

# APPROACHES OF THE ENVIRONMENTAL MANAGEMENT OF INDUSTRIAL PRODUCTION

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*The article treats the environmental management of industrial production, which aims the management of the environment as a concern both for the economic operators, the public administration and national or international institutions. In the presented conception, the environmental management of industrial production or the "green" management of production is a part of the production management, ensuring that the progress and the development of the production to be without negative consequences on the environment. Starting from the fact that the company is organized and managed so as to achieve, at any cost, his purpose, namely to obtain profit, which may represent a threat to the environment, in the need to constrain this organization through a series of laws and regulations, the paper presents a form of audit of the evaluation of the strategy of transformation in terms of performance security / environment.*

*Keywords: environmental management, industrial production, strategy.*

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## **1. Environmental management of industrial production: content, development, approaches**

*Management of environmental* is a science with an interdisciplinary character and integrity, having as object of study and research environment as a public good and auto-reproduction based system, taking into account the close relationship of interdependence that the economic environment. It aims to achieve a rational management of resources, to assess damages and costs related to the environment, establish economic instruments of environmental policy, repercussions micro and macro-economic measures and means of environmental protection etc. Environmental management must assume a major role in decisions that the efficient management of the environment by man, it must be in the position of partner nature, are held and work in accordance with the laws of nature .

Environmental management of industrial production and managing "green" production is part of production management, ensuring that the pursuit and development of production, means that the production management, to do without negative environmental consequences. He is to study, so, environmental industries.

In Western Europe, while, three steps are outlined in the Heads of businesses and staff education, in relation to the environment, namely:

- Rationalized denial;
- Therapeutic shy;
- The management responsibility.

a) *Denial rationalized* was a dominant attitude of those responsible for businesses in Western Europe until the early 70s. They argued on the basis of demonstrations supported by industry figures that do not pollute and services. In very rare cases, they showed that the phenomenon existed, but the balance is very positive, including the environment and are not cause for concern. Also responsible businesses claimed that any industrial process is under control, except for a few unforeseen accidents.

In Eastern Europe, until before 1990, the environment was considered as an acceptable price to be paid to improving the living of the population.

b) *Therapeutic shy* appeared in major industrial groups in the early 70s.

Due to public pressure and legislation increasingly sensitive to it and aware of their responsibility to their immediate managers of the industrial and services are even more equipped with technical means to fight against pollution. At the same time, they invent more effective ways to combat environmental degradation. The so-called *risk management* began to develop at least the heavily polluting enterprises or high-risk environment.

Currently, the concept of negative therapeutic shy of fighting against pollution and substituted the concept of a positive *policy environment*. In parallel, experimental methods are developed to put in the work of such a policy, devansând of the limited technical and technological issues relating to the environment.

It points out however that these methods are now confidential, closed to both having the size necessary to invest. They are, however, ignored the small and medium enterprises, although they also need methods.

c) *The management responsibility*, in the sense of a coherent environmental policies and responsibility dates from the '80s.

Method legal environmental audit came from the need to follow, to understand and apply the increasingly numerous, complex and often contradictory to the laws and regulations require.

Ensemble methods and policies for environmental management have been summarized in a *green strategy* by the heads of enterprises, the need to ensure a certain consistency in policy to promote the environment.

For each area of activity of the answer to the question: *What should I know a director of production, marketing, human resources, research, etc.. About environmental issues?*

The next activities (functions) are analyzed: trade, the production, the administrative, legal and financial activities of human resources, research-development activity in the general direction.

The production or processing. This is the most profound implications on the environment and for these reasons, the question stăpânirii processes processing or processing strategy and green feature is directly related to the economic sector analysis.

The need to measure and optimize the processes of transformation from upstream during the phases of processing or manufacturing and execution, and downstream activities.

Diagnosis of "green" of the transformation process are the:

- Supply strategy;
- Transformation strategy;
- Strategy development studies and methods;
- Strategy of finished goods and services after sale.

There is a close link between the promotion of an enterprise-wide green and functions related to the production and quality control and assurance of security and organization, so that in some companies, a single service that manages the three activities: security service-quality environment.

Transformation processes or processing, and other economic activities can have a strong negativ impact on the environment, a framework biogeologic such as nuclear activities, mining and processing of minerals (gold, zinc, aluminum, copper, etc..) construction of dams, the extension of airports, motorways etc existence. It is necessary to ensure a balance biogeologic in any situation in which industry and services have their role, not only neutral (no influence), but positive (improving). Be measured by, for, example, infiltration of zinc and aluminum in soil, groundwater contamination of water and water flowing.

It is estimated that the model based methods and tools of management and business planning are not adapted to take account of environmental responsibilities, which should be the concern of any manager.

Maladjustment mentioned is because the methods and tools for management and planning are based on postulated traditional consumption, which is undertaking a coherent set of individuals and groups, having a single identity, namely that of their enterprise, and one end all the enterprise.

That enterprise is organized and managed so as to achieve at any cost making its purpose, namely obtaining a profit, can represent a threat to the environment. For these reasons, in all countries with advanced economy, it was necessary to hold this organization through a series of regulations and laws to reduce the destructive capacity in relation to the environment.

## 2. The concept of sustainable development

Omission of the costs and negative effects to environment and health human economic activities have led some consequences to be borne by the whole society. Imposed rethinking and redesign the organization and how to conduct economic activities and achieve the transition to a new behavior and way of life and admitted under controlled environmental and human aspect.

The last decade of the century XX century brought to the fore, the problem of sustainable development, a concept which is more comprehensive compared to the ecological development. An essential factor of the rapid spread of this concept is linked to the end of the Cold War and the installation of the democratic system in the countries of Central and Eastern Europe.

At present, the international community is unanimous agreement to consider that we live in a "global risk society" (Risk Society World - WRS), because the challenge of risk as a result of human actions, in a limited space and time, spreads globally.

Perception state of WRS is in three areas: global society itself becomes an object of study, admission risk on a global scale will lead collaboration within the international community, the need for urgent measures perception of risk is determined on a global scale will impose pressure on political factors to reduce risks industrial activity, which may lead to a collapse of society, without achieving sustainable development.

The concept of sustainable development (SD) with guidelines for the future was launched at the presentation of the report entitled "Our Common Future „(known as " The BRUNTLAND Report") in the work of the World Environment and Development, is defined as" *type development ensure that the needs of present without compromising the ability of future generations to meet their own requirements.*"

This concept has been accepted and supported by the scientific, political and economic world, and being taken by the Conference in Rio de Janeiro in 1992.

In general, the concept of sustainable development involves ensuring performance on three coordinates:

1. *In economic*: increased resource recovery and removal losses of non-renewable resources;
2. *On the ecological*: avoiding environmental degradation;
3. *On the socio-cultural*: ensuring living conditions and human achievement.

As a general objective of sustainable development, shall be a finding optimal interaction of four systems: *economic, human, environmental and technological*, are in a dynamic and flexible working to meet targets. Under these conditions achievement of SD requires major change in economic policies and environment, leading to reduced resource inputs per unit of useful effect.

For the World Commission for Environment and Development, SD is defined as the transformation process in which the exploitation of resources, targeting of investments and targeting techniques and institutional changes taking place in harmoniously.

Achieving sustainable development involves meeting several requirements, namely: *resizing economic growth* based on a more equitable distribution of resources and a stronger emphasis on the qualitative side of production; *eliminate poverty* with basic needs relating to employment, housing, food, energy, water and health; *population growth* to ensure an acceptable level in order to brake the uncontrolled population growth; *conservation and enhancement of natural resources, monitoring the impact of economic development on the environment, technology shift* and control risks arising from it; *decentralization* forms of governance and increased participation in decision making; *unification decisions* on the environment and economy; *maintaining and broadening the diversity of ecosystems*.

Sustainable development is a model of economic growth in which is placed restrictions related to the necessary balance between the economic system (created by humans) and natural, which created the man.

To achieve sustainable business must take into account in determining the value in equal measure, economic, ecological and socio-cultural, based on applying the concept of balance.

Currently, the classical approach tends to business, that the main objective is to maximize profits through a fierce competition on the market, to be replaced by a holistic approach and pursuing other goals: that all those involved, environmental protection, social responsibility, etc.. It follows therefore that a business relationship with the company includes positioning its products or in relation to environmental dimensions.

Ultimately, sustainable development involves stimulating firms to design and put into service production systems "friendly to the environment."

As was mentioned in connection with sustainable development have emerged many new definitions of activities, processes and business results, such "green competitiveness", "green productivity", "green marketing", "green technology", etc. All of these approaches was based on the importance of sustainable development impact in the socio-cultural.

### **3. Environmental externalities (external costs) and internalize costs of environmental protection**

The activity of producing goods economic effect on two plans:

- Recover higher material factors, natural and human;
- May cause a degradation of the natural environment, due to the use failure of these factors.

A shortcoming of the financial management in market economies is that prices for a base purchase decisions and guide resource allocation rarely reflect the true costs of environmental degradation.

In a market economy, the pursuit of obtaining a higher profit leads to accelerated environmental degradation, a fact illustrated by a rich literature in the field.

Externalities are defined as any gain or loss is sustained (sustained) from outside, as a result of action initiated by producers or consumers and not paid any compensation.

A creative activity of economic assets which depends on externalities can be described using the following relations :

$P = f(A_1, A_2, \dots, A_n, E)$ , in which:

P is Profit Company;

$A_1, A_2, \dots, A_n$  - business activities that depend on profits

E - business-to influence other companies, called externality.

Externalities E is not compensated in any way and it appears if there is an interdependence between the activities of at least two firms, but lack any form of mutual reward of any kind.

Therefore, one can say that externalities occur where an economic activity is not determined exclusively by the variables that he controls, but also the external variables of his decision.

In the analysis externităților, intervening two categories of costs, as social cost (SC) and the cost of private (CP), called the corresponding marginal costs.

Social cost (SC) consists of all costs incurred by community members as a result of an organization, being composed of the private cost of achieving product (CP) and the cost of pollution or, more generally, external costs (EC) that is:  $SC = CP + EC$ .

It was assumed that a manufacturer who produce a quantity of products Q and pollute the environment, in which case the demand curve for its products is C, and the private marginal cost of product completion is CP. Marginal social cost (CS) and the realization of related pollution (EC), obviously, is higher than HP, this results in Fig. 14.2.

In Fig. 14.2 are given these types of costs.

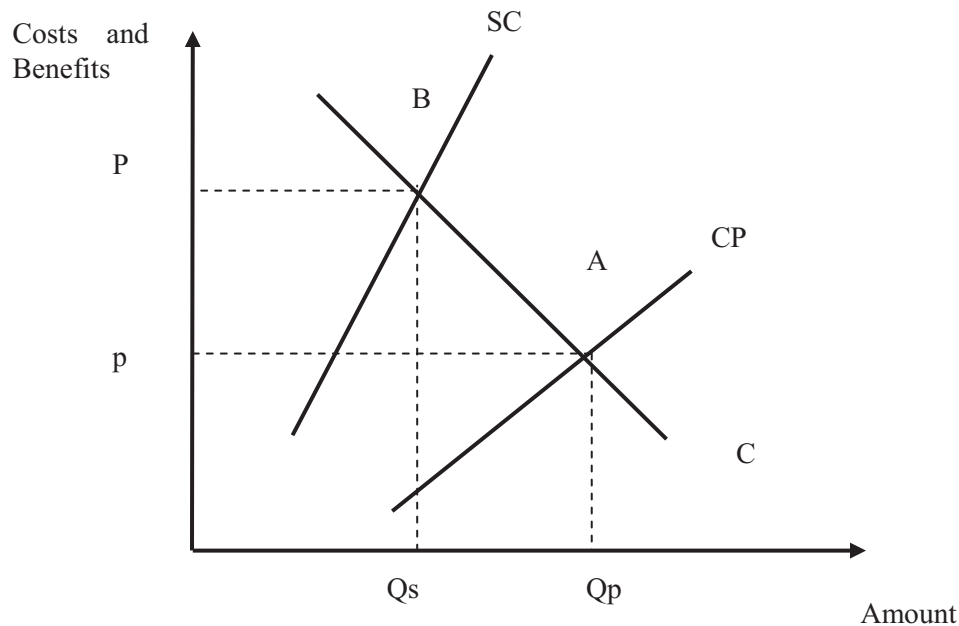


Fig. 14.2

If the manufacturer is not obliged to take measures against pollution, he will seek equilibrium point A, which corresponds to the price  $p$  and quantity  $Q_p$ , acting at the same time to maximize profits related quantity  $Q_p$ . This behavior is not beneficial to society because it does not bear the negative consequences of pollution.

If it is taken into account the costs of pollution, the efficient production of  $Q_s$  is obviously smaller than  $Q_p$ .

Behavior corresponding to point A firm and level of production  $Q_p$  characterized by the following: the company achieved a production quantity  $Q_p$  greater than the optimal level of production  $q_s$  corresponding to point B, when taking into consideration the costs of pollution, the firm emit additional pollution environment at the situation depicted is effective B; product price rise of pollution is lower compared with the situation taking into account the cost of pollution ( $p < P$ ) company is stimulated to reduce pollution as long as it does not bear the costs of pollution; Whereas it is cheaper of pollute the environment, implementation of effective measures to eliminate pollution is discouraged.

Resource allocation through the free market is distorted is the existence of externalities. In order to correct the distortion allocation and to internalize externalities (external costs), was created polluter pays principle (Polluter Pays Principle) = PPP, which has two important functions:

- a) establishes liability for the pollution produced;
- b) determines the setting of prices for environmental resources, so that producers take account of their importance in the production.

To ensure an effective use of the real factors of production, the emphasis on the impact of human activities on natural environment, the only viable solution is to include expenses for environmental protection in production costs.



Need internalize external costs in market economy is necessary for the following reasons:

- External costs are part of the total cost of production which has the effect of environmental negative and are therefore cost effective;
- Whereas prophylaxis reduces or eliminates the therapy is important to consider since phase studies on economic and technical investments, the setting of targets and their realization antipoluante, while running with the entire investment;
- To establish the total cost must be taken into account the economic efficiency of the technique new dependent care expenses on the manufacturer to make them assimilate them in order to avoid degradation of the natural environment. For these reasons, should be excluded from consumption goods, works, services and technologies that have a social cost (or damage caused to society) beyond individual benefits. The current re-structuring and economic branches are the new guidelines in the field of technical progress to ensure the restructuring of energy and polluting industries.

#### **4. Economic and financial instruments and administrative costs relating to the internalization environment and natural resources**

Rational management of natural resources, as noted, must be based on a coherent set of tools, methods and strategies, which are known and applied by managers.

Integration of environmental protection in economic and management practices and market mechanism presupposes the existence of tools consisting of:

- a) standards;
- b) permits, licenses and other authorizations;
- c) economic and financial tools and specific administrative;

Arsenal of these tools should consider the ability and breeding regeneration of resources for environmental and market requirements of goods and production inputs (machines, plant, machinery, equipment).

a) *Standards* are technical regulations are standards that define the environment and determine the permitted level or concentration of substances (particles released in water, air, soil or existing products). They differ most categories of standards related to environmental protection, as environmental standards, emission standards in the tributaries, technological standards and performance standards, product standards, process standards.

b) *Permits, licenses or other authorizations covers* assigned based on compliance certain rules and standards, along with fulfilling other specific conditions conducive to minimizing the negative effects of human activities on the environment. Such tools include mandatory environmental controls and may be withdrawn or suspended in relation to the environment.

c) *Economic and financial instruments* relate primarily to various charges for land use or emission of polluting waste. Thus, „land use fee for state property for purposes other than agriculture and forestry”, nr.69 regulated by law since 1993, was introduced to avoid removal from circulation of some important economic agricultural area. It is awarded annually by the autonomous, companies and other legal entities for state-owned land under administration or use them with other destinations than agriculture or forestry. Tax on the emission of polluting waste is designed to fit all economic agents that cause pollution in the maximum allowable. The fee for the use of state-owned roads is determined according to the situation existing at the first land in January of each year, based on the declaration made by the payer.

It is emphasized that the widespread application of the concept of sustainable economic development, to internalize social costs and accurate assessment of the effect of global production and consumption is a prerequisite for maintaining a healthy environment that is transferable to future generations.

**Bibliography**

1. Ardelean A. , Maior C. – Management of Environmental , Masthead Servo-Sat, 2003;
2. Camasoiu C. – Economy and defiance of nature, Masthead Economic, Bucuresti, 1999;
3. Coman Gh. ,Murgu Z. – Economic Environment, Masthead Moldovita, Iasi, 1996;
4. Heza M. – Intreprinderea secolului XXI – Intreprinderea inteligenta, Editura Economica ,Bucuresti , 2001;
5. Jaba O. – Production and Operations Management, Masthead Sedcom Libra, Iasi, 2007;
6. V. Mandroviceanu – Renewal strategy of the firms in machine building industry, PhD Thesis, University Al.I. Cuza, Iasi, FEAA, 1998;
7. Paul de Backer – The green management, Masthead Demod, Paris, 1992;
8. V. Soroceanu – Economic Growth of the natural environment, Masthead Economic, Bucharest, 2000.