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CRITICAL CONTROL POINTS /CCP/ OF RISK DETERMINATION AND CONTROL SYSTEM OF HACCP IMPLEMENTATION IN THE PRIVATE FORESTRY

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Abstract

Forest quality and growth sustainability can be influenced by many risk factors throughout the development process: human activity, environmental conditions change, the effects of global warming, water and soil pollution, forest pests and diseases, proliferation, wild animal damage. Ensuring the safety and quality of forest stands of timber approach to consumers needs methods to predict and identify potential risks and determine their potential impact. Real situation calls for new studies in detecting weaknesses and errors in the control and management system for all forest development stages of the technological process. His main objective to explore the food industry HACCP systems proved their worth of applications in the private forestry with the aim to provide customers with stable and high-quality timber resources.

Key words: private forestry, risk analysis, state forestry services.

Introduction

Forests and forest management in general is not only organic, but also environmental, economic and social system. Therefore, to make this complex system work appropriately, the work of one or more sub-satisfactory systems is insufficient.

Good illustration will serve a freshly cut tree. Tree skidders can start right away, but it will be difficult. The problems in the skidding are the great branches that had not been cut. Sometimes in this point the skidding process could be stopped. This is the critical point.

In this point we should look at these branches that could also be called critical control points, otherwise they will disturb the manufacturing process.

Forest growth, development and sustainability are influenced by many risk factors throughout the development process. The main among them might be:

– Political situation in the country.
– Economic situation in the country.
– Environmental situation in the country.
– Population intellectual level.
– Environmental conditions change.
– Global warming or cooling.
– Water and soil pollution.
– Forest pests and diseases, proliferation.
– Wildlife damage.

To guarantee the safety of forest growth and wood quality approach to customers, methods to predict and identify potential risks and determine their potential impact are necessary.

The real situation requires filling in the new research gaps and improving the unused opening moments existing concerning control and management system for all forest development process stages. The main tasks put forward are to explore the possible use of HACCP systems in the private forestry with the aim to provide consumers with stable and high-quality timber resources.

Materials and Methods

At the beginning of the study, first, it was necessary to survey more literature on risk control and management system (HACCP) techniques in the food industry (Avsjukovs et al. 2004, Blija 2005, Flynn 2000, Food …1998); second, the following issues can be considered in outlining the HACCP system, as forest biological diversity, stability and quality; third, developed by CP (critical point) structure identification of options, with further clarification, substantiation and implementation of forest sustainability in all aspects account for the further study of key content.

HACCP stands for Hazard Analysis Critical Control Point, the critical point (phase) identification and management of the whole process (Blija 2005).

HACCP is a tool that allows the company, institution or process management to apply more structural approach to risk causes and better control than is possible with traditional inspection and quality control procedures (Kaktiņš and Arhipova 2002, 2003, 2005a, 2005b). It is potentially able to identify the product, process or system process during which so far no failure was experienced and is, therefore, especially useful for emerging technologies.

To start using the HACCP based systems it is necessary first to carry out risk assessment of forest management and monitoring process.

Risk assessment (Food … 1998) is a process in which the risk of probable causes and their possible effects on the forest management process is evaluated (Kaktiņš et al. 2007) in general. It is necessary to eliminate the two important factors related to risk assessment:

– Risk likelihood or probability of causation.

– The consequences if it is realized.

Risk assessment is carried out by analytical work. It includes both quantitative and qualitative risk assessment. Risk assessment can be described in legislation (Meža politika 1998, LR Meža likums 2000), administrative system, education of forest owners, property size, economic opportunities for forest management, forest access, technology used, etc., and to include information available and literature research, and consultations with experts in the field (Meža enciklopēdija 2003).

The traditional evaluation model consists of the cause of risk identification, characterization, practical expressions of evaluation and characterization (Food … 1998).

There is a very sophisticated risk assessment scale. Of these appearing in the literature, the simplest is one that described the risk assessment scale and quantified risk assessment for each considered point.

Using Risk Analysis

The identification of critical control points (CCP`s) can also be done by using the risk analysis and the obtained risk categories (Table 1). For example:

Table 1. The scale of risk assessment.

Probability	high	4	5	6	7
	real	3	4	5	6
	small	2	3	4	5
	very small	1	2	3	4
		very limited	moderate	serious	very serious
	Effect				

Source: Neyts et al. 2000.

Risk category 1 – no additional measures or controls required;

Risk category 2 and 3 – control points;

Risk category 4 and more – CCP.

Results and Discussion

Study was designed to assess the existing private forestry management system analysis and critical control point detection capabilities.

Forest Policy

Forest sector development affects the last 15 years, due to the international forest management concepts change. The concepts were reviewed in the light of existing forest policy aimed to ensure sustainable forest management and balance of the forest ecological, economic, and social functions (Kaktiņš and Arhipova 2005a).

To ensure sustainable forest management in line with international commitments, a new forest policy was developed (Saliņš 2003, Kaktiņš and Arhipova 2005b).

Potential risk management system for forest policy specifies four basic functions:

– Legislative – forest policy formulation and realization of the legal drafting.

– Monitoring – Law and legislation underlying law enforcement and compliance monitoring of all the forest owners.

– Owner – public and private forest property management, ensuring the values of conservation, enhancement and income state, and both private and public forest owners accepted the ecological and social functions.

– Support activities – activities carried out by the country with their own bodies and (or) funding to ensure sustainable forest functions in the stabilization and private sector development.

Implementing Forest Policy

Assessing forest policy, we can mark the strengths and weaknesses.

The strengths of:

– using climatically, geographically and traditionally long period of accumulated knowledge and skills in the country to built up favorable conditions for forestry;

– high quality, diversified and renewable forest resources can provide the processing plant operations, thus giving a major contribution to the employment problems of the countryside;

– forest sector established that is able to maintain stability of its products in international markets;

– characterized by certain functions between the industry's leading institutions, nongovernmental organizations and stakeholders;

– operators of private forest owner conscious of accumulated great knowledge of forest cultivation, restoration and use of a

deep understanding of forest ecological, social and economic importance;

– industry bodies, leading companies and forest managers conscious part have mastered a foreign frontier forest restoration, forest production, processing and distribution technologies.

The implementation could face some weaknesses, which increases the potential risk of triggering the forest sector:

– lack of long-term development strategy objectives;

– forest sector imbalances – insufficient industrial capacity of low-quality wood and wood residues for recycling;

– small- and medium-sized enterprises and low competitiveness of the large ones;

– a large number of owners who operate small forest property (land);

– insufficient level of public awareness about the forest sector and its processes;

– insufficient funding and support for education and research, ensuring the competitiveness of the forest sector;

– ineffectively addressed issues concerning the use of wood waste in the economy, ensuring national energy independence and saving energy from other sources.

The Legal Basis Regulating Forest Management

Since independence the Latvian legislation system changed three times, which is reflected in the existing laws and their underlying laws and regulations established pursuant to 1998. Cabinet accepted regulations on forest policy.

Forest laws postulate what could be done in the forest, and determine what could be the human activity there.

Implementing Legal Acts Regulating Forest Management in Practice

The strengths of:

1st Creating of modern nurseries producing container plants not only in the Baltic countries, but throughout Eastern Europe.

2nd Step consists of restoring private forest property.

3rd Reduction of illegal forest cutting and theft.

Weaknesses, which increases the potential risk of triggering options in the forest sector:

1st A number of private forest owners are not interested.

2nd State forest Service, authorized by the state to monitor the private forest functions, did not allocate sufficient funds for this purpose.

3rd The issue of compensation to the forest and forest land owners whose land is located in protected natural areas, in which the force is operating ban, was not resolved.

4th there is a compromise between private forest owners economic objectives on the one hand and conservation objectives on the other.

5th There are several over-protected natural objects.

6th The issue of protection of private forest from wildlife damages is not completely solved.

7th Absence of a forest owner or manager of a single logistics system.

8th No measures were developed for fire regulations to prevent abuses of private woods and forests in the vicinity.

Institutions of the Forest Industry

One of the fundamental principles of the economic sector is the institutional struc-

ture of the selective stability of the sector confidence in the future. One of still remaining problems is the fragile state of Latvian products. Instability, which hampers the forest sector growth, strengthens the National Forest Service reforms.

Establishment shortening in terms of forest workers indicates:

1st Now the area under each forester or forestry is the care for, is so hugely popular that the lack of transport it is impossible to manage and control.

2nd Still not thoughtfully organized legislative action. Sticking to the roll arrangements are needed, but also provided within the framework of this policy is probably better to arrange the adoption of laws or amendments to laws. If the reforms would be deliberative, it would mean that they withstand the test of time. However, they followed after one another, but no improvement was achieved.

3rd Uncertainty about the sector also relies on industry specialists, so competition in the sector declined.

All these facts convincingly prove that the reform of National Forest Service that induced rearrangement of instrumentation could be a very serious CP.

Planning Forest Management

National Forest Service requests made of forest management – Inventory plans. They provide control capabilities for rational management of forests, environmental protection and sustainable use. This is not satisfied concerning much of the forest owners.

From all the above-analyzed set up a risk assessment table.

Table 2. Exposure assessment of risk in values.

No	Hazard identification	Risk assessment	CCP
1	Forest policy	6	CCP
2	Implementing forest policy	3...6	CCP
3	The legal basis regulating forest management	6	CCP
4	Implementing legal acts regulating forest management in practice	4...6	CCP
5	Institutions of the forest industry	3...7	CCP
6	Planning forest management	3...4	CCP

From the Table 2 we see that it is possible to impartially determine the analysis process the critical control points. Consequently, an opportunity and a real need at critical control points to take corrective action, process or system performance drastically improve.

Consequently, it has proved a critical control point of the method being applied. This opens up great opportunities for further research.

Conclusions

HACCP forest owners and managers, enabling more educated, more detailed and perceived risk causes than is possible with traditional quality control inspection procedures.

Using the HACCP system, control is transferred from the sole control of the final product to the entire process as a whole.

HACCP helps to describe the systematic nature of data and methodology, which is guaranteed in the process of realizing security.

To successfully implementation of HACCP systems by the forest holdings requires mobilization of resources for specific tasks.

HACCP, analysis of data collected makes it possible for forest owners and lessees to take economically sound decisions and develop policies that ensure equity holders and other consumer security with high quality timber while maintaining forest sustainability.

HACCP implementation can be effective in the private forest owners' associations, because small forest owners to engage their unambiguous.

HACCP introduction of the National Forest sector could be effective and feasible.

Private forestry can use some of HACCP principles, and not the entire system as a whole.

Real situation calls for new studies in detecting weaknesses and errors in the control and management system for all forest development stages of the technological process.

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