



## SEEMLA Newsletter - December 2016

Dear reader,

SEEMLA is heading for its second year. The first steps towards the EU's long-term goals for 2050, contributing to a reduction of greenhouse gas (GHG) emissions, to an EU wide environment protection legislation, taking the compartments soil, air and water into account, to a sustainable bioeconomy and society, and to networking between EU and non-EU partner countries, have been made. We are looking back to a busy and successful 2016, in which marginal lands in the partner countries were defined, identified and evaluated, pilot cases in Ukraine, Greece and Germany have been established, and the 1st National Workshop was held in Rome, Italy.

In 2017 SEEMLA is hosting the 2nd National Workshop in Berlin and its 1st International Symposium in Vienna in the frame of the second largest Geophysical Conference in the world, the EGU 2017; it will be also represented at the 25th EUBCE in Stockholm. The SEEMLA team is working tirelessly on elaborating an approach for a sustainable exploitation of biomass for bioenergy from marginal lands that may offer a solution for being able to fill the gap of future biomass demand for bioenergy production by using domestic feedstock potentials. With this newsletter we would like to inform you about the current status in SEEMLA and would kindly like to invite you to accompany us through the upcoming year, wishing you and your families a peaceful Christmas and a Happy New Year!

On behalf of the SEEMLA consortium,

Best regards,  
Wibke Baumgarten  
(FNR, SEEMLA Coordinator)

## Establishment, developing, implementing and monitoring of pilot cases in three European countries



One of the key activities of the Seemla project, is the one related to the exploitation and performing experimental case studies for evaluating and optimizing biomass production tools for MagL under practical conditions. This work package will provide a practical approach that will be developed and refined during the project. For this reason data from experimental case study sites in three European countries (Germany, Greece and Ukraine) were collected and analyzed for assessing characteristics, restrictions and potentials with regard to sustainability and biomass production. First step of this work package was made during the 5.1. task, which gave to the project consortium an overview on location and general properties of the preselected potential SEEMLA case study sites. The case study sites are located in the following European regions: Lusatia (Germany), East Macedonia & Thrace (Greece) and Vinnitsa, Poltava, Volyn and Lviv (Ukraine).

### UKRAINE



The **Poltava** site proposed by IBC&SB, probably represents the type of abandoned land, which was formerly used for conventional agriculture. These sites were set aside due to different site specific reasons. They are characterized by high groundwater levels and seasonal water logging. Most of these sites are at least partly compacted. The study case of the Poltava region is located close to the city of Semeniwka and possibly represents the type of abandoned land. The plot (which is a small part of the study case, where all actions such as planting, harvesting, supply chain measurements etc. will take place, is located in an area which was used over the past 40 years for grazing and for hay production. At the beginning of 1976 this area was overgrown by dense woody vegetation. The pilot case site is proposed to be used for growing energy willow and miscanthus.

The **Vinnitsa** site was used as waste dump and is probably contaminated (degraded land). The study case of the Vinnitsa region is located southwest of the city of Bar and the plot covers an area of 1.5 ha. It constitutes a low productive MagL, with a slope of more than 10 %, since the 1980s. In 1984 the slope was partially lined or cut for building a football stadium, that was never completed and the land was used as a solid waste dump (paper, plastic, glass, polyethylene, etc.). In 2015 the site was cleaned of wastes and will be used for growing energy willow and miscanthus.

The sites provided by SALIX lie in the western part of Ukraine and represent abandoned lands, which are used as pastures and hayfields (Volyn region) and abandoned former agricultural lands (Lviv region).

Study case “**Volyn** region” is located close to the city of Lutsk, in the western part of Ukraine. Three pilot sites with a total area of about 4.4 ha have been selected in this region for growing energy willow and energy poplar. Second case study “**Lviv** region” is located north from the city of Lviv, close to the border between Ukraine and Poland. In this region four pilot sites have been selected with a total area of about 7.5 ha. The pilot case site will be used for growing energy willow. Both areas have similar “symptoms” of marginality. The sites were abandoned, because of low productivity, regular cultivation of food crops has been ceased on these areas for at least 20 years now. Leaving these lands, fairly characteristic for the region, to be used, in best case scenario, as pastures and/or hayfields. With energy willow and energy poplar being less demanding in terms of nutrients and more resistant to various hazardous soil indicators, there is a real chance for humanity to benefit from such lands. While they are unfit for conventional agriculture, we hope that with the help of SEEMLA project, currently untapped potential, hidden within these lands, may be revealed.

## **GREECE**



The three SEEMLA study cases in Greece are located in the region of East Macedonia and Thrace in the northeastern part of Greece around the city of Komotini (about 248 km from Thessaloniki). The region is characterized by a mountainous topography and Mediterranean climate conditions. The poor forest sites, selected as Greek study cases, show shallow and stony soils as the result of previous erosion processes. The sites are still in use for forestry or in some parts for pasture (naturally poor or degraded land). In each selected study case, we choose a plot (3 plots), in which we will study plantations with common forest tree species. At plot 2, we will proceed with the establishment of a new pine plantation (*Pinus nigra*). However, in this new plantation it will not be possible to measure production and quality of biomass, within the short lifetime of the SEEMLA project and for this reason, productive ecosystems (including forests, etc.) or sites with existing successfully cultivated plantations, will be used as references for estimating the potential of MagL (plot 1 and 2). Furthermore, existing plantations of energy crops (existing forest plantation of *Robinia pseudoacacia*) on similar MagL, will be used to assess potential crop yields (plot 3).

**Plot 1** covers an area of 0.1 ha and is located near to Pelagia village, 22 km (south east) from Komotini city (Fig. 15) at an altitude of 98 m. The current land use is forest land (forest plantation - *Pinus brutia*) and the former land use was shrubs, bushes and grasslands. On this pilot case site, it is planned to proceed with woodcutting an existing forest plantation of *Pinus brutia*.

**Plot 2** covers an area of 0.1 ha and is located near to Drosia village, 33 km (north east) from Komotini city (Fig. 16) at an altitude of 590 – 600 m. The current land use is grassland and the former land use was grassland, pasture and occasional, limited cultivation. The pilot case site will be used for planting and growing pine trees, such as *Pinus nigra* (establishment of a pine plantation) and besides that, we will also proceed with woodcutting in nearby clusters of existing forest plantation of *Pinus nigra*.

**Plot 3** covers an area of 0.1 ha and is located near to Sarakini village, 42 km (north) from Komotini city (Fig. 17) at an altitude of 500 m. The current land use is artificial plantation (*Robinia pseudoacacia*) and the former land use was grassland, pasture and occasional, limited cultivation. On this pilot case site we will also proceed with woodcutting the existing forest plantation of *Robinia pseudoacacia*.

## GERMANY



Both study cases - “Welzow” and “German Railways” - are located in the southeastern part of the State of Brandenburg (Lower Lusatia) around the city of Cottbus, about 150 km southeast from Berlin. The post-mining sites of Lusatia (State of Brandenburg, Eastern Germany) represent a typical type of MagL

(reclaimed lands). These severely disturbed sites have clearly reduced soil fertility and an initially still missing soil structure. Productivity of conventional agriculture on such sites is often low. Former industrial sites or traffic areas are difficult to use for conventional land use options, but might be an alternative for biomass production if not contaminated (brownfields - anthropogenic wastelands). The selected former railway site in the city of Cottbus is a representative of the type of MagL, with very poor soil conditions (rubble, stones). The selected study site "Welzow" represents the sites that have to be reclaimed after mining, whose soils are generally undeveloped with poor initial and often unfertile conditions. The site selected for the SEEMLA project is situated in the north part of the Welzow mine, in a former dump area of approximately 170 ha in size, which was initially projected for renewable energy production from biomass. The actually chosen case study site Welzow may have a size of approximately 4.5 ha. The pilot case site will be used for growing black locust which was already successfully cultivated in an nearby "energy forest". The selected plot is surrounded by experimental sites for different types of biomass production so that potential biomass yields can be directly estimated based on crop yields. Furthermore, an abandoned railway area in the city of Cottbus was selected as a representative case study site of MagL, which consist of former industrial sites that were set aside. These sites are characterized by anthropogenic substrates often containing different kind of debris and residues.. The size is approximately 1 ha and its major part was used for wagon repair and maintenance. Generally, the site can be classified as a brownfield and thus as marginal land, particularly in terms of soil properties. The pilot case site will be used for growing poplar and black locust.

## NEWS

### **Berlin, 28 March 2017, 2nd Seemla national workshop about "Marginal lands in Germany: evaluation, use and potentials"**

The Workshop is directed at experts and prospective customers from the management, science and practise in Germany who act in the area of bioenergy, biomass use, nature conservation and environment protection.

### **CALL FOR ABSTRACTS for the 1st International SEEMLA Symposium at European Geosciences Unions's General Assembly 2017 in Vienna – Deadline 11 January 2017**

This session invites contributions dealing with the problems of marginality definitions as well as with soil properties of marginal sites and with the problem of assessing soil fertility generally. We welcome papers presenting concepts or results of innovative and sustainable land use strategies for marginal site. In addition, papers addressing potential impacts of land use concepts as reclamation approach for marginal lands on soil properties would be much appreciated.

## **SEEMLA 3rd Project Meeting and 1st National Workshop in Rome, Italy (8 – 9 November 2016)**

From 8-9 November, 2016 the 3rd SEEMLA Project Meeting was taking place in the facilities of the Ariston Hotel Rome, Italy, organized by Legambiente Onlus. On the first day of the meeting the SEEMLA consortium came together to talk and discuss about the project's progress, and also to plan and organise upcoming tasks and events.

## **Seemla: visit of Vietnamese delegation at FNR**

On 20 September, 2016 a delegation from Vietnam visited the Agency for Renewable Resources (FNR) in Gülzow-Prüzen. The delegation consisted of three representatives from the Vietnam Environmental Agency (VEA), three staff members of the Vietnam National Coal – Mineral Industries Holding Corporation Limited (VINACOMIN), and the “Climate protection through bio-energy crops on post-mining sites in Vietnam” (CPEP) project manager Fabian Stolpe (UfU, Berlin).

## **SEEMLA - Where are we after one year...**

The SEEMLA team started its work in January 2016; it is a group of Greek, Italian, German and Ukrainian partners, having their own history, political background and different strategies with regard to the sustainable use of domestic biomass for bioenergy.

Whereas Germany has a well-established bioenergy sector already, Greece and Italy need to solve inner political problems that are related to the use of renewable resources; however, both are on a good way and probably be able to meet the 2020 goals and beyond. Ukraine may be the “youngest” partner in terms of experiences in the bioenergy sector, and more specifically with regard to the sustainable use of domestic biomass for bioenergy.

In the beginning of the project marginal lands, e.g. degraded, underutilized, abandoned, were defined based on an approach from Dauber et al. (2012); this has been also in the focus of the SEEMLA newsletter #1. Marginal lands were identified in the four SEEMLA pilot regions, in which the SEEMLA approach will be investigated:

- Lusatia, Germany: recultivation site; short rotation coppice;
- Thrace - East Macedonia, Greece: shallow sites; woody biomass;
- Lviv and Poltava/Vinnitsa region, Ukraine: degraded, wet and/or abandoned sites, short rotation coppice; miscanthus.

During the summer period, the partners visited and evaluated the sites by taking the Muencheberg soil quality rating (SQR) tool into account. Soil samples were taken from all sites and have been investigated in the laboratory. The results will be available by the end of this year. Moreover, all partners with pilot cases prepared their fields and started the cultivation with bioenergy plants, mainly willow, poplar, black locust and miscanthus. The life cycle assessment as well as the policy framework are generally set, and will be adapted to the SEEMLA approach in the upcoming months, as well as the web-based GIS-tool which will enable to define marginal lands in the partners countries, allowing a transfer to the other EU Member States

**Outlook to upcoming events in SEEMLA – Save the date!**

**28 March, 2017** 2nd National Workshop in SEEMLA, Berlin, Germany

**23-28 April, 2017** 1st International Symposium and SEEMLA Session at the EGU, Vienna, Austria

**31 May – 2 June 2017** 3rd National Workshop in SEEMLA, Ukraine in the frame of the 4th SEEMLA Project Meeting

**12-15 June, 2017** 25th EUBCE, Stockholm, Sweden

**2-8 September 2017** SEEMLA Session at the DBG (German Soil Science Society) Conference, Göttingen, Germany

**SEEMLA** has achieved its goals in the first year and we are all looking forward to its second year, seeing it grow and increasing its impact and influence on the future European bioenergy policy!

## Project partners

Project coordinator



**b.tu** Brandenburg  
University of Technology  
Cottbus - Senftenberg



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Μακεδονίας  
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**SALIX**  
energy



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