# Identifying practices and policies for wood mobilisation from fragmented forest areas

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***Abstract* - A study on the market supply of wood, in particular on obstacles to mobilisation due to fragmented ownership structures, was carried out to identify the most appropriate measures for increasing the market supply of wood from the areas where forests are held by many individuals owning relatively small parcels of forest. In order to assess the level of private forest owners' participation in the market case studies have been carried out in eight European regions. The assessment of mobilisation measures by type of market and by type of owner is one of the central achievements of this study.**

## INTRODUCTION

Forest resources in Europe are expected to continue to expand (FAO, 2009) although the process is slowing down. Forest management will continue to serve a wide variety of purposes. Economic viability is likely to remain a challenge, especially for small-scale forest owners, but the increased demand for wood for fuel has been changing this (FAO, 2009). In terms of numbers of private forest owners as well as distributions of size classes, small scale land holdings prevail in European forests. This is for example demonstrated by the data from responding countries in the study by Schmithüsen and Hirsch (2009) that were able to furnish detailed information on the prevailing land structure of holdings. Aggregated figures show that 61% of all private forest holdings have an area of less than 1 hectare and 86% of all holdings belong to the size classes of up to 5 hectares.

The economic efficiency of European forestry is impaired by a number of factors, including the fragmentation of the ownership which also implies other deficiencies. In the case of Central Europe, Rametsteiner et al. (2006) have found that small-scale forest owners often do not pursue commercial goals with their forest ownership but rather just maintain the capital. It was also found that they are often not trained or educated in forestry. Their business strategies, if they have any, are thus also dominatingly "business as usual" (in the meaning of continuing with what has always been done).

## OBJECTIVE

The overall purpose of the project was to: "identify the most appropriate measures for increasing the market supply of wood and other forest biomass from the areas where forests are held by many individuals owning relatively small parcels of forest."

## METHOD

According to Yin, the case study research method is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984).

There are many different types of case studies mentioned in literature. The case studies carried out in this work can be defined as comparative, explanatory and/or descriptive case studies. Comparative case studies are a set of multiple case studies of multiple research entities for the purpose of cross-unit comparison.

The selected eight case study regions (Saxony, Austria, Rhône-Alpes, Sweden, Catalonia, England, Hungary and Estonia) are the best possible representatives for the EU in terms of forest related factors as well as in geographical or economic terms. The selected case studies include areas from EU 15 and the Member States that joined the EU in 2004 or thereafter and from Member States having high, medium and low proportions of private forest owners and intensities of wood mobilisation. Furthermore, the selected case studies include countries with relatively high and relatively low forest cover and with relatively large, medium and relatively limited forest industries, whether state-controlled or privately owned. A very important feature is that the selected case studies include different levels of fragmentation (in terms of average size) and wood mobilisation (in terms of harvest related to annual increment).

## RESULTS

Conditions of wood supply, wood demand, legal framework and infrastructure of each European case study region were evaluated. Simplifications help to finally identify three categories of market conditions, under which wood mobilisation is currently taking place:

- "Strong market" with advantageous conditions of wood mobilisation, e.g. in Sweden
- "Developing market" with mediocre conditions of wood mobilisation, e.g. in Austria, Estonia, Saxony

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- “Weak market” with disadvantageous conditions of wood mobilisation, e.g. in Catalonia, England, Hungary, Rhone-Alpes

Weak markets have low to moderate natural (supply) potentials, while demand for wood (volumes and assortments) is similarly limited (very large wood buyers are missing). Wood imports are relatively important. Disadvantageous conditions of wood mobilisation are furthermore a result of a high degree of fragmentation (low average property sizes and/or distribution of properties) and a relatively low degree of cooperation amongst private forest owners whose economic objectives in forest management are mostly restricted to self-supply.

Owners of fragmented private forests are characterised by relatively small forest properties and related small harvestable wood amounts per owner. Forest owners’ involvement in the wood market solely depends on their personal objectives. In contrast to the objectives of wood buyers, which are purely economic, owners of fragmented forests mostly have multiple objectives and attitudes. Since the share of urban forest owners has been increasing for years in most of the studied countries, the proportion of owners that are not interested in forest management and wood marketing is also rising in most of the regions.

In conclusion it can be stated that there will be a higher supply of wood from fragmented private forest ownership in the long term. This supply will however be limited to forest owners with economic objectives and therefore will be strongly influenced by increasing urbanity of owners, i.e. a rising share of non-traditional forest owners. In any case motivation towards additional wood supply from owners of fragmented private forests with other than purely economic objectives needs to address their specific attitudes, i.e. some mobilisation activity is necessary. Nevertheless, cost efficiency and thus high(er) wood prices are also a precondition in these cases, if recreational or ecological objectives are not dominant.

In general, wood supply from fragmented private forest ownership will be restricted to time periods of high wood prices, which means that they will most probably not contribute to the basic market supply. An increased market participation of fragmented private forest ownership as a result of higher wood prices is also seen in the Austrian, Saxon and Catalonian studies. However, financial incentives, specific initiatives and political support are emphasized as at least equally important (Rhone-Alpes, Estonia, Hungary, Saxony, Catalonia) for wood mobilisation from fragmented private forest ownership.

As a result of the evaluation and weighted sorting of measures a list of subgroups could be derived and is presented in the following figure for each market category. Bureaucracy or rather its facilitation is most effective in improving wood mobilisation under all market conditions. Pooling activities as well as counselling should especially be considered for improvements of wood mobilisation in “developing” and “weak” markets, albeit both measures are also effective under “strong” market conditions.

| | Market category I ("strong") | Market category II ("developing") | Market category III ("weak") |
|---|---|---|---|
| 1 | Forest roads | Pooling activities | Pooling activities |
| 2 | Land consolidation | Counselling | Bureaucracy |
| 3 | General information | Bureaucracy | Counselling |
| 4 | Transport | Specific information | Networking |
| 5 | Bureaucracy | Forest roads | Training |
| 6 | Specific information | Contracts | Forest roads |
| 7 | Networking | Harvesting technology | General information |
| 8 | Counselling | Organisation | Contracts |
| 9 | Pooling activities | Training | Harvesting technology |
| 10 | Contracts | Networking | Specific information |
| 11 | Training | Forest Information System | Organisation |
| 12 | Forest Information System | Subsidies | Subsidies |
| 13 | Harvesting technology | General information | Transport |
| 14 | Subsidies | Transport | Forest Information System |
| 15 | Organisation | Land consolidation | Land consolidation |

*Figure 1. List of most effective measures for each market category.*

## Conclusion and Discussion

First of all, several barriers to wood mobilisation from fragmented forest ownership have been identified which include low or even no profitability of forest management (e.g. taking the cost of regeneration into account), income independency of private forest owners (i.e. income from forestry), lack of knowledge and skills of forest management by private forest owners (e.g. harvesting technique or gaining felling permission) and a cooperation deficit between different private forest owners.

The assessment of mobilisation measures by type of market and by type of owner is one of the central achievements of this study. The analysis of the market factors supply, demand, infrastructure and legal framework resulted in a categorisation of three types of dominating market conditions in Europe into which the case study regions were classified.

The usefulness and efficiency of wood mobilisation measures towards fragmented forest ownerships is extremely dependent on region, market condition and forest owner type.

Neither the one and only perfect mobilisation measure exists, nor is there a need to develop many new measures. The results suggest that the most efficient mobilisation strategy may be achieved by a combination of measures selected according to the regional situation particularly considering market type and the distribution of forest owner types and their objectives.

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