

Short Rotation Woody Crops (SRC) plantations for local supply chains and heat use

Project No: IEE/13/574



Minutes

Best practice visit to the Skriveri experimental field

Best Practice visit – Task 3.5

September 2015



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SRCplus website: www.srcplus.eu

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Introduction

The Best practice SRC plantation visit to the Skriveri experimental field took place at Skriveri district, Latvia, on 23 September 2015. Event was organised by Latvian State Forest Research Institute (LSFRI) Silava and EKODOMA. The purpose of this seminar was to fulfil Task 3.5 and thus to show Latvian farmers and stakeholders SRC cultivation in practice.

First part of the seminar was held in LLU Research Institute of Agriculture in Skriveri where presentations session was held. Project SRCplus idea and main objectives were shortly presented by Dominik Rutz WIP Renewable Energies and Linda Drukmane from EKODOMA. Dagnija Lazdina from Silava presented sustainable criteria framework for SRC plantation establishment and management. Andis Lazdins from Silava presented productivity and cost of biomass production calculations in SRC plantations. Reinis Silups from SalixEnergi Baltic shared practical experience about SRC plantation planting and management. IKU Eduards showed scale scale wood chipping.

Second part of the seminar was held in Skriveri experimental field, where existing poplar, willow, alder (grey and black), aspen, wild cherry and perennial energy grasses plantations were visited. Practical field demonstrations included demonstration of mechanized planting, small-scale manual harvesting and chipping.



Figure 1: Participants of the SRC best practice visit in Latvia

Thanks IKU EDUARDS, LLU Research Institute of Agriculture in Skriveri and SalixBaltic Energy for pleasant cooperation.



1. Presentation sessions

1.1. Dominik Rutz. Short rotation woody crops SRC plus

In the beginning of the seminar SRCplus project coordinator Dominik Rutz from WIP Renewable Energies in Germany presented project idea and objectives. Main idea of the project is to promote the SRC cultivation in Europe to provide energy. Main objectives are promotion of sustainable SRC cultivation and increasing the knowledge and awareness of farmers, public land owners and wood chip users.

During the presentation he also introduced to project partners from different regions which are supported for the implementation of actions and accompanying the implementation of local supply chains of SRC.

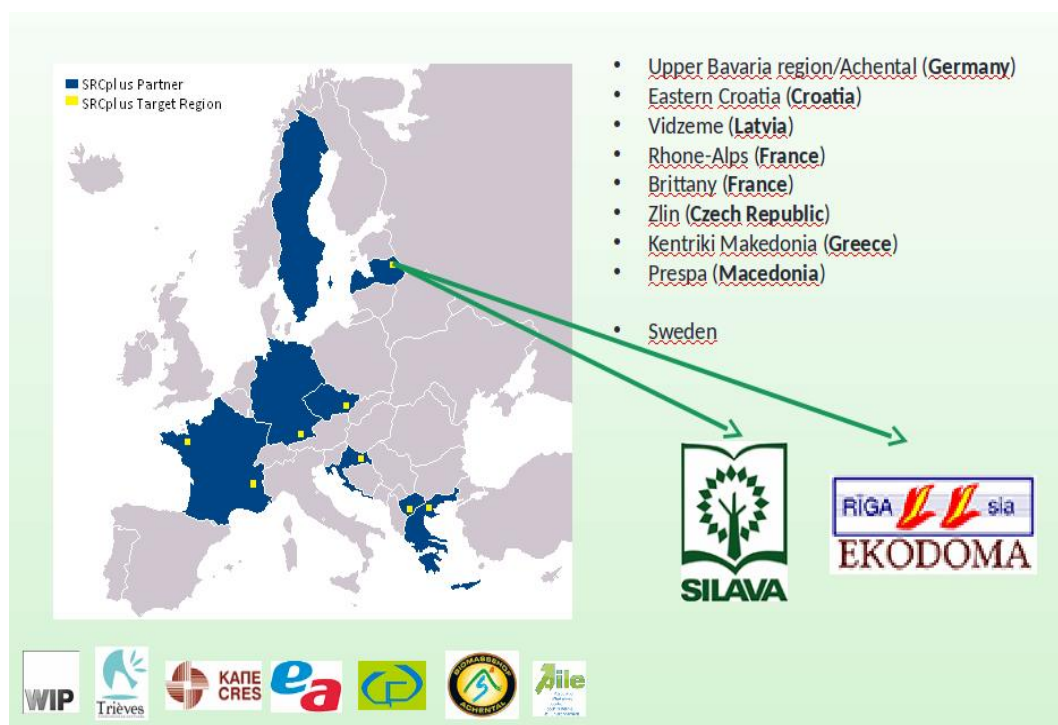


Figure 2: SRCplus project partners from different countries

1.2. Linda Drukmane. SRC project targets

Linda Drukmane from SIA EKODOMA presented project targets for Latvia and presented next events.

Some of the topics discussed in the presentation:

- project agenda in Latvia;
- target groups in Latvia;
- regional mobilisation;
- cooperation with stakeholders;
- next seminars and meetings;

1.3. Dagnija Lazdina. SRC plantation sustainability

Dagnija Lazdina from LSFRI Silava presented sustainability criteria for SRC plantations. Presentation included brief SRC plantation overview in Latvia and practical experience from previous studies.

Some of the topics from presentation related to sustainable SRC management:

- animals;
- soil;
- plant diversity;
- water management;
- landscape planning;

Presentation included information about animal species, that could live in SRC plantations and how it could be sustainable in long time period.

Some animals use young shoots as food base and could damage or completely destroy new plantation, therefore fence or other defensive materials are recommended for protection. Rodents also could be dangerous for young tree stems and roots, therefore moving and other agro-technical operations will ensure better conditions for new trees. During blossoming season plantation could be used for honey producing by placing bee houses next to plantation.



Figure 3: Using SRC plantation in different ways

When trees are high enough the grass could be use as food base for domestic animals and pastures could be established under the trees. Previous studies shows, that under correct management plan, its possible to keep high plant diversity in plantations what is one of the indicators for sustainable plantation management. Bare soils or low quality soils are suitable for SRC plantations, because most of fast growing tree species did not require rich soil as premise for growing. In parts of the country low quality lands are not used at all and didn't bring any incomes, where using these lands as plantations it's possible to provide incomes and manage land. SRC Plantations also could be used in areas, which has to be restored, like old mines, unused quarries, sand fields and extracted peat fields. To get better yields, fertilisation is preferred. Results of different fertilisation (waste water sludge and wood ash) were shown in the presentation.



Figure 4: Different planting areas for SRC plantations

Plantation could help to manage high groundwater level where it is necessary or could be used in water treatment fields. Harvesting methods differs from species and soils conditions. On wet soils harvesting is recommended during freezing period, to avoid soil damages.

Presentation also included practical information about Skriveri experimental field establishment, fertilization methods and harvesting. Videos and photos from establishment were shown in the end of presentation.



Figure 5: Establishment of Skriveri experimental field

1.4. Andis Lazdins. Productivity and cost of biomass production

Andis Lazdins from LSFRI Silava presented calculations for productivity and cost of biomass production, including also calculations about SRC plantations.

Presentation included topics:

- comparison of chainsaw with frame and bush saw in thinning;
- productivity of chainsaw and forest cleaner in delayed thinning;
- comparison of cost and income for wood chip scenario in SRC plantations;
- productivity and costs for different harvesting work methods in SRC plantations;
- opportunities to increase productivity in small tree harvesting;
- comparison of different tools in poplar and willow plots;
- comparison of different harvesting scenarios in SRC plantations.

Presentation includes comparisons and cost calculation for different harvesting tools, that could be used in SRC plantation harvesting. Calculations were made for harvesting with chainsaw with frame, bush saw and forest cleaner. Calculations showed that productivity mainly depends from average tree diameter. Best results were for chainsaw and forest cleaner. Presentations also included cost and income calculations according to average tree diameter. Harvesting with harvester was presented, structure of time consumption, productivity and costs were shown. Results from demo field harvesting were presented,

where different harvesting methods (bush saw, chainsaw and, forest cleaner, chainsaw with frame) were tested in different demo fields with different tree species (aspen, willow, poplar). In the end of presentation future perspectives to increase productivity in small tree harvesting were discussed

1.5. Reinis Silups. Willow plantation planting and management

Reinis Silups from SalixEnergi Baltic shared personal experience about willow plantation management.

Topics that were included in the presentation:

- plantation site selection;
- manual and mechanical planting;
- manual and mechanical harvesting;
- wood chips market in the future

In recent years SalixEnergi Baltic had planted more than 1000 ha in the Baltic region. Reinis Silups presented practical experience about willow plantation soil preparation, planting, management and harvesting. Videos from previous works with comments were shown.

2. Experimental field visit

2.1. Dagnija Lazdina. Introduction to Skriveru experimental field. Site visit.

Seminar visitors were shortly introduced with Skriveri experimental field and history. Different tree species growing (hybrid aspen, poplar, grey alder, black alder, willows) conditions were discussed. Different clone and density hybrid aspen plantations were visited. Different poplar clones were compared and practical tips were given from previous experiments. Poplar clone difference was clearly visible and gives an insight about proper planting material choice. Different willow clone comparison sites were shown and practical experience was shared.



Figure 6: Skriveri experimental field visit

2.2. Reinis Silups. Mechanized planting

Mechanized planting from SalixEnergi Baltic was demonstrated on the field. Planter was trailed with tractor and willow cuttings were planted. Planter was served by 2 people, who feeds the planter. Good soil preparation before planter is crucial to avoid low quality planting. Planter speed depends on plantings material and site conditions. With this planter it's possible to plant willow and poplar cuttings.

During the presentation planting steps and planting material preparation were explained, considering personal experience from previous plantation establishments.



Figure 7: Mechanized planting demo

2.3. Small scale wood chipping

Small scale wood chipper was demonstrated by company IKU EDUARDS, where 3 years old willow stems were chipped. Small chipper is useful in small plantations where isn't profitable to use mechanised harvesting machines. This kind of wood chipper can produce also mulch, which could be used in gardening. In last years mulch use in gardening is growing. In the nearest future it could become profitable business. According to market situation, farmers could decide, what kind product (wood chips or mulch) they want to produce.



Figure 8: Small scale wood chipping

2.4. Andis Lazdins. Plantation harvesting with different hand tools.

Depending on field size, different harvesting methods could be used. Mechanized harvesting is profitable in large sites, where hand tools could be used in small sites. During site visit 3 different (forest cleaner, chainsaw with frame and bush saw with chain) hand tools for harvesting were presented. Forest cleaner is faster in sawing but extra work time needed for wood material collection and loading on pile, or other worker should be hired. Bush saw with chain gives opportunity to do sawing and consecutively material collection. Because of the bush saw specification, where motor is placed on the back, long period working can be tiring. Chainsaw with frame is the appropriate hand tool for small scale harvesting, where wood material collecting and loading on piles could be done right after sawing, what allows to save time and avoid second worker hiring.



Figure 9: Plantation harvesting with different hand tools

ANNEX I

IEE Project 'SRCplus'

**Best practice visit to the Skriveri
experimental field**

- Agenda -



Wednesday 23 September 2015

Wednesday 23 September 2015
Best Practice visit – Task 3.5

(participation of project partners is *optional*)

8:00	Departure	
10:00	13:00	<p>Best practice visit to the Skrīveri experimental field <i>Organised by Silava and EKODOMA</i></p> <p>The purpose of this event is to fulfil Task 3.5 and thus to show Latvian farmers and stakeholders SRC cultivation in practice. Project partners are invited to join, too. This has benefits, for both the local stakeholders and for the project partners.</p> <p>The main language will be Latvian, but some discussions and explanations will be in English.</p> <p><i>Draft Programme:</i></p> <ul style="list-style-type: none"> • Welcome and introduction • Official publication of the handbook "Sustainable Short Rotation Coppice – A Handbook" • Visit of experimental fields: poplar, willow, alder (grey and black), aspen, wild cherry, perennial energy grasses • Demonstration of small-scale manual harvesting and chipping • Demonstration of mechanized planting • Demonstration small-scale forwarders and harvesters (forest machines and direct chipping devices)
13:00	14:00	<i>Lunch</i>
14:00	15:30	Going back to Riga