

# CONCEPT AND MODEL OF AN OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM (OHSAS) IN AGRICULTURE AND FORESTRY IN BULGARIA

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The suggested concept for a model of Occupational Health and Safety Management System (OHSAS) in agriculture and forestry provides information about the commonly applied legal requirements in the field of occupational health and safety and their relation to the clauses of BS OHSAS 18001:2007.

The general objective of the present research in the development of an OHSAS model in agriculture and forestry, is to entirely transferring the essential requirements of BS OHSAS 18001:2007/ILO-OHS 2001 and integrating in advanced level the general and specific requirements of the national OHS legislation into the foreseen model.

To fulfill this purpose we have undertaken the following research tasks:

- identification of the specific risks;
- development of the necessary OHS documentation;
- study and inclusion of good practices.

The methodology used is known as plan-do-act-check. Also, the system approach is tested.

The developed OHSAS model provides opportunity for certification of the enterprises in accordance with the requirements of BS OHSAS 18001:2007. It also significantly improves the risk management and promotes and maintains a high safety culture.

*Key Words: occupational health and safety management system, documented management approach, system approach, agriculture, forestry*

## **INTRODUCTION**

Today the occupational health and safety presents one of the most important and developed aspects of the policy of the European Union, related to the employment and social activities.

The adoption and application in the recent decades of a large majority of EU legal documents led to improvements of the working conditions in the EU member states and a considerable progress was registered in the reduction of occupational illnesses and the accidents during work.

The new EU strategy for ensuring healthy and safe working conditions is based on the global approach to wellbeing in the workplace, taking into account the changes in the workplace and the emergence of new risks, especially those of psychosocial character. The strategy gives impetus to prevention policies at national level and focuses on the public awareness of the importance of workers' health and their safe and healthy working conditions, presenting them as an integral part of the quality management and as determining elements of the economic performance and competitiveness.

The success of the Community strategy depends on the awareness level of the member states with regards to the acceptance of coordinated national strategies which define quantitative objectives for reduction of the occupational accidents and diseases, targeted towards the sectors and the enterprises having the worst results, the most common risks and the most vulnerable workers.

The increase of the effectiveness and the safety at work, the creation of a health and safe working environment in the recent years is potentially possible only with the usage of effective management tools, full compliance with the legal requirements, raising the competence level of all persons involved in the work process. This is a promising option for the implementation of advanced technologies and for accidents' prevention.

The effective activities for provision of occupational health and safety (OHS) is based on the company's policy, in which the occupational health and safety management system takes a leading position. The management of the occupational risks is the essence of the activities for provision of OHS. The OHSAS acceptance can be adapted to different situations so as to be applicable in a small enterprise with one production process as well as in a big company with high-risk activities and serious occupational hazards as the chemical and metallurgical industries and the construction. In Bulgaria the BS OHSAS 18001:2007 and OHSAS 18002 [1] are applied, which correspond to the ILO methodological guidelines ILO – OSH 2001 [2].

The existence of OHS risks is a problem which affects all companies, regardless of the economic sphere of activity and the type of property on which the employer operates. In many countries the OHS legislation becomes more and more strict and the legal sanctions more significant. Many companies try to manage these risks, reduce the costs and demonstrate good OHS management to all interested parties. As a result, an increasing number of enterprises choose to implement and certify an occupational health and safety management system based on the principles of BS OHSAS 18001:2007 and to take advantage of the benefits of this regulated approach.

The enterprises of agriculture and forestry are increasingly concerned to achieve and demonstrate good results in managing the OHS risks. They carry out this activity in terms of a more stringent legislation, in state policy that encourages the good OHS policies, and growing concern of stakeholders to protect the health of workers as a prerequisite for raising public performance.

The compliance with the OHS labour legislation is an important objective of business managers from agriculture and forestry. The first step for the realization of this objective is the OHSAS creation.

In recent years many farmers have benefited from the availability of funding under the EU programs and funds and committed to an upgrade of their machinery and buildings. The modernization of agriculture and forestry helped producers become more competitive and create conditions for a safer work. It predetermined the necessity to improve the organization and the management of OHS activities [3].

The presented OHSAS model in agriculture and forestry determines the fields in which the state's policy is realized as well as the allocation of the competences of the management bodies (departments and officials). Thus the overall logic, the branch specificity and the scope of OHS appliance are taken into account.

The model fully transfers the essential requirements of BS OHSAS 18001:2007 and ILO-OHS 2001 and integrates in higher level the general and specific requirements of the national OHS legislation.

The model has been developed in such a way that can be easily integrated with other management systems, already implemented from the business, such as Quality Management Systems (BDS EN ISO 9001:2008), Environmental Management Systems (BDS EN ISO 14001:2004), Information Security Management Systems (BDS EN ISO 27001:2013) and other systems [4].

The purpose of the model presented is to:

- provide information on the generally applicable OHS legal requirements and their relation to the model terms and BS OHSAS 18001:2007, upon which the system certification is carried out;
- provide a good practice in the OHSAS introduction and implementation in the companies from agriculture and forestry.

The implementation of OHSAS model in agriculture and forestry ensures:

- + a management approach that can be planned, documented and measurable;
- + good practices and opportunity for effective management decisions;
- + the compliance with the requirements and the provisions of the OHS legislation;
- + the development of the OHSAS documentation in scope and content, depending on the activity and the applicable legal requirements;
- + the identification of the specific hazards and risks for the life and health of the employed people, the necessary specific and effective measures for their elimination or minimization;
- + the improvement of the management of the potential risks.

The OHSAS model is not expected to incorporate all necessary rules for managing the occupational health and safety in the companies of agriculture and forestry. These rules may be supplemented during the implementation processes, taking into account the specifics of the working conditions, the work organization and the applicable OHS legislation.

**Basic elements of OHSAS model:**

- + General and specific OHSAS requirements;
- + OHS policy and objectives;
- + Planning;
- + Implementation and Functioning;
- + Checking;
- + Management review.

This OHSAS model provides the system of OHS managing to be part of the whole management system in enterprises and to be compatible with the models for quality management, environment, human resources, etc. It is also applicable for small, medium and large enterprises.

The OHSAS model provides successful certification of the companies in accordance with the standard BS OHSAS 18001:2007. It contains documents which with a corresponding reduction and adaption can be implemented and maintained by the companies, according to their specificity. The required compulsory documents are:

- ✚ Company's OHS policy and objectives;
- ✚ OHSAS Manual;
- ✚ Procedures related to the provision of occupation health and safety;
- ✚ Examples of operational documents.

### **OHS Policy and Objectives**

OHS Policy includes the management commitment to the provision of a healthy and safe working environment, including the general and specific requirements of the current OHS legislation.

For the development of the OHS Policy the following items are taken into account:

- the mission and the vision of the enterprise;
- the attitudes and the objectives of the management;
- the workers' need to ensure better working conditions;
- the typical hazards and risks in the enterprise;
- the legal OHS requirements;
- the opportunities and the need for continuous improvement of the working conditions in order to prevent injuries and illnesses.

The OHS Policy defines the general direction and is a major driving force in the implementation and improvement of the OHS management in the company so that it can maintain and improve the performance of activities related to occupational health and safety.

### **Planning**

The planning process establishes the rules for continuous hazard identification, evaluation and risk review and determines the appropriate measures to prevent, reduce and mitigate the risks.

All documents related to the risk assessment are developed: an order approving the risk assessment program and defining the risk assessors, risk assessment program, a list with the required for the risk assessment regulations, instructions, information sheets, a risk assessment methodology, etc.

A procedure is developed for the identification and assessment of the degree of application of OHS and of other legislation applicable for the enterprise. Sample checklists for assessing the compliance of the company with the applicable general and specific OHS requirements can be attached.

### **Implementation and Functioning**

For the enterprise the OHSAS implementation must be a strategic management decision. This decision provisionally includes the following stages:

Stage I - Decision for OHSAS implementation

Stage II - Preparation for OHSAS development and implementation

Stage III - Development of OHSAS documentation

Stage IV - Implementation

Stage V - Functioning and Auditing

The management decides to develop and implement occupational health and safety management system as a part of company's integrated management system.

The approach for the OHSAS development and implementation, the funding sources and the appointment of the OHS management representative are determined by the company's management.

The management decision is documented in writing.

The first step of stage "Preparation for OHSAS Development and Implementation" is the preparation of an order of company's general manager for defining the work group for the implementation of specific activities. Members of the working group may include managers and professionals involved in the company's OHS provision, medical doctors and engineers from the servicing Occupational Medical Service, representatives of external organizations (for consultation and/or development of OHSAS documents and participation in their implementation), depending on management's decision.

In the processes of the development of specific documents and the system implementation, the head of the working group should be given a mandate to additionally attract other officials.

The OHS management representative monitors and controls the work of the group. He/she organizes training for the executives and professionals involved in the system's development and implementation and the working group members to study the OHSAS pattern, the general and specific regulations applicable to agriculture and forestry. The working group should further meet:

- the procedures, techniques and documents which will be used to review current OHS system, the working conditions and evaluation of their compliance with the legal requirements;
- the recommendations for the management to guide the structuring and preparation of OHSAS documentation;
- the organization and the interactions during teamwork.

The working group must prepare a Plan for OHSAS development and implementation. This Plan is approved by the company's general manager.

The working group revises the list with the general OHSAS regulations, analyzes the company's processes and activities and supplements the valid specific regulations. The list is examined and approved by the OHS management representative.

Based on the list of regulations and procedures and annexes thereto from the OHSAS model, the working group may prepare questionnaires and checklists in order to register and evaluate the OHS activities and working conditions and study the workers' opinion.

Tables to assess compliance with the legal requirements are developed for the specific regulations of the enterprise. Also an assessment of the overall condition of the existing OHS system is performed.

Based on the assessment and having in mind the specific conditions, the working group designs the structure and the content of the OHSAS model and determines the processes and activities which will be covered from the system. It also prepares lists of OHSAS procedures, instructions, operational documents, etc. to be developed and/or modified.

In preparing the OHSAS structure, the specific risks and interactions that occur in the collaboration with other organizations and companies on the same site or at work on external sites are taken into account.

For the implementation of the system the working group prepares a timetable with specific tasks, deadlines and responsibilities, including:

- trainings;
- dissemination of OHSAS policy and documentation;
- execution of activities related to the system's implementation and functioning, including planning of internal audits;
- implementation of programs / activities for changes and improvements in OHS activities and the working conditions in connection with the OHSAS introduction;
- conducting of internal audits and system's management review.

The following documents and activities are prepared:

- order for introduction of system's documentation with responsible employees and deadlines;
- approval of implementation schedule;
- order for appointing of internal auditors;
- a list of the approved users of OHSAS documentation.

Based on an order of the company's general manager the documents and the activities are restructured in accordance with their regulations.

The working group conducts a familiarization course for the introduction of the heads of departments and the officials with the OHSAS documentation, the responsibilities and the procedures for its implementation in the enterprise.

### **Checks**

The enterprise must create, implement and maintain procedures for constant monitoring, measuring and documenting the results related to the OHSAS implementation.

Monitoring, measurement and evaluation of the results should be used as a means for determining the degree of implementation of OHS policy, its objectives and for control of the occupational risks.

Control over the entire activity should not be incidental. It should be exercised on the basis of the existing corporate management organization of activities, periodically and precisely associated with realizations and the estimated level of existing occupational risks.

The control must include all system's elements, including:

- the implementation of detailed plans, established criteria for effectiveness and objectives envisaged;
- systematic inspection from the OHS professionals of the OHS systems, of the working areas, the work equipment, the workers' behavior, etc.;
- monitoring of the workers' health status through suitable methods for observation and tracing in order to detect early signs and symptoms of injuries mainly from employment activities, in order to identify and implement effective protection (essentially this is one of the main functions of the Occupational Medicine Service).

In order to identify difficulties, gaps and nonconformities a review of the tasks must be completed during the inspection.

The review of the performance should include:

1. Quality preparation of OHS documentation and records and management of the records;
2. The information must be accessible to the employees;
3. Exercising of permanent active control on all OHS activities;
4. Outline of the necessary corrective and preventive actions and the necessary updates.

The verification of the implementation may be pre- or post-, as a greater effect is attributed to the preliminary performance measurement which includes:

- assessment of the conformity with the requirements of the regulations;
- effective use of the results of monitoring the safety of workplaces;
- evaluating of OHSAS training effectiveness;
- effective use of the results of internal and external audits;

Along with the OHSAS implementation, the OHS management representative organizes the planning of OHSAS internal audits.

The persons appointed for the conduction of internal OHSAS audits must be competent and must be chosen in a way that ensures objectivity and impartiality of the audit process.

The audit program shall be based on the results of the risk assessment of the entity and the results of previous audits.

In order to undertake corrective actions, all stakeholders should be informed as soon as possible for the results of the OHSAS audits. The company's management must take into account the findings and the recommendations from the OHSAS audit and to promptly take appropriate actions.

### **OHSAS Management review**

In order to ensure the system's continuing suitability, efficiency and effectiveness, the company's management organizes once a year an OHSAS management review.

The input data for the OHSAS management reviews may include:

- + the audit results and evaluations of the conformity with the requirements of the current legislation as well as other requirements which the organization has adopted;
- + results from participation and consultations;
- + relevant messages and signals from external interested parties, including complaints;
- + results from the implementation of the OHS activities;
- + the extent to which the objectives have been achieved;
- + status of the investigation of the incidents;
- + corrective and preventive actions;
- + actions resulting from previous management reviews;
- + changed circumstances, including development in the legal requirements and other OHS related requirements;
- + recommendations for improvement.

The reviews include assessing the improvement opportunities and the need for amendments of the OHSAS system, including the OHS policy and objectives.

The working group on the development and implementation of the system assists in carrying out the review and proposes solutions related to increasing the system's effectiveness, efficiency and resources security.

The OHS management review's results must be documented. As a result of the management review the company's senior management may take a decision for the certification of the OHSAS system.

### **Suggestions for the implementation of the OHSAS model in enterprises from agriculture and forestry and the usefulness of its implementation**

The compliance with the labor legislation in the OHS field for the enterprises of agriculture in many cases depends on the ownership of the land - whether the land is cultivated by a tenant or by the land owners, associated in a cooperation. The cooperatives provide an income for the working land owners and have a collective management body. The workers only on employment contract in the cooperatives are few and at decision level taking their interest is not taken into account. Since the greater part of the work in agriculture is carried out by the owner of the farm and his family, the predominant employment type in this field is largely family and, to great extent the self-employment. Over 70% of the farmers work independently with the support of family members and some temporary help from the workers, hired only in peak work-pressure moments.

The self-employment and the fact that the farms are often a family business, are posing a challenge in OHS terms.

Unlike the manufacturing process, the labor process in agriculture is interrupted. Depending on the contents of the manufacturing process, the interruption of work process varies from several hours (for most livestock production) to several months (in the cultivation of multiannual crops). This feature requires the use of various modes of work-and-rest

periods, taking into account the requirements of the manufacturing process of the products concerned and the psychological and social needs of the farm workers for rest and recovery.

The work in forestry is associated with remoteness of the areas from crowded roads and settlements, constant change of the working area, alternating periods of active logging and periods with lack of activities, usage and servicing of different types of work equipment, no stationary and self-propelled equipment.

The occupational healthy and safe working conditions in agriculture and forestry are characterized by the presence of serious potential risks, which are primarily due to the nature of the work - the use of various agricultural equipment, exposure to very high or very low temperatures, non-standard working hours (extended hours, including more than ten hours a day, weekends and holidays), and others [5].

All these factors have an impact on the compliance with the legal OHS requirements and create a real necessity of the implementation of OHSAS model in the enterprises of agriculture and forestry.

The application of the developed OHSAS model enables top officials in the companies to manage and minimize the risks to life and health of their employees, reduce the losses due to both general and occupational diseases and accidents at work and to gain the confidence of the supervisory OHS authorities.

The maintenance and continuous improvement of a similar system minimizes the OHS risks for the workers and the employees. In addition, the gaps and infringements which lead to accidents with workers and employees during the performance of their duties of employment are prevented.

The implemented OHSAS increases the credit of trust to the enterprise in its relations with external bodies and entities - customers, contractors, suppliers, partners, and insurers.

The implementation of OHSAS in the enterprises of agriculture and forestry:

- supports and improves the management and control of the occupational health and safety in the enterprise;
- assist in compliance with the regulatory OHS requirements;
- improves the OHS company's culture;
- reduces the employer's costs from occupational diseases and work accidents and improves the work efficiency;
- improves the prestige of the enterprise to employees, business partners and government bodies.

#### **Questions for discussion:**

**1. Ensuring occupational health and safety of seasonal workers and self-employed in agriculture and forestry.**

**2. Evaluation of production risk and implementation of control measures for risk prevention of individual short-term agricultural activities, including harvesting, irrigation, implementation of phyto-sanitary activities.**

**3. Provision of legal OHS requirements in the places where phyto-sanitary events related to the use of poisonous substances (presence of water, detergents, neutralizing substances, etc.) are carried out.**

**4. Quality assurance and specific training of workers on temporary contracts, part-time employees or subcontractors complied with the modern requirements.**

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