



Promoting sustainable use of underutilized lands for bioenergy
production through a web-based Platform for Europe

Report on the 1st stakeholder working group held in Sardinia



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1 Objectives

The main objective of the working groups is to bring together stakeholders from the different group categories in order to firstly inform them about the opportunity of using Marginal/Underutilized/Contaminated (MUC) lands for bioenergy production in their region and secondly to mobilise and encourage stakeholders in the region to start their own projects. During these meetings, working group members are invited to discuss the bioenergy value chains options available in their regions, the main challenges and opportunities of these value chains and the foreseen development of the project and their role in it.

2 Selection of working group members

In each case study area, a list of stakeholders has been developed by the partners. From this list, 10 to 15 persons from different stakeholders' categories are invited to join the working group meetings. They belong to the following categories: farmers, biomass suppliers, private or public landowners, local and/or regional authorities, politicians, industries, researchers, financing bodies, investors, Small and Medium-sized Enterprises (SMEs), entrepreneurs, others. The project partners responsible for the case studies will organise the set-up of the working groups and will facilitate and guide the discussions among the members.

3 Meetings plan

After accepting the invitation, the working group members are invited to the first working group meeting which is set by the project partner in agreement with the members. The second working group meeting will take place at the occasion of the workshop which will be organised in the case study area. The members of the working group will continue the work through virtual meetings, e-mails exchange even after the project ends with the purpose of making possible the implementation of projects intended to grow biomass on MUC lands for bioenergy production.

4 Working group in Italy

4.1 First working group meeting in Sardinia

4.1.1 Introduction

The first WG meeting of the BIOPLAT-EU project in Sardinia was held at the Hotel Panorama in Cagliari on 15 September 2020. Due to COVID-19 related constraints, some of the members of the WG participated in the meeting remotely, via TEAMS. The full list of the members of the WG formed in Sardinia is reported in Table 1.

Table 1 List of WG members participating in the 1st WG meeting held in Cagliari (Sardinia region) on 15 September 2020 and details of the stakeholders category group they belong to

Member name	Organisation	Stakeholder category
Prof. Pierpaolo Roggero	University of Sassari. Department of Agriculture.	Researcher
Laura Mula	University of Sassari. Department of Agriculture.	Researcher
Carla Asquer	SARDEGNA RICERCHE - Biofuels and Biomass Lab	Researcher
Emanuela Melis	SARDEGNA RICERCHE - Biofuels and Biomass Lab	Researcher
Valentina Carta	CREA – PB (Sardinia Regional office)	Researcher
Federica Floris	CREA – PB (Sardinia Regional office)	Researcher
Giuseppe Pulighe	CREA – PB (Sardinia Regional office)	Researcher
Marco Naseddu	CRP - Regione Sardegna - Centro Regionale di Programmazione	Regional authority
Giorgio Culazzu	Arpas - Dipartimento del Sulcis	Regional authority
Marina Monagheddu	Department of Agriculture and agri-pastoral reform. Service for the competitiveness of agricultural farms	Regional authority
Tiziana Pirelli	CREA – PB. National office - Rome	Researcher
Guido Bonati	CREA – PB. National office - Rome	Researcher

4.1.2 Invitation

The selection of the candidate members of the Stakeholders Working Group (WG) was performed in a joint effort with the regional focal point, Dr. Valentina Carta. This approach allows the organizers to count on a deep knowledge of the local context, which brought to a smoother selection of the stakeholders invited to participate as members in the WG.

Candidate members of the WG were contacted on a one-to-one basis, both via email or virtual meetings (e.g. Skype; Teams; Zoom) to raise their awareness on the objectives and the activities foreseen in the BIOPLAT-EU project and to explore their interest in being part of the WG, as representative of their specific stakeholder category. In this occasion, the CREA staff explored with the candidate the type of contribution expected from WG members, which were invited to share their knowledge, data and best practices relevant for the scope of the project.

This first approach was followed by an invitation email (Figure 1) which included in attachment the official brochure of the project, written in local language, and the agenda of the event. In some cases, such as for the invitation of the regional authorities, an official letter of invitation, signed by the Director of the CREA-PB office in Rome, was sent via the official channel (Certified email – PEC; Figure 2).

The general public was informed about the event through a dedicated post via LinkedIn, released by WIP Renewable energy (here is the [link](#)).

Progetto BIOPLAT-EU e possibili sinergie con il PIANO ENERGETICO AMBIENTALE DELLA REGIONE SARDEGNA : con allegato



tiziana.pirelli <tiziana.pirelli@crea.gov.it>
07/09/2020 11:55

A: mnaseddu@regione.sardegna.it Cc: GIUSEPPE PULIGHE; VALENTINA CARTA

Salva tutti gli allegati



bioplat_eu_flyer_Italy_final.pdf
4,8 MB



WG_Cagliari.15.09.2020_Bozza...
50,42 KB

Gentile **Marco**,

facendo seguito al nostro colloquio via Skype di venerdì scorso (4 Sett), con la presente ti invio maggiori informazioni sul primo "Working Group Meeting" organizzato nell'ambito del progetto BIOPLAT-EU dal Centro di Ricerca per l'Economia Agraria (CREA), in data **15 Settembre 2020 a Cagliari**, dal titolo: "**Il progetto BIOPLAT-EU e il settore bioenergetico in Sardegna**" (In allegato bozza dell'agenda).

Il progetto **H2020 BIOPLAT-EU** ha come scopo quello di promuovere lo sviluppo di **filiere bioenergetiche** sostenibili attraverso la coltivazione di **terre Marginali, Sottoutilizzate e Contaminate** (MUC per il loro acronimo in inglese). Il progetto ha individuato l'area del Sulcis in Sardegna, come caso studio in Italia e il CREA, al fine di approfondire la conoscenza del contesto e della realtà locale, ha organizzato, per la mattinata del 15 Settembre a Cagliari, un incontro con alcuni portatori di interesse. Lo scopo di questo primo incontro è di facilitare lo scambio di informazioni e dati su attività (sia in corso che già terminate) relative a filiere bioenergetiche e/o volte alla riqualificazione di terreni marginali e/o contaminati in Sardegna.

Una delle attività del progetto consiste nello sviluppare uno strumento di supporto decisionale web-based (STEN- Sustainability Tool for Europe and Neighboring countries) che permetterà di valutare, sotto vari aspetti (ambientali, economici e sociali), la **sostenibilità di filiere bioenergetiche** realizzate o da realizzarsi a livello locale/regionale. La valutazione della sostenibilità delle varie filiere potenzialmente realizzabili in regione (per es. biogas, bioetanolo, biometano, biodiesel), prenderà in esame tutte le fasi della filiera: 1- la coltivazione delle biomasse; 2- la trasformazione industriale dei prodotti agricoli e/o dei residui organici e la produzione di energia; 3- la distribuzione e l'utilizzo dell'energia a livello locale. Per questo motivo, sarebbe gradita la presenza di un rappresentante della Regione Autonoma Sardegna, per ognuno delle 3 componenti della filiera: Agricoltura, Industria, Energia. In particolare, sarebbe gradita da parte del Servizio Energia ed Economia Verde dell'Assessorato dell'Industria **una breve presentazione sul recente PIANO ENERGETICO AMBIENTALE DELLA REGIONE SARDEGNA**. Il Piano, infatti, fa ampio riferimento alle potenzialità delle biomasse per la produzione di bioenergie ai fini del raggiungimento degli obiettivi climatici e ambientali e descrive, in generale, la situazione attuale e le potenzialità di sviluppo future. Per esempio, il Piano indica che attualmente sono presenti in regione circa 2,400 ettari impegnati nella produzione di biomasse per fini bioenergetici e il nostro progetto vuole proprio valutare la possibilità di estendere queste aree di produzione di biomasse attraverso la coltivazione di aree MUC.

Le informazioni raccolte durante l'incontro del 15 Settembre verranno elaborate nell'ambito del progetto, al fine di popolare lo strumento STEN e valutare le reali possibilità di sviluppo (e.g. finanziabilità) delle varie filiere bioenergetiche in Regione.

L'incontro è stato organizzato in un hotel in città che dispone di una sala adeguata al fine di ottemperare alla normativa per la prevenzione del COVID-19.

In attesa di un tuo gentile riscontro a riguardo del coinvolgimento di tuoi colleghi dell'amministrazione regionale, resto a disposizione per fornirti ogni eventuale ulteriore informazione/ chiarimento in merito al progetto e/o all'incontro. Tutti i miei contatti sono elencati in calce.

Ti auguro un buon inizio settimana!

Un caro saluto,

Tiziana

Dr. Tiziana Pirelli, PhD
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Figure 1: Sample email used to invite the members of the Working Group to the 1st WG meeting in Sardinia. The email follows a virtual meeting, held on a one-to-one basis, with the aim to explain the objective of the project and the role of the WG members.

CREA - REGISTRO UFFICIALE N. 0065380 del 09/09/2020 - U



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e per conoscenza al

Vice Direttore Avv. Francesca Lissia
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Gentilissimi,

facendo seguito ai contatti informali intercorsi, mi è gradito invitare il Responsabile dell'Asse 4 del POR FESR 2014-2020 per la Regione Autonoma Sardegna, nella persona del Dr. Marco Naseddu, a partecipare, in qualità di relatore, al primo "Working Group Meeting" organizzato nell'ambito del progetto "BIOPLAT-EU: promuovere l'utilizzo sostenibile di aree Marginali, Sottoutilizzate e Contaminate per la produzione di bioenergia, attraverso una piattaforma telematica per l'Europa".

L'incontro si terrà a Cagliari il prossimo 15 Settembre, presso i locali dell'Hotel Panorama, in viale Diaz 231, con inizio alle ore 9:00, e verterà sui seguenti temi:

- La presenza di aree Marginali, Sottoutilizzate e Contaminate in Sardegna per la coltivazione di colture da biomassa da non destinarsi alla produzione di prodotti alimentari;
- Lo stato attuale e le potenzialità di sviluppo per il settore bioenergetico in Sardegna: nuovi scenari emersi dalla ricerca.
- I fondi strutturali a sostegno dello sviluppo del settore bioenergetico, tenuto conto delle diverse fasi che compongono i vari tipi di filiera: produzione di biomassa; trasformazione industriale della biomassa e produzione di energia, distribuzione e utilizzo della bioenergia prodotta. In questo contesto verranno analizzati i fondi messi a disposizione del settore dal PSR e dal FESR nel periodo 2014/2020 e le prospettive della nuova programmazione per il periodo 2021/2027.
- Le misure di sostegno alla bioenergia nel "Piano Energetico Ambientale Regionale della Sardegna"

In attesa di un Vs gentile riscontro, restiamo a disposizione per fornire ulteriori informazioni in merito all'evento.

Cordiali saluti.

Il Direttore

Roberto Henke



CREA - Centro di ricerca Politiche e Bio-economia
CREA - Research Centre for Agricultural Policies and Bioeconomy

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Figure 2: Sample of official invitation letter sent to regional authorities to participate as WG member in the 1st WGM of the BIOPLAT-EU project in Sardinia

4.1.3 Agenda

The agenda of the event included two key sessions (Figure 3). The first session was dedicated to the exchange of knowledge: the BIOPLAT-EU project was introduced, participants were informed about the opportunity and benefits of using MUC lands for bioenergy production in their region, and then invited to share information about the current status of the bioenergy sector at regional level. The second session, built upon the outcomes of the first one, was organized as a round table discussion, to stimulate the dialogue and to foster networking and collaborations among the various stakeholders in a way to overcome existing barriers that currently prevent the development of short, locally based, bioenergy value chains. The round table was also useful to identify the most promising bioenergy value chains in the region, on the basis of the local conditions. The event was closed by Mr. Guido Bonati, who showed to the WG members the functions of the Help Desk available on the website. Ultimately Mr. Bonati explained the next steps foreseen in the project, with a focus on the contents of the next WG meeting to be held in the spring of 2021.




Primo Working Group

Il progetto BIOPLAT-EU e il settore bioenergetico in Sardegna

Cagliari- Hotel Panorama, Viale Diaz 231, 15 settembre 2020

Martedì, 15 Settembre 2020

09:00	Registrazione dei partecipanti
Sessione introduttiva e apertura dei lavori Moderatore: Dr. Tiziana Pirelli - CREA PB- Roma	
09:30	Il progetto BIOPLAT-EU. Promuovere l'utilizzo sostenibile di aree Marginali, Sottoutilizzate e Contaminate (MUC) per la produzione di bioenergia, attraverso una piattaforma telematica per l'Europa Dr.ssa Tiziana Pirelli - CREA PB - Roma
10:00	Individuazione di aree MUC potenzialmente utilizzabili per lo Sviluppo di filiere bioenergetiche in Sardegna: criteri, metodologie e risultati preliminari Dr. Giuseppe Pulighe - CREA PB - Cagliari
10:15	Domande e discussione aperta
10:30	I fondi strutturali e di investimento europei a sostegno dello sviluppo della filiera bioenergetica: analisi dei fondi messi a disposizione del PSR e del FESR nel periodo 2014/2020 e prospettive della nuova PAC e del FESR 2021/2027 Dr.ssa Valentina Carta - CREA PB - e Dr. Marco Naseddu (Regione Autonoma della Sardegna - Centro Regionale di Programmazione)
10:50	Domande e discussione aperta

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11:00	Pausa caffè/the
11:15	La filiera bioenergetica in Sardegna: nuovi scenari di sviluppo emersi dalla ricerca Prof. Pier Paolo Roggero e Dr. Laura Mula - Dip. di Agraria - Università degli Studi di Sassari
11:35	Tipologie degli impianti a bioenergie in Sardegna Dr.ssa Carla Asquer - Sardegna Ricerche
12:00	Domande e discussione aperta
Discussione aperta	
<ul style="list-style-type: none"> - Dr.ssa Carla Asquer e Dr.ssa Emanuela Melis - Sardegna Ricerche - Dr. Giorgio Culazzu - ARPAS Dipartimento Sulcis - Prof. Pier Paolo Roggero e Dr.ssa Laura Mula - Dip. di Agraria - Università degli Studi di Sassari - Dr. Marco Naseddu - Regione Sardegna, Centro Regionale di Programmazione - Dr.ssa Marina Rita Monagheddu - Direttore del Servizio competitività delle aziende agricole presso la Direzione generale dell'Agricoltura e riforma agropastorale - Regione Autonoma Sardegna - Dr.ssa Tiziana Pirelli, Dr.ssa Valentina Carta, Dr.ssa Federica Floris, Dr. Giuseppe Pulighe, Dr. Guido Bonati - CREA 	
12:10	
13:30	Pranzo
14:00	Passi successivi e chiusura dei lavori. Il secondo Working Group Meeting per la dimostrazione di STEN (Sustainability Tool for Europe and Neighboring countries) lo strumento online per la valutazione preliminare della sostenibilità delle filiere bioenergetiche in regione. Dr. Guido Bonati - CREA PB- Roma
15:30	Chiusura dei lavori

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Figure 3 Agenda of the 1st WGM of the BIOPLAT-EU project held in Sardinia on 15 September 2020.

4.1.4 Summary of presentations and discussions

Dr. Tiziana Pirelli opened the meeting by giving a general overview of the BIOPLAT-EU project objectives and activities. She explained the various phases of which a bioenergy value chain is composed and highlighted the most critical sustainability issues affecting the sector, among which the food vs fuel issue. She introduced the various existing bioenergy pathways, the advantages of establishing locally based short bioenergy value chains and the key factors to be considered as basic conditions in order to put in place a long-lasting and sustainable bioenergy sector, such as the type and amount of raw material available on-site. Ultimately, Dr. Pirelli explained the reasons which brought to the selection of Sulcis in Sardinia, as one of the case study area for the project.

Dr. Giuseppe Pulighe explained that the food vs fuel debate assumes high relevance in Italy, due to the scarce availability of agricultural land and to its strong fragmentation. Dr. Pulighe explained that a possible option to overcome this ethical issue, could derive from the production of dedicated bioenergy crops in MUC lands. He highlighted the multiple social, economic and environmental benefits that this choice could bring at local level, by fostering the sustainable development of short and efficient bioenergy value chains. Ultimately, Dr. Pulighe showed the outcomes of the study performed within the BIOPLAT-EU project to assess the availability of MUC lands in the Sardinia region and gave an overview on their distribution and composition.

Dr. Valentina Carta participated virtually in the WG meeting. She gave an overview of the supporting measures (M) foreseen so far in the EU Common Agricultural Policy (CAP) (M#4; M#6.4; M#8 and M#16.6) to foster the development of the bioenergy sector. Then, she focused on how these measures were transposed in the Rural Development Plan (PSR for its acronym in Italian) of the Sardinia region, valid for the period 2014-2020. Ultimately Dr. Carta explained that new opportunities to boost the development of local bioenergy value chains in Sardinia by adding value to the MUC lands identified within the BIOPLAT-EU project, could come from the new EU policies, such as the Green New Deal and the Farm to Fork strategy. In this context, the forthcoming Common Agricultural Policies for the period 2021-2027, should be transposed into regional policies and measures to support the sustainable production of biomass into MUC lands and the circular economy, such as the use of agricultural, forestry, and agro-industrial waste and residues to produce bio-economy products, e.g. bioenergy. CAP measures need to be harmonized with other EU structural funds (such as the EU Funds for Regional Development - FESR) aiming at fostering the local industrial and economic development, thus creating synergies and accelerating the achievement of common development and climate goals.

Mr. Naseddu gave an overview of how the structural EU FESR, which are specifically addressed to regions with serious and permanent natural or demographic disadvantages, such as islands like Sardinia, could be used to foster the local development of the bioenergy sector. The region is currently under the definition of the new program for the use of these funds for the period 2021-2027 and, in this context, it is extremely important to coordinate this activity with the planning for the use of funds dedicated to agriculture and forestry, like the CAP. The creation of opportunities for dialogue among the various stakeholders along the bioenergy value chain, such as the one offered by this WG meeting, is key to avoid acting in silos and will allow to

program more effective and coordinated policies and measures which can be brought to high relevant economic, environmental and social benefits for the local population.

Dr. Carla Asquer gave an overview of the current bioenergy sector in Sardinia, by focusing on the type, numbers, geographical distribution and production capacity of existing and operational bioenergy plants. She explained the key role that biogas covers in EU as a primary source of electric power among the various existing bioenergy options and the limited role that it currently has in providing fuels for vehicles, compared to other bioenergy pathways in EU. She explained that the upgrading of biogas for the production of biomethane to be used as fuel for vehicles or as input in the existing regional pipeline for the distribution of natural gas, can substantially contribute to the transition towards a low-carbon energy scenario.

Prof. Pierpaolo Roggero gave an overview of the experimental activities conducted so far, or still on-going, by the faculty of Agronomy at the University of Sassari in Sardinia, to test the productivity and the suitability of various non-staple crops (i.e. *Arundo donax* L.; *Cynara cardunculus* var. *altilis* DC) cultivated on MUC land, with a twofold aim: to add value and to contribute to their recovery through phytoremediation. In particular, he explained that it is not possible to identify bioenergy crops which work successfully in different contexts. Their suitability depends on various context specific conditions. As an example, he shared some data and information about the cultivation of drought-resistant crops for the production of oil seeds in Sardinia, a region characterized by a very low water availability. Although these alternative crops (i.e. *Cartamo*; *Eruca sativa* sel. *Nemat*; *Camelina sativa*) can provide a certain amount of seed production (1.5 t/ha; 0.8 t/ha and 0.3 t/ha, respectively), this amount is still too low to meet the requirements of a sustainable bioenergy value chain and it can't compete with the yield obtained from more "traditional" oil seeds crops (e.g. *Brassica napus* var. *Oleifera* – up to 2.9 t/ha). He also shared the results of experimental activities conducted to test the phytoremediation potential of biomass crops cultivated in contaminated sites in Sardinia. He concluded by highlighting the need to evaluate different end-uses for crops cultivated on MUC lands: they could be addressed to the production of products other than bioenergy, e.g. animal feed.

Mr. Guido Bonati participated virtually in the WG meeting. He closed the work of the day by giving a presentation on how BIOPLAT-EU can support stakeholders in identifying the most sustainable bioenergy value chains that can be established at local level by taking advantage of the presence of MUC lands within a radius of 100 km from already existing bioenergy plants or by foreseeing the settlement of new bioenergy infrastructures, on the basis of available feedstock and energy requirements in the region. To this end the project will provide a web tool, named Sustainability Tool for Europe and Neighbouring countries (STEN), which will be made accessible on-line for all interested users. WG members will be invited to a further WG meeting, to be held in person or online, on dependence of the COVID-19 situation, during which the functionalities of the STEN tool will be demonstrated and WG members trained for their use. Mr. Bonati introduced also the Help Desk function, already available on the project website, and invited stakeholders to use it and to spread this information also with other, interested stakeholders. Ultimately, Mr. Bonati explained that the project will be also able to provide private entrepreneurs with the support of financial experts, with the aim to assess the

sustainability and the bankability of specific bioenergy value chains based on the cultivation of MUC lands for the production of dedicated bioenergy crops at local level.



Figure 4 1st WG meeting of the BIOPLAT-EU project in Cagliari (Sardinia)

The WG meeting was recognized as a valuable and effective opportunity for dialogue among various stakeholders in the bioenergy value chain, which usually work in separated silos, with no interactions and synergies among them. WG members awareness was raised on the benefits that could derive from the cultivation of MUC lands for the production of biomass for bioenergy purposes. In particular, the key role that the biogas value chain, including the production of biomethane both from the upgrading and from methanation, could have in the energy transition was largely recognized compared to other type of bioenergy pathways in Sardinia. Sardinia has recently completed its pipeline for the distribution of natural gas that, nevertheless, has never been used so far due to the lack of connection with the national distribution network. The production of biomethane could provide the first gas to be input in this pipeline, while reducing the need to import fossil fuel from outside. New opportunities to support the cultivation of MUC land for the production of bioenergy dedicated crops and to foster the development of the bioenergy sector in Sardinia could come from the recent EU strategies (i.e. Green New Deal; F2F) and from the “Recovery fund” linked due to the COVID-19 pandemic. The adoption of a holistic approach in the definition of the future regional PSR transposing the EU-CAP 2021-2027 and of the programme for the use of the FESR for the same period, was strongly recommended and recognized by all WG members, as the key strategy towards the achievement of a sustainable, low carbon, regional economy. Regional authorities expressed their interest in continuing this dialogue and to be kept informed on future outcomes of the BIOPLAT-EU project, in particular on the results of possible dedicated feasibility and financial studies.

4.1.5 Conclusions

The meeting has strongly contributed to raise the awareness of local authorities on the various socio-economic and environmental benefits that a sustainable bioenergy sector could bring at local level. Furthermore, it allowed for the exchange of experiences, data and information on research activities currently on-going on topics strictly related to the ones considered in the BIOPLAT-EU project.

The biogas value chain was recognized as of primary importance in the current regional bioenergy framework. Its wider adoption could serve as a mean to foster the energy transition favouring, at the same time, the energy self-sufficiency and independency of the island. The traditional anaerobic digestion systems, which is already valuable in its current form, could further strengthen its role in the energy transition, by being upgraded for the production of biomethane, and/or through the adoption of most recent technologies for the production of hydrogen. Future bioenergy policies shall, therefore, support the use of by-products and residues of a first energy production step (i.e. the anaerobic digestion) as raw material for a further step in the value chain (CO₂ from biogas upgrading used as raw material for hydrogen production), according to a cascading use principle. Nevertheless, due to the still very high costs of these innovative technologies, they have currently a limited presence in the island.

The huge potential of marginal and underutilized land present in the Island shall be unlocked by promoting the cultivation of dedicated bioenergy species or by introducing the latest in well balanced crop rotations and/or intercropping system, thus providing farmers with an additional opportunity to increase their income.

The working group agreed on the need to join forces among different stakeholders in a way to promote a coordinated action among the various realms involved in the bioenergy value chain: agriculture, forestry, energy, socio-economic development, environmental management.