

space constraints, in the work we tried, kept and managed, all of the listed trends individually and briefly explicit.

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THE IMPACT OF ECO-EFFICIENCY IN THE BUSINESS EFFICIENCY OF THE COMPANIES WITH SPECIAL EMPHASIS ON BOSNIA AND HERZEGOVINA

Suad Isić MA, email: suad.ibis@gmail.com

Abstract: *Bosnia and Herzegovina is a country with relatively poor ecological awareness, the environment on one hand and business efficiency and sustainable development on the other. The correct combination of these concepts can lead to stimulation of business solutions and improvement of the environment. Eco-efficiency is an important factor for sustainable development as long as the companies are using eco-efficiency as an integral part of business policy. It is important to note that Bosnia and Herzegovina is rich in natural resources to be used in the best way but also needs to have a strategy for the regeneration of natural resources. Eco-efficiency is one of the potential employment opportunities for a large number of people, which directly affects the country's economic development. The aim of this study is to show the link between eco-efficiency on one hand and business efficiency and sustainable development on the other, as well as the sole purpose and essence of eco-efficiency, displaying their mutual relationship and reflection on the environment and economic development of the country.*

Keywords: *eco-efficiency, business efficiency, sustainable development, opportunities, Bosnia and Herzegovina*

1. INTRODUCTION

The concept of eco-efficiency is a combination of ways of thinking about ecology, the environment, the environment on the one hand, and business efficiency and sustainable development on the other. Combining these concepts can lead to the promotion of business solutions and environmental improvements. In the past, eco-efficiency was seen as a source of problems and risk factors. Today, eco-efficiency is one of the valid factors for sustainable development, while companies and companies management uses eco-efficiency as an integral part of business policy. Although eco-efficiency for the ultimate goal of reducing pollution and pollutant⁴⁹ emissions, its timely and appropriate application in an individual company can have the goal of reducing costs, increasing competitiveness and achieving higher profits. In the following, explaining the topic of eco-efficiency as an indicator of business success, besides various definitions, key events in the acceptance and implementation of eco-efficiency are presented. Also, the explanation for five aspects of eco-efficiency as a strategic element in business as well as the way of implementing eco-efficiency through four areas (suppliers, customers, production process, and neighborhood industries) is given. Method of measuring eco-efficiency and selection of key indicators it is important for the enterprise itself, and only monitoring and public reporting of eco-efficiency is a way to inform the public about the key element of the company's success in terms of applying a sustainable development philosophy, including investors, insurance companies, consumers and the local

community. With its regulation, through the imposition of various taxes and taxes, the issuing of environmental licenses directs actions towards improvement of the environment, supports the initiative of improving eco-efficiency - upgrading with the leading companies (big companies) and the pressure on those lagging behind (small and medium enterprises). By example from practice, I tried to point out the importance of implementing eco-efficiency in the company itself, as well as a significant impact on the environment, through the reduction of NOx emissions.⁵⁰

1.1 Concepts of eco-efficiency

Eco-efficiency is: "combining business efficiency and environmental efficiency goals and creating relationships through which corporate behavior can support sustainable development".⁵¹

Development Concept: Eco-Efficiency is a management philosophy that encourages business solutions that seek to improve the environment and result in a parallel economic benefit. It focuses on business opportunities and enables companies to become more environmentally responsible and profitable. This is the key business contribution to a sustainable society. As defined in the World Business Council for Sustainable Development (WBCSD), "Eco-efficiency is achieved through the use of competitive prices of goods and services that meet human needs and bring quality to life, while progressively reducing environmental impact and resource use during the life cycle of the product to at least in accordance with the estimated Earth's carrying capacity. "In short, it deals with the creation of more economic value with less environmental impact.

⁴⁹ Generally, any substance introduced into an environment that has a negative impact on the resource. (<http://www.igman.com/biološki-rječnik/P/Polutant.html>) accessed on April 1, 2016

⁵⁰ NOx is a general form for mono-nitric oxide (<http://sr.wikipedia.org/NOx>) accessed on April 1, 2016

⁵¹ Bjorn Stigson, President of WBCSD, according to (Eco-efficiency LEARNING MODULE, WBCSD - Five Winds Internacional page 3)

Eco-Efficiency in Practice: Great progress has been made in applying the principles of eco-efficiency in practice. Industries, for example, have had significant success in reducing pollution and emissions, and removing hazardous materials from the production process. In the past, the economy looked at the environment and sustainable development as sources of problems and risk factors. And today they are also considered as a source of opportunities for improving economic efficiency and growth. Eco-efficiency is to a large extent responsible for the changes that have taken place in the environment of the economy towards the environment and sustainable development. Basically, it's about: to use more resources to deliver higher value. For example, if energy is saved, we reduce costs while at the same time reducing unwanted consequences of emissions. Eco-efficiency is not limited to making incremental improvements in efficiency in existing practices and habits. This should encourage creativity and innovation in search of new production methods. Eco-efficiency is not limited to areas of activity within the company, such as production and management. It also applies to activities upstream and downstream from the production plant and includes procurement and production value chains. As a consequence, this can be a major challenge for engineers, customers, managers, marketing professionals, and even finance and supervision. Computing can use eco-efficiency as an integral element of their business policy and financial statements. They can also set eco-efficiency targets for their ecological or integrated management systems. And this is a useful tool for tracking and reporting, as well as helping companies to communicate and dialogue with stakeholders. The opportunities for eco-efficiency can appear at any point during the life-cycle of the

product. This means that employees have to understand what is eco-efficiency, the value that can be brought to the company and how to do it. This nevertheless requires the building of skills and understanding to integrate eco-efficiency through business and business, and allow space for innovation and creativity.

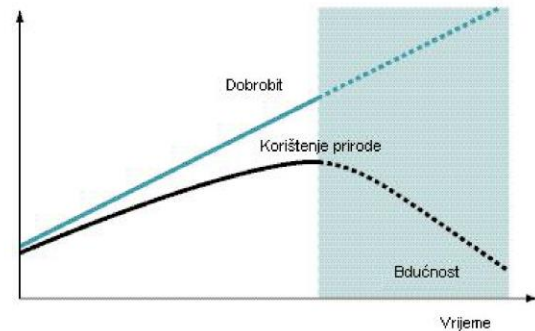


Figure 1. More benefits with less use of nature

The European Environment Agency (EEA) defines eco-efficiency as: "creating greater value (benefits) than less-used nature" (Figure 1).⁵²

2. THE TERM OF ECO-EFFICIENCY IN THE ENTERPRISE

The business explanation for eco-efficiency is clear: in business terms, it seems good move. Eco-efficiency improves business and environmental impacts and helps companies to penetrate the market and meet new regulatory trends in order to reduce costs and gain a competitive advantage and to ensure long-term profitability and sustainability. Being effective is always a high priority for every company. But if this involves creating economic value and reducing environmental impacts and reducing resource use at the same time, value added becomes even more important. The eco-efficiency process refers to every area of activity within the company - from eliminating risks and finding additional

⁵² Eco-efficiency LEARNING MODULE, WBCSD- Five Winds International p.16.

savings to identifying new market opportunities. Five aspects of eco-efficiency are recognized and make an indispensable strategic element in business (Figure 2).⁵³



Figure 2. Five aspects of eco-efficiency

2.1. Advantages of a gradual increase in eco-efficiency

Gradual increase in eco-efficiency according to the needs of people who fully understand the concept and its potential. This should not be limited to the development of incremental improvements in efficiency in existing practices and habits. Instead, they should encourage creativity and innovation in search of new ways of doing things. Second, it is not limited to areas within the company's boundaries, such as production and management, but equally valid for the entire supply chain and consumption. Flexibility of eco-efficiency seems to be beneficial for all companies at any given time. Customer needs are changing, and thus their concern for the environment and the extent of eco-efficiency. New risks come to the surface, such as climate change, and the existing ones are more pronounced. The ever-increasing pressures of economic growth and population growth make some challenges - such as the

availability of clean water - more and more serious. This is an increasing reason to focus on eco-efficiency as a "trip" rather than a "destination", that is, a process rather than a panacea.⁵⁴

2.2. Competitive advantage

Financial markets began to look at the aspects. Long-term analysts predict that companies that have implemented eco-efficiency as a business concept will significantly outperform their competitors. From a macroeconomic point of view, eco-efficiency helps richer countries in their development more qualitatively than quantitatively - by providing more services, functions and values rather than converting materials into more energy and waste. Eco-efficiency also allows developing countries to evolve in a quantitative way, but with more efficient use of resources and environmental impacts. Given that the concept of producing more from less resources (as well as reducing pollution), this means that the poor countries will benefit greatly, especially poor countries where consumer goods are expensive such as oil, and some of the natural resources, such as wood and water are poorly represented. In fact, improvements in the efficiency of such production can be the only way in which many of the world's developing companies will be able to compete in the global market.

⁵³ Eco-efficiency LEARNING MODULE, WBCSD- Five Winds International p.16.

⁵⁴ DeSimone, L. and Popoff, F., Eco-Efficiency: The Business Link to Sustainable Development, Boston: The MIT Press, 1997, by Eco-efficiency LEARNING MODULE, WBCSD- Five Winds

Internacional, p. 21), the panacea is hypothetical a medicine that would treat all the diseases, downloaded from <http://sr.wikipedia.org/wiki/panacea> accessed 25.03.2015.god

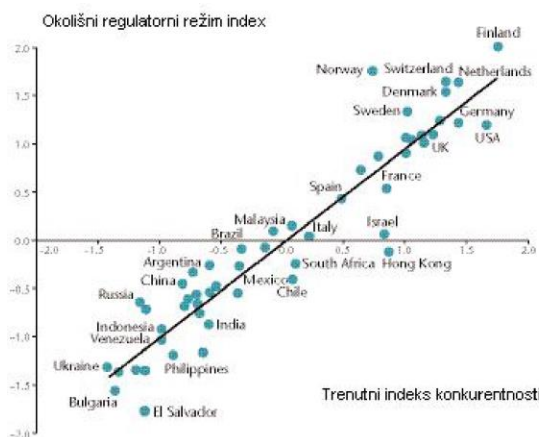


Figure 3. Environmental protection, regulation and competition

(Figure 3)⁵⁵ shows that countries with a stricter regimen of environmental regulatory mechanisms are more competitive in general. This disproves the theory that it is a "race to the bottom", that is, that investments will go to countries with less stringent environmental standards.

2.3. Implementation of eco-efficiency

Eco-efficiency can be carried out through the whole chain of production or service value, and not only within the boundaries of the physical plant. For some companies, the most harmful impacts on the environment they are related to actually occur outside their fence - either in the raw material stage and at the supplier's processing stage, or in failure to use the product or its disposal as waste. In light of this, ecological efficiency can be achieved through seven key approaches:

- Reduce the use of material
- Reduced amount of energy consumed
- Reduced dispersion of toxic substances
- Take recycling

⁵⁵ Source: Esty, D.C. and Porter, M.E., "Measuring National Environmental Performance and its Determinants", The Global Competitiveness Report 2000, Geneva: World Economic Forum, prema (Eco-efficiency LEARNING MODULE, WBCSD-Five Winds International p. 22.)

- Main support for the use of renewable sources
 - Extend the product's durability
- Increased utilization

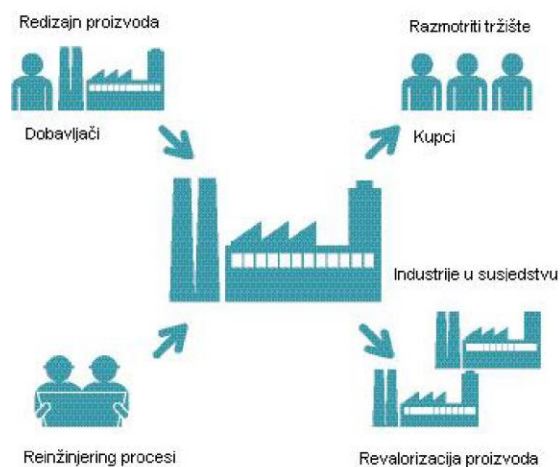


Figure 4. Four areas of eco-efficiency

Figure 4)⁵⁶ shows four main areas that provide opportunities to increase eco-efficiency. This can help businesses recognize various options, and who will be in charge of their exploitation inside and outside the company. As Figure 4 explains, all departments within the company can contribute to increasing eco efficiency: operations, procurement, R & D, sales, marketing and management, and each of them has its impact. By recognizing this, many companies have made eco-efficiency part of their overall business strategy. They realized that key eco-efficiency opportunities lie not only in their production but also along the entire supply chain, as well as in the use of their products and services. Eco-efficiency for them has become the main driver of innovation and progress, "vehicle" that helps them meet their economic and environmental goals. The WBCSD believes it is vital that the company's top management accepts the

⁵⁶ Eco-efficiency LEARNING MODULE, WBCSD- Five Winds International p. 23.

concept of eco-efficiency. Those corporations where eco-efficiency is on the CEO's agenda have been able to make real progress. Their effectiveness is not limited to several improvements in just some aspects. Instead, they start skipping eco-efficiency with innovative products, new services and a focused business strategy towards sustainability.

3. ECO-EFFICIENCY CONCEPTION: SPECIFICS IN SMALL AND MEDIUM ENTERPRISES

Multinational corporations have staff and cash flow to explore and benefit from eco-efficiency. However, many small and medium-sized enterprises feel they do not have

time or money for anything other than the mere survival of the market. In practice, small and medium-sized enterprises can also benefit from eco-efficient activities. In Latin America, to prevent a decline in trade, businesses need to be more competitive in order to survive. This is especially true for small and medium enterprises, which include 90% of industrial enterprises. These enterprises produce less than half of industrial output and are characterized by disproportionately high pollution levels in relation to larger companies. However, Latin American companies compete in global circumstances in which eco-efficiency forms an integral part of the leading business strategy. But they also work within Latin American circumstances, defined by the pressures of social needs, fundamental environmental and public health problems, regulations and limited regulatory implementation of macroeconomic policies that favor eco-friendly practices, and limited

environmental infrastructure. Where savings do not do so, then investing entrepreneurship in eco-efficiency depends on the power of government institutions and market demand.

This latter is often non-existent. Companies in the region need information on local sources of funding for cleaner products. However, these challenges can create opportunities: to benefit from the experience of other countries, in leap-frog technology, to avoid costly mistakes, to develop an approach to environmental management that takes into account specific cultural needs and opportunities.⁵⁷

3.1. Creating an eco-efficiency market

Currently, there is a small eco-efficiency market and governments realize that they must help create this market. For example, the certification price by an accredited certification service such as ISO is too high for most SMEs. In many cases, the greater the problem is management, rather than technical problems. They have environmental problems the tendency to be generated by the lack of good governance in all areas, so you problems can not be solved by technical changes. Some big companies are working with smaller, so that everyone can benefit from eco-efficiency. Strengthening government institutions and business organizations, creating regulations, certification process and widely available systems environmental management, education and training, and more demonstration projects will help in creating a market.

⁵⁷ Environmental Investment Strategy, Inter-American Development Bank, Multilateral Investment Fund, www.iadb.org, accessed

November 2001, prema (Eco-efficiency LEARNING MODULE , WBCSD- Five Winds International p. 36.)

3.2. Improving SME eco-efficiency

Eco-efficiency solutions must be adapted to local, cultural, and economic conditions.. This means that work with good practice and routine often yields greater success than a major technological transfer and implementation of an environmental management system (EMS). The informal nature of many SMEs is another significant obstacle to the further adoption of eco-efficiency. They often do not pay taxes, they do not acquire water and energy legally, which gives them a lower price than the competitor. There are several steps to improve eco-efficiency:

- Small and medium-sized enterprises can work with the supply chain, the neighboring companies, non-governmental organizations in order to create and improve the environment, and generate data that enable small and medium-sized enterprises to show improvements in the market (eg ISO 14001)
- Industry and government must generate a demand for domestic countries by encouraging environmental technology that anticipates market requirements and needs
- Incorporate community and workers In the OECD countries, the availability of public information on the environmental performance of the company associated with the local activism community was the main driver of efficiency improvements.
- Funding of institutions and insurers may require improvement of environmental protection effectiveness and make available support.

Mexican SMEs have found a major source of savings in reducing social security payments when reclassification of a non-hazardous workplace has been carried out. Also, companies will want to improve performance if they meet realistic rules and are publicly recognized for their efforts. The necessary infrastructure is another important problem. If there are companies for the separation and management of hazardous waste, there must be places for

the sale, processing, or treatment of waste. Additional steps on the road to eco-efficiency for small and medium-sized enterprises include additional training and assistance, greater access to information, effective certification systems.

4. CONCLUSION

Although the term "eco-efficiency" has been in use for more than a decade, it is more seriously accepted by the wider business community in the past few years. Significant progress has been made in applying the principles of eco-efficiency in practice. For example, in the industry, significant success in reducing pollution and emissions, and removing hazardous materials from the production process, as well as reducing production costs and increasing the efficiency of the company. Global trends in the application of eco-efficiency indicate that the West and industrialized countries have a higher degree of eco-efficiency implementation, while developing and transitional countries are less or less. Reasons should be sought in inappropriate implementation of the law, insufficiently developed awareness of the social community and the economic problem that these countries are burdened with. Our conclusion is that the implementation of the eco-efficiency concept should be accepted at the level of the organization / company.

Companies need to use their marketing skills by informing consumers in order to be aware of the urgency and need for sustainable production and consumption. The state, non-governmental organizations and public opinion should continuously exert pressure, but also offer concrete solutions in order to reduce environmental pollution and encourage sustainable development. Eco-efficiency solutions must be adapted to local conditions, both culturally and economically. A concrete example for Bosnia and Herzegovina are:

Tuzla Canton (Tuzla and Lukavac municipalities) and Zenica-Doboj canton (Zenica and Kakanj municipalities) that have a relatively higher degree of air pollution compared to other municipalities in the Federation. Experience shows that the reasons for which companies are not broader introduced the concept of eco-efficiency are:

- Company headquarters or country of origin (developed industrial countries, ZUR, transitional countries)
- Organizational profile of the company (size and activity of the company, ownership)
- Lack of management's will (lack of information or lack of understanding of how to accept the eco-efficiency process and its effectiveness)
- Costs of eco-efficiency implementation (transition from obsolete to sophisticated and complex technologies, introduction and training of employees through workshops and seminars)

Possible measures for encouraging faster and wider implementation of the concept of eco-efficiency in business processes:

- State regulation (establishing a system for issuing environmental permits, imposing eco-taxes and taxes, and the goal of the state is to reduce adverse ecological impact, without deteriorating the economy of the state, the company, and the budget of the community)
- Strengthening government institutions, creating regulations, certification process, more demonstration projects.
- Innovation as a key guide to advancing the application of the eco-efficiency process
- Protecting existing ecosystems, optimizing resource management, raising public awareness and media awareness by promoting responsible ecological behavior.

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