Identifying measures for wood mobilisation from fragmented forest ownerships based on case studies from eight European Regions

Identifizierung von Maßnahmen zur Holzmobilisierung aus fragmentierten Waldbesitz basierend auf Fallstudien aus acht europäischen Regionen

Tobias STERN, Gerhard WEISS, Caroline BOSTROM,
Wolfgang HUBER, Sebastian KOCH and Peter SCHWARZBAUER

Summary

The paper deals with the identification of appropriate measures for increasing the market supply of wood from fragmented ownership structures. Case studies have been carried out in eight European regions. The analysis resulted in a categorization of three types of dominating market conditions and three different types of forest owners. It has been found that in general a significant number of fragmented forest owners show a strong and positive reaction with wood price changes. On the other hand it seems that in all regions there is a growing group of forest owners who are not participating in wood markets at all. When selecting wood mobilisation measures it is important to consider the regional market conditions and the forest owner type to be addressed.
Keywords: wood mobilisation, forest owners, case study, market participation

Zusammenfassung

Die vorliegende Studie befasst sich mit der Identifikation geeigneter Maßnahmen zur Mobilisierung von Holz aus Wäldern mit fragmentierten Besitzverhältnissen. Dazu wurden in acht europäischen Regionen Fallstudien durchgeführt. Aus der Fallstudienanalyse

Erschienen 2013 im *Jahrbuch der Österreichischen Gesellschaft für Agrarökonomie*, Band 22(1): 19-28. On-line verfügbar: http://oega.boku.ac.at.

konnten drei Kategorien von beherrschenden Marktsituationen und drei relevante WaldbesitzerInnengruppen abgeleitet werden. Einerseits reagiert eine erhebliche Zahl der KleinwaldbesitzerInnen deutlich auf Änderungen des Holzpreises. Auf der anderen Seite wurde ebenfalls festgestellt, dass es in allen Regionen eine wachsende Gruppe von KleinwaldbesitzerInnen zu geben scheint, die gar nicht aktiv an den Holzmärkten partizipieren. Bei der Auswahl von effizienten Holzmobilisierungsmaßnahmen müssen sowohl die regionalen Marktsituationen als auch die jeweils adressierten WaldbesitzerInnengruppen berücksichtigt werden.
Schlagworte: Holzmobilisierung, WaldbesitzerInnen, Fallstudien, Marktteilnahme

1. Introduction

Forests cover over 37% of the total EU territory and provide various benefits, including timber and wood for energy. The reported wood supply from the forest resources is estimated to about 67% of the annual increment (FAO, 2006). The recent growing demand for renewable materials and energy sources has given rise to a discussion about how to satisfy the increasing demand for biomass raw-material from industry and market. The question on how it would be possible to increase the production and marketing of wood from European forests has also been raised. The study "Potential Sustainable Wood Supply in Europe" (HETSCH, 2008) published the most comprehensive picture of existing and potential wood supply components to date, within and outside the forest. This analysis of different wood supply sources indicated that about an additional 230 million m^3 could be available within Europe of which the largest share (60%) could be extracted from forests. International data on forest ownership (FAO, 2006) in the EU 27 shows that around 60% of the forest area (excluding other wooded land) is in private ownership, while around 40% are publicly owned. The share of private ownership is very diverse amongst the EU 27 countries. The highest share of privately owned forest area occurs in Portugal (92.7%), followed by Austria (80.4%), Sweden (80.3%) and France (74%). Both SCHMITHÜSEN and HIRSCH (2009) and MCPFE/UNECE/FAO (2007) state that the number of private forest owners will rise in the future due to on-going restitution and privatization processes, but no quantitative data are given. The economic efficiency of European forestry is impaired by a number of factors, fragmented ownership being one of them. 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 forest as it is.

2. Objective

The purpose of this study was to: "identify appropriate measures[1] 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 (fragmented forest ownerships[2]) in Europe."

3. Materials and Methods

In order to investigate the topic a case study approach (YIN, 1984) was chosen. The case studies had comparative and explanatory purposes. The selected eight case study regions (Saxony, Austria, Rhône-Alpes, Sweden, Catalonia, England, Hungary and Estonia) consist of entire countries as well as provinces. They were chosen in order to reach a diversity in forest cover (12 to 67%), share of private forest owners (34 to 80%), wood utilisation rate (18 to 86%) and average size of private ownership (2 to 48 ha). Hence they are selected to represent a broad European perspective, both in forest related factors and in geographical or economic terms. They also include both new and old EU Member States. To carry out the case studies in a reproducible, comparable and comprehensible way, a case study protocol was developed and implemented to the local investigators by two workshops in September 2009.

---

[1] Activities, instruments, incentives, and policies based on strategies aiming at facilitating the market supply of wood and other biomass from forests where a potential for such an increase exists.

[2] As the average plot size that would define a "small-sized" forest holding is heavily depending on the site conditions (e.g. stock, topography, site development, etc.) the decision on what may be considered as fragmented has to be taken on a case to case basis.

Besides secondary data (literature and archival document review) the case study research used focus group techniques as a major source of information as well as in-depth expert interviewing to gain a comprehensive and well-balanced representation of the situations and developments in the case study regions. Each case study report included a collection of data and structured information regarding:

- Availability, supply and demand in the regional wood market;
- Characteristics, number and organization of private forest owners and wood buyers;
- Market structures for wood and other forest biomass trade;
- The level of private forest owners' participation in the markets;
- Interest and motivation of private forest owners to actively participate in forestry as well as state-of-the-art in their cooperation;
- Possibilities and constraints for market access;
- Experiences with wood mobilisation programs in practice;
- Wood mobilisation measures, strategies and policies in the region, both successful and ineffective ones.

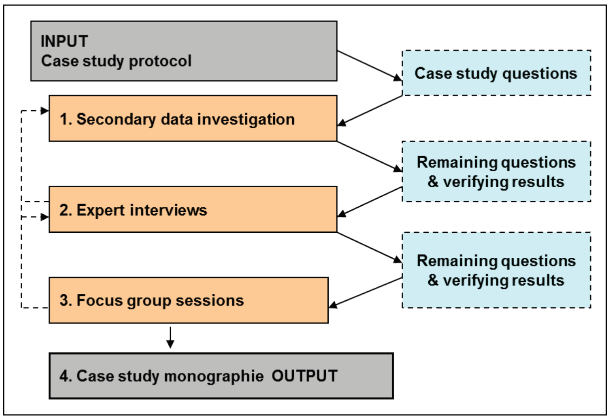

Fig. 1: Work flow for carrying out the case studies

The questions were investigated by a four step approach (Figure 1) beginning by (1) an intensive secondary data investigation. The results obtained in the first step were (2) verified and extended by means of expert interviews. The expert interviews were also used to address those questions that could not be answered in a satisfactory way during the secondary data investigation. Thereafter, focus group interviews (3) were held in order to verify previous results and to address remaining questions. As indicated by the broken arrows on the left in figure 1, feedback loops between steps 1, 2 and 3 were employed whenever useful. The eight case studies delivered a total of:

- 227 sources in literature and databases;
- 109 experts interviewed;
- twelve focus group sessions with a total of 65 participants between 14.12.2009 and 19.1.2010.

Experts for interviews and focus group sessions were selected in a case sensitive manner consisting of both forest owner and industry representatives. Draft lists of consultable experts were prepared for each case study and verified and approved by the projects steering group. Still, the selection of persons to be interviewed or invited into focus group sessions partly relied on 'snowballing', but great care was taken that this did not lead to systematic bias in the selection of respondents. Detailed information on the composition of the focus groups and interviews in each case study region can be taken from the case study reports which are available from DG AGRICULTURE AND RURAL DEVELOPMENT (2010).

3.1 Analysis

Each case study resulted in a separate report (e.g. SCHWARZBAUER et al., 2010). The case study reports were then used as an information base for an expert evaluation process. Within this process several experts independently read, compared and rated certain aspects of the case studies according to the analytical framework of the study (figure 2).

After the analysis, all single expert results were drawn together and validated in order to produce a final set of factors influencing wood mobilisation.

Obstacles that hinder wood mobilisation were then listed by their importance; both in general and for certain market conditions. Thereafter, general mobilisation measures (i.e. measure categories and subgroups) were taken from the case studies, to be further developed and related to the existing barriers of wood mobilisation. 50 detailed measures were identified and listed by five measure categories and 15 measure subgroups. All 50 measures were assessed regarding the three criteria 'effectiveness', 'short-term implementation' and 'easiness of implementation' under three different market conditions ("strong markets", "developing markets", "weak markets"; see section 4.) and ownership types. The assessment was based on the eight case study reports and the background of individual experiences of the experts and is one of the essential outcomes of this study.

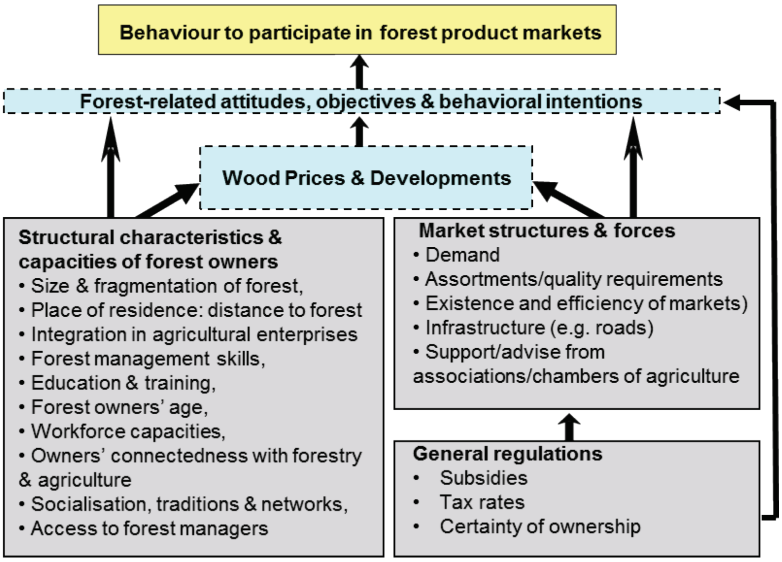

Fig. 2: Analytical framework of the study

4. Results

Several barriers for wood mobilisation from fragmented forest ownerships were identified. These include low or even no profitability of forest management (e.g. taking the cost of regeneration into account), income independency from forestry, lack of knowledge and skills of forest management (e.g. regarding harvesting technique or achievement of felling permission) and cooperation deficit between private forest owners. The analysis of supply, demand, infrastructure and legal framework resulted in a categorization of three types of dominating market conditions in Europe into which the case study regions were classified;

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

Forest owners' involvement in wood markets depends on their personal objectives. In contrast to the objectives of wood buyers, which are purely economic, owners of fragmented forests have multiple objectives and attitudes. Since the share of urban forest owners has increased for years in most case study regions, the proportion of owners that are not interested in forest management and wood marketing is rising as well (except the Swedish case study). The analysis of structural characteristics and capacities of forest owners resulted in a categorization of three types of forest owners.

In case private forest owners are interested in the economic use of their forests, i.e. in wood marketing, two preconditions must be fulfilled for any activity: trust in the contract partner and profitability of the harvesting/marketing operation.

Trust originates from positive experiences, e.g. appropriate wood prices, careful logging operations and fast payments. It is difficult for owners of fragmented forests to build up a trustful relationship with operators/industrial buyers at all, as amounts of harvestable wood are small and marketing activities rarely occur (e.g. transaction cost theory). High(er) wood prices can be the result of specific contracts (e.g. high volume contracts of large-scaled forest owners or private forest owners associations) or general market developments. As mentioned before, wood prices are generally expected to rise, especially for low qualities and hardwood. The possible increase in cost efficiency under the assumption of stable harvesting costs could thus lead to higher wood supply from private forest owners in the long term. Regardless of cost efficiency, owners of fragmented private forests are only seldom able to market wood and each wood harvesting operation is a special event for the owner, which makes wood prices particularly important for fragmented private forest ownership (e.g. in Saxony). A high wood-price-sensitivity of fragmented forest owners was emphasized in all case study reports. In contrast to traditional forest owners, two more forest owner types have been characterized that may not at all or only to a minor degree participate in wood markets. These non-traditional forest owners may have no farming or forestry background, hence no forest-related knowledge, and they may live far away from their forest and have typically become forest owners by restitution or inheritance. Probably the most important point to understand this group is to see the diversity of non-economic or at least not wood related motivations in relation to their forest ownership. This growing group of non-traditional forest owners requires a completely new understanding of and new ideas for wood mobilisation. This group is definitely the one lacking a great number of possible mobilisation measures but showing a larger strategic potential for mobilisation in the medium and long term, especially as this group is expected to grow in the future. Although the general knowledge about this group has been found low, it is possible for the purpose of wood mobilisation measures to divide this group into two subunits:

- Owners with no wood-related (often non-economic) objectives;
- Uninterested owners (no objectives at all).

In case of forest owners with no wood-related or even non-economic objectives, it is clear that a key issue for wood mobilisation lies in knowing and understanding their objectives. So far it seems that these groups are characterized by a great variety of different possible objectives – in some cases even a mixture of various objectives within one ownership. A few of these objectives may conflict with wood mobilisation, in general (e.g. conservation; loss of property value, tourism) but others may be unaffected or even highly convergent to wood mobilisation (e.g. family tradition, leisure, ownership pride). In these cases, a lack of forest-related knowledge, network and service opportunities (in context to market type) may turn out to be the reason why such forest owners do not participate in wood markets. Hence, measures targeting this group need to reach their owners with information, guidance and services but not with profitability related measures. Uninterested forest owners represent a group that by definition cannot be reached by traditional and general mobilisation measures. Beside the attempt to awake their interest by information campaigns, the probably most efficient measures for this group are those preventing further fragmentation by law or by regulations as well as land consolidation programmes including legal settings that simplify transfer of forest land. As a result of the evaluation, effective measures for each market category and forest owner type are presented in table 1.

Tab. 1: List of effective measures for each market category and forest owner type

	Strong market					Developing market					Weak market				
	Traditional owners	**Non-traditional owners**	convergent with mobilisation	conflicting with mobilisation	no objective	**Traditional owners**	**Non-traditional owners**	convergent with mobilisation	conflicting with mobilisation	no objective	**Traditional owners**	**Non-traditional owners**	convergent with mobilisation	conflicting with mobilisation	no objective
Information															
General information	X		X	X	X	X					X				
Specific information	X		X	X	X	X		X	X	X	X		X	X	X
Counselling			X	X	X	X		X	X	X	X		X	X	X
Training			X			X					X		X		
Cooperation															
Networking	X					X					X				
Organisation	X		X	X		X		X	X		X		X	X	
Infrastructure															
Roads & railways	X					X					X				
Legal framework															
Land consolidation					X					X					X
Transport	X														
Financial incentives						X		X			X		X		
Bureaucracy	X					X		X			X		X		
Specific Instruments															
Pooling activities						X					X				
Forest Info-systems	X		X	X	X										
Harvesting technology	X					X									
Contracts	X		X			X		X			X		X		

6. Conclusion

The efficiency of wood mobilisation measures aimed towards fragmented forest owners is extremely dependent on region, market condition and forest owner type. There is neither the one and only perfect mobilisation measure available nor the need to develop many new measures to be applied. The results in this study suggest that the most efficient mobilisation may be achieved by a combination of measures selected according to the regional situation, mainly including the market type as well as the distribution of forest owner types and their objectives. Implementation and efficiency of some measures depend on other measures (e.g. information), and hence these measures should be seen as important pre-measures. According to the case studies a higher supply of wood from fragmented private forest ownership can be expected under rising wood prices. This supply will however be mostly limited to forest owners with economic objectives and therefore strongly influenced by increasing urbanity of owners, i.e. a rising share of non-traditional forest owners. In case additional wood supply from owners of fragmented private forests is demanded, owners with other than purely economic objectives must, if wished, be motivated by considering their specific attitudes.

Acknowledgements

This research has been carried out by funding of the European Commission Direction General Agriculture under Tender no AGRI-2008-EVAL-11.

Literature

DG AGRICULTURE AND RURAL DEVELOPMENT (2010): Final report. URL: http://ec.europa.eu/agriculture/analysis/external/supply-wood/published 14-02-2011.

FAO (2006): Global Forest Resources Assessment 2005, main report. FAO Forestry Paper, 147, Rome.

HETSCH, S. (2008): Potential sustainable wood supply in Europe, UNECE/FAO Timber Section. October 2008. Geneva.

MCPFE, UNECE and FAO (2007): State of Europe's forests 2007. The MCPFE Report on Sustainable Forest Management in Europe. Warsaw.

RAMETSTEINER, E., WEISS, G. and KUBEZKO, K. (2006): Innovation and entrepreneurship in forestry in Central Europe. EFI Research Report, 19, Joensuu.

SCHMITHÜSEN, F. and HIRSCH, F. (2009): Private forest ownership in Europe. Geneva Timber and Forest Discussion Papers, 25. Geneva.

SCHWARZBAUER, P., HUBER, W. and WEISS, G. (2010): Prospects for the market Supply of wood… – Case study Austria. Commission of the European Communities, Rue de la Loi, Brussels, European Union, 82.

YIN, R. K. (1984): Case study research – Design and methods. Applied Social Research Methods Series, 5, 160.

Affiliation

Dr. Tobias Stern
Marktanalyse & Innovationsforschung, Wood K plus, Kompetenzzentrum Holz GmbH
c/o Institut für Marketing & Innovation, Universität für Bodenkultur Wien
Feistmantelstraße 4, 1180 Vienna, Austria
Tel.: 0043/1/47654-3581
E-Mail: t.stern@kplus-wood.at