

GOOD PRACTICES IN SAFETY AND HEALTH IN FOREST ENTERPRISES

Edgar Kastenholz, Joachim Morat, Ute Seeling
Kuratorium für Waldarbeit und Forsttechnik e.V. (KWF)
Spremberger Straße 1. 64823 Groß-Umstadt, Germany
Edgar.kastenholz@kwf-online.de

Abstract: *Interviews in German forest enterprises show that many good practices in accident prevention and health protection are applied. But prevention measures are rarely integrated in integrative concepts which would focus equally on technique, organisation and personal behaviour. Further, many measures are not integrated in a systematic health organisation in enterprises. Due to the high heterogeneousness of the sector it is of utmost importance to connect prevention activities to enterprise-specific strengths and weaknesses and current problems.*

Keywords: safety and health, forest enterprises, small and micro enterprises, health promotion

1. Introduction

Research and development in forest operations have provided a rather comprehensive understanding of good practices in safety and health. A basic framework is e.g. provided with the ILO Code of Practice – Safety and Health in Forestry Work (ILO, 1998), and numerous handbooks and guidelines (SVLFG, 2016) provide guidance and instructions to good practice. And of course, continuous research and development activities must be carried out to adapt performance and safety and health standards to the ongoing technical and process development.

It can be presumed that in many forest operations good practices are applied. After all, the actual forest workforce is permanently proving its capability to carry out the various tasks in the forest production chains. This would not be possible without using good practice in many areas of work organisation, technology, and performance. This deserves the reference that many forest workers and entrepreneurs apply a high standard of performance, achieve a high productivity, and manage to work rather safe.

Undoubtedly, safety and health in forestry has considerably improved over the last decades. But it is obvious and continuously reported, that the situation is by far not satisfactory. This is evidenced by national and international accident statistics (Forest Europe et al., 2015). Compared to other professions, forestry still shows an outstandingly high record of accidents.

This of course is foremost determined by the nature of forest work itself. Based on a wide range of research and development activities a rather deep knowledge exists about the most common health and accident risks in forest operations. Motor-manual work is a task with outstanding high accident risks and continues to be physically straining. And forest machine operators are exposed to high mental stress and one-sided strain which frequently results in musculoskeletal disorders and repetitive strain injuries.

Subsequently, good practices for accident prevention and health protection were developed to cope with the various risks in forest operations.

- Guidelines for safety and health which offer instructions for safe and health-conscious performance are available.
- Ergonomic development and design of tools and machines proves to be effective to reduce health risks, particularly in modern forest machines.

- Work organisation which reduces risk exposure, particularly job rotation and job enrichment of forest machine operators can considerably reduce one-sided stress and strain.
- There is also an extensive range of knowledge about health and safety management principles and guidance to health-conscious work organisation.
- Health care initiatives on enterprise level have been taken in many industrial sectors.

1.1 Conditions in forestry are very heterogeneous

Naturally, these good practices are not commonly applied in the whole forest sector. Many cases can be found where safety and health standards are really good, but others, where the situation is very poor. The situation in forestry is very heterogeneous, not only when the situation between different countries or regions is compared [1]. Even within regions, yes even within individual enterprises there is a side by side of highly mechanised work systems with motor-manual labour, of highly skilled professionals with untrained workers, of excellent and poor performance. Particularly forest enterprises which offer forest operation services for forest owners and the forest based industries form an extremely heterogeneous sector. In German forestry there is a side by side of self employed contractors with micro companies with a workforce in operations of three to four people and only rarely enterprises with a workforce of more than twenty people [7]. There are also enormous differences in the range of tasks and activities, competence levels, and of course in owners' and employees' attitudes.

1.2 Focus on small and micro enterprises

The challenge for applying good practice in safety and health is particularly high for small and micro enterprises, not only in forestry [5]. Small and micro enterprises very often have limited professional management capacities and frequently employ workers who are not formally trained and educated. Further, these enterprises are generally under continuous economic pressure due to low profit margins of their business. They are hard to reach and control by labour inspectorates and accident insurers and they have little access to consulting and support for prevention measures [3]. They can actually be considered to be the most critical and most vulnerable target group with regard to safety and health in forestry. Therefore it seems to be advised to focus research and development on small and micro enterprises in forest operations to improve safety and health in forestry.

1.3 Objectives

The overall objective of the ongoing three year research project which is funded by the German Ministry of Science, is to develop integrated concepts for safety and health in forest enterprises [4]. These prevention concepts shall integrate approaches for preventing accidents, to protect workers' health, and furthermore to promote health by a variety of measures. It was anticipated that prevention concepts need to be flexible and must fit to the specific conditions in individual enterprises. The objective of the work package which is subject of this paper was to analyse the actual situation in forest enterprises and to analyse how individual entrepreneurs and workers handle safety and health on organisational and performance level, or in other words, if and to what extent good practice in safety and health is already applied in forest enterprises.

Based on the results of this work package it will be possible to determine strengths and weaknesses of individual enterprises regarding organisation, technique, competences, attitudes, and the economic and situative context of their operations. This will allow to identify the connecting factors for effective prevention measures, building on existing strengths and to overcome threads and weaknesses.

3. Methods

To assess the actual situation in forest enterprises extensive interviews were carried out in twelve German enterprises, incorporating the entrepreneurs and some employees. The interview partners were selected based on their willingness to participate in a three year project process, which consists of a comprehensive analysis phase leading into a phase of testing and evaluating prevention measures together with the research team. Therefore, the sample does not aim at being representative. It rather represents a group of entrepreneurs who already have a considerably high awareness for safety and health, and who are already motivated to improve their situation.

The interview guidelines were based on literature research about safety and health in forestry, field observations of forestry work, elements of pre-existing structured assessments of safety and health management, e.g. used in German safety and health campaigns. Thus, the interviews were design to investigate risk awareness in specific forest operations, knowledge and motivation concerning prevention measures, the actually applied safety and health management and activities.

The interview data were transcribed and are subject to continuing content analysis. The core objective of the data analysis is to derive the most appropriate measures to facilitate enterprises in their efforts towards improved safety and health.

4. Results

Like the forest service enterprise sector as a whole also the group of participating enterprises is very heterogeneous. It includes self-employed contractors, micro businesses and a company with about 30 employees. Some companies have their task areas mainly in motor-manual harvesting and forwarding with forest tractors, and some undertake mechanised harvesting operations. Thereby, the study covers a wide range of task areas without claiming to be comprehensive.

In the following the research findings will not be presented for individual enterprises and no enterprise-specific data are uses. Since the analysis approach here is to assess the general occurrence of good practice in exemplary cases, the approach is to focus on dimensions which are relevant for safety and health. It will be illustrated in a summarising way, where good practices are readily applied and on the other hand, on which dimensions enterprises show considerable weaknesses and urgent need for prevention activities.

4.1 Risk awareness

Without exception the interviewed entrepreneurs and workers are well aware of the accident and health risks of their activities. almost all have a good understanding of safety regulations and safe working practices. This does of course not imply that regulations and safety standards are followed consequently. What could be found in the interviews is that safety regulations are interpreted in a way whether they are conducive to achieve the work results. While from a very formal point of view the observed attitudes – that safety regulations can be negotiable – must be judged as a clear offence, it can also be considered as an indicator for individual risk awareness.

Some interview partners explained that in specific cases, e.g. handling a hung up tree, they engage with the question how to take the tree down. They were open-heartedly describing the decision process that they assess the situation, analyse the potential risk, and if the result is, that the risk might be controllable, and the award in terms of time saved is high enough, well, they throw another tree over the hanging one.

This example shall illustrate, that forest workers in many cases know risks and prevention measures, particularly when motor-manual work is concerned. And it can be presumed that the actual performance is

based on balancing the perceived risk with the expected award. The level of risk which will be taken is based on the individual risk acceptance.

4.2 Motivation

In short, in the partner enterprises the motivation to work safe and health- consciously is high. As has been said, the enterprises have joined the project activities because they are interested to improve safety and health. But one can dare to assume that all entrepreneurs and workers generally have a high motivation to return back home from work safely.

4.3 Organisation of safety and health

Organisation of safety and health is a weakness in all partner enterprises. Some enterprises use safety advisory services or alternatively conduct a self-assessment of safety and health. This, matter of fact, is a legal requirement in Germany. But in no enterprise it could be found, that safety and health assessments are incorporated in a management system, which would provide a structure to systematically implement targeted measures. If at all, safety and health organisation is implemented to fulfil the legal requirements and it is seen as an imposition rather than a beneficial support.

A real blankness can be found when it comes to health promotion. Of course, when asked directly, all entrepreneurs underline that a promotion of their own and their workers' health would be beneficial. Some also mention that they already thought about encouraging their workers to do sports to cope with the one-sided strain of their work, but so far no entrepreneur in this study has taken any action. Also, encouraging healthy nutrition of workers has not been a subject for action.

4.4. Competences

Technical skills - The education and training standard of entrepreneurs and workers can be described as good. It could be found that in most cases the workers provide appropriate skills for the tasks they carry out. Most workers have been formally educated as forest workers. Workers who have not been educated in an apprenticeship do at least hold a European Chainsaw Certificate, which in Germany is more and more seen as the basic requirement to prove that the basic skills for operating a chainsaw safely are available. Of course, the technical competence level differs considerably between the enterprises. Individuals could be identified who clearly have deficits in felling and cutting techniques. Consequently, it will be advised to provide training to those workers who show deficits.

Formal training of harvesting operators is rather an exception in this sample, and this matches the situation in Germany in general, where only a small percentage of the actual machine operators hold a further education certificate. But it was clearly stated that the operators in the analysed enterprises are highly professional workers.

Managerial skills – Like in most forest enterprises, the interviewed entrepreneurs have no specific management skills. Structured management concepts are rarely visible. The focus is on acquisition of contracts and managing to deliver the contractual results. This of course reflects on safety and health management. A systematic management approach to prevent accidents and to protect health could not be identified in any of the twelve partner enterprises.

4.5 Technique

Technical equipment really is a strength in most forest enterprises which have partaken in this study. Protective equipment, tools and machines are, with regards to safety standards and ergonomic design, state of the arts. All interviewed entrepreneurs accentuate that they strive for using the best equipment they can achieve. In some cases it was mentioned that tractors with winch and cable are nearly always close to a harvesting site. Particularly when harvesting large dimensioned broad leaf trees, cable support was mentioned by one contractor as a “life insurance”. Additional technical means like helmets equipped with radio are used quite frequently, and this easy but effective safety tool will definitely be further promoted in the forest service sector.

4.6 Communication

Communication within the enterprise and with the contracting party is a rather critical issue in most enterprises. Safety and health related communication between entrepreneur and their workers is very different between companies. It ranges from a patriarchal stile of order and obey to a collegial stile of cooperation. An often heard statement is: “I tell them always to take care”. A considerable lack of systematic and regular communication about risks and preventive actions can rather generally be observed. The improvement of communication in enterprises is definitely a goal for forthcoming activities in all enterprises.

Improving communication with the contracting forest owner, respectively their representatives is a really important challenge. One of the most common interview results was, that the entrepreneurs are not satisfied with the ways, how foresters communicate risks in forthcoming harvesting operations. Further, the contractors complain that the effort for measures, that are necessary for safe performance, is not covered in the contract and the negotiated prices.

5. Conclusions

The recent study confirms the presumption that in many forest enterprises good practices in safety and health are effectively applied. Of course, due to the enormous heterogeneousness of the service sector, the occurrence of good practices is very different, e.g. in some enterprises one can observe a priority on excellent technology, in others training and education is in the focus of the entrepreneur. Therefore, it is impossible to generalise the findings presented in this paper for forest enterprises in general.

In the actual study no outstanding case of good practice could be identified. Where good practice occurs, enterprises carry out their operations according to state of the arts standards.

Generally, it was found that entrepreneurs and workers offer an appropriate level of competence which provides the basis for safe and health-conscious performance. Where deficits were detected they will be resolved by targeted training in the course of the forthcoming project activities.

Technical standards are in most cases good. Again, ergonomic improvements of machines are feasible, and additional features like radio communication should be introduced where it is not available so far. But the project results so far indicate that technical improvement is not the most crucial factor towards improving safety and health.

The factor which was detected in all enterprises is that entrepreneurs and workers are highly committed to their profession and their tasks. A high level of job satisfaction was found, which is, in a nutshell, entailed by a feeling of independence and control, a feeling of freedom, and last but not least by an understanding that the work and its results are meaningful. This positive perception of forest work as satisfying and meaningful work is one of the outstanding resources in forest enterprises.

The most critical dimension and hence the most important connecting factor for improving safety and health is communication and cooperation. This accounts both for communication within enterprises and between entrepreneurs and the contracting forest owners.

One of the major deficiencies in enterprises, but also in safety and health research and prevention activities in general, still is that the focus tends to be narrowed to accidents and accident prevention. Health protection and furthermore health promotion still lacks attention and action.

6. Outlook

Based on the recent findings it is of utmost importance to use an individualised approach to improve safety and health and to promote workers'. Each enterprise has different problems, weaknesses and resources and – even more important – its actors have different attitudes and levels of risk acceptance. It is auspicious that prevention measures which are directly focussed on actual problems will be effective, sustainable and accepted in enterprises.

This requires a methodology to identify strengths and weaknesses in enterprises as a connecting point for activities; it requires a method to deduce the most appropriate set of measures for an individual enterprise. In one enterprise it will be necessary to start with training activities, in other enterprises with raising awareness.

In the whole sector it will be necessary to find ways to reduce the level of risk acceptance of individual workers, mainly by continuous communication and ongoing raise of risk awareness.

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