

ENVIRONMENTAL MANAGEMENT AS A SYNERGETIC TOOL

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Abstract

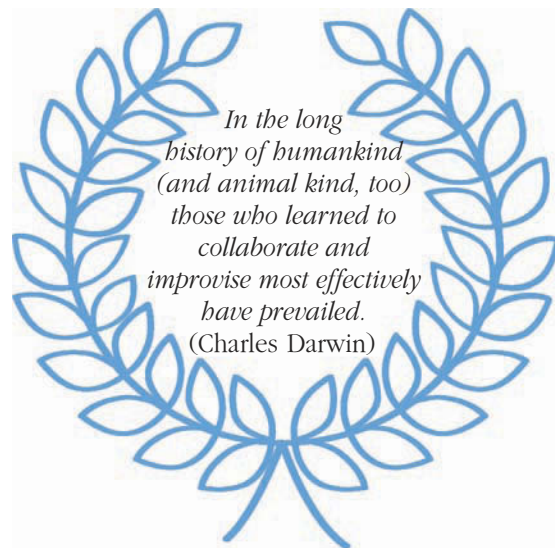
The aim of this paper is to discuss the role that environmental management accounting plays as a tool intended to provide needed economic and ecological information at the company level with the aim of contributing to a more effective internal process of decision-making and control activities. Certain limitations and shortfalls of traditional accounting systems in handling various environmental issues are shortly discussed. Without information on full costs, it is even more difficult to take correct business decision on what changes to make in order to improve profitability in a business environment characterized by more intensified competition. Some barriers and open issues and challenges for further development of environmental management accounting, as well as general estimation of the situation with that regard in Bosnia and Herzegovina, are provided at the end of the paper.

Keywords: environmental costs, environment, accounting, management

INTRODUCTION

There is a growing body of evidence that environmental issues have become important factor that different organizations and primarily manufacturing enterprises must take into account in the process of making various business decisions. Why should organizations and accountants within the organizations care about environmental issues? One reason is that many internal and external stakeholders are showing increasing interest in the environmental performance of organizations, particularly private sector companies.

An example of internal stakeholders might be employees affected by pollution



in the work environment. External stakeholders include communities affected by local pollution, environmental activist groups, government regulators, shareholders,

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investors, customers, suppliers and others. In other words, today's challenges to companies, in developed as well as in the transition countries, to raise the quality of their environmental performance is the result of the pressures coming from the wide range of different parties (state and local governments, international organizations, ecological/consumers' associations, insurers, banks, business partners, media etc.). That environmental pressure is forcing many organizations to look for new, creative and cost-efficient ways to manage and minimize wide range of environmental impacts. In order to effectively manage the environmental pressures, and related costs and benefits, a company needs various types of expertise, including environmental, technical, accounting and finance, marketing and public relations, and general management. Accountants have a special role to play because of their access to an organization's monetary information, their ability to improve or verify the quality of

such information and their skills in using that information to help make sound business decisions in areas such as investment appraisal, budgeting and strategic planning.

Traditional Accounting Systems and Environmental Issues

Sometimes the amount of materials alone does not provide so obvious an action. Honest costing information is necessary to assist companies in making good decisions about materials use. Cost accounting practices assure that all expenses will be allocated to the particular process or product where they originated. This differs from conventional accounting, which has allowed for some costs, although clearly dedicated to a particular process or product, to be assumed as overhead and not properly allocated. Historically this has been true for all environmental costs (e.g. staff time, permitting fees, waste management costs) which have been lumped into overhead.

Traditional systems of accounting (financial, managerial and cost accounting) shows important shortfalls and limitations as an informational basis for the business decision-making process on the company level, in the sense of inadequate recording and usage of environment related information, primarily different categories of environmental costs. Traditional accounting systems that are created and adapted for the needs of financial management and reporting typically do not succeed to allocate environmental costs on those activities, products or processes which are

responsible for these costs. Environmental costs that might be relatively high for certain sectors or products, particularly if less visible and less tangible costs are taken into account, usually are treated and recorded simply as common overhead costs. That results in the fact that these costs are practically „hidden” from management and consequently not included as relevant information in various phases of management process. Hence the constant tendency of the management to underestimate the extent and growth of such costs. The rule of thumb of management is that 20 percent of production activities are responsible for 80 per cent of environmental costs. When environmental costs are allocated to overhead accounts shared by all product lines, product with low environmental costs practically subsidize those with high costs. Such a way of recording of environmental costs within traditional accounting system has evidently numerous negative consequences as follows: inappropriate cost allocation on different levels, inaccurate determination of prices for products and services, distorted scheme of rewards and compensations for employees, inadequate capital budgeting and investment appraisal, inappropriate product mix, inability of effective application of measures for cost reduction, etc.

Traditional or functional accounting has an obvious tendency to rely heavily on precisely determined quantitative measures. The assumption is that such measures are objective. This is supported by Willis[1] „As far as the consideration of environmental costs and impacts is concerned,

the conventional accounting model’s fundamental shortcoming is that, being entity-centered, it deals with the entity’s market-priced transaction within the conventional market-based economy; it has no means of valuing and recording any transaction for which the marketplace has not assigned a value (or for adjusting when there is a partial value).” To handle environmental issues at all one must accept that certain amount of subjectivity is inevitable in the activities like identifying environmental costs, estimating environmental benefits, accounting for environmental risk and contingencies and hence liabilities of the company, undertaking environmental audits and introducing eco-balance sheets. All these activities are problematic from the standpoint of traditional accounting framework. But the consequences of neglecting or ignoring of more or less subjective



estimates and measures is effectively highlighted by the following observation [2]. „The first step is to measure whatever can be easily measured. That is ok as far as it goes. The second step is to disregard that which can't be easily measured or give it an arbitrary quantitative value. This is artificial and misleading. The third step is to presume what can't be measured easily really isn't important. This is blindness. The fourth step is to say that what can't be measured really doesn't exist. This is suicide.” But the possible explanations of why there is such a strong bias towards financial information in traditional accounting systems might be that: **a)** the ultimate objective of a company (maximizing shareholder value or profitability) is expressible in monetary form, and information which can be expressed in the same terms is always likely to attract more immediate attention; and **b)** the financial side of management is relevant to all functions, including environmental management. Not only do environmental budgets need to

be managed, but also proposals for action, which can be justified in terms of conventional methods of financial investment appraisal and product costing, for example, are more likely to be successful.

Increasing Role of Environmental Management Accounting

In general, it is possible to identify six different domains of environmental accounting which are relevant to the firm level, based on their boundaries of attention – an individual organization, the supply chain in which it forms part and the whole of society – and the extent to which they focus on financial and/or non-financial information. The six domains which emerge can be defined as follows: Energy and materials accounting – the tracking and analysis of all flows of energy and substances into, through and out of organization. Environment related financial management – the generation, analysis and use of monetized information in order to improve corporate environmental and economic performance. Life-cycle assessment – a holistic approach to identifying the environmental consequences of a product or service through its entire life cycle and identifying opportunities for achieving environmental improvements. Life-cycle cost assessment – a systematic process for evaluating the life-cycle costs of a product or service by identifying environmental consequences and assigning measures of monetary value to these consequences. Environmental impact assessment – a systematic process for identifying all the environmental consequences of an organization, site or project's activities. Environmental externalities

costing – the generation, analysis and use of monetized estimates of environmental damage (and benefits) created by an organization, site or project's activities.

Environmental management accounting (EMA) which represents the use of accounting and related information to support internal management can potentially encompass all of the six domains but in practice is primarily concerned with environment-related financial management and the linkages with energy and material accounting and other internal and external systems needed to generate financial data. Combining different definitions available we can say that: Environmental management accounting is the process of identification, collection, estimation, analysis, internal reporting and use of materials and energy flow information, environmental cost information and other cost information for both conventional and environmental decision-making within an organization-company. It is obvious from the definition that EMA incorporates and integrates two of the three building blocks of sustainable development – environment and economics – as they relate to an organization's internal decision-making process. The third building block – society – is not directly included since EMA focuses on costs internal to the company and does not include external costs to individuals, society, or environment for which a company is not legally held responsible.

Incentives for corporations to use EMA come from the increasing pressures that companies are facing, such as more stringent regulatory pressure and growing market competition, as well as from the benefits of implementing EMA. The gains EMA systems offer to companies include (Figure 1):



- (a) Identify impacts of environment related activities on the corporate bottom line, and identify hidden environmental costs in overhead accounts,
- (b) Identify cost reduction and other opportunities to improve performance and offset environmental costs by generating revenues,
- (c) Demonstrate the cost savings to be gained from good environmental management, and reduce or eliminate non-value-added costs, offsetting environmental costs by generating revenues,
- (d) Raise management commitment and awareness, and assist decision-making on cost allocation, capital budgeting, product pricing, product mix, investment and development, and increase competitive advantages and market expansion opportunities to environmentally aware consumers,
- (e) Support development and operation of an overall environmental management system; provide assurance to stakeholders of improvements in environmental performance,

- (f) Reduce environmental liabilities and risks, and enhance compliance with environment-related laws and regulations,
- (g) Enhance customer values, thereby increasing competitive advantage,
- (h) Improve environmental performance and protection of human health, establishing a green corporate image,
- (i) Provide improved environmental, financial and other data for reporting to external stakeholders, and
- (j) Supporting long-term sustainability of the business, taking into account economic, environmental and social factors.

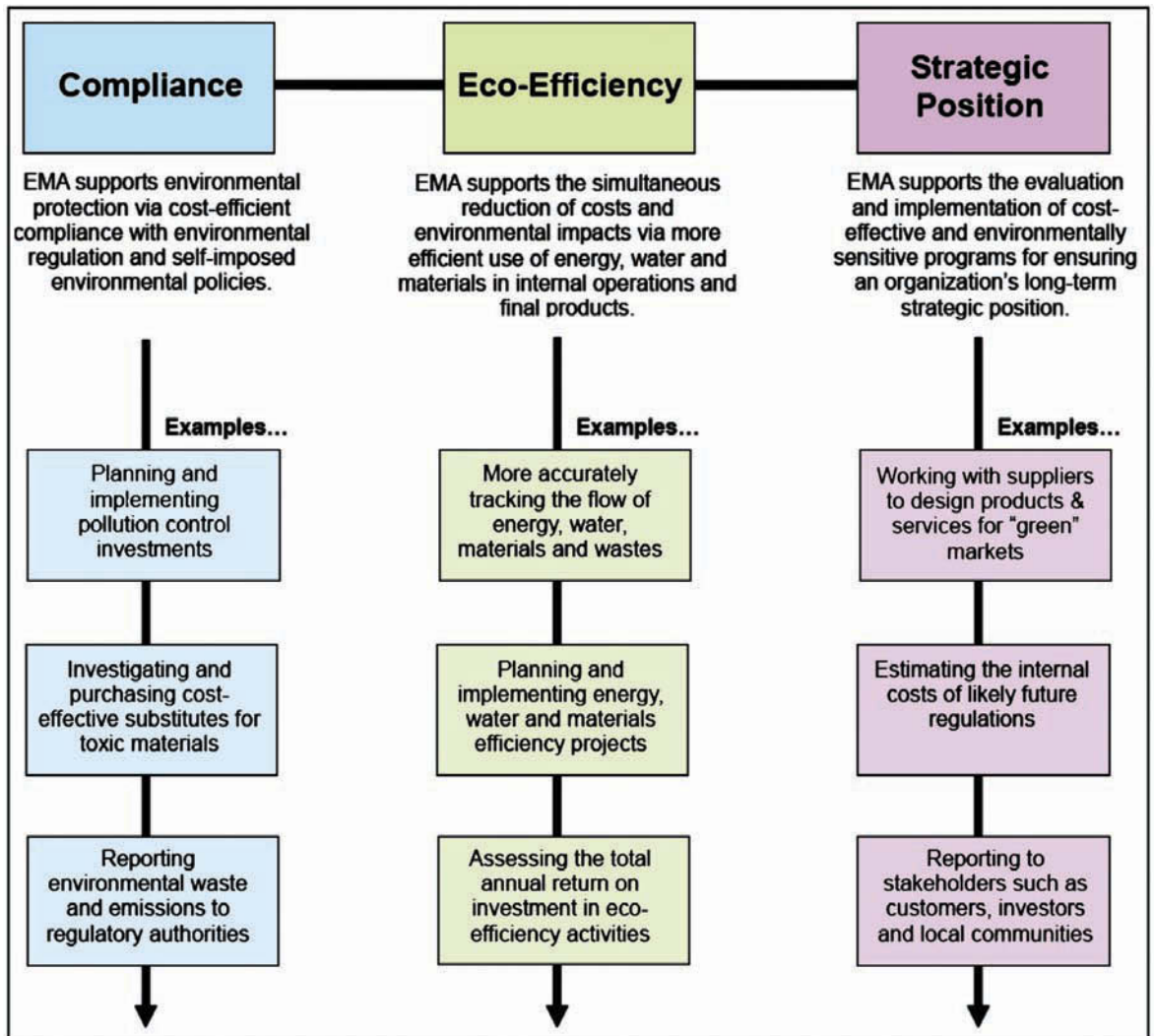


Figure 1 – Uses and benefits of EMA. Adapted from [3].

Adopting a structured approach to resource productivity can help companies achieve cost savings of 1-3% of annual turnover, depending on the nature of their

business operations. This is backed up by the experiences of over 500 companies participating in waste minimization clubs. Over 60% of the cost-saving projects that

these companies undertook were no-cost or low-cost. Applying environmental management accounting techniques at companies where the cost of materials, utilities and wastes account for about 80% of business costs can typically result in cost savings of about 3% of annual turnover.

Companies where environmental costs account for about 30% of business costs can, on average, save about 1% of annual turnover [4]. This relationship is shown in Figure 2, which will help a company to estimate the potential cost savings it could achieve.

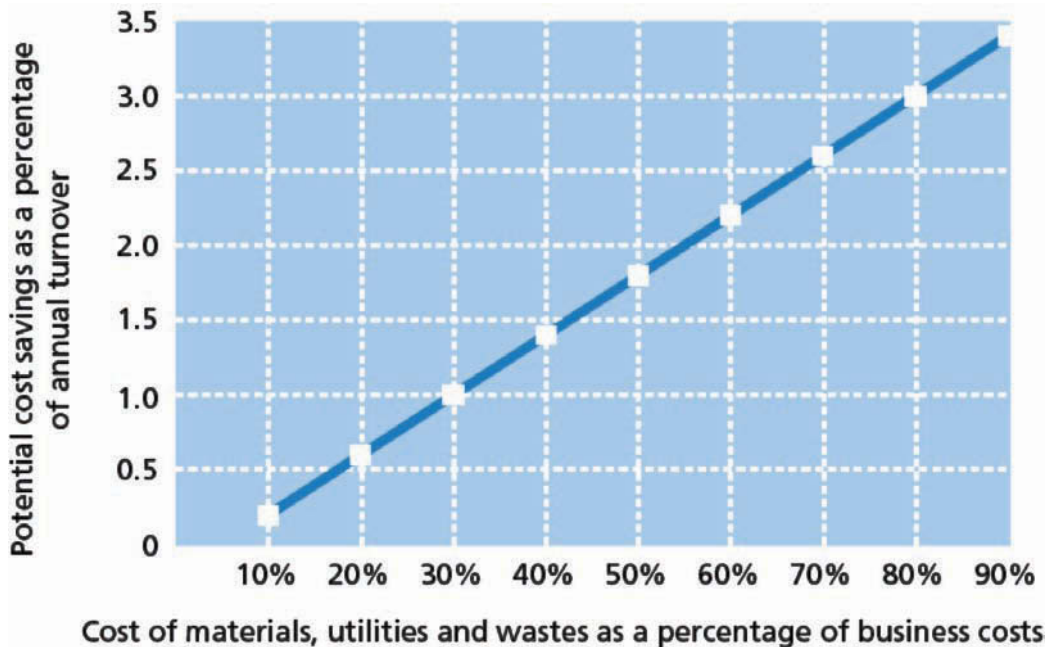


Figure 2 – Typical potential cost savings as a percentage of annual turnover

The general ledger is a good starting point for accountants wishing to identify which environmental costs to target for improvement. Reviewing the general ledger to identify where the costs of materials, utilities and waste disposal are allocated will also help to find the largest items. These are likely to represent the greatest opportunities for cost savings.

Traditionally, while making such decisions management has ignored environmental performance information and concentrated predominantly on financial

impacts. Environmental protection decisions have often been driven by regulatory requirements and are not thought of in financial performance terms. However, as environmental protection costs continue to increase (i.e. as externalities become internalized to the company) and managers realized that internal cost savings can be obtained from improved environmental performance, the integration and redefinition of these techniques becomes more and more important.

The Case of Bosnia and Herzegovina

In order to assess the situation in Bosnia and Herzegovina regarding the usage of environmental management accounting the survey has been made. A questionnaire has been sent electronically to the responsible managers of 100 firms from various sectors. The response rate was only 18%. We are aware that the sample is not representative. The results obtained can serve only as provisional and illustrative data, helping to create general assessment. The aim of the survey was to assess the way firms use accounting systems for the official reporting and decision making, and the way they measure their performance and business success. We were interested if the firms are aware of the EMA, its potential benefits and the extent to which the EMA system is used in Bosnian firms.

The survey has demonstrated that the most frequently used financial indicators

based on accounting systems applied are: profit margin, ROI and ROA. The most frequent nonfinancial indicators are: market share, customer satisfaction and employees satisfaction. A small percentage of managers (16%) said they were aware of the EMA and its potential benefits, but all of them replied that they had not yet practically introduced an EMA system in their companies. As the main reason for such a situation managers said they are not legally obliged to use such a system. In spite of the potential gains from EMA the system has not been yet implemented in companies in Bosnia and Herzegovina. The barriers that block this implementation are lack of information on EMA systems and the benefits they can generate (84% of managers are not fully aware, or are partially aware of the EMA system). For 82% of the companies from the survey, the process is considered too costly relative to the benefits. Lack of knowledge and qualified personnel and lack of available tools are other barriers (87%). Although it was not visible from the survey one of the possible barriers might be the resistance of some managers against full transparency of all costs. Increasing knowledge on all cost drivers requires adequate managerial measures to be implemented. It requires also and increasing creativity and additional efforts of the management in order to achieve successful cost reduction and vice versa increases their responsibilities for failures to do that. General business climate and social circumstances in Bosnia and Herzegovina might be the part of the explanation for such a situation.



Conclusions

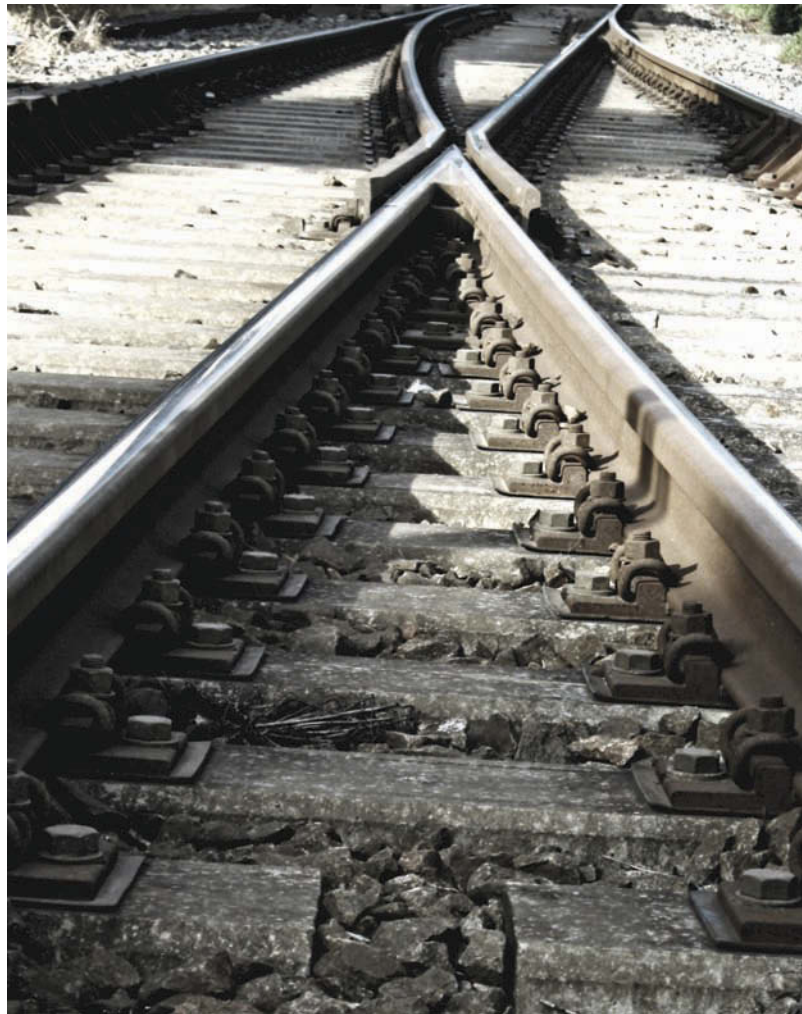
Regardless of its proved increasing importance for successful performance of companies, the current state of environmental accounting and environmental management accounting practices in almost all countries is still characterized by experimentation and lack of harmonization. It is particularly true for Bosnia and Herzegovina. Hence a variety of challenges in front of academic and business society to be resolved in the future.

Developing of appropriate environmental accounting standards. Environmental management systems and reporting frameworks have been established by some of the world's leading environmental organizations, standards organizations, industry associations, and professional bodies. As these frameworks are increasingly adopted in industry, the accounting bodies represented by IFAC-International Federation of Accountants are likely to increase their efforts towards developing appropriate accounting standards.

Enhance the responsibility of companies to internalize by means of environmental accounting greater portion of social costs related to environmental degradation and pollution. Currently companies are predominantly concerned only with those aspects of environmental issues that have direct impact on their financial bottom-line and those for which are held legally responsible. Companies account for plant and equipment depreciation when calculating profits, but no deduction is made for the degradation of natural capital (ecosystems, oceans, forests and the like).

Enhance the existing narrowly defined primary goals of environmental accounting which according to US EPA are as follows: **a)** Increase of stakeholder value by decreasing costs and increasing productive efficiency; **b)** Move environmental costs out of overhead accounts and track them directly to the responsible product, process or facility; and **c)** Estimate the dollar costs of waste and related activities, in order to identify the best opportunities for improvement and cost savings.

Better valuation techniques for natural resources and environmental resources are desperately needed. Traditional price



theory should be enhanced to incorporate new issues and transform currently inadequately monetized environmental effects and facilitate their incorporation into accounting practices.

In summary, the challenge which will definitely continue to be the one among the most important challenges in the future is how to translate general sustainability goals into concrete and operationally mean-

ingful concepts, policies, measures and indicators at micro level, as well as how to incorporate relevant environmental issues into different branches of mainstream economic theory and practice of business strategic and operational management. This means the challenge of the further appropriate development of environmental accounting in general and particularly environmental management theory and practice.

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