

Sustainable Networks for the Energetic Use of Lignocellulosic Biomass in South East Europe

Description of Joint Pilot application 2: Forest training guide

**to be implemented in
Western Macedonia, Greece and
Centru Region, Romania**

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Pilot factsheet

Pilot title: Guide for educating personnel in timber harvesting, safety and insurance		Acronym: (Forest Training Guide) F.T.G.
Lead Partner: CERTH (W. Macedonia)	Other partners: UNITBV (Romania)	Area of intervention: Greece (W. Macedonia), Romania
Pilot focus: service oriented	Start of implementation: March 2014	Pilot duration: 03/2014 – 11/2014
Budget: Estimated cost: max. € 5.000	Target group: R&D Institutions, forestry agencies, logging operators, equipment provider etc.	

1. Executive summary

Key words: forest management, raising awareness/training, mechanized harvesting methods

The working environment of timber harvesting operators has changed over the past years. The operator's physical workload has decreased while the proportion of mental load has increased due to the use of modern mechanized harvesting equipment. However mechanized harvesting equipment is increasingly complex, costly, and difficult to operate productively. In addition, industry stakeholders and the general public are demanding better forestry practices.

In some countries there is no professional training for this kind of machinery. Learning-by-doing is a common way to learn how to use harvesting equipment; this can be dangerous, leading to ineffective work methods and thereafter to low productivity.

The purpose of this guide is to educate timber harvester operators providing the information needed related the appropriate mechanized harvesting methods and the respective safety guidelines.

2. Objectives

The purpose of this guide is to facilitate the training of timber harvesting operators. The guide will be developed in order to assist the target groups in efficient use of harvesting equipment (both traditional, but focused on new-introduced on the market). Specific problems and needs such as equipment setup or take down, skidding infrastructure, operational patterns and other relevant information needed for an efficient harvesting along with information required regarding the safety and precaution measures during harvesting activities will be addressed and presented into a training-oriented guide. In addition, an overview of training needs and training already offered will be taken into account, as well as a prediction and quantification of skilled personnel needs in the forthcoming years.

CERTH will collect information requested to harvesting techniques (general and country specific), logging safety guidelines and training needs and options (e.g. workshops, handouts, multimedia applications or simulation tools) of personnel on behalf of Greece and Romania. The requirements of both countries will be taken into account in order to elaborate and produce a guide which could be translated into national language.

2.1 Additional Romanian objectives

- Training the personnel of small and medium harvesting companies in what concerns an adequate planning and organization of the harvesting site, using classic and state-of art tools (e.g. basics of a Timber Harvesting Plan);
- Educating small and medium harvesting companies how to use state-of art tools in choosing adequate forest equipments in order to increase technical efficiency and to reduce environmental impact.

2.2 Additional Greek objectives

See 4.3

3. Description of pilot application

3.1 Description of core application

The pilot application will be divided into 3 parts and should include the following information:

Part 1: Timber harvesting operations related information

- **Planning:** Forest plans, tools and methods for planning and organization of the felling site
- **Professional assistance** (available or not): Logging operators, Cooperatives, Universities/Faculties
- **Important Considerations in Timber Harvesting:**
 - **Operational conditions/limitations:** such as timber size, daily production requirements, harvesting costs, silvicultural treatments or cutting practices, forest access, topographic limitations, existing roads, forest site disturbance, slash handling capability, availability of equipment and contractors.
 - **Harvesting and transport processes:**
 - Felling and processing;
 - Ground-Based harvesting and extraction equipments, Cable Systems, Helicopters etc.;
 - Timber transportation.

Part 2: Safety and insurance in harvesting operations

- **General rules of safety**
- **Personal Protective Equipment Guidelines**
- **Safety Guidelines for Hand Tools and Chainsaw Operations**
- **Safety for Ground Based, Cable and Aerial Extraction Systems**

Part 3: Forestry Training and Education

- **Quantification of the expected capacity needed over the next years**
- **Quantification of the personnel required to harvest the forecasted capacity**

- **Identification of required skills & knowledge** (Machine operation & production oriented skills, timber skills, silviculture, environment & health & safety, operations management, business management)
- **Profiling Suitable Candidates for Training & Career Development:** Listing of necessary & desirable characteristics
- **Training currently available:** Overview of training resources available internationally
- **Training required**

3.2 Description of country-specific extensions in Romania

- Forest as a work environment
- Operational environment and/or technical & environmental limitations
- Harvesting operations planning
- Operational patterns for ground based and cable systems
- Required level of training and safety issues in handling/operating forest equipment
- Available forestry training and education
- Professional assistance

3.3 Description of country-specific extensions in Greece

The guide will be focused on new harvesting technologies which are feasible and economic viable to be installed on the Greek terrain (sloppy, small and fragmented forest ownership, absence of biomass trade centres, variation in quality, often absence of thinning activities etc.).

3.4 Innovative capacity

The present pilot brings together the experience and the competence of CERTH / CPERI with the widespread local, national and international expertise and experience of regional forestry agencies, harvesting equipment users and services to produce a handbook aimed at those who are interested in an efficient and safe way to harvest timber, regarding both mechanized means as well as personal skills.

3.5 Involved parties

4.5.1 Romania

- UNITBV: Planning of Pilot;
- ASFOR & Harvesting companies: provision of information on harvesting technologies, safety and training needs;
- ALSER FOREST – forest equipment reseller.

4.5.2 Greece

- CERTH/CPERI: Planning of Pilot and coordination of partner activities

- Regional Forest Agency of Kozani: provision of information on harvesting technologies and safety guidelines
- Hellenic Forests G.P.: provision of information on harvesting technologies and training needs
- Alfa Pellets: provision of information on harvesting technologies and training needs

3.6 Time schedule

4.6.1 Romania

The toolkit will be implemented within 5 months.

- ▶ 03/2014 – 05/2014 Planning and coordination
- ▶ 05/2014 – 09/2014 Application
- ▶ 09/2014 Test run

4.6.2 Greece

The toolkit will be implemented within 5 months.

03/2014 – 05/2014 Planning and coordination

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3.7 Financial scheme

Factor	Cost [€]	
	UNITBV	CERTH
FOROPA Personnel		
External expertise		
Equipment		
Total	5.000	3.000
Grand total	8.000	

4. Expected outcomes and impact

4.1 Romania

The harvesting guide will take into account the training needs involving relevant sectors of the forest industry, especially harvesting companies which play a key role in biomass mobilization. It will address current and future training needs for timber harvesting equipment operators. Since the timber harvesting has multiple goals (assuring the silvicultural needs, preservation of long term site productivity, economic efficiency etc.), building capacity by training equipment operators should

enhance the efficiency in this occupational domain as a key aspect in the sustainable management of forests.

4.2 Greece

The guide has taken into account the training needs produced involving all relevant sectors of the forest industry. It has looked at current and future training needs for timber harvesting machinery operators.

A timber sale embraces more than the single event of harvesting trees; it involves the integration of landowner goals, silvicultural needs, specific site requirements, and the long-term productivity of the site. International experience has shown that improved skill sets among machine operators leads to higher productivity and reduced costs, key elements to economically viable harvesting operations. Mechanized logging should reduce the overall accident rate and physical stress of machine operators.

5. Communication and dissemination plan

5.1 Romania

The handbook helps connecting technology and market and addresses the training needs of timber harvesting equipment operators. The handbook (English/Romanian versions) will be created in digital and hardcopy format and will be uploaded to the web portal of the project or/and distributed to the interested parties. It will be combined with a workshop/educational training event of the respective audience and target group (forest harvesting operators) and other interested parties.

5.2 Greece

The handbook helps connecting technology and market. The handbook will be created in digital and hardcopy format and will be uploaded to the web portal of the project. It will be combined with a workshop/educational training event of the respective audience and target group (forest harvesting operators) and other interested parties.