ✓ evaluation of the exploitation potential and **establishment of logistical chains and systems**;
- ✓ promote knowledge of the forested areas for the biomass production potential but opening **new possibilities for other uses** / the areas with bush dominance, because of their high territorial representativeness, should be treated with special care.

ISPRA:

- ✓ provide regional and local policymakers, in Lazio, the essential information and data **to develop clear national-level policy goals for forests and energy** that reflect the principles of **sustainable development and sustainable forest management**;

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Project cofinanced by the European Regional Development Fund (ERDF)

WP4 Setting up of integrated strategies for the development of renewable energies

1.1. Assessment of the structural diversity of forest habitats

Conclusions:

CRPF:

- ✓ **potential biodiversity -** *Pinus halepensis* is quite low;
- ✓ the evaluation of the IBP are key factors for the biodiversity of a forest - can be very **good indicators to propose a biodiversity friendly management;**
- ✓ the entire tree harvesting can only be implemented once in the life of the forest stand. It is a good tool to introduce management in abandoned or non-managed forests.

R.SICILY:

- ✓ identify the most suitable forest types for the use of biomass for energy production, in terms of **suitability and affordability**;
- ✓ provide information on the **evolutionary dynamics, structural characteristics and dendrometric parameters** in order to identify, for each of them, the most **appropriate silvicultural interventions** able to combine the use of forest biomass with a greater ecosystem stability of forests

Med L'Europe en Méditerranée Europe in the Mediterranean
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Project cofinanced by the European Regional Development Fund (ERDF)

WP4 Setting up of integrated strategies for the development of renewable energies

1.2. Development of a Geo-Information System for the Potential Forestry Biomass Management.

P15 ALGAR
Portugal

ALGAR
Valorização e Tratamento de Resíduos Sólidos, SA

- **LP DGMA** Spain
- **P3 CTFC** Spain
- **P6 ISPRA** Italy
- **P9 CRPF** France
- **P10 SFI** Slovenia
- **P13 UoWM** Greece
- **P17 R. SICILY** Italy

Objective:

To develop tools that support decision making processes related to forestry biomass management, especially the potential biomass production and the work planning.

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Project cofinanced by the European Regional Development Fund (ERDF)

WP4 Setting up of integrated strategies for the development of renewable energies

1.2. Development of a Geo-Information System for the Potential Forestry Biomass Management.

Conclusions:

- ✓ The logistical analysis based on "cost-distance" formulations allows the achievement of cost estimation of biomass transport, for very large territorial areas;
- ✓ This type of method lacks prior information on consumption points, located within the scope of the road network used in the analysis. This must be used to create scenarios;
- ✓ The conjugation of the transport cost methodology with the territorial information on biomass production availability, allows the gather, in a relatively fast way, of information about biomass exploration and transport system profitability;
- ✓ The GIS are an essential tool to apply this type of options, establishing as powerful auxiliaries in supporting forest managers and policy makers when installing forest biomass frameworks.

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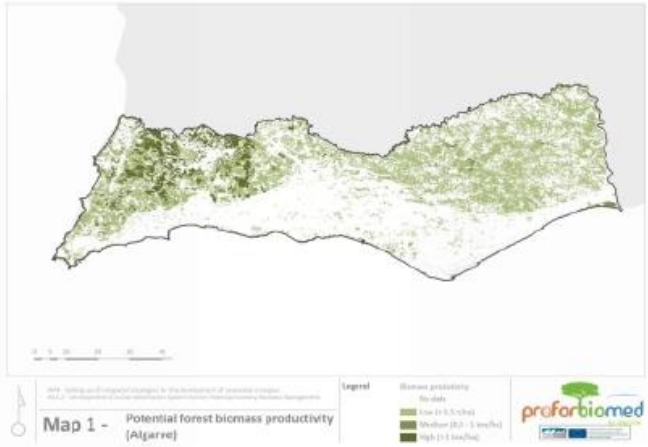
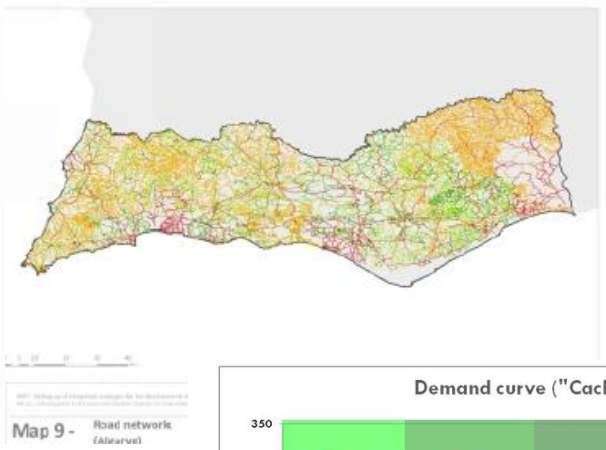
WP4 Setting up of integrated strategies for the development of renewable energies

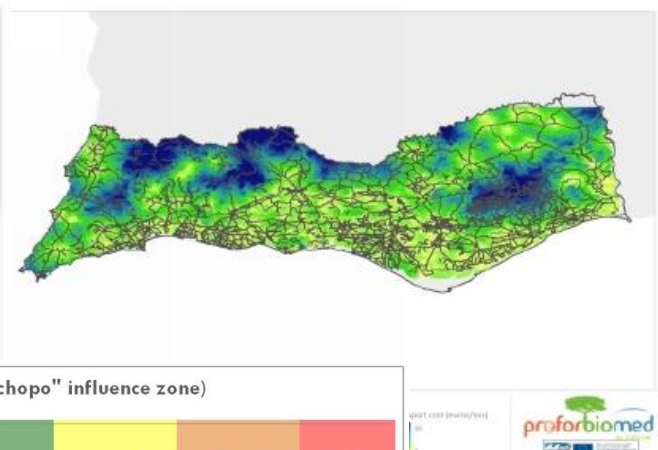
1.2. Development of a Geo-Information System for the Potential Forestry Biomass Management.

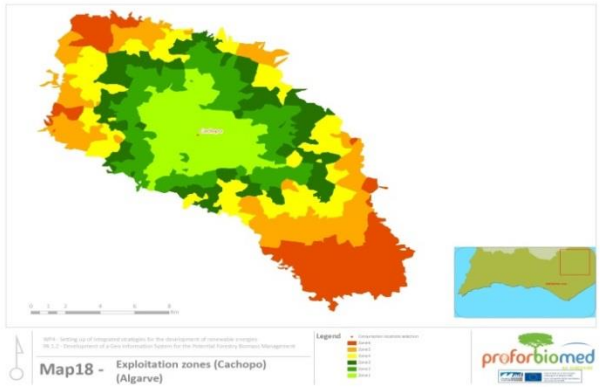


Map 1 - Potential forest biomass productivity (Algarve)

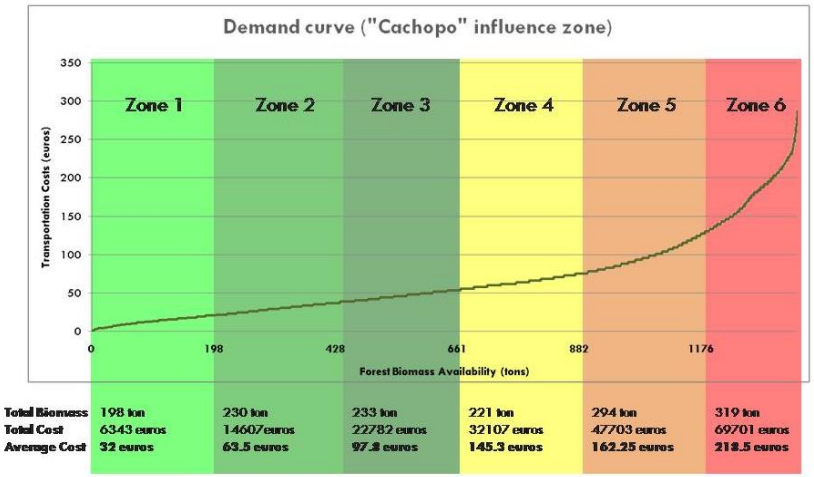


Map 9 - Road network (Algarve)





Map18 - Exploitation zones (Cachopo) (Algarve)



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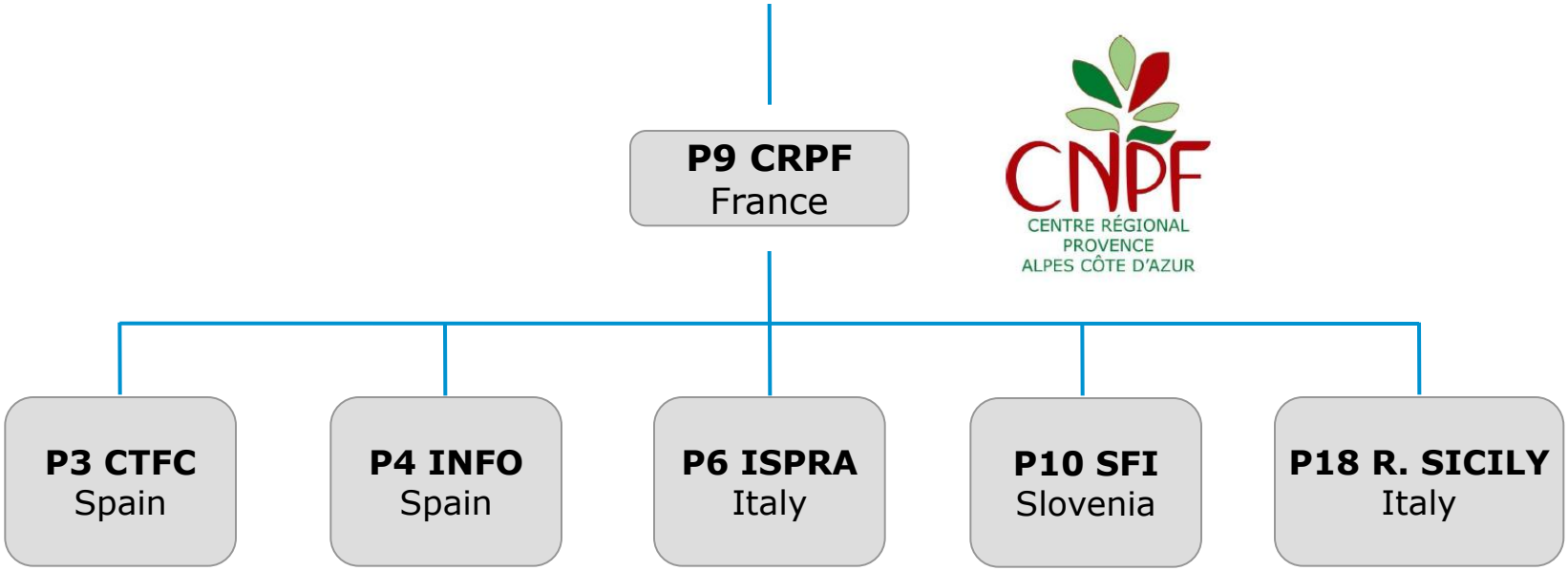
WP4 Setting up of integrated strategies for the development of renewable energies

1.3. Assessment of forest biomass production



Objective:

To develop methodology to get real and adapted data that helps to define the characteristics and needs of the process to design sustainable forest biomass production.

WP4 Setting up of integrated strategies for the development of renewable energies

1.3. Assessment of forest biomass production

Conclusions:

- ✓ A small area should be determine where to perform measurements and experiment with blocks (changing parameters of the harvesting).
- ✓ Work will be done when planned, at least in these small areas within the whole harvesting area, in order to use PROFORBIOMED resources (people contracted for measuring) efficiently. For this is necessary to do a previous planning of the forest operations.
- ✓ It is also important to contact with: the forest enterprises and workers (to know the operations on time) and as in the case of technical assistance performing (site management and technical control of tasks).
- ✓ Extraction of whole trees shouldn't be done after spring, because the damages to remaining trees are more important than if done in winter; this is due to the difficulty of extracting whole trees with their crowns. Near the operating areas of the tractor (where the tractor stops for extending and pulling the cable) an over-density of trees should be left in order to cut these extra trees, which are expected to be damage.

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WP4 Setting up of integrated strategies for the development of renewable energies

1.4. Assessment of the environmental impact of forest biomass harvesting or extraction

P14 CICAE
Portugal

P3 CTFC
Spain

P5 ENGUERA
Spain

P6 ISPRA
Italy

P9 CRPF
France

P10 SFI
Slovenia

P17 R. SICILY
Italy

Objective:

To demonstrate forest managers how to assess environmental impact of the biomass harvesting or extraction and how to mitigate it. Impacts on Soil, Fire risk and Biota have been measured.

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WP4 Setting up of integrated strategies for the development of renewable energies

1.4. Assessment of the environmental impact of forest biomass harvesting or extraction

Conclusions:

FIRE RISK:

- ✓ Implementation of power plant → decreasing the area burned
- ✓ Shrub removal decreases significantly for decreasing wildfire hazard
- ✓ After thinning operations wood biomass extraction is recommended

SOIL:

- ✓ The total removal of the biomass is not, at all advisable, in areas used for eucalyptus production or areas with bushes.
- ✓ Total removal of vegetation should be avoided, particularly in the more sloping areas→ where the soil may be entirely lost leading to a degraded landscape
- ✓ Shrubs and herbaceous plants will also contribute to the pedogenesis processes
- ✓ The use of heavy machinery should be done with caution, particularly in the soils with fine texture
- ✓ Human activities frequently cause a degradation of soil environmental conditions → reduce the abundance and simplifies the communities

BIOTA:

- ✓ Caution with endemics and species with high conservation value → greater sensitivity to potential extraction of residual forest biomass operations
- ✓ The action of extracting residual forest biomass does not lead, in general, significant impacts on fauna but its very important minimize the cutting phase and extraction of residual forest biomass
- ✓ Is important alert to forest ecosystems as complex biological systems characterized by the inherent and unpredictable environmental changing

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WP4 Setting up of integrated strategies for the development of renewable energies

1.5. Development of a system of traceability of the forest biomass

P7 FLA
Italy

Fondazione Lombardia per l'Ambiente

P3 CTFC
Spain

P10 SFI
Slovenia

P17 R. SICILY
Italy

Objective:

To develop protocols to assess and improves quality in the biomass value chain.

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Project cofinanced by the European Regional Development Fund (ERDF)

WP4 Setting up of integrated strategies for the development of renewable energies

1.5. Development of a system of traceability of the forest biomass

Conclusions:

- ✓ Forest biomass could represent a valuable resource as renewable energy but, it might also raise some concerns with regard to integrity of forest ecosystems and other associated issues of the production chain.
- ✓ To support an appropriate development of the biomass sector, good practices and guidance are needed.
- ✓ Many projects and initiatives addressed the issue of biomass sustainability and traceability: coordination is needed in order to provide clear guidelines to operators and robust evidences to consumers and markets.
- ✓ It needs further development to set-up appropriate criteria and requirements to define 'short supply chains', linking them to valuable and measurable parameters.
- ✓ Solid biomass sustainability is a paramount topic on technical and policy agenda at both national and European scale.
- ✓ A good traceability system as proposed by PROFORBIOMED may be a great use for calculating the foot print (ecological, carbon, etc.) of the bioenergy supply chains.

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WP4 Setting up of integrated strategies for the development of renewable energies

1.5. Development of a system of traceability of the forest biomass

The protocol is structured into three main sections:

- ✓ **Introduction**, that provides general information about the nature, aims, scope and structure of the document as well as key terms and definitions;
- ✓ **Part 1 Requirements for organisations** operating in the forestry biomass supply chain. Requirements include: (i) traceability requirements; and (ii) additional requirements;
- ✓ **Part 2 Auditing requirements and procedures**, that includes rules to be followed by independent bodies in charge of controlling the implementation of the present Protocol.

The document is then complemented by five Annexes:

Annex 1 – Structure of wood biomass origin and sources according to EN 149611
Annex 2 – Summary of requirements for social/environmental sustainability
Annex 3 – Moisture estimation
Annex 4 – Tracking system;
Annex 5 – Audit checklist (informative).

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WP4 Setting up of integrated strategies for the development of renewable energies

1.6. Pilot plots of short rotation energy plantations

P2 GOV
Spain

GENERALITAT VALENCIANA
CONSELLERIA D'INFRAESTRUCTURES, TERRITORI I MEDI AMBIENT

- **P3 CTFC** Spain
- **P4 INFO** Spain
- **P6 ISPRA** Italy
- **P10 SFI** Slovenia
- **P14 CICAE** Portugal
- **P18 RoWM** Greece

Objective:

To analyse short rotation energy plantations as additional wood biomass resource.

WP4 Setting up of integrated strategies for the development of renewable energies

1.6. Pilot plots of short rotation energy plantations

Conclusions:

- ✓ Regarding silvicultural treatments, weed control is very important because weeds can decrease production. Also, the coppice system has been shown to favour biomass production for paulownia, poplar and salix species. A good irrigation shows better biomass production.
- ✓ Whenever possible, it has to be taken into account the use of existing invasive species with energy purposes like Acacia case in Portugal and the use of SR plantations as green filters in wastewater facilities, because they do not produce food, thereby saving water and nutrients, while contributing to environmental improvement.
- ✓ Some initial economic studies have been done, but results obtained can't be considered concluding. What is clear is that costs are very dependant on biomass price, but with good production, this kind of crop can be viable. Supply and demand for biomass must be regulated, to ensure good market conditions and logistics, as in the food industry, without interference.

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WP4 Setting up of integrated strategies for the development of renewable energies

1.7. Development of forest biomass management plans

LP DGMA
Spain

Región de Murcia

P2 GOV Spain	**P6 ISPRA** Italy	**P7 FLA** Italy	**P9 CRPF** France	**P10 SFI** Slovenia	**P15 ALGAR** Portugal	**P17 R. SICILY** Italy	**P18 RoWM** Greece

Objective:

To apply previous pilot actions and integrate them in a sustainable forest management plan.

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WP4 Setting up of integrated strategies for the development of renewable energies

1.7. Development of forest biomass management plans

Conclusions:

- ✓ Despite efforts to develop a common methodology, each partner has followed its own methodology according to their specific legislation. On the other hand because of this reason, a lot of information has been compiled.
- ✓ Implementation of the development of Forest Management Plans for all types of forest ownerships for biomass uses has been done.
- ✓ Promotion of new legislation to encourage the Forest Biomass Management Plans development and use.
- ✓ Rules and standardized documents to facilitate their review and approval.
- ✓ Increased interest by private owner, which is aware of the need to have a FBMP to extract biomass in a sustainable way.
- ✓ The creation of a model for the use of forest resources capable of triggering a process of involvement of other entrepreneurs and investors interested in taking a role in the stages of the production process (transport, storage, energy production)
- ✓ Improvement of the biomass resource vision, which until now was non existent.
- ✓ Research on new tools (LIDAR) to make cheaper the field work.

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Project cofinanced by the European Regional Development Fund (ERDF)

WP4 Setting up of integrated strategies for the development of renewable energies

2.1. Preparation of pre-feasibility projects of a small/medium size biomass plant or district heating system

P18 RoWM
Greece

HELLENIC REPUBLIC
REGION OF WESTERN MACEDONIA

LP DGMA Spain	**P4 INFO** Spain	**P11 LEA** Slovenia	**P13 UoWM** Greece	**P10 SFI** Slovenia	**P17 R. SICILY** Italy

Objectives:

- Promotion of small-regional energy contracting models where economical operations can be easily integrated into the existing infrastructure and have different socioeconomic impacts on rural development (new income on farms, new job creation, energy independence...).
- Special emphasis on public bodies, local communities, and policy makers – to raise awareness about possibilities of wood biomass use in public building.

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Project cofinanced by the European Regional Development Fund (ERDF)

WP4 Setting up of integrated strategies for the development of renewable energies

2.1. Preparation of pre-feasibility projects of a small/medium size biomass plant or district heating system

Conclusions:

Small/medium size biomass plants & District heating systems

- ✓ The **high NPV** and relatively high payback period characterize these projects which can be profitable under proper and **careful design**

Co-firing in thermal power stations

- ✓ It can lead to overall profitability but Big biomass quantities needed, changes in the yard of PPC, absent biomass supply chain, transformation costs for units, make this project difficult to succeed.
- ✓ Sustainability of such an investment should be further examined in a more in-depth technical and financial analysis

Boiler replacement to biomass

- ✓ The majority of studies implemented dealed with this issue.
- ✓ Low cost of capital and relatively high biomass potential

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WP4 Setting up of integrated strategies for the development of renewable energies

2.1. Preparation of pre-feasibility projects of a small/medium size biomass plant or district heating system

Country	Greece	Partner	P18	REGION OF WESTERN MACEDONIA
Title of the prefeasibility study		Small district heating system for the Local Community of Ksino Nero in the Municipality of Amyntaio		

Project

Location area	The Municipality of Amyntaio is located in the southern part of the prefecture of Florina and has an area of 589,323 ha and a population of 16,890 inhabitants. The local Community of Ksiino Nero is located 34 km from Florina and 5 from Amyntaio and has a population of 1,089 inhabitants.
Brief description	The proposed project will cover the heating needs of the local community with the construction of a biomass cogeneration unit using the ORC (Organic Rankine Cycle) technology. The investment required for the construction and operation of the unit is approximately 6.000.000 €.

Technical aspects

Description of system	Combined Heat and Power systems produce electricity and thermal energy simultaneously in an integrated system. The thermal energy recovered in a CHP system can be used for heating or cooling in industry or buildings. Because CHP exploits the heat which would be lost in conventional discrete manufacturing electrical or mechanical energy , the overall performance of these integrated systems is much greater than the individual systems
Combustion technology	Biomass boiler
CHP technology	The selected tecnology is the technology of ORC. The ORC technology represents an economically interesting methodology for decentralized biomass-fired combined heat and power plants. The ORC technology is based on the Rankine process with the difference that instead of water an organic working medium is used.
End users of energy	1089 inhabitants, 499 households and 114 market stores

Biomass plant and District Heating System

Size	small	
Thermal Power	3,4	MWth
Electrical Power	1	MWe
Number of the boilers	1	
Peak boiler biomass consumption	14.559,6	tn/yr
Total operation hours	5.040	h/y
Cost of electricity prod		€/ MW

Biomass characteristics

Type of biomass	*wood chip (80%) , straw (20%)*	
Wood chip	10,63	MJ/kg a.r
Straw	16,03	MJ/kg a.r

Economical aspects

Investment cost	6.000.000	€			
Operation & Maint. cost	480.000	€			
			NPV	4.047.425	€ (with public subsidy)
Fuel & transport cost	873573,6	€ /year	IRR	7,5	% (with public subsidy)
			Payback period		**9 years** (with public subsidy)
Feed in tariff	200	€/MWh			
Heat selling price	41,29	€/MWh			

Policies and energy contracting

Financial support instruments	with public subsidy, loan duration: 10 years; loan rate: 7%;
Cost of biomass fuel	60 €/ ton
Type of contracting	contracts with the farmers/ residents of the nerar area for a specific amount of years in order to secure the supply

Social aspects

Number of new jobs	It creates new, immediate jobs, as well as indirect jobs in the supply chain of raw materials and final production

Conclusions and lessons learned

Considering the current economic situation coupled with the growing demand for use of district heating in the Local Community of Xino Nero, theinstallation of a biomass district heating system is proposed. The system will cover the needs of 1089 inhabitants (499 households and 114 market stores). The selected technology was the technology of ORC which is more efficient. The investment required for the construction and operation of the unit is approximately 6.000.000 €. The results of financial scenarios showed that the net present value and internal rate of return are affected by the existence or not of government grant. However for this type of project, a payback period of 9 years is expected taking into account also the public subsidy.

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WP4 Setting up of integrated strategies for the development of renewable energies

2.2. Presentation of existing good practice examples of forest biomass use

P9 CRPF
France

CNPF
CENTRE RÉGIONAL PROVENCE ALPES CÔTE D'AZUR

P6 ISPRA
Italy

P7 FLA
Italy

P10 SFI
Slovenia

P13 UoWM
Greece

P18 RoWM
Greece

Objective:

To transfer existing good practices in forest biomass use to all project partner countries or regions.

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WP4 Setting up of integrated strategies for the development of renewable energies

2.2. Presentation of existing good practice examples of forest biomass use

Outputs:

A guide on best practices with technical practical information and examples and communication and dissemination activities → Final draft done

WP5 Renewable energies as an opportunity for local and regional economies

In this WP the aim is to **involve** the different **key-stakeholders** in each partner territory, **providing strategy tools** and support to better exploit the economic potential represented by forestry biomass and to set structures that allow the **permanent dialogue between private and public actors**. It is engaged with WP3 (where stakeholders have been identified) and WP4, where biomass forestry chains have been analysed and other pilot experiences have been developed.

Main partner: P12 ADEP

ADEP PATRAS MUNICIPAL ENTERPRISE FOR LOCAL DEVELOPMENT S.A.

PARTNERS INVOLVED:

P3 CTFC Spain	**P5 ENGUERA** Spain	**P8 AIFM** France	**P10 SFI** Slovenia	**P13 UoWM** Greece	**P18 RoWM** Greece

P4 INFO Spain	**P7 FLA** Italy	**P9 CRPF** France	**P11 LEA** Slovenia	**P14 CICAE** Portugal	**P17 R. SICILY** Italy

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WP5 Renewable energies as an opportunity for local and regional economies

- Development of a **social and economic structure** for the energy use of forest biomass
  → **3 Joint Reports:**

Definition of Local network (Database); provide local and regional authorities strategy tools to support forestry biomass and to involve the different stakeholders to cooperate by building clusters.

Report economic impact; Report of the economic impact on the deployment of the wood bioenergy activity in each region.

Strategic report on "Renewable Energies"; Strategic report on Renewable energy as an opportunity for the MED regions settings strategic orientations to implement policies.

- PA.3.1: **Networking Building Up**.

Main partner:

The **objective** is the development of the economic and social network for energetic use of the forestry biomass.

Activities: Property scheme + Barriers synthetic report; Regional field of activity; Meetings and reports (regional reports); Report origin quality and end-users

P3 CTFC
Spain

CENTRE FORESTAL DE CATALUNYA / TECNOLÒGIC

Lifelong Learning Programme
UNIVERSITAT JAUME·I

WP5 Renewable energies as an opportunity for local and regional economies

- PA. 4.1: Creation of a **Promotion Office** for biomass

3 Offices for Promoting the energy recovery from Forestry Biomass in **Patras** (Greece), in **Kozani** (Greece) and in **Enguera** (Spain) have been created.

- Play a major role as **information/education/communication centres** in promoting the forestry biomass residues use in the Mediterranean region.
- They are supporting tools to enhance communication and coordinated action between public and private actors at different levels, improving the development and application of strategies and policies.
- These offices will continue to run after the end of project.
- The objectives are to trigger investments in the field of energy from biomass.

Main partner:

P12 ADEP
Greece

ADEP PATRAS MUNICIPAL ENTERPRISE FOR LOCAL DEVELOPMENT S.A.

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WP5 Renewable energies as an opportunity for local and regional economies

- PA. 4.2: Creation of a **web portal** for collaborative work and exchange of experiences and activities.

Main partner:

P7 FLA
Italy

Fondazione Lombardia per l'Ambiente

- Local Web Portal created with a user manual that explain how to upload and use the website.
- The Web Portal could be given to the stakeholders that are interested to implement it at local level.
- Partners are focusing their efforts to involve key actors at the local level that have contact with the enterprises and have the ability to enhance and use the portal after the end of the project.

- PA 4.3: Application on field of **best practices** of sustainable forest management .

Main partner:

P17 R. SICILY
Italy

Regione Siciliana
Assessorato Risorse Agricole e Alimentari

- Diagnostic phase → identification and collection of the "Best Practices" adopted in the field of sustainable forest management.
- Demonstration phase → realization on the demonstration sites of specific operations and strategies for the sustainable forest management and the monitoring of the interventions done.
- Communication phase → organization of information and dissemination activities addressed to local stakeholders and aimed at the diffusion of the Pilot Action results obtained in the local context and in the other countries involved in the Pilot Action, to favour the exchange of knowledge and experiences.

Waiting for the final regional reports.

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L'Europe en Méditerranée
Europe in the Mediterranean

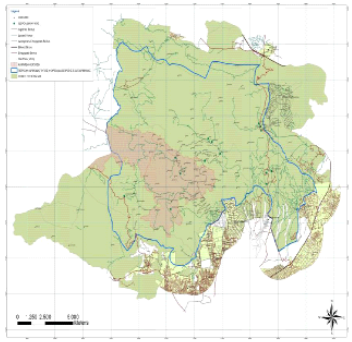
WP5 Renewable energies as an opportunity for local and regional economies

Sheet n.	Title/Name of the "Good Practice" selected
4	Reforestation in the National Park of Parnitha after the disastrous fire in 2007

Geographic localization

Country: Greece
Region: Attiki
Municipality: Athens
Area: Athens

Cartographic localization



Short description of the area

The highest and most extensive mountain range in Attica, Parnitha is located at the northwestern outskirts of Athens, with its western side overlooking Viotia prefecture. Its thick forests consist mainly of fir and pine, but also cedars, planes, Judas trees, maples, strawberry trees and other species. In the past, the area was a haven for wild fauna, including bears, wolves, boars, wildcats and the rare lynx, now extinct in Greece. Today, only smaller mammals, birds, wild goats and the last few herds of native red deer threatened by illegal hunting and the destruction of their natural environment- may be observed. About 1,000 species of plants have been observed on the mountain, including crocus and tulips. Parnitha is part of the ecological network Natura 2000. In 1961 the biggest volume of the mountain area of 180,000 hectares was declared a National Forest.

Synthetic description of the "Best Practice" selected

On 28 June 2007 a great fire destroyed 25,000 of the approximately 35,000 ha of forest land of the national park of Parnitha. Destroyed about 10,500 ha of pine forest, 21,800 ha of fir forest and 4,300 ha of macchie. The pine forest burned by 2/3. Rare plant species of the ecosystem of Parnitha lost. Total burned 56,000 ha of the 300,000 of the total area of the mountain.

Main Topic	Reforestation in the National Park of Parnitha after the disastrous fire in 2007
Purpose	In 2008, - in a total area of 28,000 acres - flood and erosion control works were constructed in order to prevent soil erosion and reduce the flooding risk in the forest. At the same time, restoration of natural vegetation in the forest started. The entire burned area stated as an official "under reforestration" area by the General Secretary of the Attica Region , and so all other actions were banned

- PA 4.3: Application on field of **best practices** of sustainable forest management . EXAMPLE

Promoter *(by who the initiative was promoted)*	Management Body Parnitha National Park, the Department of Attica Reforestations and Forest Service of Parnitha.
Financier *(by who "the best practice" was financed)*	The best practice was financed by the Greek government.
Actors involved *(by who the best practice was carried out)*	Management Body Parnitha National Park, the Department of Attica Reforestations, Forest Service of Parnitha, WWF NGO.
Target Group *(to who the best practice was addressed)*	Volunteers, local inhabitants and relevant stakeholders.
Innovative aspects	

Results /Impacts	
Impacts on forest management	The main impacts of the Best Practice were: - Constructions for future risks of forest fires and fire prevention - Reforestation of burnt forest area
Impacts on the local community	The main impact for the local community was a Better/ healthier environment to live.
Economic impacts	Wood supply for energy use, for the local inhabitants that took part in this best practice. There was no other economic benefit
Additional information	

Website/ Bibliographic references	http://www.parnitha.net/
Contact details	foreasparnithas@gmail.com

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WP6 Smart grids

Objective:

The promotion of **intelligent energy management systems** at local and regional level through the implementation of **Smart Grids concept.**

Main partner: RoWM

HELLENIC REPUBLIC
REGION OF WESTERN MACEDONIA

PARTNERS INVOLVED:

P3 CTFC Spain	**P5 ENGUERA** Spain	**P7 FLA** Italy	**P11 LEA** Slovenia	**P15 ALGAR** Portugal
P4 INFO Spain	**P6 ISPRA** Italy	**P10 SFI** Slovenia	**P13 UoWM** Greece	**P17 R. SICILY** Italy

Med L'Europe en Méditerranée Europe in the Mediterranean
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WP6 Smart grids

Working Groups:

WG 1. DISTRICT HEATING SYSTEMS

1. Optimization of the biomass supply chain in Murcia. Reducing the price for the local communities from 50 to 27 €/ton.
2. Development of a local biomass cluster in a municipal level, in order to optimize the logistics and to secure the continuous, unstopped supply in given prices.
3. Make use of ORC for CHP application - Common problems, themes to be tackled with other partners.
4. Development of a model for examining the feasibility of a CHP plant, taking into account the feed in tariff, the fuel market, thermal energy needs and costs
5. Analyze the opportunity to make use of SRC for the biomass fuel needs and agricultural residues

WG 2. SMALL HEATING SYSTEMS APPLICATIONS

6. Biomass logistics and cost maps in Med Area
7. Carbon emission and energy balance

WG 3. COST RELATION MAPS WITH THE USE OF GIS

8. Technical details and choosing the right biomass boiler in order to substitute the former diesel or Nat.gas one
9. Feasibility of a biomass trade centre
10. Price regulation and energy contracting model

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WP6 Smart grids

Conclusions:

- The primary scope of the implemented work follows the Smart grid concept trying to transfer the concept of **energy efficiency**, **reliability** and **sustainability** into the biomass sector.
- To **identify common problems** were the smart grid concept could apply in order to cope with one of the main goals of this WP meaning the efficiency, the sustainability and the reliability of the proposed system.
- In all cases, **more than 10 cases** were finally examined, a deep exchange of the applications was examined and further questions were answered.
- In any case, an important information and **exchange of experience** took place which can be used successfully for the implementation of similar projects in the different project partner territories in the future which was the primary goal of this WP.

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PROFORBIOMED and "Dirección General del Medio Natural" (CITMA-Generalitat Valenciana)

1. Valencian forestry sector
2. PATFOR
3. Forest Management Instruments & PA 1.7.
4. Agricultural/forestry land & PA 1.6.
5. 2007-2013 EU Funding Programme
6. Other projects derived of PROFORBIOMED in Valencia Region
7. NEW 2014-2020 EU Funding Programme

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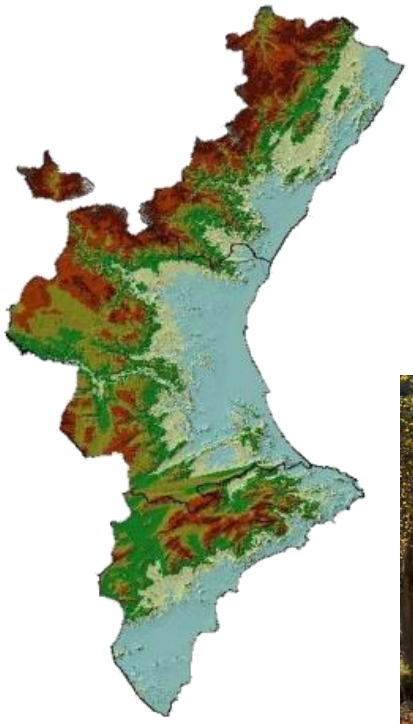
1. Valencian forestry sector

Initial diagnosis



- Zero profitability of forest land
- Lack of management of forest land
- Fuel accumulation in forest lands
- Increased risk of forest fires and pests
- Depopulation of rural areas
- Abandonment of agricultural land due to the low profitability of agricultural crops

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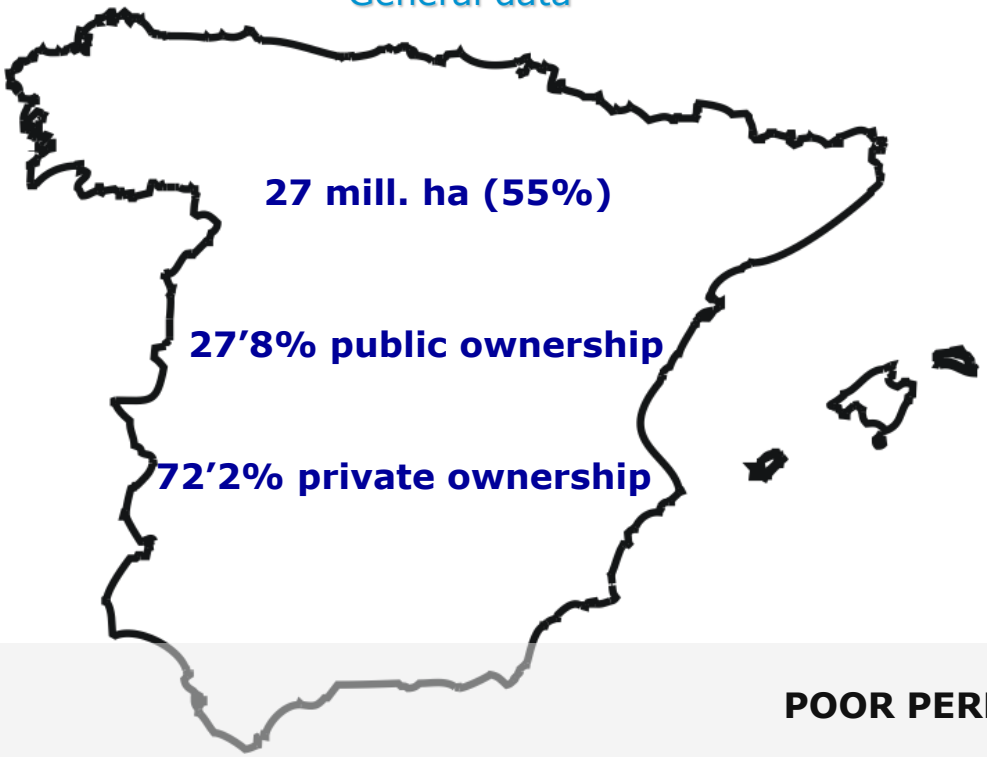
1. Valencian forestry sector

General data



27 mill. ha (55%)

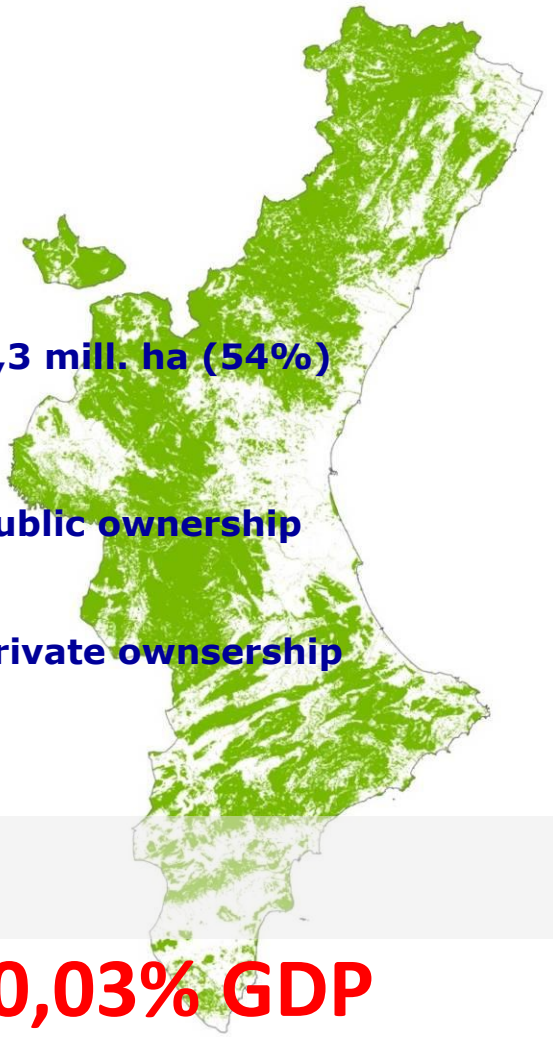
27’8% public ownership

72’2% private ownership

1,3 mill. ha (54%)

38’6% public ownership

61’4% private ownsership



POOR PERFOMANCE

1,03% GDP

0,03% GDP

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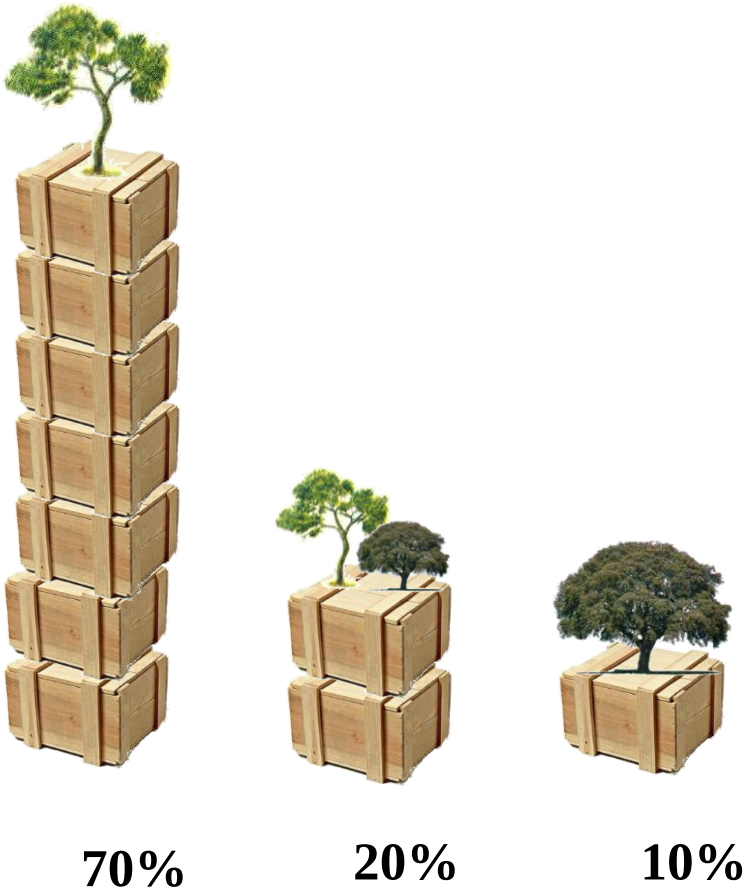
1. Valencian forestry sector

CV data



70% 20% 10%

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1. Valencian forestry sector

FORESTS MANAGED BY REGIONAL GOVERNMENT

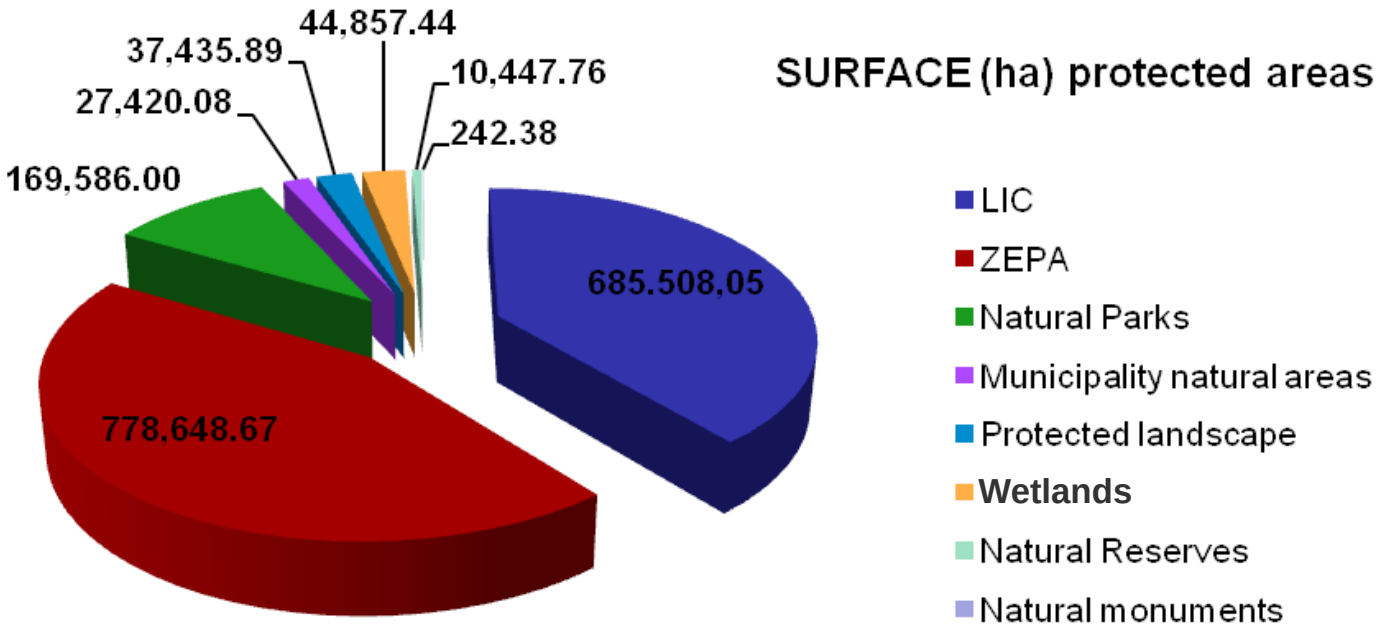
PROVINCE	Nº FORESTS	SURFACE (ha.)
Alicante	168	67.675
Castellón	187	61.557
Valencia	232	302.119
TOTAL	587	431.352

1. Valencian forestry sector

Protected areas

NATURA 2000 and NATURAL PARKS

Total protected surface: 978,674.49 ha. (40%)



2. PATFOR

FORESTRY ACTION PLAN OF VALENCIA REGION

Define the forestry model of Valencia Region, based on its integration with rural development, in sustainable management, multifunctionality of forests and the conservation of biological and landscape diversity.

PATFOR → Instrument for territorial planning

PATFOR → Instrument for forest planning

This plan started in 2008 and was approved in 2013.

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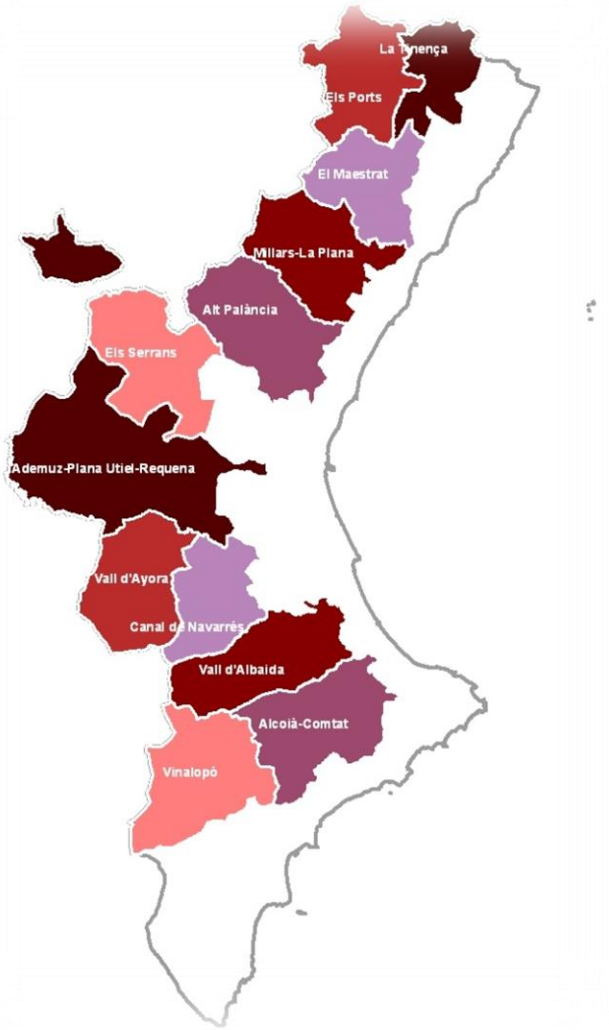
2. PATFOR

UTILIZATION BIOMASS WITH ENERGY PURPOSE

BIOMASS AVAILABLE: 14,4 MILL. M^3
11 MILL. TN (40% TOTAL FOREST BIOMASS)

HARVEST BIOMASS AVAILABLE: 436 M^3/year
142,000 TN/year (40% TOTAL FOREST BIOMASS)



12 Areas with homogeneous biomass production (> 6,000 T/year)

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2. PATFOR

From two main issues of the PATFOR:

FOREST MANAGEMENT INSTRUMENTS

PERMEABILITY-FOREST AGRICULTURAL USE

"GOV" has taken part in Two Pilot Actions:

PROFORBIOMED PILOT ACTION 1.7.
Development of forest biomass management plans

PROFORBIOMED PILOT ACTION 1.6.
Pilot plots of short rotation energy plantations

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3. Forest Management Instruments & PA 1.7.

Sustainable management of forests based on sustainable development and the capacity of forests to satisfy simultaneously economic, ecological and social functions, without any of them diminish the others

PA 1.7.
Forest Management Plan for biomass use

Methodological guide – cartographic viewer

3. Forest Management Instruments & PA 1.7.

FOREST MANAGEMENT INSTRUMENTS

- Forest management plan (FMP)

  Is designed for large forest areas whose main use is timber. The volume of timber inventory of forest must have an error less than 15% with a trust of 95%.

- Forest management technical plan (FMTP)

  Is appropriate in those forests whose primary use is not the timber or when extensive treatments are required. Usually be appropriate in forests from reforestation or excessively dense post-fire regeneration. It is not necessary to make as precise sampling as FMP.

General Plan
Special Plan → 10 years
Annual Plan

- Forest management simplified technical (FMSP)

  It has been designed for forests under 25 ha, and owner or manager has to include a detailed inventory and cutting plan for 5 years (term of this instrument)

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3. Forest Management Instruments & PA 1.7.

Forest management plans

- In 2011 there were 2,474 ha with FMP approved
- This year, there are 42,865 ha with FMP approved

Forest Management plans in April 2014	Surface (ha)
PUBLIC SURFACE WITH FOREST MANAGEMENT PLAN APPROVED	39,009.03
PRIVATE SURFACE WITH FOREST MANAGEMENT PLAN APPROVED	3,856.20
PUBLIC SURFACE WITH FOREST MANAGEMENT PLAN WRITTEN	43,299.60
PUBLIC SURFACE WITH FOREST MANAGEMENT PLAN IN PROCESS OF WRITTING	22,857.73
PUBLIC SURFACE IN ADMINISTRATIVE PROCESS	34,927.72
	143,950.28

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3. Forest Management Instruments & PA 1.7.

FOREST HARVESTING; NEW REGIONAL REGULATION - DRAFT

OBJECTIVE:

Promoting forest harvesting, as a key factor to encourage the conservation of forest ecosystems, and revitalize the competitiveness and development of economic activity in the municipalities of our rural areas, through the use of their own resources, as a means to create jobs and wealth, ensuring sustainable and balanced development related to economic, environmental, cultural and social terms.

In accordance with the Valencia Regional Climate Change Strategy

One of the measures proposed **"***to increase the CO2 fixation capacity of forest ecosystems through the promotion of forest planning instruments (M058*)"

Regulate forest harvesting made in Valencia Region forests. Establish conditions and proceedings

Forest harvesting: woods, firewood, bark, grasses, fruits, resins, aromatic and medicinal plants, mushrooms and truffles, bee products, hunting and other products from forests in the terms of Forestry Law for Valencia Region.

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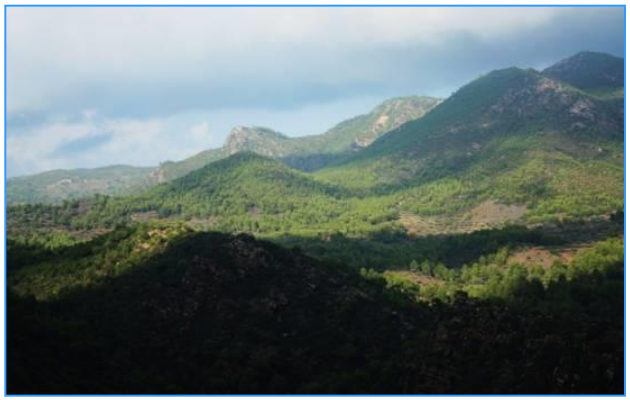
3. Forest Management Instruments & PA 1.7.

Sustainable management of forests

Private and public forests should have a forest management instrument approved by the Forestry Administration. It should be in force

Forest harvesting only is necessary to communicate previously to the beginning



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3. Forest Management Instruments & PA 1.7.

Forest harvesting for firewood

- If firewood is from forest harvesting for personal use it is not necessary any communication, responsible proposal or authorization
- If firewood is from silvicultural works for personal use is necessary to make a responsible proposal. It is forbidden to commercialize this firewood

Forest harvesting for exceptional cases

- That caused by exceptional conditions as forest fires, pests, winds, snow, ….

It is necessary to have an authorization of forests authority

Moreover, this **regulation** also **anticipates** the commitment of **public authorities** to ensure the legal origin of forest products, using all the means to prevent trade in the European market for forest products whose origin is not legal, according to the EC 2173/2003 Regulation of December 12 and Regulation 995/2010 of the European Parliament and of the Council of the 20th of October

In **forest harvesting** and **timber products**, the forest administration assigns a unique alphanumeric code for each authorization, and each approval of a forest management instrument, which identify the legal origin and traceability

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4. Agricultural/forestry land & PA 1.6.

PA 1.6. Short rotation coppices Paulownia

4 Area Plots: different clones, treatments, frameworks, etc

Outputs → Technical procedures; Methodology to fill in general data of biomass projects managed by GOV

TEMPORARY FOREST PLANTATIONS NEW REGIONAL REGULATION - DRAFT

- It is considered temporary forest land, those agricultural lands that acquire the status of forest land due to the establishment of a temporary tree plantation, during the period of it.

- Administrative framework of these plantations.
- Specifies the species, the objectives of the harvesting and the land that could be affected by this legislation.
- Develops "Alien Species Catalogue", including non-native tree species whose use is only possible in temporary plantations and with a concrete target of production.

4. Agricultural/forestry land & PA 1.6.

- Only be considered temporary forest land parcels that have an area < or = 10 hectares

- Must be presented simplified specification of temporal forest planting and forest management simplified technical plan for temporary forest land.

- It is been created the Registry of Valencia region temporary forest plantations (RPFTCV)

Code European Union (EU) / Country Code (ES) / INE Code municipality where the temporal plantation is located / Identifier forest plantation forestry plantation temporary registration / Year of inclusion in the register

4. Agricultural/forestry land & PA 1.6.

Native species, uses and geographical area where its planting it's authorized

Specie	Harvesting target	Geographical area authorized
Castanea sativa	Wood or fruits	Valencia region
Corylus avellana	Fruits or truffle	Valencia region
Juglans regia	Wood or fruits	Valencia region
Pinus pinea	Fruits	Valencia region
***Populus spp* (native species)**	Wood or biomass	Valencia region, except: - *P. alba*: Rio Serpis (TM de Lorcha, Beniarrés, Muro de Alcoy, Cocentaina, Alcoy) y LICs Riu Bergantes, Ríos del Rincón de Ademúz, Alto Turia, Hoces del Cabriel y Curso Medio y Bajo del Júcar. - *P. nigra*: LICs Riu Bergantes y Hoces del Cabriel.
Prunus avium	Wood	Valencia region
Quercus faginea	Truffle	Valencia region
Quercus ilex	Truffle	Valencia region
Sorbus domestica	Wood or fruits	Valencia region
Sorbus torminalis	Wood	Valencia region

4. Agricultural/forestry land & PA 1.6.

Alien Species Catalogue, uses and geographical area where its planting it's authorized.

Specie	Harvesting target	Geographical area authorized
Castanea spp. (alien species)	Wood or fruits	Valencia region
Juglans spp. (alien species)	Wood	Valencia region
Pawlonia spp.	Wood or biomass	Valencia region
Populus spp (clones of alien species)	Wood or biomass	Valencia region, except: - Hybrid clones with parental *P. alba*: Río Serpis (TM de Lorcha, Beniarrés, Muro de Alcoy, Cocentaina, Alcoy) y LICs Riu Bergantes, Ríos del Rincón de Ademúz, Alto Turia, Hoces del Cabriel y Curso Medio y Bajo del Júcar. - Hybrid clones with parental *P. nigra*: LICs Riu Bergantes y Hoces del Cabriel.

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5. 2007-2013 EU Funding Programme

EAFRD FUNDING

Subsidies to retire forest residual biomass in forests of Valencia Region → 51€/tn

Promoting Biomass

Order January 2013
for the enhancement of forest biomass on forest land in Valencia Region

Year	Files approved		
	Number	Subside	Tn
2009	19	906,219.61 €	17,769.01
2010	56	910,000.00 €	17,843.14
2011	136	910,000.00 €	17,843.14
2013	161	910,000.00€	17,843.14

6. Other projects derived of PROFORBIOMED in Valencia Region

Availability study of a District Heating & Cooling in a forest area

- One of the outputs of PROFORBIOMED project is the main considerations to take into account in the availability study of a District Heating/Cooling
- Collaboration in the reduction of GHG emissions → Horizon 2020
- Promotion of renewable energies.
- Sustainable use of biomass by and for rural areas.

7. NEW 2014-2020 EU Funding Programme

PREVISIONS FOR FOREST SERVICE

- ERDF : 30,000,000€ Hydrological Restoration

- EAFRD:
    - Forest health: 2,800,000€
    - Restoration due to natural disasters: 1,000,000€
    - Forest management instruments:3 ,100,000€
    - Forest management and conservation in private and public forests: 11,500,000€
    - Marketing of forest products, special focus on biomass: 11,000,000€

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THANKS FOR YOUR ATTENTION!!!

proforbiomed
Promotion of residual forestry biomass in the Mediterranean basin

http://www.citma.gva.es/ca/web/medio-natural/proyecto-estrategico-proforbiomed

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