



## ENVIRONMENTAL AUDIT FOR ENVIRONMENTAL IMPROVEMENT AND PROTECTION

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UDC  
657.6:502.1  
3  
Review  
paper

**Abstract:** The main purpose of this paper is to explain the ways in which environmental audit contributes to improving and preserving environmental protection, respecting the concept of sustainable development. The paper uses methods of analysis, synthesis, analogy, and continuity. Specifically, to draw conclusion about the impact of environmental audit on environmental improvement and protection, first of all, relevant and available foreign literature and practice are consulted. Research results show direct link between environmental audit requirements and protection and improvement of polluting enterprises' environment. Practical applicability of research results consists in giving specific proposals to reduce pollution and improve environmental protection. Furthermore, the most appropriate form of environmental audit report is proposed. Originality and importance of research conducted in this study consist of proposals for introduction, implementation, control, and continuous improvement of environmental protection, through internal and external environmental audit in enterprises of the Republic of Serbia.

Received:  
10.01.2017.  
Accepted:  
04.09.2017.

**Keywords** environment, environmental pollution, environmental management systems, environmental audit, environmental audit report.

**JEL classification:** M42, Q56, K32

### 1. Introduction

In modern business environment, enterprises must be socially responsible, i.e. able to harmonize their operations with their environment, in a way that brings benefits

both to society and the enterprise. One important aspect of corporate social responsibility is respect for the impact of enterprises on the environment. Creation of environmental image by preventing and reducing environmental pollution increases competitive advantage, reduces environmental costs, and meets growing public expectations from enterprises. In order to reduce the impact of various forms of environmental damage on the environment, the developed countries have introduced stricter legislation, as well as standardised and well documented system to monitor all the relevant circumstances in enterprises that cause pollution.

A number of factors in recent years have contributed to the change in the attitude of enterprises towards the environment, the most important being (Črnjar & Črnjar, 2009, pp. 244-245):

1. Development of international and national environmental policy;
2. Strengthening and development of environmental awareness;
3. Introduction of eco-labelling;
4. Creation of environmental image of the enterprise;
5. Fear of costs incurred by harming the environment and
6. Savings resulting from reduced resource consumption (e.g. water, raw materials, reusable products, recycling).

In addition to these factors, Gray (2000, p. 7) emphasises importance of education and practical training of environmental directors in enterprises and environmental auditors in particular.

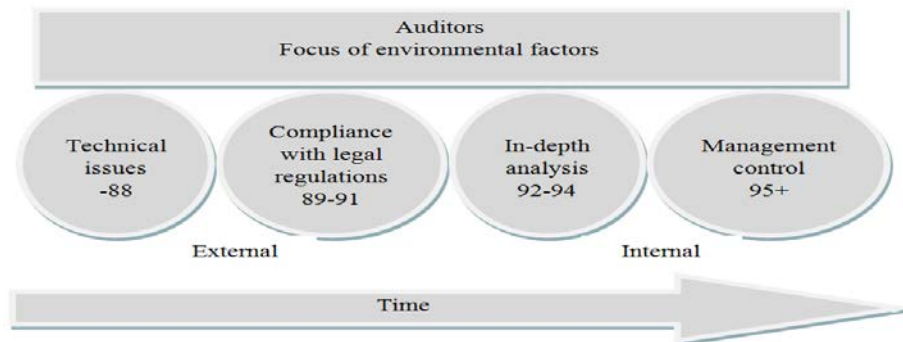
Environmental management elements and systems, which will be discussed in this paper, are presented through the following parts: role and importance of environmental audit and requirements laid down in International Standard ISO 14001. Based on a detailed analysis of these two subject areas, it will be possible to establish the difference between internal and external environmental audit and, finally, explain the process of conducting environmental audit and its reporting.

The paper will draw conclusion based on the methods of analysis of relevant and available foreign literature and practice in the field of environmental protection and environmental audit. In addition, methods of synthesis, analogy, and continuity will be used. These methods are used to, on the basis of experience derived from available literature, world practice of polluting enterprises, and ISO 14001 standard requirements, draw conclusion on the necessity of introducing internal and external environmental audit in polluting enterprises, which would ensure compliance with relevant standards and regulations

## 2. Essential definition, creation and development of environmental audit

According to Medley (1997), rapid development of environmental audit started in 1988. Medley analysed in detail the role of auditors, noting that it is important to emphasise that environmental audit changed over time, and, according to him, there are four stages of its development, reflecting changes in the primary purpose of environmental audit and tasks of environmental auditors (Figure 1). Environmental audit initially focused on technical issues and legal compliance and, in general, was carried out by external experts, outside accounting arena and the enterprise itself. As environmental audit changed and developed, the role of auditors changed as well, and the focus shifted to management control. Today, there are a number of enterprises that have started to educate, train, and use their internal financial auditors to conduct environmental audit of enterprise facilities, as an extension of regular annual operational audit. Figure 1 clearly shows that environmental auditors primarily engaged in technical issues and business compliance with environmental regulations, while, in the last 20-30 years, they have engaged in an in-depth analysis of environmental problems, as well as management control. Thus, environmental audit has, from original analysis of external factors, shifted to analysis and testing of internal factors in the enterprise

**Figure 1. How environmental audit changed over time**



Source: Adapted from Medley, P. (1997). Environmental accounting – What does it mean to professional accountants? *Accounting, Auditing & Accountability Journal*, 10 (4), p. 595.

Theoretical framework of research in this paper starts from the premise that, in audit theory and practice, despite different creation timeframes, the following three global approaches to defining and developing environmental audit emerged (Peršić et al., 2007):

- Environmental audit assesses the level of compliance of business systems with regulations and standards in the field of environmental protection;

- Environmental audit is to assess effectiveness of environmental management and
- Environmental auditors assess impact of the enterprise on the environment.

For the purposes of this study, environmental audit is defined generally and comprehensively, taking into account all three approaches and practical needs, as follows – environmental audit is an instrument of management in the process of systematic, evidence-based, periodic, and objective evaluation of all activities of the enterprise in relation to environment, management readiness and compliance of all other business conditions with requirements of the accepted environmental policy and is based on optimal development of a system of internal control and practical implementation of systematic assessment of business compliance with regulations, standards, and accepted environmental policy of the enterprise.

The above-mentioned global approaches and comprehensive definition of environmental audit show that, in recent years, special focus has been on its importance as an instrument to ensure the enforcement of the basic tasks of environmental management systems (EMS)<sup>1</sup>. EMS and environmental audit are in most countries established and developed as voluntary approaches. Their introduction improves attitude of enterprise towards the environment with a view to management's greater focus on identifying potential problems and avoiding associated costs before they occur. Therefore, management of an enterprise should on time take certain actions and plan projects to improve environmental protection. The primary task of EMS is implementation of the so-called *green strategies* (Sharma & Vredenburg, 1998) and, in that process, environmental audit is not only a potential possibility, but a mandatory measure of proactive action. It provides for timely disclosure of the achieved level of compliance with environmental standards, regulations, measures, and policies, and also stimulates management to engage in wider incorporation of environmental perspective in all processes and activities of the enterprise and its environment. Therefore, teamwork of environmental auditors and the enterprise management can significantly contribute and help improve and protect the environment.

Results of wider research (Delmas, 2001; Gavronski et al., 2008; Kitazawa & Sarkis, 2000; Poksinska, 2003; Schylander & Martinuzzi, 2007) conducted in different countries of the European Union (EU) and the world have shown that benefits of implementing EMS are the following:

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<sup>1</sup> EMS is usually translated as an environmental management system, although literature often identifies this term with the term of ecological management system, so that the two terms are used interchangeably in this paper.

- Supports implementation of international standards, raises eco-culture of the enterprise to a higher level, and provides for integrated system of environmental quality management;
- Arranges risk management in terms of vulnerability of ecological systems and takes action to prevent damage to the environment (reduces premiums for insurance against incidents, accidents, and disasters);
- Rationally manages available resources, which is the basis for establishing better relationships with business partners, media, community, and entire public; and
- Implementation of EMS norms is the basis for obtaining benefits from EU funds.

Plenty of studies dealing with the impact of industrial production on the environment (Dean & Brown, 1995; Jenkins et al., 2002) suggest that emergence of environmental audit is associated with large-scale natural disasters and development of regulations and standards in this area in the 1980s (Porter et al., 2014). With the developed awareness of the need for preventive action in order to prevent increasingly frequent environmental disasters, governments of many countries, back in the 1970s, began systematically to adopt regulations and standards on enterprises' reporting about potential harmful effects on the environment. The first created regulations in the field of environmental audit appeared in the form of laws, amendments, and acts in the US, Great Britain, Holland, Belgium, Japan, etc. These were followed by national, European and international standards aimed at environmental protection and improvement. For the area of environmental audit, ISO 14010-14012 standards are especially important, which build on the provisions of ISO 14001. The first ISO standards were adopted in 1996, and to date have been repeatedly revised, altered, and amended.

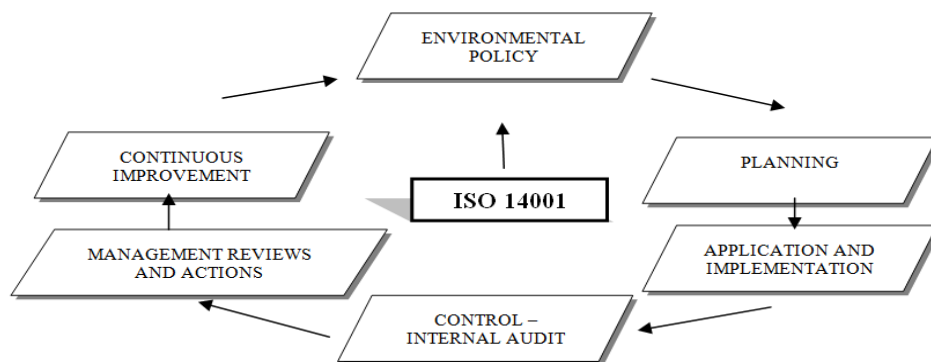
### **3. The requirements of ISO 14001**

International standards dealing with environmental management and protection have a high degree of unification and formalization, and should be consistently interpreted and applied. Basic requirement of ISO 14001 standard is continuous improvement of attitude towards the environment. This standard establishes an environmental management system, which should allow the enterprise to, taking into account legal requirements, develop policies and goals, as well as necessary information regarding all material aspects of the environment. Therefore, enterprises incorporate environmental strategies into their business strategy to achieve a number of benefits through efficient environmental management: reducing environmental costs and waste, increasing employee motivation and customer satisfaction, improving products and public relations, and so on (Gadenne et al., 2009, p. 46). ISO 14001 contains specific requirements with regard to

environmental protection systems and guidelines for the use of this standard. The International Organization for Standardization (ISO), as well as the global federation of national standards bodies, have prepared and adopted ISO 14001.

The standard emphasises that increasingly stringent legislation and pronounced concern of stakeholders for environmental protection and sustainable development require enterprises to demonstrate their performance in continuous environmental protection. ISO 14001 is applicable to all types and sizes of enterprises and can be adapted to different economic, geographical and cultural conditions. The overall objective of this international standard is to support environmental protection and prevention of pollution, in balance with social and economic needs (Tari et al., 2012). Thus defined, the overall aim is carried out by applying the basic approach adopted to protect the environment, which is shown in Figure 2.

**Figure 2. Basic approaches to environmental protection**



Source: Adapted from *ISO 14001:2005 Sistemi upravljanja zaštitom životne sredine, Zahtevi sa uputstvom za primenu*. Beograd: Zavod za standardizaciju, p. 4.

*Environmental policy* of the enterprise is adopted by management, which should bear in mind that it should be documented and available to the public. Top management should ensure that the adopted policy (ISO 14001, p. 10):

- Corresponds to the type, scope and impact of activities, products, or services on the environment;
- Includes commitment to continuous improvement and prevention of pollution in accordance with relevant laws and regulations;
- Provides a framework for setting and reviewing general and specific objectives of environmental protection and
- Is communicated to all persons working for or through the enterprise.

Based on the foregoing, it can be concluded that the environmental policy is the driver of establishment and improvement of this system.

*Planning* environmental protection serves to investigate potential harmful effects on the environment and processes required to obtain results. The enterprise, therefore, must establish, implement, and maintain general and specific environmental objectives for each level and function. Also, the enterprise must establish, implement, and maintain programs for achieving the above objectives, which must be measurable, where practicable, and consistent with the environmental policy. Programs must include: 1) specification of responsibility for achieving general and specific objectives, and 2) means and timeframe in which these objectives are to be achieved.

*Introduction, application, and implementation* of this standard serve to implement EMS activities and conduct training of employees in the enterprise. Enterprise management trains staff and provides resources for the establishment, implementation, maintenance, and improvement of environmental management system (financial resources, organisational infrastructure, special skills of staff, and technology). Also, management determines documents and communicates roles, responsibilities and powers of employees. The established system of environmental protection should be constantly improved and perfected. Therefore, top management of the enterprise should appoint one or more special representatives with defined powers, responsibilities and tasks. Each enterprise is responsible for developing specific procedures for standby emergency response (e.g. flammable liquids, storage of oil tanks, compressed gases that can lead to spills or accidental releases).

Through checks, i.e. control, management carries out monitoring and measurement procedures to control operations and effects of environmental protection. Control includes internal audit activities, EMS audit, as well as other forms of corrective comparison of the planned with actual results. To prevent possible conflicts, management takes preventive measures and, if a conflict does occur, corrective measures and procedures are taken to prevent their repetition. Checks must be established, implemented and maintained to include: 1) responsibilities and requirements for planning and carrying out checks, reporting results and maintaining appropriate records and 2) determined criteria, scope, frequency, and methods of environmental protection system checks.

*Management reviews and actions* are necessary to redress the perceived conflicts. At planned intervals, top management shall review the system of environmental management to ensure its continuing suitability, adequacy, and effectiveness (ISO 14001, p. 15). In order for the system to continually advance, management has to examine the need for changing policies, general and specific objectives of environmental protection, and make appropriate decisions and measures to be implemented in the future. Continuous improvement and improved environmental policy are conducted by top management, as well as all employees in the enterprise.

The above requirements of international standard ISO 14001 can be applied to any enterprise that wishes to:

- Establish, maintain and improve the system of environmental protection;
- Harmonise this system with the environmental policy;
- Demonstrate compliance with ISO 14001, by:
  - Determination and declaration of compliance by the enterprise itself;
  - Asking for certificate of compliance from stakeholders;
  - Asking for certificate of compliance from an external organisation and
  - Seeking certification/registration of its environmental protection system from an external organisation.

The degree of application of this standard depends on factors such as: environmental policy, activity, location, conditions in which enterprise operates, and the like. From all the above, it can be concluded that the main purpose of introducing environmental management system is delivering better environmental performance (Link & Naveh, 2006). To achieve this purpose, it is necessary that the enterprise periodically conceives, examines and evaluates environmental system in order to identify opportunities for application, implementation and improvement. Environmental audit plays an important role in the achievement of these objectives in the enterprise.

The importance of environmental audits has been recognised by the International Organization for Standardization, which, within ISO 14000 standard series, laid down guidelines for environmental audit, namely, general principles (ISO 14010), procedures (ISO 14011) and environmental auditor qualifications (ISO 14012). Given the above, it seems important to point out that ISO14010, among other things, indicates that environmental audit can only be undertaken if there is sufficient information on the audit subject, if there are adequate resources for conducting the audit and if there is adequate cooperation between the members of the audit team as well as environmental auditors and the enterprise. Also, environmental audit should be carried out with due diligence and respect for the principles of objectivity, independence, and competence. Therefore, the environmental audit process should be designed to provide the enterprise and the auditor with the desired level of confidence in the reliability of audit findings and conclusions.

In addition to ISO 14010, ISO 14011 is also very important for the implementation of environmental audit, as it gives the procedures for implementing the EMS audit. This standard establishes audit procedures related to the planning and implementation of the EMS audit, with the aim to determine the compliance of the EMS with the pre-set criteria. ISO 14011 specifies in detail the role,



responsibilities and activities of the EMS audit, whereby the following activities are identified: initiating audit (within which the scope is defined and a preliminary review of documents carried out), audit preparation (includes the plan, tasks and working documents of the EMS audit), carrying out audit and preparing the audit report. Given that the following section explains in detail the environmental audit process, this section will not elaborate in detail the above-mentioned audit activities prescribed in ISO 14011.

#### **4. The process of implementation and the relationship between internal and external environmental audit**

Summarising previous presentation related to theoretical framework of the research of environmental audit and requirements arising from ISO 14000 standard series, one can conclude that it is a continuous process with feedback. Environmental audit has both preventive and corrective effects on the quality of environmental management system – EMS. This system has a high degree of unification and formalisation, because it is derived from ISO 14000. Research suggests that environmental manager bears primary responsibility for the effective implementation of EMS in business framework of the enterprise (Janjić and Jovanović, 2015). Established EMS adds to the enterprise's perception of environmental protection and the need for environmental audit. With this in mind, environmental audit is seen in a way that one always starts from internal activities of enterprise management, through its adopted environmental policy, to consideration of external influences of the enterprise on the environment (Maltby, 1995, pp. 9-11).

It should be pointed out that, according to Wilmshurst and Frost (2001, 137), environmental audit may have different forms, with the aim of identifying key issues, assessing compliance, identifying and evaluating possible risks, in order to provide feedback for the improvement of environmental policies and programs and evaluate competence (in terms of sustainability and cost) to reduce the enterprise's impact on the environment. Recognising the fact that there are different models in theory and practice for the implementation of the environmental audit process, it is necessary to emphasise that they most often differ from each other in terms of: number and order of the process stages, goals to be achieved and target groups of users. In this article, we accepted methodological framework and the usual procedures that are used in the process of conducting environmental audit, as shown in Table 1.

**Table 1. Methods of conducting environmental audit**

<b>PLANNING ENVIRONMENTAL AUDIT</b>	<b>IMPLEMENTATION OF ENVIRONMENTAL AUDIT</b>			<b>FOLLOW-UP PROCEDURES</b>
	Previous activities	Direct implementation of environmental audit	Follow-up activities	
<b>ACCEPTING ENGAGEMENT</b>	Preparation of the audit plan	Defining the flow of audit implementation at the first meeting of the audit team	Classification of collected information	<i>Preparation of an improvement action plan</i>
	Sending questionnaire to users			
<b>DEFINING THE SCOPE AND AREA OF AUDIT</b>	Rating information from the environment	Compiling overview of the necessary documentation	Drafting the preliminary audit report	<i>Implementation of the action plan to improve attitude towards the environment</i>
	Rating current information	Detailed overview of all the specific audit subjects		
	Initial review of audit area	Interviewing employees	Collection of objections and amendments to reports	
<b>CREATION OF AUDIT TEAM</b>	Developing a questionnaire for each area of environmental audit	Establishing a record of data collected		<i>Application of procedures of current and long-term evaluation of measures in the action plan</i>
	Revising plan and preparing logistics	Completing a meeting of the audit team	Drafting the final report	<i>Review of the action plan</i>

Source: Adapted from Peršić, M., Janković, S. & Vlašić, D. (2007). Interna revizija u sustavu zaštite i unapređenja okoliša. U: Žager, L. (Ed.) *Interna revizija i kontrola* (pp. 47-62). Zagreb-Poreč : Hrvatska zajednica računovođa i financijskih djelatnika - Sekcija internih revizora - Hrvatski institut internih revizora, p. 58.

The first stage in the process of implementing environmental audit is *planning*, which is based on defined goals, tasks and areas related to the audit subject. Then, planning environmental audit takes into account the defined environmental policy of the enterprise and principles of EMS operation. Efficient and effective planning and preparation of audit logistics is important for ensuring the success of audit procedures during the process of implementation of environmental audit. The authors conclude that the process of conducting environmental audit begins with drafting a plan of activities and procedures that auditors will apply.

Special importance in the process of environmental audit belongs to the quality of questionnaires prepared by auditors, since they are most often used as a technique for gathering evidence. The questionnaire is used to *collect information* on the achieved level of environmental protection and improvement by the enterprise to be audited. Collected information is processed, analysed and

evaluated, to be published in the environmental audit report. This report is compiled for the needs of internal, as well as external users. Specifically, different groups of stakeholders are interested in results of environmental audit: production management, enterprise owners, owners of surrounding land, customers, competitors, local authorities, regulators, and general public. They assess the quality of the audit team and the competence of environmental auditors.

*At the first meeting of the audit team*, members learn about the implementation of selected audit techniques and procedures, as well as the benefits expected as a result of conducted environmental audit. During the implementation of individual stages of the audit process, it is necessary to ensure the cooperation of employees in the enterprise. It helps auditors reach adequate findings and express an opinion on (Peršić et al., pp. 59-60):

- Compliance with relevant internal and external environmental requirements;
- Behaviour of management in the implementation of regulations, laws and standards relevant to environmental protection and improvement;
- Manner of implementation of significant environmental campaigns by enterprise management;
- Degree of environmental recognition of enterprise and its green credentials in narrow and wider environment;
- Level of environmental awareness of employees and environmental climate in the enterprise;
- Degree of implementation of the system of continuous improvement of attitude towards the environment and
- Conditions in which EMS operates.

In case of any irregularity, auditors make recommendations in the report and propose solutions for a better attitude of the enterprise towards environmental protection. Through disclosure of results of the audit process and proposing adequate solutions in the *audit report*, environmental audit fulfills its objectives and tasks of the audit plan. In addition to the audit report, *action plan* is often drawn up, which includes: objectives of each environmental activity, requirements to be met, persons responsible for implementing activities, necessary resources, and program of implementation of defined activities. It is essential that top management of the enterprise, together with the head of the audit team, specifies methods of operation in the field of elimination of deficiencies in the system of environmental protection, for its improvement. The action plan should be flexible, as it is systemically revised and adjusted through the monitoring process. Through continuous implementation of environmental audit, based on a feedback system, auditors notice improvements and changes of adopted environmental policy, as well as of current business of enterprise management.

A detailed audit report is submitted to top management of the enterprise, and its concise form is openly published for external users. The purpose of disclosure is to allow authorised external auditors to review, first of all, the level of implementation of EMS norms, as well as to examine, evaluate, and verify information on enterprise's impact on the environment, published in a regular annual report, within a sustainable development report, as an independent report, or as part of an integrated report.

Given that there is no officially prescribed form of enterprise's environmental impact report and that these reports are in most countries drawn up on the voluntary principle, in recent years, the Global Reporting Initiative<sup>2</sup> (GRI) is increasingly gaining relevance, as its reporting guidelines adopted around the world give the greatest contribution to the harmonisation of sustainable development reporting and, thus, to reporting on the enterprise's impact on the environment. The main objective of GRI is that enterprises accept general international postulates, principles, and standards. Specifically, at the international level, there are increasing requirements for relevant reports on sustainable development (GRI-G4, 2013), i.e. reports on the achieved level of environmental, social, economic, and technical implementation of specific activities, projects, products, and services. Preparing report in accordance with the GRI Guidelines facilitates the environmental audit process, bearing in mind that the guidelines specify the environmental impacts of the enterprise to be reported. For that reason, the authors of this paper advocate incorporation of GRI guidelines and *environmental report within the report on the achievement of sustainable development objectives*, with the aim of giving sustainable development reporting, with special emphasis on environmental preservation and protection, systematic importance, place and role that the financial reporting system of enterprises has today. Based on this, we believe that the auditor's report on the verification of sustainable development report should be followed by a report on sustainable development.

In addition to the above, for better understanding of environmental audit, it is necessary to separate internal from external environmental audit (Letmathe & Doost, 2000, p. 430). Internal environmental audit represents extended hand of management, and its main task is to meet the demands of enterprise management in the realization of objectives defined in the environmental policy. Tasks of internal environmental audit are aimed at (Peršić et. al., pp. 50-52):

- Proper application of regulations and standards on environmental protection;

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<sup>2</sup> Global Reporting Initiative was founded in Boston in 1997, following the initiative of the Coalition for Environmentally Responsible Economies and the *Tellus* Institute.

- Performance evaluation of internal control in all aspects of environmental protection (e.g. hazardous waste treatment);
- Implementation of alternative options in respect of products, services and processes, taking into account their impact on the environment;
- Application of methods and procedures aimed at significant reduction in the consumption of materials, water and energy;
- Presenting savings in the overall cost structure, due to implementation of measures for sorting, reduction and recycling of waste;
- Achieving a higher level of environmental compliance of business processes and activities of the enterprise as a whole and its parts and
- Raising awareness of employees, through education, on the use of new methods and procedures that contribute to higher respect for the environment (higher savings of non-renewable and utilization of renewable resources).

To make it possible for internal environmental audit to fulfill the above functions, it is necessary to adopt an environmental audit plan and provide the relevant team for its implementation. The audit team may consist of employees in the enterprise (in large systems) or experts from specialised institutions. Since an accountant in an enterprise cannot possess all the skills to perform complete internal environmental audit, they should have a significant role, together with technologists, environmentalists and, in particular, internal environmental auditors. The role of accountants in conducting internal environmental audit is indispensable, because they can help with the following important issues: verification of financial data, cost-benefit analysis, proper recording of the necessary environmental information, effects of investment in environmental protection and the like.

A prerequisite for the successful implementation of internal environmental audit is to establish EMS, based on the norms of ISO 14001. Enterprise with ISO 14001 certification are accredited in terms of environmental protection and improvement. Application of the above standard requires enterprises to publicly disclose their environmental policies. The practice of developed countries shows that internal environmental audit is conducted at least once every three years. The more work done by internal auditor through continuous and systematic monitoring of environmental indicators in the enterprise, the less time, effort and money will be spent by external auditors (Letmathe & Doost, 2000, p. 427).

There are many advantages of internal and external environmental audit in all enterprises, particularly in those that are socially responsible. On the other hand, the process of introducing these two specific types of audit requires considerable time and cost, as well as specific competencies of employees who provide information to auditors. Nevertheless, there is no doubt that benefits of internal and external environmental audit outweigh costs and disadvantages that accompany

this process. *Table 2* shows basic advantages and the most important disadvantages of introducing internal and external environmental audit. Cost-benefit analysis shows that benefits (advantages) outweigh costs (disadvantages), which implies that their introduction and implementation are necessary.

**Table 2. Advantages and disadvantages of internal and external environmental audit**

<b>INTERNAL ENVIRONMENTAL AUDIT</b>	<b>EXTERNAL ENVIRONMENTAL AUDIT</b>
<b>ADVANTAGES</b>	
Increases image and reputation of the enterprise in the environment	Increases image and reputation of companies in the environment
Contributes to more efficient execution of internal operating processes and cost savings	Increases credibility of information in published reports
Contributes to the reduction of insurance premiums for damage	Reduces the risk of non-compliance with regulations in the field of environmental protection
Improves EMS operation	Reduces the risk of conflicts due to incorrect information on the environment
Contributes to better management results	Accelerates business decision-making of investors
Ensures a higher level of satisfaction and environmental communication with customers	Encourages the development of internal environmental audit
<b>DISADVANTAGES</b>	
High requirements for human and other resources	Published information in environmental reports can lead to negative reactions of the environment
Conflict situations in audit of individual business segments	High costs of implementation and reporting
Retroactive effect of previously undiscovered negative environmental impacts	Inconsistency of execution and reporting procedures

*Source:* Adapted from Porter, B., Simon, J. & Hatherly, D. (2006). *Principles of External Auditing*. UK: John Wiley & Sons, Ltd. pp. 566-577.

Disadvantages of internal and external environmental audit can be reduced and overcome by proactive environmental protection management. This would allow for future manifestation of the listed and many other benefits of internal and external environmental audit. This requires cooperation among accounting, management, and internal and external audit departments. If there are no environmental auditors, problems of environmental cost control can be solved with cooperation of existing professionals and external consultants. *Know-how* on environmental audit should assume institutional form, including the development

of standards for the practice of environmental auditing and accreditation of environmental protection practitioners (Power, 1997, p. 129).

## **5. Conclusion**

Results of research conducted in this paper indicate that enterprises that pollute the environment cause damage at the local and global levels, due to emission of harmful substances in all segments of the environment, climate changes, and inadequate recycling and disposal of dangerous substances, which impairs safety of the environment and health of population. Also, based on available literature and practice, we can conclude that enterprises that comply with regulations in the field of environmental protection and apply ISO 14001 standard contribute to environmental preservation.

Environmental auditors examine the risks of production, processing, and storage facilities of enterprises, potential pollutants. Environmental audit based on international standards and best practices of environmental auditors in developed countries proposes corrective measures to remedy the observed anomalies which may be related to technologically outdated facilities, inadequate handling of equipment, environmental incidents, and the like, and affect primarily the composition of soil, air and groundwater (e.g. oil refineries). The most important benefits of environmental audit and environmental management system for the enterprise are of organisational, financial, market, social and community nature.

Based on the study of relevant foreign literature and practice in the field of environmental protection, it is possible to draw important conclusion, applicable in the Republic of Serbia as well. Modelled after the larger and more developed countries, whose experience is presented in this paper (China, Austria, Finland), the Republic of Serbia needs to:

- Consistently implement the adopted environmental regulations (Law on Environmental Protection and other laws and by-laws relating to environmental protection and international standard ISO 14001);
- Introduce energy efficient environmental technology in enterprises that pollute the environment;
- Build green zones (parks) around polluting enterprises;
- Recycle environmentally hazardous waste (e.g. electronic devices);
- Build waste water treatment plants;
- Raise collective awareness through environmental education of employees and
- Introduce internal and external environmental audit in order to adequately monitor the process of environmental protection, EMS and implementation of legal regulations and ISO standards.

Bearing in mind the above-mentioned issues, which increasingly attract the attention of the global community, the need for information from internal and external environmental audit reports becomes more pronounced. This is corroborated by the case study conducted by the World Resources Institute, according to which environmental costs are over 20% of operating costs. It is significant that, of total environmental costs, only 20% are in the category of prevention and detection. Much of environmental costs (80%) is related to costs of f – costs that exist because of poor environmental performance.

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## **EKOLOŠKA REVIZIJA U FUNKCIJI UNAPREĐENJA I ZAŠTITE ŽIVOTNE SREDINE**

Apstrakt: Osnovna svrha rada je da objasni načine na koje ekološka revizija doprinosi unapređenju i očuvanju zaštite životne sredine, poštujući koncept održivog razvoja. U radu su korišćene metode analize, sinteze, analogije i kontinuiteta. Naime, za izvođenje zaključaka o uticaju ekološke revizije na unapređenje i zaštitu životne sredine korišćena je relevantna i raspoloživa, pre svega, inostrana literatura i praksa. Rezultati sprovedenog istraživanja pokazuju da postoji direktna veza između zahteva ekološke revizije i zaštite i unapređenja životne sredine preduzeća zagađivača. Praktična primenljivost dobijenih rezultata istraživanja se sastoji u davanju konkretnih predloga za smanjenje zagađivanja i unapređenje zaštite životne sredine. Predložena je i najpogodnija forma izveštaja ekološkog revizora. Originalnost i značaj istraživanja sprovedenih u ovom radu se sastoje u predlozima za uvođenje, primenu, kontrolu i stalno usvršavanje zaštite životne sredine korišćenjem ekološke interne i eksterne revizije u preduzećima Republike Srbije.

Ključne reči: životna sredina, zagađivanje životne sredine, ekološki upravljački sistemi, ekološka revizija, izveštaj ekološkog revizora.

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