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

Project No: IEE/13/574

Concept of training for farmers

WP 3 – Task 3 / D 3.3

November 2014

ΚΑΠΕ CRES | CENTRE FOR RENEWABLE ENERGY SOURCES AND SAVING

Authors: Ioannis Eleftheriadis, Centre for Renewable Energy Sources and Saving (CRES), Greece

Editors: Ioannis Eleftheriadis, Centre for Renewable Energy Sources and Saving (CRES), Greece

Contact: Centre for Renewable Energy Sources and Saving (CRES)
Ioannis Eleftheriadis
Email: joel@cres.gr, Tel: +30 210 6603384
19th km Marathonos Av.
19009, Pikermi, Greece
www.cres.gr

The SRCplus project (Short Rotation Woody Crops (SRC) plantations for local supply chains and heat use) is supported by the European Commission in the Intelligent Energy for Europe Programme. The sole responsibility for the content of this report lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein. The SRCplus project duration is March 2014 to April 2017 (Contract number: IEE/13/574).

SRCplus website: www.srcplus.eu

Co-funded by the Intelligent Energy Europe Programme of the European Union

Contents

1 Introduction

The goal of Task 3.3 is to prepare the background for training activities for farmers in target regions/ countries under a common concept. The general concept and basic training materials will be prepared in WP2 (led by SLU) for the transfer of general know-how about SRC to farmers. Target countries will adapt the general concept according their national/ regional needs.

SRCplus consortium will organize training activities for farmers and their associations in order to provide them reliable information, to mobilize national and regional potential for SRC and to increase the awareness and knowledge of farmers. Know-how will be transferred to farmers at the regional and national level and it is expected to create capacity for SRC in order to remove non-technical barriers related to SRC cultivation and production of woodchips.

In these training activities, achieved project's results will also be promoted to other relevant key actors of the potential biomass supply chains, like environmental associations, market actors, energy producers, heat consumers and the industry. Sustainable agricultural practices for wood chips production form SRC will also be promoted in order to highlight environmental benefits of SRC in comparison to annual crops.

Project results available for training activities for farmers are:

- Analysis of the SRC production in the target countries (Task 2.1),
- SRC best practices (Task 2.2)
- Sustainability criteria for SRC (Task 2.4)
- Handbook on sustainable supply chains of SRC (Task 2.5)
- Analysis of the unexploited potential for SRC in the target regions (Task 6.1),
- Sustainable SRC in the target regions (Task 6.2),
- Implementation concepts for the set-up of new SRC sites in the target regions (Task 6.3)
- Suitable areas for SRC production in the target regions (Task 6.4)

Other key actors, like seedling providers and agricultural machinery suppliers or manufacturers will be involved in training activities to guarantee technical support to farmers.

The knowledge transfer to the key actors and their cooperation will strength the development of SRC local supply chains.

2 Selection of farmers for training activities

Farmers and their associations are the main key actors in SRCplus project. Information exchange and technical support for farmers in SRC cultivation for woodchips production is crucial for the successful implementation of the project.

Farmers will be initially involved into the project's training courses during regional meetings. These meetings will help the selection of trainees for the capacity building activities. They will be selected from the stakeholder database (Task 2.6). Farmer's associations will also be invited to make presentations during the training.

3 Topics addressed in training activities

The training activities will address the main following topics:

- Species of SRC and their characteristics
- SRC suitability depending on climate, environmental (e.g. water availability) and soil characteristics
- Agricultural practices: planting, growing and harvesting including sustainability issues
- Machinery types in each process
- Costs of planning, harvesting, machinery, agricultural business models
- CAP opportunities for SRC plantations
- Synergies of SRC with other land uses
- Multi-cropping with SRC
- Plantations of SRC in degraded, non-productive and unused lands
- Use of woodchips on the farm and marketing of woodchips

3.1 Species for SRC

Specific figures about species suitable for SRC should be addressed in training activities:

- Species and general characteristics – biological cycle (poplars, willows, robinia, eucalyptus)
- Varieties
- Clones
- Adaptability in different conditions (e.g. environmental, weather, soil)
- Pests, disease, weeds
- Nutrition and fertilization
- Water needs and irrigation
- Specific agricultural operations:
  - Soil preparation
  - Planting density
  - Crop management
  - Harvesting period (rotation)
- Yields and productivity
- Results from research activities (e.g. effects mixture of varieties and clones on productivity, crop management)

3.2 Parameters affecting SRC

In agricultural practice many parameters affect the site selection for different crops, including SRC. The presentation of figures about these parameters will support the knowledge transfer to farmers. Specific parameters addressed in training activities are:

- Soils properties
- Weather/climatic conditions (e.g. temperature)

- Water availability
- Landscape

3.3 Good agricultural practices

Best or good agricultural practices foe SRC cultivation and wood chips production must be presented during training events to transfer know-how and increase the awareness of farmers to SRC. Specific issues addressed in these activities are:

- Preparation of soil
- Planting techniques and design
- Crop management and Weed control (mechanical, chemical)
- Harvesting of wood chips
- Logistics of wood chips (storage, transport, delivery)

Defined strict criteria for sustainable agricultural practices of SRC cultivation will also be promoted. Effects of sustainable agriculture to long-term productivity of agricultural lands should also be addressed paving the way for future agricultural practices.

3.4 Machinery and equipment

Specific presentations about agricultural machinery and equipment for all operations are necessary for further cooperation between farmers, machinery suppliers or manufacturers. Relevant stakeholders could offer presentation about machinery or equipment, like:

- Planting machinery (e.g. cutting planter)
- Weed control machinery (e.g. weeder)
- Harvesters (chip harvesting, whole rod harvesters, bio-balers, billet harvesters)
- Irrigation equipment

Visual presentation (pictures, videos, brochures, flyers) is recommended.

3.5 Costs of SRC

Cost analysis is crucial to prove economic benefits for farmers. Comparison with conventional agriculture and annual crops is recommended. Costs distribution in two main categories, operational and material costs, will offer more detailed information to farmers in order to decide the agricultural model they plan to implement.

Important issues affecting the agricultural model are:

- Rotation cycle (2 years, 3 years)
- Harvesting method (chip harvesting, stem harvesting)
- Final use

3.6 CAP opportunities

SRC is an agricultural alternative for farmers to annual crops and will help to fulfil the agricultural requirements of the new Common Agricultural Policies (CAP). The presentation about the implementation of new CAP (after 2014) in target regions/ countries is important for the planning of agricultural exploitation system. The contribution of farmers associations

through specific presentations is crucial for training activities and update of the training concept.

3.7 Synergies with other land uses

Increased ecosystem services on SRC cultivation areas as well as increased benefits for the ecosystems of SRC, that is cultivated on intensive agricultural land (annual monocultures) or on marginal soils, will contribute to more welfare of the people and raise the acceptance of bioenergy among the public.

3.8 SRC and multi-cropping

Advantages of SRC and multi-cropping could also be addressed during training activities. Special emphasis should be given in benefits of multi-cropping for farmers like:

- Effective use of inputs such as soil, nutrients, water, fertilisers etc.
- Minimised incidence of crop failure owing to biotic agents
- Shortage of water for irrigation
- Maintenance of soil fertility
- Narrowing of space available for weeds

3.9 SRC in degraded, non-productive and unused lands

Perennial energy crops, like SRC, are considered as ideal crops for bioenergy production for a many reasons. Cultivation in degraded, marginal and low productivity lands has benefits like:

- Higher biomass yields compared to annual bioenergy crops
- Better water and nitrogen use efficiency
- Avoidance of the competition with areas used for food production
- Due to their long life time (15-20 years) they have positive effect to the soil erosion problems

3.10 Use of wood chips from SRC

The determination of end use of woodchips from SRC is important for the development of the agricultural business model, the economic efficiency of production and the development of woodchips local supply chains. For that purpose it is necessary to have some presentations during training about:

- Specifications of woodchips for heat production
- Quality and certification for woodchips
- Energy conversion technologies (combustion, gasification)
- Heat production systems
- Woodchips market
- Logistics for woodchips

Other key actors, like energy producers and heat consumers, to be involved in training activities.

4 Evaluation of training

A specific questionnaire should be prepared to have a feedback from trainees for the evaluation of the training activities and the training concept, as well. During training activities, farmers having the potential to establish new SRC could be identified, in order to provide them technical support.

After the end of training activities the participants will receive a certificate on the completion of the training.

5 Materials for the training

Please add training materials.

References

PLEASE ADD REFERENCES

AUTHOR (year) Title – Publisher/Editor/City/Country/Website/ Page number