BUSINESS AND THE ENVIRONMENT

editors
Tomasz Dorożyński
Anetta Kuna-Marszałek

WYDAWNICTWO UNIWERSYTETU ŁÓDZKIEGO

BUSINESS AND THE ENVIRONMENT

WYDAWNICTWO
UNIWERSYTETU
ŁÓDZKIEGO

BUSINESS AND THE ENVIRONMENT

editors
Tomasz Dorożyński
Anetta Kuna-Marszałek

WYDAWNICTWO UNIWERSYTETU ŁÓDZKIEGO
ŁÓDŹ 2016

Tomasz Dorożyński, Anetta Kuna-Marszałek – University of Łódź, Faculty of Economics and Sociology, Department of International Trade, 90-255 Łódź, POW Street no. 3/5

REVIEWER
Edward Molendowski

TRANSLATOR
Beata Połowińska

NATIVE SPEAKERS
Mark Muirhead, Derrick Cook

INITIATING EDITOR
Iwona Gos

PROOFREADING AND TYPESETTING
AGENT PR

COVER DESIGN
Stämpfli Polska Sp. z o.o.
Cover Image: © Shutterstock.com

This book has been published under the project „The creation of new interdisciplinary curricula in the field of economics of environmental protection (in Polish and English) at the University of Łódź" supported by a grant from Norway through the Norway Grants and co-financed by the Polish funds.
(Agreement No FSS/2014/HEI/W/0124/U/0014)

Published by Łódź University Press
First Edition. W.07304.16.0.S
Publisher's sheets 8,0; printing sheets 9,375

ISBN 978-83-8088-016-0
e-ISBN 978-83-8088-017-7

Łódź University Press
90-131 Łódź, Lindleya 8
www.wydawnictwo.uni.lodz.pl
e-mail: ksiegarnia@uni.lodz.pl
phone (42) 665 58 63

CONTENTS

http://dx.doi.org/10.18778/8088-016-0.01

PREFACE

Social and economic development exerts an increasing pressure upon the environment and is the source of numerous environmental threats. Being aware of these issues leads to concrete steps that can be taken by the government (e.g., adopting laws that help reduce pollution), as well as by enterprises (e.g., through exercising corporate social responsibility, environmental management or the eco-labelling of products). It means that business activities, until relatively recently ago juxtaposed with environmental attitudes, more and more often need to take account of the consequences they have on the environment.

The textbook *Business and the Environment* discusses current pertinent issues connected with making businesses more environmentally friendly. It is addressed to Polish and foreign students but also to managers, consulting companies staff, business environment organisations and public administrators at various levels. The authors have assumed that the readers are acquainted with the basics of economics and management, familiar with the processes that take place in global economy, realise the environmental threats connected with human activity, and are interested in reducing them. Hence, we make little reference to the theory as our intention was to present, in a concise form, only practical issues with as many real-life examples as possible.

The publication is the result of a project which involved the authors who are research staff of the Department of International Trade of the University of Lodz[1] and consists of six chapters. The first one identifies major global environmental threats that result from the intensification of international trade, which is the effect, but also the root cause, of increasing production and consumption. These include overexploitation of soils by agriculture, predatory mining, cutting down tropical forests or intensive fishing.

The second chapter explores corporate social responsibility. It describes the practical inclusion of the idea in business management. It also gives arguments for socially responsible business and the benefits of adopting such an approach.

[1] The project „The creation of new interdisciplinary curricula in the field of economics of environmental protection (in Polish and English) at the University of Łódź" implemented in the years 2015-2016 and supported by a grant from Norway through the Norway Grants and co-financed by the Polish funds.

The third chapter explains the system of eco-certification, its types, major characteristics and the business effects of eco-labelling products and services. Increasing social environmental awareness has made eco-labelling one of the main determinants of consumer choices and, in response to that, enterprises build up their environmentally friendly image and eco-label their products.

The fourth chapter is devoted to environmental management systems. It outlines benefits of management strategies that enable the negative environmental impact of corporate activities to be monitored, evaluated and minimised. Such strategies are favoured by, inter alia, the formalised environmental management system, EMAS, applied by the EU.

Chapter five discusses the environmental marketing strategies of enterprises. They are increasingly often the vehicle for the implementation of corporate social responsibility. That is why we have identified the types and characteristics of these strategies in concrete applications.

The sixth chapter explains basic terms connected with the market of public procurement in Poland in the light of binding EU regulations. The rest of the chapter focuses on the so-called green public procurement, i.e., procurement that respects environmental protection requirements.

We would like to gratefully acknowledge the valuable comments of the reviewer, Professor of the Cracow University of Economics, Dr hab. Edward Molendowski, and thank the experts in the project, Professor of the Warsaw School of Economics, Dr hab. Mirosław Jarosiński, and Dr. Edward Karasiński, from the Lodz Society of Science.

http://dx.doi.org/10.18778/8088-016-0.02

Chapter 1

International trade and the environment

Anetta Kuna-Marszałek

1.1. Contemporary international trade – general tendencies

Contemporary international trade has been developing as a result of liberalisation in the world economy, which has visibly accelerated its pace over the past few decades, and today takes place within the existing regional groupings and on the World Trade Organisation (WTO) forum. Nowadays, it would be difficult to find a single country not participating in international exchange. International transactions take place at a number of different levels, and in various forms or configurations, thus being far from the traditional understanding and perception of international trade. It is worth stressing that contemporary trade is not only about the exchange of goods and services, but increasingly, about trading in licenses, patent rights or – due to migrations – even capital. What is more, contemporary international trade is perceived as a factor that impacts economic development of countries and regions and reinforces economic transformation processes.

By international trade we mean the entirety of transactions between all countries or within groups of countries (most often under integrated structures). One can point to a number of factors shaping the development of international trade, namely: political (political or military conflicts at the international scale or the absence thereof) and economic factors (prosperity in international markets translates into increased demand, including imported goods), trade policies pursued by countries (liberalism/protectionism), technological (development of technologies, including modern development trends in means of transport and communication) as well as institutional factors resulting from the activities of international organisations (e.g. GATT, WTO, IMF). The pro-active attitude of the latter and their activities fostering liberalisation ideas usually lead to increased openness of trade and to the establishment of rules and regulations facilitating

the execution of commercial transactions (e.g. settlement of commercial transactions). This applies also to procedures governing contractual arrangements or the rules for the application of commercial policy measures.

Since early 1960s, we have observed immense growth in world trade: between 1970 and 2013, the share of exports in global production doubled, and today it accounts for over 25% (www.wto.org 2015). In the early years of this period, elasticity of exports (the ratio of exports growth to production) was 1.5%, while in 1986 it was already growing considerably, to reach over 2.5% by the end of the 1990s. This acceleration resulted from the fall of the centrally planned economies in Central and Eastern Europe as well as from the opening up of Chinese and Indian economies and their pro-export strategies (Dugiel 2000, p. 9).

The **most important characteristics of contemporary international trade** include:

- trade growth dynamics – changes in export and import dynamics are higher that the dynamics of GDP change, a growing share of exports in GDP is observed. Between 1948 and 2014, global exports in goods grew (in value terms) from USD 58bn to USD 18.5 trillion, i.e. over 300 times, whereas global GDP grew ca. 8 times within the same period (www.trademap.org 2015);
- the growing share of services in international trade (growth from 15% in 1980 to 26% in 2014). Currently, services represent ca. 65% of global GDP (in highly developed countries this share amounts on average to 75%). In 2014, global exports of services exceeded USD 4 trillion, while the average annual growth rate in value terms was ca. 8% (www.wto.org 2015);
- the growing share of developing countries in international trade in the exports of developed countries. Despite their constant domination in global trade, economically developed regions are gradually losing their importance. Their share in the world's exports in 2014 was only 55%, whereas in 1995 it amounted to 70%. Highly developed countries are gradually making room for the rapidly developing economies of South and East Asia and Latin America;
- the increase in intra-industry and intra-firm trade. This illustrates the growing dependence on the import of parts and components manufactured within the same branch of industry and even within the same corporation.

As mentioned above, trade in services, know-how and technological thought has been growing in importance in contemporary trade. This is a natural effect of

the servitisation of developed economies, understood as the growth of the service sector in GDP and employment structures. All this takes place in the wider context of technological advancement, resulting from the exploitation of knowledge created within the process of education (Michalczyk 2007).

1.2. International trade and demand for environment functions

The environment performs two basic functions in the economy. Firstly, it is the source of natural resources, which means it provides natural commodities (e.g. water, air, soil and raw materials) to be used in economic activities. Its other function is in providing the possibility to remove waste produced as a result of human economic activities into the environment. Both functions were presented in detail by Budnikowski (1998, p. 67; see figure 1.1.), who divided natural resources into non-renewable (energy resources, metal ores depositions) and renewable (sea fish, forests).[1]

The negative impact of international trade upon the environment results from considerable growth in demand for both of the aforementioned functions due to intensified trade. International trade produces increased pressure on the natural environment and its resources in both direct and indirect ways. The direct impact is mainly the effect of greater intensity of transportation (growing demand for fuels, with fuel consumption leading to increased emissions of pollution to air, risk of ecological disasters) and excessive – compared to the capacity of local ecosystems – concentration of production (as a consequence of export specialisation patterns). The indirect impact is caused by the influence of international trade on economic growth. This, is turn, means greater demand for natural resources and increased emissions (due to resource extraction and processing).

International trade seriously overburdens the environment. Building and using roads and transportation networks, exploitation of arable land to grow ever increasing amounts of products, excessive extraction of resources, air pollution with exhaust fumes or storage of poisonous and radioactive waste, provide a justification for such an opinion. The scale of risks resulting from disturbances in environmental sustainability and the need to protect the environment are often used as an excuse to introduce barriers to global trade.

The difficulty in precisely estimating the impact of trade upon the environment is even greater if we consider how hard it is to identify the value of its

[1] The division into renewable and non-renewable resources is a simplification. In literature on the subject, this division is much more complicated. Detailed classification of natural resources based on a number of different criteria, was provided, for example, by Jakubczyk (2002, p. 122–125).

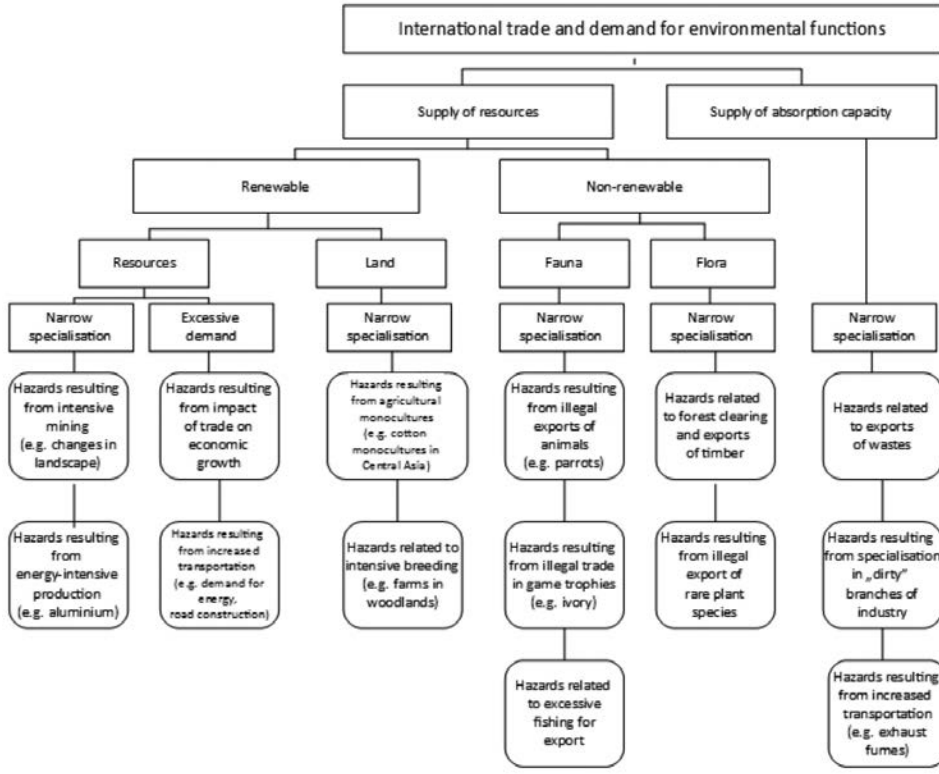

Figure 1.1. The environment and its primary functions

Source: Budnikowski (1998, p. 67)

renewable and non-renewable resources, so important for the management thereof. These are integral common goods that meet various individual and societal needs and the estimation of their 'natural' (market) price poses a number of problems. Even though theories have generated several approaches to the valorisation of, e.g., non-market renewable resources (the individual preferences theorem, the hedonist theorem as well as the contingent valuation and the alternative cost theorems), in most cases attempts at any valuation of these resources may raise serious doubts.[2] The growing dependence among economies resulting from globalisation is accompanied by the interconnection of natural systems. Air and water know no borders, therefore, external effects may arise on an international scale. According to Budnikowski (1998, p. 64), the environmental impact

[2] More on the subject in e.g. Szyszko et al. (2013).

of international trade is well illustrated by Rees's (1992) metaphor of the 'ecological footprint'. It was defined as an area of closely interconnected areas of productive land and sea ecosystems required to produce the goods consumed and to assimilate the wastes generated. The ecological footprint at the beginning of the 1960s amounted to 0.49, whereas in 2011 as much as 1.5, which means that the world population uses currently 150% of the earth capacities related to resource exploitation and pollution absorption. It should be stressed however, that during the last 40 years the ecological footprint measured in global hectares per 1 inhabitant of the Earth (the estimated number of hectares of land and sea surface needed to compensate for resources used for consumption of absorption of wastes) amounts to ca. 2.5–2.8 (footprintnetwork.org 2015).

1.3. International trade and demand for resources

The last decade is characterised by the fast growth in prices of resources in international trade, resulting from, among others, the demand of the so-called emerging markets. Dudziński (2013) calls this phenomenon the '21st century resources boom'. In international trade, we observe the growing demand for almost all kinds of resources, but mainly for energy resources. One of the outlooks by the World Bank suggests that by 2030 the demand for energy will have risen by over 120% (with ¾ of this growth to be consumed by developing countries), including the doubled demand for crude oil[3] (Global Economic Prospects, Commodities and Crossroads 2009).

In today's world, a clearly visible shift in energy demand towards the non-OECD (most developed) countries can be observed. Is it estimated that energy consumption in these countries will grow by 2.3% annually by 2035. To compare, growth in OECD countries should not exceed 0.2% between 2012 and 2035, with a strong declining tendency after 2030 (BP Energy Outlook 2035 2014, p. 9).

The depletion of basic natural resources (including raw materials and primary energy sources) is seen as a serious threat. The issue was very much highlighted in the 1970s, characterised by a serious energy and ecological crisis. The report *Our common future* (1987) stressed that prices of non-renewable resources would grow in parallel with their increasingly difficult accessibility. Moreover, the report contained a warning indicating that high levels of economic growth take

[3] This assumption was made under the expectation that no progress will be made in energy generation efficiency.

place at the expense of future generations, who will be forced to limit the consumption of some goods due to the depletion of resources. A number of countries suffering from a resource deficit try to secure their supplies in international markets. For example, the European Union opposes the impediments imposed on access to resources in third countries through the introduction of measures that distort free trade (European Parliament Resolution of 20 May 2008 on Trade in Raw Materials and Commodities 2009).

As already mentioned, a particularly important role is played by energy resources and primary energy carriers (e.g. crude oil, coal, natural gas and uranium). The key problem is that they cannot be recycled, and their exploitation results in the production of gas, dust and heat pollution. This, in turn, gives rise to ecological threats, e.g. the production of carcinogenic and flora-degrading dusts, the emission of gases producing acid rains and heat pollution. Metals, in turn, via their gasiforms and radioactive waste, affect human health and the quality of foodstuffs. The use of chemical resources results in disturbances in natural biogeochemical processes (Czaja 2002, p. 398).

1.4. Impact of export promoting specialisations on the environment

1.4.1. Intensive agriculture and degradation of soil

In underdeveloped countries, specialisation in production leads to degradation of soils, resulting from excessive intensification of agricultural production as well as its monoculture character. The processes observed in Central Asia are a good illustration of the thesis. Agriculture in countries of this region was once capable of feeding their population for a number of centuries. From the moment these countries got included in the centrally planned economy, traditional crops were replaced with the mass production of industrial crops (e.g. cotton), which led to considerable degradation of soil in these regions. Similarly, in a number of countries, the extraction of crude oil and natural gas results in significant devastation of the environment, in particular, pollution of large areas of soils and groundwater.

A number of hazards for the natural environment are caused by intensive farming. These result from the scale of crops or the demand for energy resources from the sector. Besides this, the intensification of farming, aimed at increased efficiency, causes excessive use of production means, such as agricultural machinery, mineral fertilisers or plant protection products. Excessive use of machinery may, for example, develop watertight layers of soils, which, in turn, result in their lim-

ited aeration, permeability of water and filtration. Moreover, constant cultivation speeds up the oxidation of organic substances resulting in a decrease in its fertility.

Overly intensive agricultural production or export-oriented monocultures in agricultural practices (growing coffee, cocoa or cotton), replacing traditional and diversified agricultural production also contributes to overexploitation of the environment. Former USSR Republics, such as Uzbekistan or Turkmenistan, one of the world largest producers and exporters of cotton, provide a good example of areas characterised by monoculture practices.

The impact of cotton production on the environment – the case of the Aral Lake

The Aral Lake, situated on the Kazakhstan/Uzbekistan border, was formerly called the Aral Sea. It is a landlocked, saline, endorheic lake in the desert area of the Turan Lowland in Central Asia. Formerly supplied by two rivers, Amu Darya and Syr Darya, today it relies mostly on precipitation. There are numerous islands within the Lake's basin, with their number growing as the water level falls. The largest of them are: Vozrozhdeniya Island (translating into Rebirth or Renaissance Island), Barsa Kelmes and Kokaral.

The Aral Lake covers part of the Aral-Syrykamysh depression, stretching along the Eastern foot of the Ustyurt Plateau. The Aral Lake surroundings are amongst the most ecologically endangered areas in the world. The desiccation of the Aral Lake resulted from a major reshaping of the environment owing to the needs of the fast-developing Soviet industry. It affected mostly certain former USSR Republics, including Uzbekistan and Turkmenistan. The authorities of the newly-created Soviet Union, decided that the Karakum Desert area would become a cotton growing region. To this end, along both rivers feeding the lake, a number of irrigation channels were built, very often against the basic canons of hydrology. The obvious result of this irrational policy was the desiccation of the basin. Whereas in 1960 its surface amounted to 68k sq. km, today its area has decreased by almost 90%. Its bed nowadays forms a new desert, stretching between Uzbekistan and Kazakhstan.

Cotton growing in these countries has led to soil erosion, while attempts to irrigate fields with water from rivers – contributors to the Aral Lake – has led to a total destruction of the region's fauna and flora. A saline desert, with an area of over 40k sq. km, has replaced the former lake. Salty dust, travelling – depending on wind strength – as far as 500 km from the desert, also constitutes a hazardous factor, contributing to degradation and erosion of soils, thus leading to environmental disaster. Additionally, the mezoclimatic changes

(towards a more continental climate) are now observed in the area, meaning that summer months get hotter and winters longer, which has also led to the shortening of the vegetation period. Growing salinity and shrinking water areas adversely affect local agriculture and diminish the productivity of the soil. The Amu Darya delta has been particularly badly affected: with forests growing along the river dying out. Continuous extension of artificially irrigated areas and dependence of cultivated crops on access to water lead to its excessive consumption, which, in turn, lowers the level of groundwater. This has become highly saline, toxic (due to excessive use of DDT and other harmful chemicals) and undrinkable. As a result of this unreasonable human activity, a number of fish species have also disappeared.

Source: Bielecki (2010).

1.4.2. Deforestation

Deforestation designed to create more arable land resulting from increased international trade constitutes another problem for the world economy. Rich literature on the subject clearly suggests that growing demand and prices (in international markets) for agricultural and timber industry products result in the broadening of deforested areas. The following authors provided analyses for individual countries: Angelsen (1999) – Tanzania, Arroyo-Mora at al. (2005) – Costa Rica, Pacheco (2004) – Bolivia, Morton et al. (2006) – Brazil or McAlpine (2009) – Australia.

Mass clearing of forests causes massive devastation in Africa, Caribbean and Pacific countries and Latin America. In many cases, this results from the activities of international companies interested in maximising profits and ignoring any side effects of their activities. The consequences of such behaviour affect not only the environment but – first and foremost – the economy. In some countries (e.g. in Nigeria or the Philippines) where exploitation of woodland resources by international corporations is intensive, deforestation has become a nation-wide problem. As a consequence, these countries not only lose the possibility to export forestry products, but also the jobs and income that might be generated by the forest and timber industry (Nordstrom, Vaughan 1999).

It is worth stressing, that in the last three decades[4], the global area of forests has decreased by ca. 50%. According to Laurance (2010, p. 73), 25 countries have

[4] Although deforestation concerns mostly tropical forests, the temperate zone's forests are also highly endangered.

irrevocably lost their tropical forests, while other 29 states have lost over 90%. The deforestation ratio is highest in Asia (40%), followed by Central and South America and Africa. In some scarcely populated areas of South-East Asia, such as Borneo, Sumatra and New Guinea, forests have been replaced with oil palms and rubber trees plantations. It is also the case in Malaysia, Indonesia and Thailand, belonging to the largest exporters of both palm oil and natural rubber. In 2011, the share of Malaysia, Indonesia, Thailand and Vietnam in the total exports of natural rubber was as much as 87%. (FAOstat 2014).

The gradual replacement of forests with industrial crops represents a considerable threat to the diversity of fauna species. This is particularly harmful in the case of tropical forests, being the natural habitat for ca. 60% of all animal species known. It is estimated that in the future ca. 40% of animal species typical of the so-called biodiversity hotspots[5] will perish. According to BirdLife International, the same is deemed to happen – within the next century – with at least 13% of bird species, with 99% of them driven to extinction due to deforestation and hunting (Bradshaw et al. 2009, p. 81). Additionally, illegal international trade in rare animal species adds up to a decrease in the population of these fauna species.

1.4.3. Destruction of mangrove forests

Excessive specialisation of international trade contributes also to the destruction of other renewable resources. A good example may be provided by mass shrimp fishing (intended mainly for developed countries' markets), which brings about the extinction of mangrove forests in a number of developing countries, in particular those of the South-East Asia and East Africa.[6] Destruction of these forests leads inevitably to the loss of the basic functions of ecosystems, being natural habitats of fish and crustaceans species already on the brink of extinction. Other endangered functions of the mangrove forests are these related to their participation in land-forming (epeirogenic) processes, protecting the land from storm surges and the absorption of a substantial amount of CO_2 from the atmosphere.

The shrimp production industry has been exhibiting an upward tendency since the mid-20th century. In 1950, global production of shrimps amounted to 1,325 tonnes, which made up only 0.3% of the total production of all crusta-

[5] A biodiversity hotspot – a region in which there are at least 1500 endemic species, that is ca. 0.5% of the world list of endemic species (total number of endemic species: 300 thousand).

[6] For the last ten years, the largest producers and exporters of, among others, shrimps and mussels include China, India, Bangladesh, Vietnam, Indonesia and Egypt.

ceans originating mostly from coastal areas and rivers estuaries. Thirty years later, in 1982, global production of shrimps exceeded one million tons. By 2011, it had grown to almost 3.6 million tons, and represented 35% of global production of crustaceans both from fishing in seas and river estuaries (FAO 2015). It is estimated that ca. 1–1.5 mio. ha of global coastal areas are used for shrimp farming (intensive systems), with a severely degraded environment in 20–40% of these areas. Thailand is considered an extreme case, as the area of mangrove forests in the country was halved over the period 1960–1996. Ca. 200,000 hectares of mangrove forests ceased to exist, and one third of their area was transformed into shrimp farms. The negative effects of these farms can also be observed in other countries, inter alia, in Bangladesh, where since the early 1990s, specialisation in shrimp farming and their export has produced significant social, economic and environmental effects. These include, first and foremost, increased salinity, a dramatic drop in soil fertility, deforestation, irreversible destruction of coastal flora (mangrove forests included) and the disappearance of biodiversity (many species of flora and fauna, primarily fish).

The high concentration of organic compounds, chemicals and heavy metals, due to their intensive use in shrimp production, has led to eutrophication with an increased risk of harmful algal blooms, changes in the nutrition patterns of many marine animals, oxygen depletion (anoxia), toxicity of sulphite and nitrogen compounds (as a result of decomposition of organic matter), and increased morbidity (the low quality of sea water). All these developments have destabilised the coast, increased erosion and damaged coral reefs. Restoration of any eco-system is a long-term and often impossible exercise. Further negative consequences of industrial shrimp farming include the withdrawal from traditional business, such as growing rice or husbandry.

1.4.4. Intense fishing

Fishing as an export specialisation also adversely affects the environment. Nowadays, too much of the fish stock is still being overfished, above the maximum sustainable yield (MSY). This is the threshold which identifies the optimum annual catch that would not hinder future reproduction of fish stock. Exploitation of wild fish stocks for export purposes rapidly increased in the 1970s and 1980s, due to the development of fishing fleets, new fishing technologies and increased investments in the fisheries sector. By the end of the 1980s, despite increased fishing capacity, production of fish from wild fishing areas dropped or stagnated (Delgado et al., 2003, p. 2). By the late 1990s, developing countries were producing twice as much fish as developed countries, which, to some extent, was the effect of the creation of exclusive economic zones based on the United Nations Convention on the Law of the Sea.

According to Eurostat and FAO, the biggest global producers and exporters of fish are China (16.8%), Peru (7.8%), Indonesia and the EU27 (5.7% each), the United States (4.7%), and India (4.6%) (*Wspólna polityka rybołówstwa w liczbach* 2012, p. 20). Overexploitation of fishing grounds results in overfishing, which negatively impacts the environment. It causes reduced catches, a smaller average size of fish, increased by-catch or discards or reduced biodiversity in fresh and sea waters. Overfishing of at least one species distorts the balance in eco-systems, and stock restoration of late-maturing big fish species may take years. On top of that, the removal of older, bigger individuals with good reproductive capabilities reduces the regeneration capacity of the entire population. An example is the overfishing of cod in the North and Baltic Sea at the end of the 20th century, which disturbed the environmental balance in these regions. Its disappearance from the top of the food chain, caused by overfishing, changed the structure of the trophic cascade. Populations of seals, smaller fish species, snow crab, and the northern prawn considerably increased, while the amount of small zooplankton decreased. The latter is decisive for the development of phytoplankton, a natural inhibitor of algal blooms. According to common opinion, both climate changes and cod overfishing are the main reasons for the extreme transformations in the sea eco-systems of the Atlantic, North and Baltic Sea (Greene et al. 2008, p. 34).

Since 1990, trade liberalisation has severely reduced biodiversity in seas and oceans as a result of the overfishing of many fish stocks. Detailed analysis of data for individual species indicates a decreased fish population at the top of the food chain, since they represent the highest market value. The biggest problem is connected with the maintenance of the stock of big predators, the most valuable from a commercial point of view. Their overfishing changes the structure of the population and increases interest in further links in the food chain (the so called "fishing down the food chain"). According to Brocki (2011, p. 181), numbers of predators in the Northern Atlantic over the last 50 years has decreased by 2/3, and the trophic level of fish landed decreases by 0.1 every decade. Going down the sea food chain, results in harvesting less valuable species and exploitation of further stock. The disappearance of dominant species allows other species to grow and their abundance distorts the eco-system.

This problem may be solved by applying the rules of responsible fishing, defined as a situation when all components of the fisheries sector are sustainable. In 1995, at the FAO Conference in Rome, attended by 170 countries, the participants adopted a code that establishes the necessary framework for international and national efforts aimed at ensuring the lasting and sustainable exploitation of living resources of seas in harmony with the environment. At present, there

are many Regional Fisheries Management Organisations (RFMO), international bodies set up by countries fishing in particular geographic areas. There are ca. 20 RFMOs, covering a major part of global waters. Their role consists of managing, protecting and sustainable exploitation of sea species covered by respective conventions.

1.4.5. Mining and extracting of raw materials

Mechanical transformations of the earth surface connected with mining and extracting also negatively impact the environment. Surface mining is the simplest method used to obtain raw materials. In Poland alone, this method is used to extract ca. 40 minerals, inter alia, sands, gravel, loam, building and road stone, limestone, marl, sulphur, and brown coal. Huge surface mines are scattered across all continents, mainly in Australia, U.S., Canada, Chile, Columbia, Russia, China, India, Zimbabwe, and Zambia (Czaja, Becla 2007, p. 181). Some of these countries are also global top coal exporters. For instance, over the period 2007–2011, the share of Australia and Indonesia in global exports of coal was 49.4%. They are followed by Russia (11.1%), United States (7%), and Columbia (6.8%). Detailed data are given in Figure 1.2.

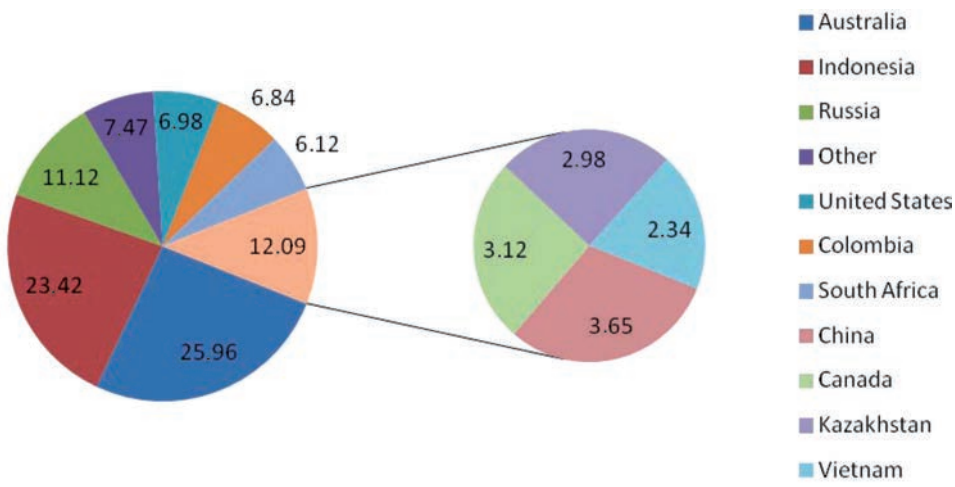

Figure 1.2. Share in global exports of coal in 2007–2012

Source: Author's own calculations based on International Energy Statistics, www.eia.gov (access: 22.07.2015)

In the environs of mines, which often cover several hundred square kilometres, the environment is badly degraded. This is due to severe transformations caused by surface mining and includes changes in (Nietrzeba-Marcinonis 2007, pp. 7, 10):

- geological structure and relief; emergence of new forms of landscape, depletion of soil layers; erosion, degradation and devastation of soils;
- water management (distortions in ground water systems; changes in surface waters; water contamination; arid land);
- in flora and fauna (direct destruction of habitats; loss of flora and fauna; degradation of plants);
- in soil structure (degradation, devastation, distortion in levels and layers);
- microclimate;
- type of land use.

Mining also rules out large areas previously used for farming or forests and reduces arable land. In Australia, in Bowen (Queensland), the negative impact of dust, volatile greenhouse gases, noise and vibration was observed. In that region, mining threatens underground water as a result of drilling, underground exploitation of raw materials or as a result of draining shallow groundwater. Saline water is a side effect of mining and increases the danger of flood and contamination of local eco-systems. Subsidence results in the formation of hollows, which hinder farming. Additionally, widespread damage caused by mining can also be observed in fixed assets, buildings, and infrastructure. Similar threats can be identified in other regions of Australia, e.g., Hunter Valley or Gunnedah Basin (both mines are in the state of New South Wales) (Franks et al. 2010, pp. 301–304).

Another example is a surface mine in South Sumatra in Indonesia, where coal resources are among the biggest in the country (33%, the second biggest). The vast majority of the extracted raw material is exported. The negative impact of mining and extracting is huge, which is reflected in the intense geomorphologic processes. Fatah conducted studies to answer the question of how the size of a mine and the scale of coal mining determines the environmental impact. We may expect that from the point of view of environmental protection, it is better to have many small mines which operate based on stringent regulations. Intensity of noise and transport should be reduced, together with soil degradation and erosion or costs of waste disposal. Calculations show however, that the contamination of the environment by each mine considerably burdens the environment and only marginally depends on size (Fatah 2008, pp. 95–97). The presence of

many small mines instead of one larger one will not solve the problem of any harmful impact.

Oil mining also adversely affects the environment, as it strongly impacts all of its components, e.g., the relief, water management, atmosphere, soil and flora. For resources under the seabed, changes are produced to its surface and the quality of water and air. These may be of substantial size and provoke disastrous effects, in particular when there are eruptions of formation fluids and leaks of drilling fluid from wells made from drilling platforms and when there are failures of tankers or oil pipelines. Contamination of the atmosphere is down to dust pollutions and contamination with gases produced by combustion engines, boiler houses as well as transport, construction of pipelines, storing waste and technological material. According to Dubiel, Matyasik and Ziaja (2010), open leaks of hydrocarbons from oil wells, oil fires outside of pipelines and siphons in gas drillings pose the biggest danger. Other harmful effects of mining include noise, light and changes in temperature (Dubiel et al. 2010, p. 573). Air-born contamination degrades soil and flora.

The environmental impact of the extraction of oil – the case of Nigeria

Nigeria is one of the biggest producers and exporters of oil in Africa. According to the UN report, it is also one of the most contaminated areas of the world, due to the exploitation of the environment (United Nations 2007, p. 7). The mining sector in the Niger delta produces ca. 85% of the GDP of the country, and is the source of 95% of revenue to the national budget. Paradoxically, the region remains the poorest part of the country, mainly as a result of the environmentally unfriendly exploitation of oil and the policy of depriving the indigenous people of their rights to raw materials. It is estimated that since 1975, over 80% of oil extracted in the region has been exported to foreign markets, and represented 90% of profits from exports in Nigeria (Ebegbulem et al. 2013, p. 279). This is the reason why the environment is degraded and why farmers' income has decreased over the entire area, which is confirmed by the studies of Inoni, Omotor, and Adun (2006) conducted on randomly selected households of 262 farmers from 10 communities in the region. Natural gas extracted together with crude oil burnt as flares releases dangerous hydrocarbons (methane mainly) with sulphur and nitrogen oxides into the atmosphere. As a result of these uncontrolled emission of gases, 35 mio. tons of CO_2 were released to the atmosphere and ca. 12 mio. tons of methane, meaning "Nigerian oilfields contribute more to global warming than the rest of the world" (United Nations 2007, p. 7). Gas flares are fatal for agriculture. Studies demonstrate that they are responsible for 100% of productivity losses for crops situated within the range of ca. 200 m from the

place of extraction (e.g., Izombe station), 45% of losses within 600 m, and ca. 10% of losses in crops within the range of one kilometre. Most trees, e.g., oil palms or cotton bushes have died out completely as a result of air contamination and intense gas emissions (Ebegbulem et al. 2013, p. 282).

Sources: Inoni et. al. (2006), United Nations (2007), Ebegbulem et al. (2013).

1.5. Dirty industry migration

Recent decades have also witnessed discussion concerning the migration of industries in search of the lowest environmental standards. This migration is the effect of, inter alia, trade liberalisation, increased turnover in international trade and it deepens the differentiation in the environment in rich and poor countries. The so-called **pollution havens hypothesis** assumes that enterprises (especially emission intensive ones) aim to locate their business in poorly developed countries or areas where environmental requirements are low, to avoid the high costs of manufacturing. According to Chodyński (2011, p. 114), as many as 40% of projects are connected with operations potentially harmful to the environment. That is particularly true of: machinery, electronic appliances, chemical, food processing, non-ferrous metals, mineral products, man-made plastics, and rubber industries or transportation services. We cannot but agree, as the above mentioned industries exploit the environment to the greatest extent and contribute to its faster degradation. That is caused by the liberalisation of the world economy, where free movement of goods and elimination of barriers to trade are the most important aspects. Moreover, the organisation of production processes, where ownership surveillance is within individual links of the value chain, is being replaced with a system of contracts. International enterprises avoid engaging their resources in buying out and reorganising other entities as they want to avoid the risk of operating in a new environment. Guided by the "do it the cheapest" principle they can quickly and cheaply change suppliers, often during their "environmental exploitation" of subsequent regions.

On top of that, dominating interests of international corporations often make local and national initiatives designed to enforce environmental rules look repressive or unfriendly. The competitive struggle for profit produces reflections of "disaster capitalism", where disasters are used to achieve individual objectives at the expense of societies and the natural environment.

Enterprises which take advantage of the freedoms of an open market to migrate in the search for less stringent environmental standards may be justified in

many ways. Firstly, stringent environmental regulations significantly increase the cost of production, as they often require technologically advanced equipment and solutions. They increase the cost of manufacturing, mainly due to changes required in production technology or the installation of cleaning or filtering devices. Manufacturers will avoid higher charges if they don't implement costly, environmentally friendly technologies. Secondly, stringent environmental regulations limit the possibilities of disposing of industrial waste (deplete ravaged areas that could be used as waste landfills). Thirdly, environmental standards may lead to a ban on the use of some (toxic for the environment) factors of production as well as certain outcomes of production. In all of these cases, increasing the cost of manufacturing is the issue of primary importance. Hence, it is obvious that enterprises are interested in locating manufacturing in regions offering lower costs of production (assuming it is feasible and other determinants of the location remain the same). Low standards expected from, e.g., production methods diversify conditions in different countries and, by the same token, determine location decisions. This is in line with the microeconomic principle of cost minimisation. Moving production to less environmentally demanding countries to be able to use a cheaper but more contaminating technology is an example of eco-dumping. As a result, the environment is badly degraded, natural resources are freely exploited, risk of illnesses and death rate increase and the standard of living of the local community deteriorates. It is controversial and causes protests among environmentalists and economists.

Moving burdensome production to countries of lower standards and environmental regulations also means contamination is transferred internationally and intensifies global environmental problems. "Dirty" investment means also shifting environmental risk on to weaker partners, which is often referred to as environmental neo-colonialism (eco-imperialism). Czaja (2004, p. 11) defines it as a phenomenon where enterprises from developed countries locate outdated production technologies, store waste and pollution costly in disposal or overexploit raw materials in developing countries. Besides this, eco-imperialism means also additional environmental duties imposed by developed countries that hinder social and economic development of developing countries without proper logistics and financial support. On the other hand, however, from an economic point of view, it seems undisputable that allocation of industries caused by differences in standards is optimal. It helps countries to exploit or generate their comparative advantages. Moreover, one may not dismiss that moderate environmental requirements result from the lobbying of groups hoping to attract foreign investors as poorly developed countries compete for industrial investment projects, even in sectors that have been eliminated in highly developed countries for environmental reasons.

Many of these poorly developed countries still specialise and export products, the production of which intensely contaminate the environment. Usually this is true of Africa, South America, or Asia. Exploitation of non-renewable raw materials and their processing provides the basis for operations of the most heavily polluting sectors of industry. Moreover, any increase in exports of renewable resources from developing countries recorded in statistics is also linked with the development of non-organic farming, which destroys biodiversity and valuable natural habitats. The above examples demonstrate that trade liberalisation in these countries may intensify environmental degradation, similarly to the inflow of foreign direct investment motivated by dirty production. Obviously, we may not prejudge whether that will really be the case, although intuition suggests such an ending.

The issue of dirty industry migration has long been a subject of interest to economists. However, literature remains divided over the effects of liberalisation, which apparently contributes to migration in the search for moderate environmental standards. While theoretical writings are dominated with voices that justify such trends, conclusions from empirical models are ambiguous.

1.6. Transportation and the environment

The increasingly higher volume of cargo transport at a global scale is the effect of trade development. It is also accompanied by the extension of distances covered by goods and focused on modes of transport more burdensome to the environment. In the modern economy, transport is the most important sector. Its infrastructure covers ca. 1% of the globe (Czaja, Becla 2007, p. 183). The dynamic development of transport in recent decades resulting from intensified trade is a vital development factor in the world. At the same time, however, it is a source of burden and environmental problems that can be observed not only locally but also globally. Its energy consumption (fuels and electricity) is substantial and it exerts great pressure upon the environment. Liberalisation of trade and its increased volumes intensify international industrial cooperation, which calls for the movement of raw materials, parts, semi-finished products and ready goods to various countries and continents. Over the period 1990–2010, the value of global trade in goods increased by 370%, with an average annual increase of ca. 9%. In 2012, the share of transportation services in total exports of services, on average globally, amounted to 22.35% (www.dataworldbank.org, 2015).

The European Commission forecasts until 2030 show that transport (both passenger and cargo) will continue to develop dynamically. The market for the

transport of goods will grow at a faster pace, since it is closer correlated with GDP growth dynamics. In Europe, by 2030, the TEN-T programme will partially be completed and is aimed at supporting the development of trans-European transport networks in a way respectful of the environment and offering higher safety standards. It is estimated that in the period 2010–2050, transport of goods will increase by 57% (an annual average of 1.1%). The biggest increase of 72% (corresponding to 1.4% annually) will be recorded in Member States which joined the EU after 2004 (EU Energy 2014, pp. 38–39).

Hence, it seems obvious that with the constantly increasing market of transport services, following in the footsteps of increasing tendencies in trade, its environmental impact will be greater. This is due to the direct environmental effect of transport. Its consequences depend on the level of economic development of countries, advancements in technology, and the ability to exploit various modes of transport as well as the climate and sensitivity of environmental components. The transport infrastructure exerts pressure upon natural habitats and biodiversity as a result of land use, distortions caused by noise and light or landscape transformations. It is also the major cause of accidents. Increased negative impacts are also due to changes in the means of transport.

Globalisation requires rapid movements of goods, which leads to increased consumption of energy and intense emission of pollution. The economy encourages supply management procedures, such as *Just In Time,* which, on the one hand, eliminate inefficiencies by reducing the lead time to a minimum but, on the other hand, need quick, i.e. energy-consuming, means of transport. On an international scale the roles of rail and inland transport relatively diminish, while air and, most of all, road transport have become more important.

Van Veen-Groot and Nijkamp (1999) discuss the environmental impact of transport by means of four effects: scale, structural, technical and product. The first one reflects the impact of trade liberalisation upon economic activity. It is linked to increases in international trade, meaning an increase in transport and a higher demand for transport services. As the latter poses a big burden to the environment, it is postulated to use intermodal transport more broadly (although not always and not under all circumstances is it the easiest solution). Striving to use less polluting modes of transport (such as rail or inland waterways instead of road or air transport) could be a solution leading to reduced emissions of pollutants per unit of product. Recently, we can observe opposite tendencies: the shift from slower means of transport towards faster but less environmentally-friendly ones.

The structural effect demonstrates the impact of trade liberalisation upon increases in production in sectors in which a country enjoys a comparative advantage. The effect may produce changes in the structure of economic activity,

e.g., in the share of industrial production, agriculture or services in GDP as well as transformations within individual sectors. Hence, trade liberalisation may favour expansion of economic activities in line with identified comparative advantages, such as climate or applied environmental standards. If environmental resources are correctly valued, their value is taken into account in international markets and exploitation is not distorted with state intervention, trade generates conditions conducive to sustainable growth. If these ideal premises are missing, it may produce negative structural changes by increasing specialisation in "non-environmentally-friendly" sectors. In looking for better (cheaper) operating conditions, industries start moving and the structure of economies will change, generating increased demand for transport.

Over the last few years, the average distance covered by transport has considerably increased and, despite becoming a day-to-day reality, new technologies in transport and logistics are insufficient to fully offset the negative impact of trade upon the environment. The increased average distance over which goods are transported goes against the principle of sustainable growth, according to which, production and consumption were closest in terms of geography. On top of that, structural effects include the features of transported products. In the contemporary economy, small products representing high added value are transported. They can be easily transported by air or by road (in this case they are mainly a so-called general cargo), modes that produce more contamination.

The technical effect, contrary to the previous two, has a positive impact upon the environment. It modifies technologies, reflects potential transfer of innovation, expands uses of environmentally-friendly materials and, with respect to transit, it favours production of means of transport that produce less exhaust fumes and noise and are more energy-saving. Newer technologies are less burdensome to the environment. They also help to develop safety devices that can neutralise adverse outcomes of both previous effects.

The product effect, the last on the list, appears when products exert an environmental impact. This may be positive when more environmentally aware consumers select "green" goods and their preferences and higher expectations actually contribute to the dissemination of new, environmentally-friendly technologies. Innovations are a good example if they lead to the use of renewable sources of energy or place more environmentally-friendly cars in the market. Open trade, new investment, transfer of modern technologies or improved management systems help accelerate economic growth. On the other hand, however, the product effect may produce negative effects, e.g., when international trade facilitates the movement of dangerous or toxic materials. Negative outcomes include situations when trade liberalisation generates a demand for endangered

species of flora and fauna. Can the wish to buy certain products (in line with consumer expectations) produce changes in transport? There are specific means of transport used for specific assortments of goods. Van Veen-Groot and Nijkamp (1999) demonstrate that products representing higher value (and smaller quantities) are transported using more environmentally-friendly means of transport, while cheaper goods (in bigger quantities) are transported in ways more harmful to the environment, which is why the increasing number of cheap products in international trade may generate more pollution. This is how positive quantitative effects of changes in the assortment of products are offset by unfavourable changes in the structure of the means of transport used to transport them.

Eurostat estimates show that in the years 1990–2011, emissions of harmful substances from transport increased by 19%. The biggest increase in pollution was recorded for road transport (21%), while a drop (–46%) was identified for rail transport. Among EU Member States, the highest amount of harmful emissions was reported for Germany (17% share in total EU emissions), followed by France (14%), Italy (13%), and the UK (12%) (*Energy, transport and environment indicators* 2013, p. 141). These countries are also among the biggest exporters and importers, not only in the EU but also globally (Tables 1.1. and 1.2.).

Table 1.1. Key exporters in global trade in goods in 2012 (in bn of USD)

Global ranking	Country	value in USD	Percentage share in global exports
1.	China	2,049	11.1
2.	United States	1,546	8.4
3.	Germany	1,407	7.6
6.	France	569	3.1
9.	Italy	501	2.7
11.	United Kingdom	474	2.6

Source: WTO Statistics database.

According to Badyda (2010), transport in the European Union is the source of almost 54% of total emissions of nitrogen oxides, 45% of CO_2, 23% non-methane volatile organic compounds, and 23% of dust PM_{10}, and 28% of $PM_{2,5}$[7]. More-

[7] Solid particles of the diameter of 10 and 2,5 μm respectively.

over, it is responsible for the emission of over 41% of tropospheric ozone precursors, 23% of CO_2 emissions, and almost 20% of other greenhouse gases (Badyda 2010, p. 115). Transport is the second biggest source of pollution emission in the EU (after the energy sector) and despite EU political initiatives and various legal regulations, pollution continues to increase. In the age of technological progress or the development of modern transportation networks, this may seem strange. Unit transport is less polluting, more energy-saving but still it depends 96% on oil and oil derivatives. We must admit that over the years transport and fuel technologies have become more environmentally friendly, nevertheless, the majority of trucks are powered by diesel engines, the main sources of emission of nitrogen oxides, solid particles and CO_2 (Demir et al. 2013, p. 2). Therefore, although emissions per unit of transport are actually reduced, the increased number of vehicles and massive transport prevent total pollution from falling.

Table 1.2. Key importers in global trade in goods in 2012 (in bn of USD)

Global ranking	Country	value in USD	Percentage share in global exports
1.	United States	2,336	12.6
2.	China	1,818	9.8
3.	Germany	1,167	6.3
5.	United Kingdom	690	3.7
6.	France	674	3.6
11.	Italy	487	2.6

Source: WTO Statistics database.

The deteriorating quality of the natural environment is especially painful to people living in agglomerations and alongside arterial roads. Hence, environmental aspects produce the need to promote environmentally-friendly modes and technologies of transport, including combined and intermodal transport.[8] These needs have been reflected in many EU documents (e.g., the White Paper

[8] Intermodal transport involves using multiple modes of transportation to carry goods in one cargo unit using at least two modes of transport one after another. Combined transport is intermodal transport with the main part of goods transported by rail, inland or sea waters, with only small fraction, at the beginning and/or the end performed on roads.

of 2001), which state that the directions of European Transport Policy should be subordinated to the principle of sustainable growth and sustainable mobility, in particular, that of goods.

The scale of the problems resulting from transport is extensive. Remedies are connected with the development of more modern, environmentally-friendly means of transport, both by improving those already existing and developing new ones. Changes also include transport management systems, disseminating new solutions (e.g., the already mentioned intermodal transport), and integrated logistics.

***

Until the 1970s, the issues of the environmental effects of trade and intensified consumption were neglected because already industrialised countries had been building up their wealth based on the least costly use of natural resources in distant parts of the world. Overexploitation thereof results in lasting changes in eco-systems, while free trade produced considerable negative effects in exporting countries. Arguments in favour of government interference in international trade and more and more vocal postulates in favour of environmental protection, have become the subject of debate on the contemporary global economy and the interdependence of regions.

Trade expansion targeting global demand changes the scale at which enterprises operate, production organisation and directions of supplies. International trade and, first and foremost, production, overburden the environment and strongly impact its resources. Agricultural use of land to grow more and more crops, excessive extraction of natural resources, storing toxic and radioactive waste, etc. give credibility to such views. Environmental issues emerging as a result of such activities include mainly deforestation, rapid desertification of large areas in all continents, contamination of seas and oceans, overfishing or progressing degradation of soil. Pollutants reduce biodiversity, in terms of species and habitat. Increased pressure on the environment also results from increasing greenhouse gases emissions, leading to changes in climate or distorting the balance in eco-systems. As a result, the "environmental footprint" has doubled within the last 50 years, while the "carbon footprint"[9] has increased almost tenfold.

[9] Carbon footprint is a methodology of estimating total emissions of GHG in equivalents of carbon for a product's life cycle from the moment raw materials are obtained, thorough manufacturing until the disposal of the final product (www.carbontrust.co.uk 2015).

Environmental pollution issues have accompanied discussions on world trade liberalisation for many years. The view that trade negatively impacts the environment is commonplace. However, we need to stress that the impact of international trade upon the quality of the environment and the quality of its components is usually indirect. For that reason, it is difficult to identify it and estimate.

Questions and assignments

1. List three characteristic features of contemporary international trade.
2. Describe the demands of international trade on the main functions of the environment.
3. Evaluate the environmental impact of production for export. Give examples.
4. Describe the environmental effects of transport.
5. Evaluate the phenomenon of dirty industry migration.

Literature

Angelsen A. (1999), *Agricultural expansion and deforestation. Modelling the impact of population, market forces and property rights*, "Journal of Development Economics", vol. 58(1), pp. 185–218.

Arroyo-Mora J.P., Sánchez-Azofeifa G.A., Rivard B., Calvo J.C., Janzen D.H., *Dynamics in landscape structure and composition for the Chorotega region, Costa Rica from 1960 to 2000*, "Agriculture, Ecosystems and Environment", vol. 106(1), pp. 27–39.

Badyda A.J. (2010), *Zagrożenia środowiskowe ze strony transportu*, "Nauka", nr 4, pp. 115–125.

White Paper. *European Transport Policy 2010* (2001), European Commission, Brussels.

Bielecki R. (2010), *Jezioro Aralskie – największa katastrofa ekologiczna minionego stulecia*, Annales Universitatis Paedagogicae Cracoviensis, Studia Geographica I, *Przyrodnicze skutki antropopresji,* Folia 93, pp. 6–13.

BP Energy Outlook 2035, 2014.

Bradshaw C.J.A., Sodhi N.S., Brook B.W. (2009), *Tropical turmoil: a biodiversity tragedy in Progress*, "Frontiers in Ecology and the Environment", vol. 7(2), pp. 79–87.

Brocki W. (2011), *Odpowiedzialne rybołówstwo w świetle ekonomii zrównoważonego rozwoju*, [in:] Poskrobko B. (ed.) *Ekonomia zrównoważonego rozwoju w świetle kanonów nauki*, Wyższa Szkoła Ekonomiczna, Białystok, pp. 175–188.

Brundtland G.H. (1987), *Our Common Future*, World Commission on Environment and Development), Oxford University Press, Oxford 1987.

Budnikowski A. (1998), *Ochrona środowiska naturalnego jako problem globalny*, PWE, Warsaw.

Chodyński A. (2011), *Odpowiedzialność ekologiczna w proaktywnym rozwoju przedsiębiorstw*, Krakowska Akademia im. Andrzeja Frycza Modrzewskiego, Krakow.

Common Fisheries Policy in numbers. Basic statistical data (2012), European Union, Belgium.

Czaja S. (2002), *Internacjonalizacja i globalizacja współczesnego kryzysu ekologicznego*, [in:] Fiedor B., Czaja S., Graczyk A., Jakubczyk Z., *Podstawy ekonomii środowiska i zasobów naturalnych*, C.H. Beck, Warsaw, pp. 382–400.

Czaja S. (2004), *Wpływ współczesnego neokolonializmu ekologicznego na globalizację problemów środowiskowych*, [in:] *Ochrona środowiska a procesy integracji i globalizacji*, eds. A. Budnikowski, M. Cygler, Oficyna Wydawnicza SGH, Warsaw.

Czaja S., Becla A. (2007), *Ekologiczne podstawy procesów gospodarowania*, Wyd. Akademii Ekonomicznej im. Oskara Langego we Wrocławiu, Wroclaw.

Czaja S., Becla A. (2007), *Ekologiczne podstawy procesów gospodarowania*, Wyd. Akademii Ekonomicznej im. Oskara Langego we Wrocławiu, Wroclaw.

Delgado Ch.L., Wada N., Rosegrant M.W., Meijer S., Ahmed M. (2003), *Fish to 2020. Supply and demand. Changing global markets*., International Food Policy Research Institute Washington, D.C., WorldFish Center Penang, Malaysia.

Demir E., Bektas T., Laporte G. (2013), *A Review of Recent Research on Green Road Freight Transportation*, "Beta Working Paper series" 428, August, pp. 1–40.

Dubiel S., Matyasik A., Ziaja J. (2010), *Systematyka wpływów górnictwa ropy naftowej i gazu ziemnego na środowisko naturalne,* „Wiertnictwo Nafta Gaz", vol. 27(3), pp. 571–582

Dudziński J. (2013), *Kryzys surowcowy, paliwowy i żywnościowy lat 70. XX wieku a boom surowcowy XXI wieku – podobieństwa i różnice*, „Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania", No. 33, pp. 19–33.

Dugiel W. (2009), *Zmiany w światowym systemie handlu Perspektywa dla Unii Europejskiej*, Centrum Europejskie Natolin, Warsaw.

Ebegbulem J.C., Ekpe D., Adejumo T.O. (2013), *Oil Exploration and Poverty in the Niger Delta Region of Nigeria: A Critical Analysis*, "International Journal of Business and Social Science", vol. 4(3), March, pp. 279–287.

Energy, transport and environment indicators (2013), Eurostat, Luxembourg.

EU Energy, *Transport And GHG Emissions Trends To 2050* (2014), Reference Scenario 2013, European Commission, EU.

Fatah L. (2008), *The Impacts of Coal Mining on the Economy and Environment of South Kalimantan Province*, "Indonesia ASEAN Economic Bulletin", vol. 25(1), pp. 85–98

Franks D.M., Brereton D., Moran Ch.J. (2010), *Managing the cumulative impacts of coal mining on regional communities and environments in Australia*, "Impact Assessment and Project Appraisal", vol. 28(4), pp. 299–312.

Global Economic Prospects, Commodities and Crossroads (2009), World Bank, Washington.

Greene Ch.H., Pershing A.J., Cronin T.M, Ceci N. (2008), *Arctic Climate Change And Its Impacts On The Ecology Of The North Atlantic*, "Ecology", vol. 89, pp. S24–S38.

Inoni O.E., Omotor D.O., Adun F.N. (2006), *The Effect Of Oil Spillage On Crop Yield And Farm Income In Delta State, Nigeria,* "Journal Of Central European Agriculture", vol. 7.(1), pp. 41–48.

International Energy Statistics, www.eia.gov. (access: 30.08.2015).

Jakubczyk Z. (2002), *Teoretyczne podstawy gospodarowania zasobami naturalnymi,* [in:] Fiedor B., Czaja S., Graczyk A., Jakubczyk Z., *Podstawy ekonomii środowiska i zasobów naturalnych*, C.H. Beck, Warsaw, pp. 120–169.

Laurance W.F. (2010), *Habitat destruction: death by a thousand cuts*, [in:] Sodhi N.S., Ehrlich P.R. (eds.), *Conservation Biology For All*, Oxford University Press, pp. 73–87.

McAlpine C., Etter A., Fearnside P., Seabrook L., Laurance W. (2009), *Increasing world consumption of beef as a driver of regional and global change: a call for policy action based on evidence from Queensland (Australia), Colombia and Brazil*, "Global Environmental Change", vol. 19(1), pp. 21–33.

Michalczyk B. (2007), *Międzynarodowa wymiana towarowa*, [in:] *Współczesne tendencje w handlu międzynarodowym*, Rymarczyk J., Niemiec M. (eds.), Oficyna Wydawnicza Arboretum, Wroclaw, pp. 39–75.

Morton D., DeFries R., Shimabukuro Y., Anderson L., Arai E., del Bon Espirito-Santo F., Freitas R., Morisette J. (2006), *Cropland expansion changes deforestation dynamics in the southern Brazilian Amazon*, "Proceedings of the National Academy of Sciences of USA", vol. 103(39), pp. 14637–14641.

Nietrzeba-Marcinonis J. (2007), *Wpływ rekultywacji leśnej terenów pokopalnianych na wybrane właściwości gleb inicjalnych na przykładzie zwałowiska nadkładu Kopalni Węgla Brunatnego Turów S.A.*, PhD thesis, Uniwersytet Zielonogórski, Zielona Góra.

Nordstrom H., Vaughan S. (1999), *Trade and Environment*, WTO Special Studies 4, Geneva.

Pacheco P. (2006), *Agricultural expansion and deforestation in lowland Bolivia: the import substitution versus the structural adjustment model*, "Land Use Policy", vol. 23, pp. 205–225.

Rees W. (1992), *Ecological footprints and appropriated carrying capacity: what urban economics leaves out?*, "Environment and Urbanisation", vol. 4(2), pp. 121–130.

Resolution of the European Parliament of 20.05 2008 on trade in primary raw materials and products (2008/2051 (INI)) 19.11.2009, Official Journal of European Union C 279 E/9.

Szyszko J., Rylke J., Jeżewski P., Dymitryszyn I. (eds.) (2013), *Ocena i wycena zasobów przyrodniczych,* Wydawnictwo SGGW, Warsaw.

United Nations, Department Of Economic And Social Affairs (2007), *The Adverse Impacts of Oil Pollution on the Environment and Wellbeing of a Local Indigenous Community: The Experience of the Ogoni People of Nigeria,* Khabarovsk, Russian Federation, August.

van Veen-Groot D.B., Nijkamp P. (1999), *Globalisation, transport and the environment: new perspectives for ecological economics*, "Ecological Economics", vol. 31, pp. 331–346.

www.carbontrust.co.uk. (access: 30.08.2015).
www.dataworldbank.org. (access: 30.08.2015).
www.faostat.fao.org. (access: 30.08.2015).
www.footprintnetwork.org. (access: 30.08.2015).
www.trademap.org. (access: 30.08.2015).
www.wto.org. (access: 30.08.2015).

http://dx.doi.org/10.18778/8088-016-0.03

Chapter 2

CORPORATE SOCIAL RESPONSIBILITY

Małgorzata Misiak

2.1. The notion of CSR

Due to its relatively long history[10], the idea of corporate social responsibility (CSR) has made reference to various justifications and has been interpreted in different ways. According to one of its definitions, CSR is a duty of the management to take decisions and actions that will take care both of the firm's own interests (to multiply profit) and protect and improve the well-being of people (Davis, Blomstrom 1966). The above definition stresses two aspects of social responsibility. Protecting societal well-being means enterprises should avoid actions that are harmful, even if they bring profit, and simultaneously they should undertake actions aimed at preventing and eliminating negative social phenomena that result from their operations. Maximising the well-being of people is equivalent to getting engaged in a variety of social undertakings (Rybak 2004, p. 28). We can deduce from the above that in the area of CSR there are two approaches to responsibility: a passive one, which consists in refraining from pursuing harmful activities, and an active one that mitigates and prevents negative social effects of business activities.

An enterprise:

- acts responsibly,
- bears responsibility,
- assumes responsibility,
- is held to account.

[10] For the first time the idea of social responsibility was formulated by Carnegie in *Gospel of Wealth* published in 1899.

The first means doing business in accordance with legal and social norms. Bearing responsibility is about corporate responsibility for the effects of the firm's actions. In other words, the firm in question is ready to face the consequences of its deeds. Bearing responsibility and being held to account refer to situations that have already happened in the past. The only difference is the subject, who assesses a particular action. In the first case, it is the firm, the actual perpetrator of an act. In the second case, the assessment is external to the perpetrator although it is addressed to him and is designed to provoke specific changes in his behaviour (Klimczak 1996, p. 58).

Social responsibility is based on the stakeholder theory, according to which a firm maintains relations with a variety of actors who influence its operations but at the same time are influenced by it.[11] Enterprises operate in an environment where the effects of corporate activities are felt and experienced. Hence, a firm should be responsible vis-à-vis the people, groups and organisations directly or indirectly linked with its operations or interested in its performance. Currently, stakeholders include entities who meet the following criteria:

- make claims regarding the firm (irrespective of their nature),
- are actually or potentially able to enforce these claims,
- want to use their influence upon the decision-making process in the firm to satisfy their claims (Adamczyk 2009, p. 49).

In the light of the above, stakeholders are: shareholders, boards of management, employees, clients, suppliers and business partners, financial institutions and creditors, the State and society (Freeman 2010, p. 32). The environment is a special, so-called silent, stakeholder.

2.2. Areas of CSR

We may identify many areas of corporate social responsibility. The most often invoked typology is that by Carroll (1993). His model distinguishes four levels of responsibility: economic and legal, which society demands; ethical, which it expects; and philanthropic, which it considers desired. They are all underpinned by economic responsibility. An enterprise should, first and foremost, be profit-

[11] The term "stakeholders" was introduced by Ansoff and Steward in the 1960s (Ansoff, Steward 1967).

able or at least not incur losses. Legal liability ranks high. Firms undertake obligation to act within limits specified by the law, observe the "rules of the game", i.e., legal regulations. Examples of this type of responsibility include: protection of the natural environment and consumer rights, respecting regulations governing the employment relationship, or meeting contractual obligations. At another level, we can find moral (ethical) responsibility. It is about acting in a fair, just and proper way, exceeding the minimum standards laid down by the law. Obviously, it is relative and depends on the ethical "climate" in society but, at the same time, it is a derivative of principles applicable in the firm in question and the ethics of its managers and employees. Finally, at the top, there is philanthropic responsibility, connected with earmarking some of the firm's resources for the needs of society to offer specific assistance, improve the standard of living or solve social problems.

According to Carroll and his typology, corporate economic responsibility is elementary. Other types of responsibility are understood as auxiliary commitments. This is the so-called *after profit obligation* concept. Concepts of *before profit obligation* assume the reverse order. The moral responsibility of individual people (members of the management board, managers, employees) for ethical choices takes precedence over other areas of responsibility. Firms are obliged to consider stakeholders' expectations and treat them as equal to their objectives. Only after having met these expectations is an enterprise free to choose how it will generate profit (Kang, Wood 1999, p. 414).

In real life, however, entrepreneurs represent different attitudes with regard to corporate social responsibility. These attitudes were extensively and in detail discussed by Johnson and Scholes (1993). They identified ten categories of corporate social roles grouped in four types of organisational culture (see Table 2.1). The first type, covering categories 1-3, represents an approach, according to which corporate social responsibility is not a corporate duty and it restricts the primary function of a business, which is generating profit (Lewicka-Strzałecka 1999, p. 54). The second type (categories 4-7), takes account of the role of stakeholders in generating long-term profit. Charity or sponsoring are perceived as investments or promotion outlays. In type 8, the firm is aware of the need to consider the needs of various stakeholders and profit is not its only objective. The last type of culture (categories 9-10) includes businesses that first of all meet social needs, where economic reality may even hamper achieving their objectives.

The above classification may be related to what Griffin proposes (Griffin 2013). He distinguishes between four types of CSR (see Fig. 2.1). The lowest level, i.e. resistance, is generated by firms which do not get involved in solving social or

environmental problems at all, and when such problems arise they either deny responsibility or cover them up. At the second level there are enterprises which limit their CSR-related activities to what is required by law. The third level, social response, includes firms which fulfil their obligations but are unable to go beyond the binding framework. At the highest level of the "responsibility ladder", referred to as "social input", we can find enterprises active in CSR, even seeking the opportunity to make their input a social good.

Table 2.1. Categories of corporate social roles

Firm's role	Activities and attitude to:	
	economy	social issues
to achieve maximum profit	dominated by profit	a barrier in generating profit
to achieve satisfactory profit	dominated by growth	social expectations treated as hindrances
to defend free enterprise	"the only business of the business is business"	outside the firm's interests
"lonely wolf"	main stress put on profit	assumes responsibility on a voluntary but unilateral basis
socially engaged	main stress put on profit	interactive links
to contribute to social progress	main stress put on profit	interactive links
"global actor"	main stress put on profit	interactive links
to shape society	financially self-sufficient	changes people's lives through innovation
to serve society	secondary with regard to social commitments	supplies important, although non-economic goods and services
to give employment	based on subsidies	supplies jobs

Source: Rojek-Nowosielska (2006), p. 46.

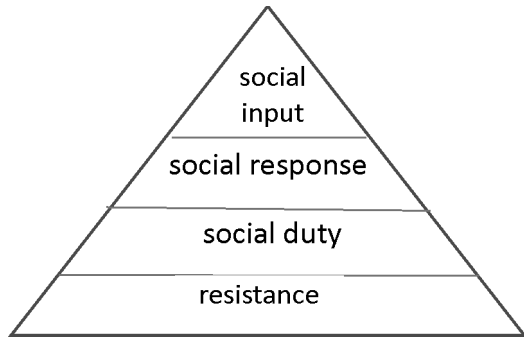

Figure 2.1. Responsibility levels according to Griffin

Source: Author's considerations based on Griffin (2013)

2.3. CSR tools

The list of CSR tools is long and is closely connected with the organisational corporate culture of the firm in question and its operational profile. The most often applied tools are:

- social campaigns, i.e. actions designed to change the attitudes or behaviour of a selected reference group, which use the media to convey the message;
- socially engaged marketing that takes care both of marketing goals and social needs;
- ethical programmes for employees aimed at integrating them around corporate common values;
- social reporting – preparing and drafting documents that present how a firm is managed and how responsibly it acts in business;
- corporate surveillance – a series of mechanisms used for controlling and coordinating the behaviour of various shareholders who have their own interests but collaborate with the management to effectively deliver corporate tasks;
- eco-labelling and social labelling consists in placing additional environmental or CSR-related information on product packaging or label;

- reducing waste, pollution and the emission of greenhouse gases through the optimisation of manufacturing, transport and logistics;
- socially responsible investment, where stock exchange analysts, while analysing enterprises, consider assessment criteria for the potential of a long-term increase in the company's value based on its social and environmental performance;
- employee volunteering schemes cover activities through which firms initiate and support their staff involvement with NGOs and institutions specified in legal regulations. Employees who do voluntary work help those in need using their skills and talents while firms enable such initiatives and support them financially or in organisational terms;
- trans-sectoral cooperation undertaken by a business with NGOs and Universities which, thanks to synergy effects, helps better deliver common responsibilities.

2.4. CSR in a corporate management system

Each firm interacts with people, groups and organisations as well as institutions in society. Some of the relationships are purposeful and desired, some unintended and undesirable. Relationships with stakeholders are decisive for the development directions of businesses. They may support corporate goals. Their nature and frequency involve decision-making, i.e., management, which includes the following stages:

- stage one – identification of stakeholders,
- stage two – identification of stakeholders' interests and expectations,
- stage three – drafting stakeholder relationships management strategy,
- stage four – implementation of the strategy.

The above demonstrates that first we need to answer the question who our stakeholders are. In most cases we can identify:

- stakeholders who bring their capital, work and competence to the enterprise;

- stakeholders directly involved in business relations with the enterprise in question, i.e. suppliers, clients, business partners, and competitors;
- stakeholders in the business environment, e.g. the local community, public opinion, the media, central and local government institutions, and NGOs.

Thus, an enterprise's relationships with society may be primary and secondary. They change over time and may often be conflicting. The most frequent conflicts emerge when a choice must be made between productivity and employment or output and its quality.

The second stage analyses business – stakeholder relationships. It usually starts with a map of the links between a firm and the actors whose interest should be considered when delivering the corporate strategy. Then, we identify the interest group to which the entity in question belongs. And finally we must identify stakeholder expectations. Each stakeholder engages in relationships with a business in a different way. Managers must be aware of the diverse needs of stakeholder groups and respond appropriately. However, quite often groups disregard other stakeholder interests. For example, owners are interested in achieving the highest rate of return for the capital they invested while clients want to get the highest value for money when they buy goods or services. Each group represents a different capability of using its potential to achieve intended objectives. Some, e.g. shareholders, vote and impact corporate decisions. The power of other stakeholders, e.g. clients and suppliers, comes from their ability to refuse to buy or sell. Finally, there are stakeholders who may exercise political power over a business by developing laws, filing claims or influencing state institutions to, e.g., adopt new regulations. Having identified the stakeholders and following the analysis of their needs and power, we can develop a matrix of priorities (see Table 2.2). Not all stakeholders are equally interested and engaged in each political issue.

Table 2.2. Identification of responsibilities vis-à-vis stakeholders

Stakeholders	Economic responsibility	Legal responsibility	Ethical responsibility	Philanthropic responsibility
Shareholders Employees Suppliers Media Environment				

Source: Author's considerations, based on Carroll (1993), p. 78.

Corporate stakeholder relations are not long-lasting. Information pertaining to them must be collected and analysed systematically. The inclusion of stakeholder-related information in management is a strategic issue. Businesses may use collected knowledge to identify or modify their mission, goals, strategies or plans. It will help them predict trends developing in their environment and respond to planned undertakings. Stakeholder analysis is fundamental for business management, and stakeholder identity is reflected in the corporate strategy. Enterprises may choose one of four types of CSR strategy:

- passive – no response to social needs, just trying to neutralise issues that may potentially threaten the business. Firms that follow this strategy resist, avoid or assume no social responsibility whatsoever. They feel bound exclusively by legal requirements, which they interpret in their own favour. That is why these firms feel responsible only for the outcomes of unlawful behaviour. The overriding goal in this case is profit maximisation;

- reactive – response is given to changes in the environment and in the law. Far-reaching legalism, meaning strict adherence to law, is a typical attitude. It is also reflected in the firm's meeting its obligations regarding those stakeholder groups with whom it signed legal contracts, e.g., concerning employees. Social actions are launched in response to pressure exerted by public opinion;

- proactive – expectations coming from the environment are taken care of before any social problem arises. Enterprises which engage in solving problems thoroughly analyse the stakeholders, their expectations and types of power, and try to balance the conflicting interests of individual groups. The strategy consists in shaping positive stakeholder relations based not only on legal obligations but also on ethical norms;

- interactive – active engagement in delivering social goals. Enterprises include all stakeholders in the management system. Together with social partners they seek ways to solve or prevent social problems. Firms actively look to find their place in society by undertaking a vast range of activities.

When incorporating CSR principles into business management, firms may avail themselves of ready-made standards. One of them is the AA1000 standard, developed in 1999 by the Institute of Social and Ethical Accountability, which introduces social and ethical issues into the strategic management of an organisation and its operations.

The standard includes 5 main stages:

1. Planning – the organisation commits to the process,
2. Accounting – the principles of social responsibility are identified,
3. A social audit is conducted and a CSR report prepared,
4. Embedding – the process is strengthened,
5. Stakeholder engagement with groups linked to the organisation.

The standard may be used not only for strategic analysis, but also in the internal assessment of an organisation when it comes to social and ethical accountability and for self-improvement purposes.

2.5. CSR principles

The CSR concept would be incomplete if we did not discuss the principles to be followed by a socially responsible organisation. These principles have been formally adopted at international level. We should mention here the principles setting forth the norms of acceptable business behaviour approved by the Caux Round Table[12], the Global Sullivan Principles[13] or the *Global Compact*[14] guidelines. They provide useful guidelines for companies on how to use and apply CSR. Since nowadays *Global Compact* is the major global initiative in the area of corporate responsibility, having already been joined by more than 12,000 participants, including 8,000 businesses from 145 countries, we shall focus on its principles.

Human rights:

- support and respect human rights proclaimed by the international community,
- the elimination of all cases of human rights violations by businesses,

[12] An international network of experienced business leaders from Europe, Japan and the United States, established in 1986 to mitigate tensions in the business community.

[13] Declared by Sullivan in 1977 in connection with combating apartheid in South Africa. In 1999 they were announced by the UN.

[14] *Global Compact* was launched in 1999 on the initiative of Kofi Annan. It is a platform for dialogue and education voluntarily joined by businesses. It is a forum for the exchange of knowledge and expertise as well as the promotion of corporate social responsibility.

Labour standards:

- respect freedom of association, elimination of all forms of forced and compulsory labour,
- abolition of child labour,
- effectively counteracting discrimination in employment,

Environment:

- a precautionary approach to the environment,
- undertake initiatives to promote environmental responsibility,
- the application and promotion of environmentally friendly technologies,

Anti-Corruption:

- working against corruption in all its forms, including extortion and bribery.

The first two *Global Compact* principles originate from the Universal Declaration of Human Rights adopted by the UN in 1948. Traditionally, human rights have fallen within the remit of states and governments, and international law in this area has been developed and addressed to them, however, there is a growing population of businesses which (motivated by a variety of legal, moral or business factors) realise the need to face the issues of human rights. Four principles of the *Global Compact* relating to labour standards come from the International Labour Organisation Declaration on Fundamental Principles and Rights at Work of 1998. The Declaration is the effect of the annual International Labour Conferences, tripartite meetings of representatives of governments, employers and employees from 177 countries. Three further principles relating to the environment are founded on the Rio Declaration on the Environment and Development. Supplementing the two major environmental principles, *Global Compact* focuses on two major challenges of our times: climate change and sustainable water management. The last of the ten principles was declared relatively recently, i.e., in 2004. Corruption and fighting corruption are among the top challenges of the modern world. Corruption adversely affects societies but is also extremely costly to business. In many parts of the world, it accounts for over 10% of the cost of business and the value of the "bribery industry" is estimated at one trillion USD[15].

CSR is implemented through the voluntary obligations of firms as well as, increasingly often, based on standards and formal and legal commitments. Most

[15] https://www.unglobalcompact.org (access: 25.09.2015).

often, they relate to the issue of transparency and mandatory reporting of non-financial data by enterprises. They are enacted by stock exchanges, national governments and international organisations.

In the European Union (EU), CSR policy was delineated by the White Paper published by the European Commission in 2002. It covers four EU activity areas:

- education, exchange of experience and good practices: research on the impact of CSR upon business and society, the exchange of experience and good practices among enterprises and Member States, the development of adequate managerial skills, the adaptation of social responsibility principles to suit the SME sector;
- developing corporate social responsibility tools: codes of conduct, management standards, auditing and reporting rules, product labelling and socially responsible investment;
- launching a Multi-Stakeholder Forum on CSR;
- integrating CSR in all EU policies.

The document is addressed to EU institutions, Member States, social partners, business and consumer associations, and enterprises.

CSR has also been standardised internationally. An example is the ISO 26000 standard developed by the International Organisation for Standardisation in 2010 to provide guidance on principles of social and environmental responsibility in the following fields:

- organisational governance,
- human rights,
- labour practices,
- the environment,
- fair operating practices,
- consumer issues,
- community involvement and development.

ISO 26000 standard is intended to be useful to all types of organisations: business, central and local administration and the third sector. It is not subject to certification but is a collection of voluntary practices and standards.

2.6. CSR: pros and cons

Advocates of corporate social responsibility point to the fact that the market does not regulate the economy to a sufficient extent. Due to the failures of the "invisible hand of the market" mechanism, the economy needs the "visible hand" of the government, NGOs and business. When a firm gets involved in socially responsible actions it escapes government regulations in this area. The latter are costly and reduce the flexibility in making business decisions, hence, from a business point of view, it is better to take initiative in social matters and retain more freedom in economic operations. Thus, assuming social responsibility provides an enterprise with an opportunity to restrict the regulatory functions of the state.

Whether businesses like it or not, they must adapt to the needs of society, which requires enterprises to operate in a particular way and may demand the liquidation of environmental damage resulting from economic operations. Enterprises exert substantial impact upon the environment and they benefit from the resources entrusted to them by society, e.g., access to natural resources. No wonder that, in accordance with the principle of stewardship, they make commitments to operate in a socially acceptable way or, at least, be accountable for the effects of their actions. If a firm uses natural resources or pollutes the environment, it should take part in environmental protection.

Moreover, social engagement may be consistent with the firm's own interest. If society expects business to take care of social issues, undertaking such actions and positively promoting them lie in the business' best interest. As a result, a socially responsible business will be respected, which usually increases client interest, sales, and gives better access to capital and skilled labour. The improved image of a business, its more positive assessment and approval in stakeholders' eyes, cannot be achieved overnight. Benefits of CSR, more broadly explored in the next section, materialise over a longer time frame. However, many researchers have no doubt that they exceed the cost of socially-friendly actions. We may conclude by saying that the ethical conduct of an enterprise is a profitable investment.

And finally, CSR supporters are also of the opinion that modern businesses, in particular multinational corporations, have huge resources often exceeding the potential of some national economies. These resources should be deployed in solving or mitigating existing social problems.

In the era of liberalisation and globalisation, business plays an increasingly culture-shaping role. In the face of the crisis of values, the values promoted by entrepreneurs, such as efficiency, profitability, productivity, capacity and material-

ism, have gained in importance. Hence the responsibility for values and attitudes proclaimed and created by enterprises. Noteworthy, over a longer perspective, a business will take advantage of its culture shaping conduct, as its stakeholders, employees, clients and suppliers, will be the "promoters" of these values. We can see it clearly on the example of the enterprise-employee relationship. When an enterprise limits its engagement in solving social issues, it stresses profit generation related goals and it is walking a fine line between legal and illegal in moral ambiguity, which may surely negatively affect the attitudes of its employees and their commitment to issues vital to the enterprise.

CSR has also got its opponents. Their argument is that "the social responsibility of business is to increase its profits"[16]. Firms are *stricte* economic entities and they may not be motivated by ethical reasons. On top of that, imposing social obligations upon entrepreneurs may divert their attention from the primary task of profit maximisation. Expenditure on social actions impoverishes also and in international markets, regarding competitors not involved in such activities. Firms may also hide the costs of their social engagement in higher prices of goods and services meaning they will ultimately be paid by society. From the above perspective, would not it be better – CSR opponents ask – if stakeholders themselves earmarked a portion of their income for social or environmental purposes? Quite possibly, if the public knew the real costs of CSR and who bears them, perhaps it would not demand socially responsible actions.

Businessmen and managers may be unaware of what specific social problems they should tackle, what strategies they should put in place, and what concrete steps they should instigate. Market, not politics, is their domain, and markets provide too little information on social matters. Social issues should be decided by governments or specialised institutions. Hence, entrepreneurs' decisions are arbitrary and often mistaken, not only because they are made by incompetent people, but also because they are often "contaminated" with the desire for profit.

Besides, managers as plenipotentiaries of business owners are employed to manage production and maximise profit, not to offer eleemosynary services. Individual proprietors are in a different position. If they decide to reduce the income to meet their social obligations, unlike managers they spend their own, not somebody else's money. When the management board reduces the financial surplus that should be paid to shareholders to earmark it for social goals, *de facto* the business behaves like a thief who steals and distributes profit.

[16] Title of the article of Friedman, one of the most fiercest critics of CRS (Friedman 1970).

Another argument against burdening enterprises with social obligations is that social engagement substantially increases the power and influence of a business while even without it, business exerts huge impact upon society nowadays.

Finally, there are some who believe that the mission of a business consists in manufacturing useful goods and services, which exhausts its social role (Kaczocha 2009, pp. 22–33).

2.7. The CSR impact upon business

In a modern economy, social engagement largely influences business development. Today's enterprises need not only raw materials, capital, equipment, labour and knowledge, but they also depend on social approval (Hatch 2002, p. 96). The increased relevance of intangible resources for building a competitive advantage, and the specificity thereof, have given the CSR doctrine a new place in business management. It is no longer identified with philanthropy, unrelated to economic efficiency, it has become a tool to improve profitability (Paliwoda-Matiolańska 2009, p. 169). Studies have shown that businesses taking up the challenge of corporate social responsibility win loyal clients, enjoy public trust and build up their reputation. This way, they may win a competitive edge, which in the longer term translates into concrete financial performance.

By implementing the CSR system, firms develop intangible, innovative resources, often irreplaceable or inimitable, which give it a lasting competitive advantage. Such resources include:

- social capital,
- innovation,
- reputation,
- entrepreneurial environment.

Social capital is the collective value of social organisation factors, such as trust, norms, and networks which may improve the efficiency of society through coordinated actions (1993). Social capital adds to the creation of value at all levels of business. It is of huge importance for relationships between firms and employees. It helps to attract good employees who are educated, open, loyal and responsible, and who are willing to share knowledge and improve, create, and innovate. Social capital also positively impacts the corporate organisational climate (Bem-Kozieł

2008, pp. 112–116) and translates into stable employment based on strong identification with the enterprise. Social capital positively impacts relationships with suppliers as well as the stability and efficiency of distribution channels.

Similarly, by means of their business strategy, firms develop an entrepreneurial culture, understood as "convictions, attitudes, assessment of business operations and how they are conducted" (Paliwoda-Matiolańska 2009, p. 190). This may come through in many fields, e.g., by the use of renewable resources, strategy to export only highly processed goods, relationships with shareholders or the policy to attract external resources.

The environment of a modern enterprise expects it to apply innovative solutions: new products and services but also innovative engagement in solving globally acknowledged economic, social and environmental issues, such as climate change, increasing poverty and social inequalities. That is why, today, the main success factor for a firm is the identification of stakeholders' needs and expectations, and the development of new products, services, technologies and strategies that address them.

Reputation is the image of business in stakeholders' eyes. We mean here both the firm's visibility and its credibility. According to several studies, the positive and coherent assessment of the external environment is a tool of business growth and economic security which also provides a sort of shield in moments of crisis. Business reputation has two dimensions: a general one, connected with the transparency of operations, meeting its commitments, honesty, accountability vis-à-vis society and the environment, and the dimension directly related to the firm's products or services and the quality thereof.

Thus, we can see that by implementing the CSR system, an organisation may benefit greatly. Benefits should be perceived in a long-term perspective. They are:

- increased investor interest – Creditors are much more interested in working with responsible businesses, which, besides good financial performance, may offer a transparent management system, and responsibly build their image and good relations with those around them the environment. To many investors, financial credibility depends on the social credibility of a business;

CSR and financial performance

Numerous studies have been conducted on the links between CSR and the financial performance of firms. CSR positively impacts the cost of capital. Studies have shown that the market perceives socially engaged firms as posing a smaller risk than others

and rewards them with better rating. There is a convincing body of evidence that good management in the area of CSR positively correlates with the financial performance of a business. It is true of the results reflected in books of accounts and in the value of shares. Firms from the top of the CSR rankings achieve above-average financial results and the value of their shares remains above market indices. The effects can be noticed in medium and long-term perspectives.

Source: Grzymisławski (2013)

- stronger customer and stakeholder loyalty – Consumers with increased social awareness are guided in their choices by trust with a business and its image. A growing portion of consumers pay attention to how "organic" a product or service is, whether social responsibility principles have been observed in its production and to the overall reputation of a business;
- better relationships with local community and authorities – Taking part in the life of the local community, undertaking long-term and tangible social investments, facilitates effective and smooth business operations. Social responsibility helps a firm become embedded in the community, become popular with local inhabitants and win the trust of local authorities. A special role is played by the cooperation with NGOs and building trans-sectoral partnerships;
- improved competitiveness – The implementation of CSR principles is an asset giving firms a competitive advantage. To Polish businesses, a transparent CSR policy may be a way of building their positions in international markets where expectations connected with meeting CSR standards are more obvious;
- improved corporate organisational culture – By taking up CSR challenges, a business improves standards governing its conduct regarding stakeholders (employees, business partners, clients) thus avoiding the cost of "bad partnership". These changes, based on trust, responsibility and transparency for all stakeholders, shape the corporate organisational culture;
- shaping positive image among employees – Corporate social responsibility is among the non-financial elements of staff motivation. Codes of conduct, social programmes, and taking care of the environment improve the firm's image in the eyes of its employees. Employees have more respect for what the firm is doing when they see that it addresses social problems vital also for them;

- attracting and retaining the best people – The improved image of a business increases employees' trust and makes it more attractive in the labour market, which attracts new employees and helps to retain the best ones;
- tax benefits – Social expenditure may reduce taxable base.

Social benefits include:

- giving visibility to the problem and engaging bigger social groups and the government in the delivery of social goals,
- education of society,
- better shape of the natural environment,
- developing a philanthropic mindset,
- stimulating the economic and social development of the location, region and even the country (Ratajczak, Stawicka 2008, p. 135).

2.8. CSR in practice

Businesses are more and more aware of benefits resulting from sticking to CSR principles. Polish entrepreneurs believe that business operations modelled in line with CSR positively impact their financial performance. In the study conducted by KPMG, an improved image of the firm in the market was the most often selected benefit – with over a half (52%) of respondents attributing it to CSR-related activities. Another advantage of conduct compliant with corporate social responsibility principles is the potentially stronger approval of the business environment selected by over a third of the interviewed entrepreneurs (KPMG 2015).

Almost half of the overall business population in Poland is involved in CSR activities. Further, 15% consider launching them, meaning we may expect that the idea will develop in Polish businesses in the years to come. This is true, however, mainly of large and medium-sized enterprises, especially with the involvement of foreign capital.

Businesses active in the field of CSR most often decide to support local communities (89%) and engage with the natural environment (85%). These are the two most important areas which featured in respondents' opinions as the most

important for their business operations. Below we present some examples of CSR practices[17]:

- In the autumn of 2014, acting within the framework of the Project "The Greenest Terminal in Poland", DB Schenker opened a new cross-docking terminal in Złotoria near Białystok, the most environmentally-friendly one in Poland. The terminal is equipped with LED and solar lamps, which enable them to reduce CO_2 emissions by 31,400 tons annually. Solar thermal collectors on the roof of the office heat utility water. The terminal also stores over 7,000 litres of rainwater, reducing water consumption. The building design ensures optimization of daylight, good acoustics and adequate quality of air. There are heating and ventilating devices in the hall installed to recover heat, and a condensation furnace.
- "Forest full of Energy" is an original environmentally-friendly campaign of the energy distribution company PGE, delivered in cooperation with the Regional Directorates of State Forests. The project is designed to promote an environmentally-friendly attitude among children and youngsters and is addressed primarily to local communities. The event was attended by ca. 700 people who planted over 40,000 trees. The same company organised another campaign "Holidays against the Current – Discovering Energetic Places". It presented attractive tourist destinations in territories earlier occupied by PGE for business purposes.
- Under the "Huge Waste Collection" campaign, IKEA encourages its clients to bring waste for disposal. In return, the company offers seedlings of various plants.
- Kronopol launched a project "Actively through Green Forest", within which a cycling and walking route was regenerated, and fitness equipment (the so-called outdoor gym) was placed in one of the favourite leisure locations in Żary. The company also supplied 9 schools in the county of Żary with bakery products once a week. They distributed 120,000 buns.
- PGNiG TERMIKA within the campaign "Back to School" purchased school kits for pupils from schools in the vicinity of their power stations.
- Within the framework of the "Sustainability Ambassador" programme, volunteers from Henkel visited schools to speak about the need to care for the environment, the sustainable development idea and responsible consumption, to more than 800 pupils.

[17] Examples taken from: Responsible Business Forum (2015).

60% of firms implement good practices in the area of health and safety at work, dialogue with employees, recruitment, training or employee volunteering programmes. Some examples are presented below:

- The NEUCA company, which employs over 4,000 people, many of them parents, launched "My Mamy" [We Mothers] programme. It includes a series of opportunities for future parents starting from the period of pregnancy, such as subsidies for childbirth classes, flexible working hours (agreed with the superiors), participation in medical and preventive consultancy and events, discounts in partner businesses, and refunded LUX-MED medical services. When a child is born, the parents are entitled to a newborn kit, subsidies for nursery and kindergarten, medical care for the parent until the child is 3 years old, an extra day off (paid) on the child's birthday (until he/she is 11), school kits for pupils and Christmas gifts. Parents who come back to work receive a welcome kit (reimbursement of care treatments), a possibility to work flexible hours, and to rent equipment to work at home.

- The mBank Group employs over 6,000 people. It is not always possible to reach those whose commitment and professionalism are exceptional. The bank decided to find them and developed a programme "People Make Us Stand out – Help Us Find the Outstanding Ones". It motivates employees to undertake new challenges and get involved in innovative ventures.

- At Christmas time, the employees of PKN ORLEN take part in their employee volunteering programme "Making Dreams Come True". It consists in fulfilling the wishes of children from orphanages. In 2014, the initiative was handed over to employees for the first time. They identified orphanages and care centres to be targeted by the programme. In total, more than 700 employees made the dreams of children from 16 orphanages come true.

- Tesco supports its employees' families, in particular multi-child ones. Educational scholarships of the Tesco Foundation for Children "Wise Start", worth PLN 1,500 each, were awarded to 116 children in the first edition of the programme. On the occasion of Christmas, all children from low income families received a 100 PLN gift card. The programme covers almost 800 Tesco employees (2,400 children) and its total amount exceeded PLN 240,000.

- In KGHM, employees' social activities focus around the volunteering programme "Copper Heart". One of its most organisationally advanced projects is that of the KGHM Bone Marrow Team. For years the team has been promoting the fight against leukaemia and registers bone marrow donors. Volunteers have registered over one thousand potential donors. Three of

them have donated bone marrow and saved lives. Besides fighting leukaemia, volunteers propose other initiatives. To date they have, e.g. painted doghouses in a dog shelter, organised charity concert and art workshops for children from orphanages and cleaned up Kunickie Lake. They also conducted several workshops in physics and chemistry for teenagers.

- The underperforming state pension system, the wish to ensure financial security to its employees in the future and to make them aware that they need to save regularly were reasons why Volkswagen Poznan launched its Employee Pension Scheme. The scheme could be joined by all employees who had spent at least 2 years in the company. In 2014, the participation rate was 88% and 26% of employees decided to pay additional premiums. Every year, the company reminds its workers about the benefits of the scheme, encourages them to join it, and informs those who leave the company about what they can do with their accumulated assets. For Volkswagen Motor Polska, prevention means also the habit of taking care of one's health and changing the lifestyle. That is why, every two years, the company offers a free-of-charge medical examination during working hours as a part of the programme "Healthy Woman, Healthy Man". The objective is to detect early lifestyle diseases, such as diabetes, heart disease or cancer. An employee diagnosed with any disease may benefit from a medical package paid by the employer in case of serious diseases or use specialist medical consultancy services. On top of that, there is a special social benefit fund which may be used to finance costly treatment, surgery or specialist examination. Ca. 70% of employees benefit from periodical examinations.

Why do some businesses not get involved in CSR projects? Maybe they are not familiar with the CSR idea, they do not have enough knowledge or they lack staff qualified to take care of the subject. Many firms do not see tangible benefits of socially engaged actions and some do not have enough financial resources.

Questions and assignments

1. What is your understanding of corporate social responsibility? How, in your opinion, does corporate social engagement differ from Public Relations?
2. What benefits do socially engaged activities bring to business?
3. In your opinion, should businesses engage in social issues?
4. List the major stakeholders of an enterprise and explain their relationships with it.

Literature

Adamczyk J. (2009), *Społeczna odpowiedzialność przedsiębiorstw*, PWE, Warsaw.

Ansoff H.I., Stewards J.M. (1967), *Strategies for a Technology-Based Business*, "Harvard Business Review", vol. 45.

Bem-Koziel K. (2008), *CSR a efektywność pracy*, [in:] *Społeczna odpowiedzialność biznesu w małych i średnich przedsiębiorstwach*, M. Bąk, P. Kulawczuk (eds.), Instytut Badań nad Demokracją i Przedsiębiorstwem Prywatnym, Warsaw.

Davis K., Blomstrom R. (1966), *Business and its Environment,* McGrower Hill, New York.

Davis K., Blomstrom R. (1975), *Business and Society: Environment and Responsibility*, McGrower Hill, New York.

FOB (2015), *Odpowiedzialny biznes w Polsce w 2014. Dobre praktyki*, Warsaw.

Freeman R.E. (2010), *Strategic Management. A Stakeholders' Approach*, Cambridge Univeristy Press, Cambridge.

Friedman M. (1970), *The Social Responsibility of Business is to Increase its Profits*, "The New York Times Magazine", September 13 available on http://www.colorado.edu/studentgroups/libertarians/issues/friedman-soc-resp-business.html (20.10.2015).

Griffin R.W. (2013), *Podstawy zarządzania organizacjami*, PWN, Warsaw.

Hatch, M.J., 2002, *Teoria organizacji*, PWN, Warsaw.

Johnson G., Scholes K. (2008), *Exploring Corporate Strategy*, Prentice Hall, London.

Kaczocha W. (2009), *Filozoficzno-etyczne rozwinięcie idei społecznej odpowiedzialności biznesu*, [in:] *Społeczna odpowiedzialność biznesu. Uwarunkowania, kontrowersje, dobre i złe praktyki*, Z. Pisz, M. Rojek-Nowosielska (eds.), "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", no. 42, University of Economics, Wroclaw.

Klimczak B. (1996), *Etyka gospodarcza*, University of Economics, Wroclaw.

KPMG (2015), *Społeczna odpowiedzialność firm. Fakty a opinie*, Warsaw.

Lewicka-Strzałecka A. (1999), *Etyczne standardy firm i pracowników*, IFiS PAN, Warsaw.

Paliwoda-Matiolańska A. (2009), *Odpowiedzialność społeczna jako źródło przewagi konkurencyjnej*, [in:] *Społeczna odpowiedzialność biznesu. Uwarunkowania, kontrowersje, dobre i złe praktyki*, Z. Pisz, M. Rojek-Nowosielska (eds.), "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", no. 42, University of Economics, Wroclaw.

Ratajczak M., Stawicka E. (2008), *Społeczna odpowiedzialność biznesu jako narzędzie podnoszenia konkurencyjności sektora MSP*, [in:] *Społeczna odpowiedzialność biznesu w małych i średnich przedsiębiorstwach*, M. Bąk, P. Kulawczuk (eds.), Instytut Badań nad Demokracją i Przedsiębiorstwem Prywatnym, Warsaw.

Rojek-Nowosielska M. (2006), *Kształtowanie społecznej odpowiedzialności przedsiębiorstw*, University of Economics, Wroclaw.

Rybak M. (2004), *Etyka menedżera – społeczna odpowiedzialność przedsiębiorstwa*, PWN, Warsaw.

http://dx.doi.org/10.18778/8088-016-0.04

Chapter 3

ECO-LABELLING

Anetta Kuna-Marszałek

3.1. Corporate environmental responsibility

Increased interest in environmental issues has given firms new challenges. The incorporation of environmental considerations into economic practice determines business activities and integrates tasks connected with the protection of the environment with all goals, functions and development strategies of enterprises. The same is true of the international expansion of economic operators and the extension of the scope of their operations. According to Malara (2006, p. 276), contemporary enterprises should take a comprehensive approach to the issues of production and consumption in relation to environmental schemes, and take advantage of economic instruments that stimulate the efficient use of resources and protect the ecosystem against degradation.

Thus, we may speak of a specific business model in the modern economy, the so-called **Environmental Corporate Social Responsibility** (ECSR), which incorporates the environmental factors at each level of corporate operations and takes account of stakeholders' needs "when delivering core values of an organisation, thanks to the awareness existing within the enterprise" (Chodyński et al. 2007, p. 188). Trying to present a methodological framework of the ECSR idea, we may identify its three main premises (Chodyński et al. 2007, pp. 188-189):

- it is a source of environmental innovation created to ensure the long lasting development and growth of a business;
- it guarantees effective reporting of standards of conduct to stakeholders with regard to the internal business operations of a firm (human rights and best practice concerning the rights of nature, work and technology, working environment and natural environment, etc.);
- it is a way to reduce business risk for enterprises.

Some authors see the environmental factor as a strategic one for business performance and highlight it when building business value. ECSR-based business models take account of (Seroka-Stolka 2012):

- internal business assumptions considering environmental criteria: environmentalisation of business processes, environmentally-friendly products;
- external business assumptions considering environmental criteria: environmental criteria as a key success factor, sector-specific environmental conditions;
- assumptions connected with meeting stakeholders' needs;
- assumptions connected with the development of internal corporate environmental and social responsibility centres, which measure and monitor strategies based on environmental criteria.

The notion of "a green corporation", which stresses the importance of environmental responsibility in business, links with the implementation of the ECSR model. According to many economists (e.g. Bansal, Roth 2000; Tran 2009), the emergence and development of such companies is determined, e.g., by increasing competitive advantage through implementing eco-innovations or the principles of green management. This leads to higher efficiency in the use of resources, a quicker return on investment, market expansion, product differentiation or the improved image of a corporation.

The use of the ECSR concept and declaring environmentally friendly operations become especially relevant, first and foremost, for consumers from developed countries, as the more affluent a society is, the better we see changes in the system of values and the higher social, cultural and, in particular, environmental awareness. The latter aspect touches, inter alia, the depletion of natural resources, the need to use renewable energy sources more effectively, or the negative effects of global warming. For that reason, we have recently increasingly often observed businesses shifting from a traditional operating mode (which on the supply side considers the basic production factors: land, labour, capital and products on the side of outcomes) to an environmental one, where we additionally include natural resources, contamination and waste.

Thus, in the era of globalisation, one of the conditions of the market success of a product is its ability to also meet those needs of societies which result from their environmental awareness. This is why we deploy eco-marketing, otherwise called environmental, green or ecological marketing, designed to increase

environmental awareness in consumers who are not that interested in environmental protection by influencing them to change their social behaviour, in particular their consumer choice (Zaremba 2004, p. 84).

Eco-marketing strategies facilitate the development of environmentally-friendly products which are labelled and offered to consumers with appropriate information about their environmentally friendly properties. Recently, we have witnessed a series of initiatives designed to label products and services meeting higher than average environmental protection standards. An attestation or a certificate received from a duly authorised organisation or institution serves as a guarantee of quality or the absence of any negative environmental effect. Environmental trademarks are thus important tools, through which enterprises communicate with consumers and have become clear strategies in the market fight for clients.

3.2. What is eco-labelling?

Polish literature offers numerous equivalents of the English terms of *ecolabel* and *eco-labelling*. There are terms used interchangeably, such as: ecolabels, environmental labelling, eco-marks, environmental labels, environmental declarations and (to identify the system) eco-labelling, environmental designation, environmental certification. All of them describe the same, i.e., marking products or services with an environmental label after the product or service has been analysed from the point of view of the burden they present for the environment. The process ends with the granting of a certificate that authorises the use of an environmental label. **Eco-labelling** means the product in question has less adverse effects on human health and the natural environment than alternatives serving the same purpose (Leśniak 2009, p. 105). Eco-labels can be found, inter alia, on food packaging, cleaning products and cosmetics; though the colours of signs may differ and inscriptions may come in various languages.

The confirmation that the producer has met the appropriate environmental requirements allows them to use a characteristic mark representing a specific marketing value, which also contributes to increased sales. Environmental labels and declarations are environmental management tools, they provide information about a product or service with respect to their general environmental characteristics and unique aspects. Their role is to efficiently impact purchase decisions (Environmental labels and declarations – General principles, p. 5).

Environmental labels may be positive when they are granted to environmentally-friendly products, negative when they warn consumers about any environmental

hazards connected with the use of the product in question, and neutral when they provide environmental information (Adamczyk 2004, pp. 174-175). Irrespective of what eco-labelling we find on products, it is intended to improve the image of a product in the consumer's eyes and to effectively shape the image of the company. To achieve it however, we need high environmental awareness of consumers and their ability to read the markings, and associate and interpret them.

The placing of a special marking (logo) is referred to as labelling. According to the definition of ISO (*International Organization for Standardization*), environmental labelling is a declaration identifying the environmental aspects of a product or service, which may be a claim, symbol or graphic mark on a product, label or its packaging, in texts concerning the product, technical bulletin, advertising, telemarketing as well as in digital or electronic media such as the Internet (Environmental labelling and declarations. Self-declared environmental claims, p. 7). Its purpose is to encourage the supply of and demand for products which cause less stress to the environment. By supplying the customer with verifiable, accurate and sound information about the environmentally-friendly aspects of products which he/she acquires, it stimulates the potential for market-driven, continuous environmental improvement.

All products available on the market, especially those which, on the one hand cause significant stress to the environment and, on the other hand, demonstrate real potential for improvement, should be subject to environmental assessment and eco-labelling. The last 30 years have witnessed numerous initiatives aimed at labelling products and services that exceed the average environmental standards. In order to unify the approach to the eco-labelling of products, ISO issued a series of standards addressing these issues, e.g. ISO 14020, ISO 14021, ISO 14024, ISO 14025, ISO 14040, ISO 14044.

3.3. Types of eco-labels

According to ISO, we may identify three types of eco-labelling which highlight the specific environmental merits of products:

- **type I** – a marking that confirms the fulfilment of environmental criteria, awarded by independent eco-labelling schemes following tests of compliance with a set of detailed criteria;
- **type II** – claims made by businesses (manufacturers, importers, distributors, sellers or anyone wishing to benefit from such claims), based on their own environmental standards, which make reference to a selected product's properties, e.g., biodegradability or recycling;

- **type III** – environmental claims approved by independent schemes. They do not assess how much a product is environmentally-friendly but provide quantitative data (e.g., CO_2, NO_x emission) that may be used by consumers and motivate them to purchase a more environmentally-friendly product. Environmental claims may impact the improvement of not only product design in technical terms but also its economic exploitation and the modification of manufacturing technology.

The most common marking applied in practice is an eco-label which informs the purchaser about the specificity of a product, and is placed directly on it or on its packaging. Additionally, there are also marks connected with specific industries, energy efficiency labels as well as symbols visible on packaging and indicating a product's properties, not its merits.

Table 3.1. Characteristics of eco-labelling

Types of eco-labelling	Characteristics
Type I environmental labels and declarations	– awarded by an independent party upon the fulfilment of environmental criteria based on a simplified life-cycle examination, – may be national, regional or international.
Type II environmental labels and declarations	– introduced by the manufacturer, the so=called self-declared environmental claims, which may refer to: • manufacturing and distribution (e.g. the content of recycled material, energy), • use of a product (e.g. reduced consumption of energy or water, extended life-cycle of a product), • disposal of expended products (e.g. recyclable, compostable, degradable).
Type III environmental labels and declarations	– awarded by an independent party, – based on independent verification of data from product life-cycle assessment, analysis of data concerning the LCI – *Life-Cycle Inventory* or on IT modules in accordance with adopted standards and, if necessary, on additional environmental data, – developed by using pre-defined parameters, – administered by the scheme operator, who can be an enterprise, a group of enterprises, industry or trade association, public authorities, agency, independent scientific institutions or other organisations.

Source: Author's study based on: *Environmental labels and declarations. Environmental labelling type I. Principles and procedures,* PN-EN ISO14024:2002; *Environmental labels and declarations. Self-declared environmental claims (Environmental labelling type II)*, PN-EN ISO 14021:2002; *Environmental labels and declarations. Environmental labelling type III. Principles and procedures,* PN-EN 14025:2009.

As we have mentioned, in order for an eco-mark to be awarded to a particular product, the product must meet specific criteria identified for a group of products serving the same use that compete in the market. This is especially critical for type I and III labels, as the latter additionally covers the entire life-cycle analysis (LCA), also referred to as the eco-inventory. The method may be referred to as the examination of a product and its manufacturing "from cradle-to-grave". The LCA refers to the environmental aspects and to the impact of manufacturing on the natural environment, while additional economic or social effects often remain outside the scope of analysis (*Environmental management – Life-cycle analysis – Principles and structures*, 2002, p. 21). The studies usually include all stages of product manufacturing and exploitation, from the design stage through to waste disposal. The first stage is a critical point of each undertaking or product, its future properties and pressure exerted upon the environment. At this stage, raw materials, materials and their use are selected, i.e. factors decisive for the necessity to use natural resources. At the design stage, we also decide on the life-span of a product, how easily it may be repaired, dismantled and re-used (e.g. recycled). It means that the initial stage is decisive for the entire life-cycle of a product, and it takes the fullest possible account of any product – environment relationship.

Each stage of a product's life-cycle is analysed from the point of view of the consumption of raw materials, water, energy, waste production and its recycling or user-friendliness. Specific aspects that may also be considered include noise emission, the use of space, ease of handling, the composition of the product itself or the comprehensiveness of the instruction manual. These are assessed by experts, who identify when various ecological threats may emerge. It is vital that experts represent all stakeholders: manufacturers, traders, ecologists, researchers, authorities, ecological or consumer organisations, mass media, and experts in advertising. They consider the possibility of how to eliminate the negative effects of manufacturing, the product's impact on the natural environment as well as anticipate the impact of improved products upon the market (Shawn 2009).

An adequate level of safety should also be ensured for all logistic operations within the entire environmental life-cycle of a product. For example, electronic waste was transported from the United States to China, India, and Pakistan where it was manually dismantled, which posed a threat to the natural environment and human health. To minimise risk, the United States developed a new strategy for public procurement. Firstly, they selected suppliers by imposing on them the obligation to have environmental management systems in line with ISO 14000 and EMAS.[18] Secondly, they analysed the energy efficiency of the equipment and changes in environmental

[18] A voluntary Eco-Management and Audit Scheme open to organisations (businesses, institutions, and authorities).

characteristics of products through eco-labelling and certification (important for environmental safety). Thirdly, the manufacturer's contractual liability was extended (e.g. to recycling or withdrawal of harmful materials) (Chodyński 2010).

3.4. Eco-labelling and its functions

Eco-labelling may be an element of the creation of the image of a business and its products or services. Usually it has the following functions:

- information – by highlighting the environmental characteristics of products;
- identification – as it helps us identify products by type and origin, and facilitates the distinction between environmentally friendly products and other alternatives;promotion – a marketing tool, which builds up a business's image and reputation; helps the perception of product quality through a brand, which may be an eco-label; and facilitates sales of products associated with it. Eco-labelling helps to convince consumers that a business puts prevention of the negative effects of product manufacturing or exploitation at the centre of its attention rather than instigating corrective measures, and that it acts in compliance with all legal regulations and constantly improves its performance;guarantee – it ensures the maintenance of product quality at an appropriate level; stimulant – it encourages producers to initiate environmental undertakings and enhance the interest of the business through environmentally-friendly actions;
- education – it deepens knowledge about the environmental characteristics of products and identifies alternative product handling possibilities at all stages of its life-cycle.

Additionally, eco-labels which are registered trademarks and may not be used by unauthorised persons may be valuable business assets, encouraging businesses to invest in maintaining or improving the quality of their products. They may also contribute to the success of firms which have decided to place environmental labels on their products, and may come in useful when applying for external funding. Governments of many countries promote environmental actions, therefore, joining an eco-labelling scheme gives an entrepreneur the possibility to apply for preferential bank loans for environmental investment projects or facilitates access to environmental funds. A systemic approach to minimising any potential hazards puts a company in a better position than their competitors who disregard the rules of environmental protection.

3.5. Characteristics of environmental certification

For a system of environmental certificates to be effective and efficient, it must be based on a duly designed and legally framed system of attestation. The International Chamber of Commerce and Global Eco-labelling Network, which bring together the biggest organisations involved in environmental certification, drafted guidelines which identify the basic conditions for attestation applied to eco-labelling. The most important of these are (www.iccwbo.org 2015; Introduction to ecolabelling 2004):

- any product may be subject to certification, appropriate marking will be awarded to those which pose the least stress to the environment. The cost of applying for and awarding an eco-label is born by product manufacturers or importers;
- labelling should be accompanied by information justifying why the product has been considered more environmentally-friendly than others;
- awarding eco-labels is voluntary, and may not be enforced by any legally binding instruments, neither may it be a condition for placing a product on the market. In other words, eco-labelling should not create unnecessary barriers in international trade. Manufacturers should be encouraged to join certification schemes by both the market and consumer preferences. The latter, in turn, may be shaped with the involvement of the State, which reaps concrete benefits from promoting participation in eco-labelling schemes; environmental certification schemes should be available on an equal basis to domestic and foreign manufacturers;
- attestation criteria should be flexible and adapted to progresses in science and technology. This is attained through awarding certificates for a limited period of time (e.g. 3 years), following which, the licence is re-verified and possibly extended. A temporary review of information and data based on which eco-labelling is awarded, allows the awarding body to take account of new and available innovations;
- environmental criteria must be attainable using universally available technologies. The cost of adjusting the manufacturing process and products to the requirements must be acceptable to manufacturers, and it should not significantly impact the cost of an eco-labelled product;
- the eco-label awarding criteria should be open and available to all interested parties;

- attestation and eco-labelling should be paid for from fees collected for the use of the labels. External subsidies of the scheme should be minimised or completely excluded.

3.6. Principles of environmental certification

As we have already mentioned, the goal of environmental certification is to confirm that an eco-labelled product is less harmful to the environment than other similar products offered on the market. Environmental labelling schemes are fully voluntary, one do not need the label to place a product on domestic or international markets. Neither do eco-certificates inform the consumer about the possibility to re-use or process (recycle) the product in question; there are other markings, e.g. "Green point"[19] that cover such properties.

There are no detailed international recommendations regarding how certification should proceed or what methods should be used in product attestation.[20] They differ due to cultural diversity, different wealth levels between societies, industrialisation, availability of high technologies as well as other factors. As a result, each country takes a different approach to the eco-labelling of products. Usually, we need to analyse economic circumstances together with the social, political and cultural context and, depending on a country's characteristics, any individual parameters of the manufacturing process which are subject to environmental assessment (e.g. in a region with a high unemployment rate it is recommended to pursue labour-intense activities).

Specific requirements vis-à-vis a product or manufacturing may be identified by various teams. They may be teams representing central administration, industrial, trade or scientific associations or consumer organisations. In environmental certification, criteria must also be linked with environmental protection,

[19] "Green Point" is a registered trademark owned by Duales System Deutschland A.G. (DSD), in Poland its exclusive licensee is Rekopol Organizacja Odzysku S.A. The trademark is protected pursuant to the Act *Industrial property law and Law on combating unfair competition* (Dz.U. of 2003, No. 119, item 1117, with further amendments). Using the "Green Point" trademark is not mandatory in Poland or in any other EU Member State, and the decision to use it is made by the entrepreneur. www.rekopol.pl/zielony_punkt/zielony_punkt (access: 30.08.2015).

[20] The International Chamber of Commerce and Global Ecolabelling Network – an institution bringing together major organisations active in environmental certification – drafted only the guidelines that identify basic attestation conditions applied to eco-labelling. See, e.g., www.iccwbo.org; *Introduction to ecolabelling*, Global Ecolabelling Network Information Paper, 2004, www. globalecolabelling.net/pdf/pub_pdf01.pdf (access: 30.08.2015).

meaning, we need to use scientific knowledge in the field when developing them. Besides this, requirements may relate to ergonomics or health protection.

Individual environmental certification schemes differ mainly in the specific criteria for products or their manufacturing, some are based on the cradle-to-grave approach, other address one specific product feature (e.g. the origin of raw materials needed for its manufacturing) or its corporate management system. Some eco-labels have been created for just one type of product (e.g. cosmetics, wood products), others cover a variety of fields.

An entrepreneur wishing to be awarded an eco-certificate is obliged to adjust their product and its manufacturing to the detailed requirements, which may be a lengthy and costly process. They may also need to avail themselves of professional assistance, which is why many certifying bodies have their own equivalents which render such services. Then, a producer applies to an appropriate body for an eco-label. The certifying body must be independent and accredited by an organisation responsible for a given certification scheme. Following a series of checks, reviews and tests, which may be conducted in a specialised laboratory, a document is issued that confirms compliance. Confirmation of compliance with environmental requirements allows the placement of an appropriate label on the product. This label carries a specific marketing value and may help a company in winning customers' trust by helping to convince them that the enterprise in question:

- puts its main stress on preventing any negative effects of product manufacturing or exploitation, rather than on later corrective measures,
- acts in compliance with binding regulations,
- continuously improves in all fields of its activity.

Thus, the eco-label is a measure of excellence, and manufacturers must strive to deliver products that will ensure environmental leadership in the market. This is how the principle of permanent improvement is enforced together with increased self-monitoring and accountability.

3.7. Benefits to enterprises

Consumer environmental awareness has been growing in recent years. Increasingly, it is not just the quality of a product but also its manufacturing that are decisive when making a purchasing decision, which is why various eco-labels,

along with their environmental and information role, have also acquired stimulating and marketing functions. They are intended to contribute to the success of firms who have decided to place environmental labelling on their products.

Green consumerism in numbers – the case of the United States and Poland
In the United States, 77% of consumers believe that buying eco-products leads to ethical and environmental shopping. 62% of respondents also make an effort to find products offered by environmentally responsible firms. 68% of consumers claim it is worth paying more for a green product or service when it is offered by a brand that they trust. Nine out of ten interviewees claim firms have a duty to protect the environment, and they should be accountable for their actions. 77% more favourably perceive firms involved in environmental actions. The share of people who purposefully do not buy products from firms associated with environmentally irresponsible behaviour is 27% of respondents (Green in the Economy II, 2011).
In Poland, 27% of consumers admit that they consider the environmental impact of a product when making a purchasing decision. 39% of Poles know the environmental impact of the products that they use, and only 8% know nothing about it. Between 2008 and 2011, the percentage of Poles declaring that they avoid buying products harmful to the environment increased by 30% (to over 70%) (www.mos.gov.pl, 2015; www.odpowiedzialnybiznes.pl, 2015). Almost 80% of young people (not older than 39) say they are unable to differentiate between the environmental labels on organic products, which shows their low environmental awareness and lack of knowledge about the labelling of organic food. However, for a clear majority of consumers (85%) the presence of an eco-label on a product increases their trust in the product (Chudzian, Chatys 2014).

Source: Green in the Economy II (2011); www.mos.gov.pl; www.odpowiedzialnybiznes.pl; Chudzian, Chatys (2014).

An Eco-label is a modern way to promote a product and a firm in line with the principle of sustainable development. In the times when it is "fashionable" to promote a healthy lifestyle benign to the natural environment, buyers are attracted by various environmentally-friendly actions. For this reason, the biggest economic benefit to an entrepreneur is the increase in sales and profit from economies of scale. A business can thus establish a market niche and reinforce its positive corporate image, position and strength of product brand associated with respect for environmental protection principles (Introduction to ecolabelling 2004, p. 5).

The economic benefits for the business which decides to label its products with type I and III eco-labelling (therefore obliged to meet certain environmentally-friendly criteria) may also be connected with the ability to recover certain second-hand raw materials, waste management or higher efficiency of infrastructure. For this reason, other advantages of being a part of a certification scheme may include savings of energy, raw materials and materials used in production or products, and services designed to reduce the consumption of natural resources without compromising on quality. A business may also benefit from paying less for the economic exploitation of natural resources, or restrict the occurrence of incidents that create a financial burden connected with, e.g., the need to clean up contaminated sites and pay compensation to those affected. Due to the fact that governments in many countries promote environmental actions, joining an eco-labelling scheme helps a business get access to soft loans for environmental investment projects or facilitates access to environmental funds. A systemic approach to minimising potential hazards gives such businesses the ability to stay ahead of their competitors who disregard environmental protection principles.

Moreover, an eco-label may help a firm to win a client's trust, as it helps to convince them that an enterprise:

- puts its main stress on preventing any negative effects from product manufacturing or exploitation, rather than on corrective measures,
- acts in compliance with binding regulations,
- continuously improves in all fields of its activity.

Thus, the eco-label is a measure of excellence, and manufacturers should strive to deliver products that will ensure environmental leadership in the market. This is how the principle of permanent improvement is enforced together with increased self-control and accountability. Examples of non-financial benefits that may also be gained by enterprises using environmental labelling include adding to their competitive credibility in domestic markets and the ability to overtake competitors in modern development strategy. They are also considered credible business partners. Moreover, by improving the quality of their products and implementing new technologies, firms with eco-labels may more easily enter international markets, as the quality of their products is higher.

Hence, there are numerous benefits awaiting an enterprise that decides to make the effort to place eco-labels on its products. While the financial effects are felt the most quickly, others may come with time (e.g., improved image, increased client's trust).

Because of the multiplicity of eco-certificates, consumers find it increasingly difficult to unambiguously interpret them, and to be familiar with the criteria met by products so labelled. Information made available on eco-declarations are easily (types I and II) or relatively easy (type III) available, and are especially useful when confirmed by external experts. However, consumers are not always aware of this and manufacturers, taking advantage of "organic products" being fashionable, place labels on packaging that imitate officially recognised eco-labels. As a result "fake" eco-labels are more and more common, and many products are labelled with flowers or trees, which can be used without the need to introduce environmentally-friendly solutions in product manufacturing or exploitation. Placing such a logo on a product is cheap, however, it brings no marketing benefits. To avoid misleading a consumer, it is not recommended to use unclear and imprecise environmental claims (type II) or claims that only generally suggest that the product in question is beneficial or environmentally-friendly. For this reason, it is not recommended to label products with claims like green, pollution-free, nature-friendly, soil-friendly, ozone layer-friendly (Environmental labels and declarations. Self-environmental claims, op. cit., p. 17). Using a "fake" environmental logo may lead to legal consequences for the manufacturer. If the label in question bears an unambiguous association with the specific characteristics of a product (e.g. it suggests that it was made of recycled raw materials), a consumer may make a claim against the seller if the manufacturer attributed qualities to the product that it does not possess (Dębicka-Fobke, Jankowska 2004, p. 69).

3.8. Environmental labelling programmes

The first eco-labelling scheme (*Blue Angel*) was introduced in the 1970s in Germany. Subsequent eco-labels emerged in Canada (*Environmental Choice Label Scheme*), in the countries of the Nordic Council (*White Swan*), Austria (*Eco-Mark*), and in the Netherlands (*Eco-Mark*). In the early 1990s, well-developed eco-labelling schemes were also in operation in India, Japan, New Zealand, Singapore, South Korean, and in the United States. Currently, globally, there is a plethora of national environmental certification programmes. There is, however, one aspect which remains unchanged: eco-labels are voluntary and are awarded by an authorised body upon compliance with strictly specified criteria (for Type I and III labels).

Organisations which promote the use of eco-labels (*Global Ecolabelling Network*) bring together 26 national and international organisations which administer

specific eco-labelling programmes. They can be found in 35 countries, e.g., in Brazil, Croatia, China, Hong Kong, Indonesia, the United States, South Korea, and Ukraine.[21] As mentioned above, consumer environmental awareness clearly increases in highly developed countries. Already in the 1990s, in the United States, more than 80% of environmentally-conscious buyers were seeking out organic products, in Germany this was true of every second customer, while in the United Kingdom more than 80% of respondents preferred to choose products which are not harmful to the environment. In the same period in Poland, such products were not sought by almost 60% of respondents and ca. 17% were not familiar with the term "organic product" (Targosz-Wrona 2010).

It is also important how many eco-labels emerge in a given market and are known to consumers. The longer they exist, the more attention buyers pay to products labelled with them. In Belgium, every second respondent was able to recognise only 4 out of 11 different eco-labels they were shown, whereas in Denmark and Sweden buyers can identify and describe most eco-labels present in the market. Likewise in France, where people are familiar with eco-labels, ca. 80% of respondents demonstrated basic knowledge on the subject. In Japan almost 92% of consumers correctly interpret the major national eco-labels (Rubik, Frankl 2005, pp. 80–82, 116).

As already mentioned, there are multiple eco-labels in the world, and not all of them are recognisable to consumers. On the website www.ecolabelindex.com, we can find the majority of eco-labels registered all over the world. Thus, when in doubt or when we do not know symbols or labels on packaging, we may use the alphabetical index on this site.

The list of best known eco-labels includes:

1. **Organic production** – European Union – a logo uniform across the EU was introduced in March 2000. The objective was to increase the credibility of food produced using methods that are not harmful to the environment and highlight products on the market. To be labelled with the logo a product must comply with a series of criteria (e.g. at least 95% of product ingredients must have been produced using organic methods, products are sold directly by the producer or in closed, secured and labelled packaging).

2. ***Ecolabel,*** "Daisy" – European Union – a flower surrounded by twelve stars, is an alternative to national organic trademarks which guarantee a certain

[21] A complete list of countries is available, inter alia, on the website: www.globalecolabelling.net (access: 30.08.2015).

quality. The logo is awarded after a shortened analysis of product life cycle. Tests focus on the environmental impact at the stages of: getting primary raw materials, manufacturing, packaging, transportation, product use and disposal. At each stage there are many environmental aspects which are assessed, e.g., waste generation, contamination of soil, water and air, noise, consumption of natural resources and energy, and, additionally, impact upon environmental systems. The award of the logo is equivalent to meeting the most stringent environmental standards. It is awarded in 24 categories, which include, household equipment, detergents, textiles, and paper (www.ec.europa.eu/environment/ecolabel access: 20.10.2015).

3. **European ecolabel for Organic Farming** – European Union – a logo awarded by the European Commission since 2010 to organic products produced in the EU and meeting binding Community standards. It does not cover products imported from outside of the EU.

4. **Blue Angel** (*Der Blaue Engel*) – Germany – products with this logo represent better environmental characteristics than other products from the same product group. The assessment takes account of, e.g., contamination of air, water, soil, noise, potential to form particularly hazardous substances, user safety, comfort and aesthetics. At present, the label is awarded in 75 product groups, e.g., tyres, refrigerators, construction materials, household chemicals, paper products, deodorants. It does not however cover food products and pharmaceuticals. It is worth mentioning that the German logo is also placed on products manufactured by foreign companies, which account for 13% of all enterprises holding the certificate (www.blauer-engel.de access: 20.10.2015).

7. **Swan** (Svanen) – Scandinavian countries – products labelled with this logo have a less negative impact upon humankind and the natural environment. They must meet specified criteria relating to selected qualities of the product and its manufacturing, and are verified by an accredited testing authority. Along with progress in science and technology, environmental requirements are gradually increased and compliance with certification criteria is systematically monitored. The “Svanen” scheme is considered one of the most comprehensive and objective eco-labelling schemes in the world (www.svanen.nu access: 20.10.2015).

8. **Falcon** (Falkon) – Sweden – “Good Environmental Choice” The Falkon logo has been in existence since 1992, and abides by the criteria of the

non-governmental environmental organisation – The Swedish Society for Nature Conservation. Attestation takes account of only the organic qualities of the product. Currently, there are several hundred products in the market labelled with this logo, mainly detergents and paper.

12. **Krav** – Sweden – the logo awarded by the Association of Organic Farmers since 1985. Food products so labelled are produced without the use of artificial fertilizers and chemical pesticides. They are top quality products. The logo appears also in a "Krav-import" version, which guarantees consumers that imported food comes from organic products.

13. **Milieukeur** – the Netherlands – the logo awarded by an independent SMK organisation, bringing together consumers, producers, sellers, the government and environmental organisations. Demanding criteria (some of them reviewed on an annual basis) to be met by products are often more stringent than those included in legal regulations (www.smk.nl access: 20.10.2015).

Polish manufacturers may also apply for most eco-labels available in the world. However, due to differences in the terms on which they are awarded, the fact of being given one eco-label does not automatically guarantee the possibility to place other eco-labels on the product. For that reason, each manufacturer should focus on those eco-labels preferred by consumers or business partners. Eco-labels with the biggest geographical scope are not always the most recognisable in the local market. For example, in Scandinavia consumers trust first and foremost local not Europe-wide labels (Dębicka-Fobke, Jankowska 2004, p. 70). Polish experience in the use of eco-labels is still rather limited; most eco-labels that we see in Polish stores come from Germany and Scandinavia, i.e., from leading countries in environmentally-friendly market solutions. Foundations for a system of eco-labelling were laid in Poland when the Minister of Environment and the Managing Director of the Polish Centre for Testing and Certification (Polish abbr. PCBC)[22] signed, on 13 July 1998, principles of certification for the

[22] The beginnings of the PCBC date back to 1958 when the Polish Committee for Standardisation Measures and Quality Control established the first organisation in Poland to deal with quality issues – the Quality Mark Office (in the 1970s transformed into the Central Office for Product Quality, which in 1994 became the Polish Centre for Testing and Certification). Since 1 January 2003, PCBC S.A has been a one-man State Treasury company and operates based on the Act of 30 August 2002 (with further amendments) on the Compliance Assessment System (Dz.U. of 2002 No. 166, item 1360). PCBC is a member of international organisations active in the field of testing and certification, e.g. EOQ (European Organisation for Quality), IQNet (International Network of

"Eko-znak" (Eco-mark) registered by the Polish Centre for Testing and Certification. The detailed principles and mode of awarding the "Eko-znak" in Poland and its logo (registered in the Patent Office in 2003) were specified in consultation with the Minister of Environment (Decision of 23 October 2003) based on the Act on Testing and Certification (Dz.U., 28 June 1993, No. 55, item 250) and the regulation of the Minister of Economy on the certification of products (Dz.U. 16 March 2000 r., No. 17, item 219).

Since 2005, "Eko-znak" in Poland has been awarded based on the same criteria for products and services as those listed in the decisions of the European Commission, which specify environmental criteria within the framework of the programme for awarding European environmental labelling (*Ecolabel*). Pursuant to the decision of the Committee for "Eko-znak" and *Ecolabel,* entrepreneurs may be awarded with both labels at the same time on favourable financial terms.

"Eko-znak" can be used by domestic and foreign products which do not produce negative environmental effects and meet certain criteria in the area of the protection of health and the environmental and economical use of natural resources. "Eko-znak" is an official Polish trademark, awarded to products which comply with the environmental standards listed as the compliance criteria (*Program przyznawania wspólnego znaku towarowo-gwarancyjnego – znak ekologiczny EKO* 2009, p. 9). There is a committee for "Eko-znak" at the PCBC entrusted with the task of developing these criteria and standardising them as requirements vis-à-vis certified products.

Authorisation to use "Eko-znak" may only be given to a product meeting all utility (safety and those relating to its functions) requirements. When the aforementioned is confirmed by an appropriate document (e.g. a manufacturer's declaration of compliance), certification relates to meeting environmental criteria over an entire product life-cycle, the "Eko-znak" licence is granted for a specified period of time (up to 3 years). If eco-criteria have not been amended, the licence can be renewed/prolonged or, when there have been amendments, the product must be retested. "Eko-znak" is most frequently chosen by manufacturers of fertilizers, textiles, paper and chemical products. By the end of 2014, PCBC S.A. had drafted criteria for awarding the "Eko-znak" to more than thirty product groups, inter alia, detergents, interior paints and varnishes, portable PCs, TV sets, toys, and hotel services.[23] In 2009, they launched the certification of new product groups based on criteria taken from the requirements applied in Nordic

Certification Bodies), IECEE (International Electrotechnical Committee for Electric Equipment). PCBC's representatives represents Poland in the works of the EUEB (European Union Ecolabelling Board). See www.pcbc.gov.pl (access: 30.08.2015).

[23] For a detailed list see www.pcbc.gov.pl (access: 30.08.2015).

countries for the eco-label ”Nordic Swan”. These criteria cover the following product groups: cosmetics, toys, stationery, packaging paper, and printed paper products.

EKOLAND is another eco-label recognisable in Poland. It is awarded to food products, and it certifies that products were manufactured in an environmentally-friendly way, without the use of mineral fertilizers and in accordance with the natural cycle of substances in nature. The right to use the label is awarded to products originating from manufacturers, processing plants and traders who meet the requirements of the Act of 25 June 2009 on organic farming (Dz.U. 2009, No. 116, item 975) and Council Regulation (EC) No. 834/2007 of 28 June 2007 on organic production and labelling organic products certified by a competent body. Farms that wish to label their products with this symbol must acquire attestation from the Polish Association of Organic Food Producers. A farmer who wants to go organic must remember that it may take over 2 years (until the moment when he may receive the certificate). Within this period, the farm is monitored by an accredited certifying body, which inspects the farm at least once a year to find out whether best practice on the farm complies with principles laid down in the act on organic farming. Criteria for organic farming and Ekoland Association are strictly specified and drafted based on the guidelines of International Federation of Organic Agriculture (IFOAM) (see Kryteria rolnictwa ekologicznego Stowarzyszenia Ekoland 2013).

***

In the era of globalisation, eco-labelling has become one of vital elements shaping the model of consumption which is linked to continuous enhancement of the environmental awareness of societies. In response to buyers' needs, enterprises initiate steps leading to the creation of the image of an ecologically-friendly business by, e.g., meeting specific requirements and applying for environmental certificates. It means that, on the one hand, thanks to eco-labels, consumers can identify a product more easily and, on the other, market processes shaped by an environmentally-conscious buyer may impact the environmental behaviour of economic operators.

Eco-labels have become special trademarks. They are used as marketing instruments that help achieve an advantage over competitors in a competitive market. In order to keep them, enterprises must implement environmental strategies and be active in the field of environmental protection. Such activities are no longer treated as costs to enterprises and they have become important promotion tools.

This being said, protection of consumer interests is one of the major benefits of eco-labelling. It should provide buyers with information that facilitates the

making of rational choices. Thus, we should expect that activities undertaken by governments or organisations to promote environmental issues will quickly bring effects, and enterprises will start supplying the market with products and services bringing the least burden to the environment.

The environmental labelling of products is not common in Poland, while in other countries (mainly in highly developed ones) eco signs are more important in the buying process. This is mainly due to the lack of knowledge among entrepreneurs about the issue and costs involved in certification and using environmentally-friendly labels. Although "Eko-znak" has already been awarded for more than 15 years, it is still recognisable to only a limited group of consumers. This is caused by the lack of promotion and difficult access to information about products so labelled. Obviously, efforts that could improve the environmental awareness of Poles are fundamental for the promotional success of "Eko-znak", which is confirmed by the increased number of people able to recognise environmental labelling for the purpose of making consumer decisions.

Questions and assignments

1. Define eco-labelling and its main types.
2. Describe the functions of eco-labels.
3. Describe the major benefits to entrepreneurs resulting from the use of eco-labels on products.
4. List and describe 5 selected eco-labels.
5. Identify eco-labels on products that you use every day and point out their meaning.

Literature

Adamczyk W. (2004), *Ekologia wyrobów*, PWN, Warsaw.

Bansal P., Roth K. (2000), *Why Companies Go Green: A Model of Ecological Responsiveness*, "The Academy of Management Journal", vol. 43(4), pp. 717–736.

Chodyński A. (2010), *Proaktywność strategii przedsiębiorstw a bezpieczeństwo ekologiczne*, www.repozytorium.ka.edu.pl (access: 30.08.2015).

Chodyński A. (2011), *Odpowiedzialność ekologiczna w proaktywnym rozwoju przedsiębiorstw*, Wyd. Oficyna Wydawnicza AFM, Krakowska Akademia im. Andrzeja Frycza Modrzewskiego, Kraków.

Chodyński A., Jabłoński A.S., Jabłoński M.M. (2007), *ECSR (Environmental Corporate Social Responsibility) jako współczesna koncepcja biznesu,* [in:] Chodyński A. (ed.), *Społeczne i ekologiczne aspekty zarządzania*, Krakowska Szkoła Wyższa im. Andrzeja Frycza Modrzewskiego, Kraków.

Chudzian J., Chatys M. (2014), *Znajomość znaków ekologicznych wśród młodych konsumentów*, „Roczniki naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu", vol. XVI (6), pp. 82–88.

Dębicka-Fobke G., Jankowska M. (2004), *Zagadnienia i wytyczne dotyczące ochrony środowiska w Unii Europejskiej,* Związek Rzemiosła Polskiego.

Etykiety i deklaracje środowiskowe – Deklaracje środowiskowe III typu – Zasady i procedury (2009), PN-EN ISO 14025:2009.

Etykiety i deklaracje środowiskowe – Etykietowanie środowiskowe I typu – Zasady i procedury (2002), PN-EN ISO 14024:2002.

Etykiety i deklaracje środowiskowe – zasady ogólne (2003), PN-EN ISO 14020:2003.

Etykiety i deklaracje środowiskowe. Własne stwierdzenia środowiskowe (Etykietowanie środowiskowe II typu) (2002), PN-EN ISO 14021:2002.

Green in the Economy II (2011), media group, NBC Universal.

Introduction to ecolabelling (2004), Global Ecolabelling Network Information Paper, July.

Kryteria rolnictwa ekologicznego Stowarzyszenia Ekoland obowiązujące od 27.03.2013 (2013), www.ekolandpolska.pl. (access: 30.10.2015).

Leśniak J. (2009), *Koncepcja zrównoważonej konsumpcji*, [in:] Kiełczewski D., Dobrzańska B. (eds.), *Ekologiczne problemy zrównoważonego rozwoju*, Wydawnictwo WSE w Białymstoku, Bialystok.

Malara Z. (2006), *Przedsiębiorstwo w globalnej gospodarce. Wyzwania współczesności*, PWN, Warsaw.

Prawo własności przemysłowej i ustawy o zwalczaniu nieuczciwej konkurencji, [Industrial Property Law and the Law on Unfair Competition], Dz.U. 2003, No. 119, item 1117, with further amendments.

Program przyznawania wspólnego znaku towarowo-gwarancyjnego – znak ekologiczny EKO, PCBC S.A., wyd.2.

Rozporządzenie Ministra Gospodarki w sprawie trybu certyfikacji wyrobów, [Regulation of the Minister of Economy on the mode of product certification], Dz.U. 2000, No. 17, item 219.

Rubik F., Frankl P. (2005), *The future of eco-labelling. Making environmental product information systems effective*, Greenleaf Publishing.

Seroka-Stolka O. (2012), *Ekologiczna i społeczna odpowiedzialność biznesu w opinii przedsiębiorstw regionu częstochowskiego*, „Journal of Ecology Health", vol. 16(3), pp. 119-125.

Shawn M. (2009), *Life cycle assessment: green grows up,* "PM Engineer", September, vol. 15.

Targosz-Wrona E. (2010), *Etykiety środowiskowe jako znaki towarowe w marketingu produktów przyjaznych środowisku w dobie globalizacji*, http://91.188.98.13/Content/7685/targosz.pdf. (access: 20.10.2015).

Tran B. (2009), *Green management: the reality of being green in business,* "Journal of Economics, Finance & Administrative Science", vol. 14(27), pp. 21–45.
Ustawa o rolnictwie ekologicznym [Act on organic farming] z 16 marca 2001 r., Dz.U. 2001, No. 38, item 452.
Ustawa z 16 kwietnia 1993 r. o zwalczaniu nieuczciwej konkurencji [Act on combating unfair competition], Dz.U. 2003, No. 153, item 1503 with further amendments.
Ustawa z 23 sierpnia 2007 r. o przeciwdziałaniu nieuczciwym praktykom rynkowym [Act on combating unfair market practices], Dz.U. 2007, No. 171, item 1206 with further amendments.
Ustawa z dnia 3 kwietnia 1993 r. o badaniach i certyfikacji, [Act on testing and certification] Dz.U. 1993, No. 55, item 250 with further amendments.
Ustawa z 30 sierpnia 2002 r. o systemie oceny zgodności [Act on compliance assessment system], Dz.U. 2002, No. 166, item 1360 with further amendments.
www.blauer-engel.de. (access: 20.10.2015).
www.ec.europa.eu. (access: 20.10.2015).
www.ecolabelindex.com. (access: 20.10.2015).
www.ekonsument.pl. (access: 20.10.2015).
www.globalecolabelling.net. (access: 20.10.2015).
www.iccwbo.org. (access: 20.10.2015).
www.mos.gov.pl. (access: 20.10.2015).
www.odpowiedzialnybiznes.pl. (access: 20.10.2015).
www.pcbc.gov.pl. (access: 20.10.2015).
www.rekopol.pl/zielony_punkt/zielony_punkt. (access: 20.10.2015).
www.smk.nl. (access: 20.10.2015).
www.svanen.nu. (access: 20.10.2015).
Zaremba S. (red.) (2004), *Marketing ekologiczny*, Wyd. Akademii Ekonomicznej we Wrocławiu, Wrocław.
Zarządzanie środowiskowe – Ocena cyklu życia – Wymagania i wytyczne, PN-EN ISO 14044:2009.
Zarządzanie środowiskowe – Ocena cyklu życia – Zasady i struktura, PN-EN ISO 14040:2002.

http://dx.doi.org/10.18778/8088-016-0.05

Chapter 4

ENVIRONMENTAL MANAGEMENT SYSTEMS

Małgorzata Misiak

For a few decades, due to the dynamic growth of the world population and the accelerated pace of economic growth, we have observed an increased exploitation of the environment and the resultant increasing scale of environmental threats. These phenomena, in turn, have – with some delay – resulted in social changes: people, more and more aware of the relationships between business activities, the state of environment and the quality of life, have begun to expect enterprises to introduce new management modes that would take into account the limitations and needs of the natural environment (Kuna-Marszałek 2011).

Consequently, business management systems are more often preoccupied with environmental protection issues, alongside their usual production, financial and marketing goals. These pro-environment activities, integrated with other tasks and functions performed within a company, have a considerable impact on companies' performance and development outlook (Kuna-Marszałek, Marszałek 2011). Environmentally responsible enterprises may count on measurable benefits from the adoption of such strategies, even if interweaving environmental issues with their business activity is neither easy nor inexpensive. This is because such activities imply the use of appropriate tools and legal solutions, one of them being the introduction of the environmental management system (EMS).

4.1. Definition and philosophy of EMS

EMS is part of the general management system of a company, one which enables the supervision and assessment of the impact of business activities on the environment, together with the assessment of measures undertaken with a view to minimising the negative consequences of the company's impact upon the environment (Maruszak-Flejszman 2007). This notion covers all issues related to the

environmental impact of business activities which bear considerable importance for the company's strategy and its competitiveness in the market.

For the first time, the philosophy of environmental management was formulated in the mid-1980s, in the 'Code of practice for environmental management' adopted by the German Association of Environmental Management. Drawing up and adopting this Code by an association of German businesses was the first initiative of its kind worldwide. The concept of a systemic approach to environmental issues in business activities was formulated in the Business Charter for Sustainable Development, adopted on the initiative of the International Chamber of Commerce in 1991. The Charter sets out 16 priority rules meant to govern industrial development with full respect for the rules of environmental protection and the environment's ecological capacity (Lisowska-Mieszkowska 2007, p. 7).

4.2. Types of EMS

Environmental management systems can be divided into informal (non-certified) ones, based on one's own or an external concept (e.g. Cleaner Production Programme or *Responsible Care*) and formal ones. Formalised EMS date back to the 1990s, when the first standard on environmental management system, the BS 7750 standard, was drawn up in Great Britain. Its structure was based on the international ISO 9000 quality management standard. Almost simultaneously, the European Commission started work on the draft Regulation on voluntary participation by organisations in a Community eco-management and audit scheme. The Regulation was analogous to BS 7750 standard, but it was intended for all Member States of the European Union. It came into force in 1995, and a year later the updated British standard was published by the International Organization for Standardization as the international ISO 14001 standard.

Thus, today, the two most important formal standards for eco-management are: the EMAS system and the ISO 14001 standard. They are based on the Deming cycle, also known as the PDCA (*Plan-Do-Check-Act*) cycle, providing for the continuous improvement of effects achieved by an organisation in the field of its relationship with the environment:

- planning, i.e. defining the processes necessary to deliver the best possible results,
- implementing the activities according to all procedures planned,

- studying the results of implemented actions, i.e. checking if the plan was efficient in order to identify any potential need for improvement
- including the ideas for improvement in the new plan.

Implementation of the above stages enables the spiral effect, in which every subsequent action is better than the previous one, which – in effect – leads to a continuous improvement of results (see: Fig. 4.1).

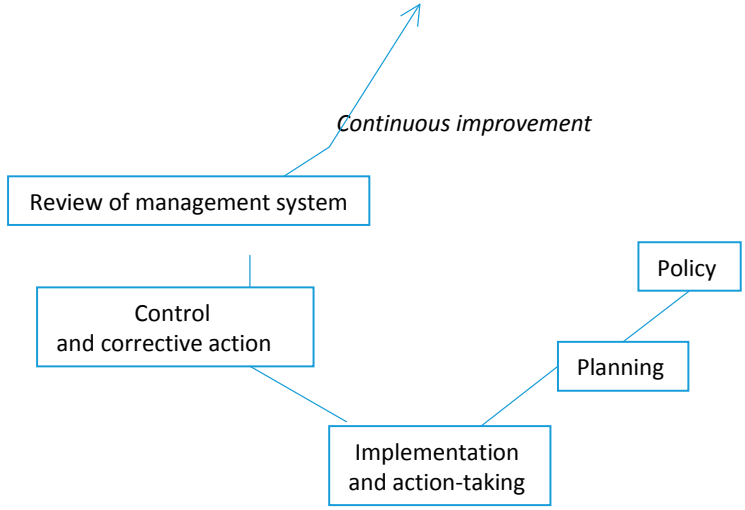

Figure 4.1. Deming Cycle in EMS

Source: own model drawn on the basis of the PN-EN ISO 14001:2005 standard

Both systems set out the requirements to be met by a company if its EMS is to be operational and reliable. The aims behind both systems are also identical: namely, the reduction of the negative effects of a company's activities on the environment. The EMAS system is more complex than the ISO 14001 standard, whose planned reform, however, should make both systems even more similar (Dziennik "Gazeta Prawna" 2015). The additional EMAS standards include: an unconditional obligation to comply with all legal provisions relating to the environment, a commitment to the continuous improvement of pro-environment activities, a focus on personnel involvement and external communication, the obligation to perform environmental reviews and internal audits, the introduction of the EMAS logo and the register of organisations with EMAS system implemented as well as the possibility of derogation for small organisations.

The existence of two regimes means that enterprises can choose to apply either of the foregoing standards. The wide-use of quality management under the ISO 9000 standard would possibly advocate the use of ISO 14001. However, there is a possibility of combining the EMS with an already possessed quality management system, as both contain a number of similar elements, e.g. documented procedures, the issues relating to organisation and personnel, the implementation of control, keeping records, corrective actions, audits and reviews conducted by management (Sałek-Imińska 2004, p. 377). Moreover, the ISO certificates are internationally recognisable hallmarks, which may constitute an additional benefit for companies. The advantages of EMAS, in turn, are: its EU reach, the register of enterprises which facilitates building up commercial relations at home and abroad by the possibility to register in the freely accessible Community database, as well as the logo, providing a company with an attractive communication and marketing tool.

Since EMAS, although based on the ISO standard, is still more complex, below we shall discuss its main assumptions.

4.3. EMS in the light of EMAS Regulations

EMAS – the *Eco-Management and Audit Scheme* – is the EU-wide system for eco-management and auditing. It is provided for by Regulation (EC) No. 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).

4.3.1. Implementation of the system

The first, obligatory phase of EMAS implementation is the environmental review. It consists in the analysis of all of the company's activities relating to the environment. The review is meant to: 1) check if hitherto activities of the company connected with environmental issues have met their objectives, 2) draw up the inventory of legal and other requirements relating to the environment which the company has to and/or wants to fulfil, 3) determine the way in which the company's processes, products or services influence the environment, 4) set up the criteria according to which the significance of this influence will be assessed, and finally 5) collect the data about all the incidents or failures which may provide information on the ecological hazards related to the company's business activities.

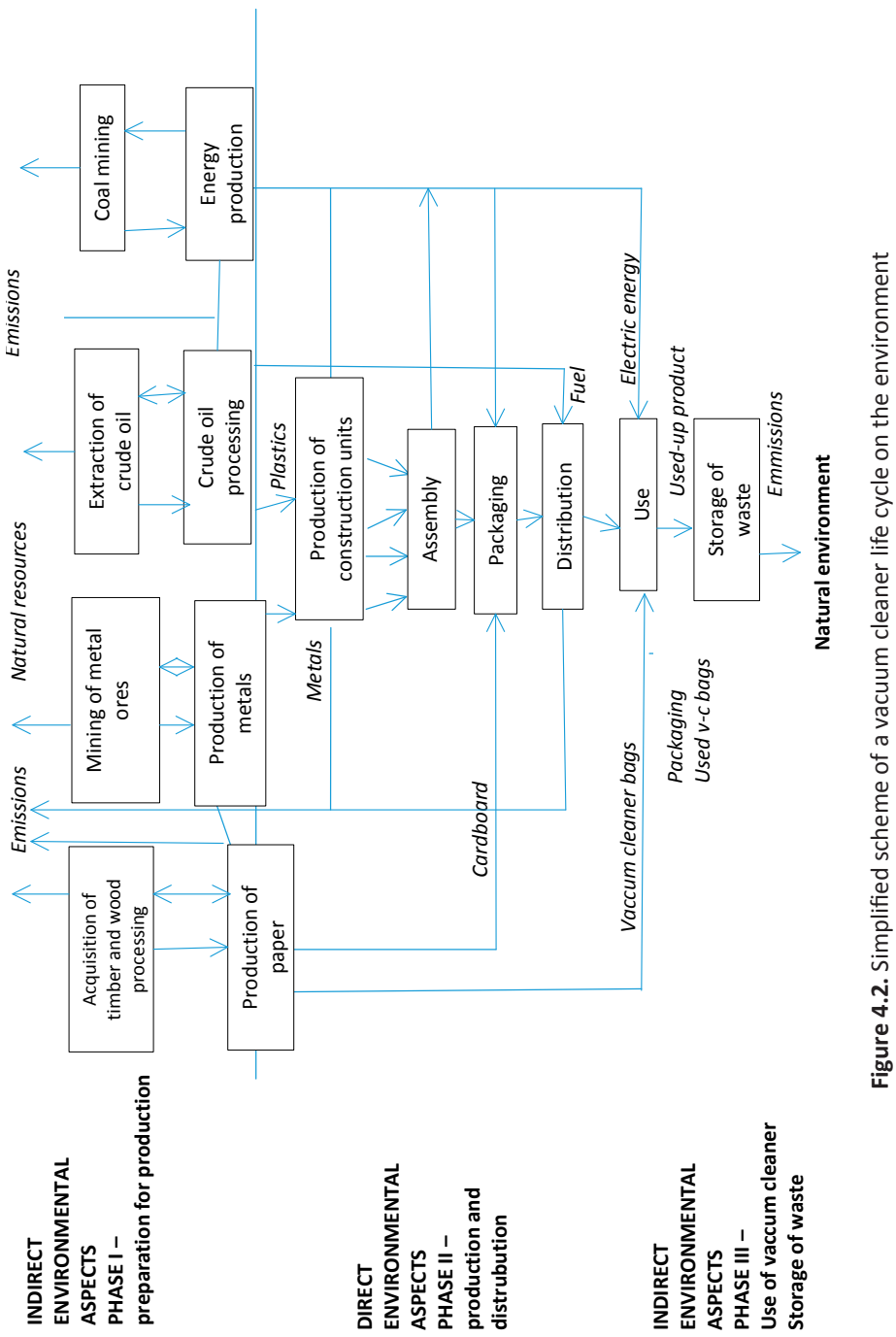

Figure 4.2. Simplified scheme of a vacuum cleaner life cycle on the environment

Source: Marcinkowski et al., p. 50

The key importance here belongs to identifying environmental aspects, i.e. the company's activities, products or services that have an actual or potential impact on the environment – since a company willing to introduce EMAS is obliged to document them. The environmental impact can be either positive or negative, whereas environmental aspect may be direct or indirect. The former concern the kind of impacts a company can control fully, i.e. gas and dust emissions, contamination of soil, waste generation, the impact on biodiversity (e.g. by disturbing ecosystems functioning) or even the consumption of office supplies. The indirect aspects in turn are those that remain outside the full control by the company. They may concern the choice of goods and services the company uses in its processes, shaping ecological awareness or the assessment of practices used by subcontractors or suppliers. These decisions can have a significant impact on the production of waste and wastewater, dust, odours or noise. Figure 4.2 presents a simplified scheme of the environmental impact by a vacuum cleaner producer.

The next phase of EMAS implementation consists in determining which of the environmental aspects have a significant impact on the environment. This accounts for the adoption of the criteria according to which one can identify the aspects with the most significant impact on the environment. Intensity, scope, time, frequency of impact, environment vulnerability, reversibility of changes and the probability of occurrence can serve this purpose. Each company can set the criteria individually, however, the methodology applied should be tested in practice. The assessment of environmental aspects should take place on a regular basis, according to the approved procedure.

A company implementing EMAS should identify standards relating to environmental protection and keep their register (regularly updated). This is not only about the legal requirements but also good codes of practice or arrangements with relevant stakeholders (clients, NGOs and authorities).

Finally, the company has to draw up and implement its environmental policy. According to the EMAS Regulation, the policy should lay down 'the overall intentions and direction of an organisation relating to its environmental performance (…) including compliance with all applicable legal requirements relating to the environment and also a commitment to continuous improvement of environmental performance' (Art. 2 of the EMAS Regulation). The environmental policy should:

- point out to the name of the organisation and give a short description of its activities,
- be adequate to the nature and scope of the environmental impact of the company's activity,

- include a commitment to continuous improvement and prevention of pollution,
- include a commitment to comply with applicable legal requirements and with other requirements relating to the identified environmental aspects,
- provide the framework for setting and reviewing environmental objectives and targets,
- be communicated to all persons working for or on behalf of the organization, subcontractors and other collaborating entities,
- be signed by the top management, implemented and updated
- be available to the public.

An example of an environmental policy is presented in Box.

Environmental policy

Environmental policy of Rockwool Polska

"ROCKWOOL Polska, as a producer of stone mineral wool goods, friendly to the environment and favourable to sustainable development, feels particularly obliged to protect the environment at every stage of its activity. We declare that the company takes into consideration the improvement of ecological balance within the entire life cycle of our products and that in our daily practice:

- we fulfil all legal requirements related to environmental protection, and undertake to implement the highest possible standards,
- we develop products and systems made of stone mineral wool so that they would contribute more and more to environmental protection:
  - by improving energy efficiency,
  - by reducing CO_2 emissions,
  - by minimising the consequences of fires thanks to non-flammability and fire-proof characteristics,
  - by minimising noise pollution,
- we minimise the environmental impact further by implementing low- and non-waste technologies,

- we maintain an open dialogue with clients, suppliers, administration, employees and neighbours,
- we see to it that our manufacturing plants are the least burdensome for the environment.

The basis for our activities is the constantly developed and mastered environmental management system that guarantees a comprehensive approach to pro-environment activities, supports the implementation of pollution preventive rules and enables documenting all measure undertaken in this respect.

Management of ROCKWOOL Polska Sp. z o.o"

Environmental policy–Roleski Company

The Roleski Company considers protection of the environment as one of the company's priorities, which is reflected in the Environment Policy adopted and based on the following principles:

- Conducting activities according to the environmental regulations and standards in force.
- Minimising the use of chemicals both in product recipes and in conservation and sanitary processes related to production equipment and facilities, etc.
- Rational use of electric energy, heat and water.
- Introduction and full implementation of internal regulations related to the reduction of waste generation.
- Continuing investment in modern equipment and machinery, with the focus on their energy efficiency and other pro-environmental features.
- Ecological education of employees and involving them in activities promoting environmental protection.
- Maintaining long-term co-operation with reliable suppliers.

The Policy thus formulated is implemented through:

- continuous mastering of the Integrated Management System, conformant with the requirements of the EN ISO 14001 standard,

- following the environmental protection regulations and rules in force,
- minimising the amount of solid waste and wastewater generated,
- the use of raw materials and packaging that guarantee production of goods satisfying the Clients' quality expectations,
- mastering technologies and manufacturing processes so that they are environment-friendly and satisfy the needs and expectations of current and future users and other interested parties,
- continuous involvement of employees in activities aimed at constant improvement of quality and systematic upgrading of their competences and knowledge relating to environmental protection,
- securing appropriate working conditions for employees and the resources aimed at the continuous development and modernization of the organization.'

Source: http://www.rockwool.pl/o-firmie/polska/polityka-srodowiskowa, http://republikaroleski.pl/o-firmie/polityka-srodowiskowa (access 25.09.2015).

The environmental policy constitutes the framework for defining specific objectives aimed at minimizing the negative impact on the environment. If possible, these objectives should be measurable and achievable through the implementation of environmental activities. These activities are concrete measures and tools a company should implement in order to achieve environmental policy objectives. A particularly important role in the assessment of objectives and tasks belongs to environmental performance indicators (amounts of emissions, consumption of raw materials or energy) related to a single unit of goods produced.

Examples of correspondence between the contents of the environmental policy, its objectives and the environmental activities adopted are presented in Table 4.1.

Table 4.1. Environmental policy and corresponding environmental objective and activities

Contents of environmental policy	Environmental Objective	Environmental activities
Minimising environmental acidification	Reduction of SO_2 emission by 50% compared to 2015 emissions	Use of low-sulphur coals

Tab. 4.1. cont.

Minimising the use of non-renewable resources	Reduction of coal consumption by 15% compared to 2015	Introduction of co-incineration of coal and biomass
	Reduction of solvent consumption compared to 2015	Introduction of closed cycle and regeneration of solvents
Optimisation of waste management	Introduction of selective collection of waste at 80% of workstands	Purchase and distribution of containers for collecting waste papers, glass, metals plastics and biodegradable wastes
	Recycling of 100% of used-up toners and cartridges	Introduction of a system for collection and delivery to regeneration plant
	Recycling of 100% of used-up fluorescent lamps	Introduction of a system for collection and delivery to the distributor

Souce: Marcinkowski et al. (2010), p. 63.

Companies should also draw up appropriate environmental programmes, including:

- clearly assigned responsibility for the execution of tasks and achieving the objectives by designating relevant persons or organisational units,
- allocation of resources for the execution of environmental tasks,
- deadlines for achieving environmental tasks.

The results of activities undertaken by companies with the aim of reducing the negative impact on the environment are measured with so-called environmental performance indicators, defined by the EMAS Regulation and applicable by all organizations implementing EMS under the EMAS standard. The indicators focus on the following core areas:

- energy efficiency,
- material efficiency,
- water,
- waste generation,

- biodiversity,
- emissions.

Each indicator is composed of figures A, B and R, with R indicating the ratio A/B (R=A/B) where A – input/impact on the environment, B – overall output of the organization. Figure A indicates the total annual input/impact by pollution and consumption of natural resources in the given field. These are: annual consumption of energy, annual consumption of energy from renewable sources, annual consumption of materials and water, total amount of generated waste broken down by types, the total annual amount of hazardous waste, the size of the surface of land used in built-up areas, yearly emissions of greenhouse gases, at least SO_2, NO_x and PM.

Figure B is the same for all fields and indicates the total annual gross value-added, total annual physical output (expressed in tonnes) or the total annual turnover or the number of employees.

A company does not have to use all indicators if they are not appropriate in the case of a particular organization. Additional ones may, however, be introduced, if they better reflect the specificity of a given enterprise.

The key environmental aspects and related activities should be constantly monitored. To this end, an enterprise should establish a procedure providing for regular monitoring and checks of parameters appropriate for activities with a significant impact on the environment, i.e. the so-called key characteristics. The requirements relating to these parameters result from legal regulations in force, administrative decisions or civil law contracts. They should be measured or are established on the basis of appropriate documentation.

Limit values for the key characteristics are the operating criteria, which fall under operational steering. Operational steering means setting up and implementing procedures that identify optimum conditions using operating criteria. Operational steering can cover the following fields of activity:

- production processes,
- provision of services,
- purchase of materials and resources,
- storage of materials and products,
- transport,
- packaging,
- equipment maintenance,

- product design,
- research and laboratory activities,
- concluding of agreements/contracts.

Table 4.2 presents an example of environmental aspect and corresponding operating criteria (for a manufacturing company).

Table 4.2. Environmental aspects and corresponding operating criteria

Significant environmental aspect	Source/ process	Actual amount/value	Operation criterion	Monitoring mode	Basis
Hazardous post-varnish waste	Paint shop	342 Mg/year	800 Mg/year	Waste register	Permit for waste generation

Source: Marcinkowski et al. (2010), p. 70.

Implementation of EMS usually involves a change in the organizational structure of the company. The assignment of tasks, responsibilities and rights, as well as communicating the changes to employees, is indispensable. The person responsible is usually a top management representative in the rank of a plenipotentiary. Depending on the company's specificity and structures, necessary changes can take various forms, e.g. in small companies the role of plenipotentiary can be assumed by the President (CEO). It is also possible that an external specialist, with appropriate knowledge and skills is hired and consequently there is no need to change the scope of tasks and duties performed by the employees. Finally, one of the members of the management board can take on the responsibilities connected with environmental management.

Effective implementation of EMS implies also providing necessary training to employees, by which each of them could acquire the desired competences relating to environmental protection and his/her workplace. Therefore, identification of training needs is necessary. A part of them should address significant environmental aspects related to the company's business activity, but environmental awareness of staff, the nature and philosophy of eco-management or the consequences of EMS implementation may be also taken into account. EMAS attaches particular attention to the active involvement of all staff members for the sake of the efficient operation of the system.

The implementation of EMS entails drawing up procedures and keeping appropriate records, if necessary. The EMAS documentation covers:

- system documents required by formal EMAS rules: environmental policy, specification of environmental objectives and tasks, description of the scope of EMS as well as the description of the most important elements and their interconnections,
- operational documents resulting from the specificity of a given company's environmental aspects.

Records of outcomes or evidence confirming the execution of various tasks or activities are specific types of documents. They concern in particular: the assessment of regulatory compliance, monitoring and checks as well as supervision over measurement equipment, employees' competences, organised training courses, results of internal audits, preventive and corrective actions undertaken as well as reviews of the management system. Depending on the specificity and needs of an enterprise, the following may also be needed: registers of data concerning raw materials and other resources, products, supplies and subcontractors, equipment maintenance reports, repair reports or records documenting malfunctions or breakdowns as well as hazardous situations. Additionally, the EMAS Regulation requires that the EMAS processes documentation should be supervised.

It was assumed that EMS documentation should not become an additional and unnecessary bureaucratic burden, especially to micro and small enterprises for which the drawing up and maintaining of extended EMS documentation may be too much of an effort, disproportionate to the scale of environmental benefits. Therefore, the EMAS system allows a flexible approach to the documentation required within EMAS processes. Its size and scope should be adequate to the area of the company's activity and its impact on the environment, so not all elements of the system have to be documented.

A company that has introduced the EMS should make all possible efforts to secure its proper functioning. The internal environmental audit serves the purpose of evaluating the performance of the eco-management system. The essence of the audit lies in collecting and verifying the evidence that can prove the conformity of the system and achieved results of environmental activities with legal requirements and the company's environmental policy. Internal audits should be carried out according to the established procedures and the appropriately adopted programme. The audits should take place every three years, although in large companies they are usually performed at yearly intervals. The frequency of audits depends on the nature, scale and complexity of activities, the significance of the environmental aspects relating to the company's activity, the results of previous audits and the history of environmental problems.

Internal audits are carried out by an auditor or by a group of auditors, depending on the size of the organisation and complexity of its activities. The choice of auditors should guarantee impartiality and objective judgement, by ensuring, e.g., that a given department is not audited by its own employee. Audits can also be carried out by an external auditor (a physical person or an organisation). The audit covers:

- interviews with employees,
- checks and control of equipment and activities carried out,
- verification of procedures, records, registers and other documents,
- random on-the-spot checks.

After the audit, a written report is prepared by the auditor(s). It consists in: a description of the scope of the audit, information on conformity with the environmental policy, assessment of the results of pro-ecological measures taken, the evaluation of the monitoring of impact on the environment as well as proposals of preventive and corrective actions, if any irregularities have been found out. In the case when irregularities are detected, the auditing process should end with the adoption of an appropriate plan for corrective action. Formally, the audit is not ended until the identified irregularities have been eliminated by the implementation of a proposed corrective action. Corrective actions are taken in the case of incompatibilities, i.e. irregularities consisting in non-compliance with at least one of the requirements. The identified irregularities have to be removed through corrective actions aimed at the elimination of their causes. Preventive actions, in turn, are meant to eliminate the sources of potential irregularities that could possibly occur in the future. The key issue here is to eliminate the sources of irregularities rather than their consequences only, because only the removal of the source makes it possible to solve the problem completely.

EMAS performance should be subject to regular reviews. The organisation implementing the system according to EMAS rules should also organise a mutual exchange of information with interested parties, including clients, the local community and local authorities, and to publish periodically the current and updated information on the state of the environment. The environmental statement is the key document for proper communication with stakeholders. The statement contains all the detailed information on the organisation's operations, with particular focus on the activities relating to the environment. According to the provisions of the EMAS Regulation, the environmental statement should contain at least the following elements:

- a clear and unambiguous description of the organisation registered under EMAS and a summary of its activities, products and services, and its relationship to any parent organisations, as appropriate;
- a reference to the environmental policy and a brief description of the environmental management system of the organisation;
- a description of all significant direct and indirect environmental aspects which result in significant environmental impacts of the organisation and an explanation of the nature of impacts related to these aspects;
- a description of environmental objectives and targets in relation to significant environmental aspects and impacts;
- a summary of available data on the environmental performance of the organisation against its environmental objectives and targets with respect to its significant environmental impacts. Reporting should be on the core indicators and on other relevant existing environmental performance indicators;
- other factors regarding environmental performance, including performance against legal provisions with respect to their significant environmental impacts;
- a reference to the applicable legal requirements relating to the environment;
- the name and accreditation or licence number of the environmental verifier and the date of validation (Annex IV to the EMAS Regulation).

The environmental statement should be drawn up at regular intervals (at least every three years) and updated every year. The updated environmental statement should contain at least the last four elements pointed out above. Due to the fact that the environmental statement constitutes an instrument for communication between organisations and the external environment, it should provide for the possibility of interaction on the side of stakeholders, e.g., an on-line form to be filled and sent via the organisation's webside.

4.3.2. Maintaining EMS

The EMS must be subject to verification. This is the conformity assessment carried out by an environmental verifier in order to demonstrate whether an organisation fulfils the requirements of the EMAS Regulation. It also covers the validation

of the environmental statement, i.e. the confirmation that the information included in the environmental statement is reliable, credible, correct and appropriate to the organisation's type of activity, and that it meets the requirements of the Regulation.

A verifier is an organisational unit, an institution or a natural person, who has obtained the appropriate licences to carry out conformity assessments. The choice of a verifier must take into account the scope of the verifier's license according to the Statistical classification of economic activities in the European Community (NACE). During the verification, the verifier, reviews documents, interviews employees and performs a sample check of documents submitted by a verified company. The procedure is followed by drafting a verification report. The aim of this report is to document the verification process, to verify – on the basis of the collected evidence – the conformity of an organisation's EMS with the requirement of the EMAS standard, verify whether the environmental statement has been implemented and – if applicable – to point out to any deficiencies of the eco-management system. If no incompatibilities or deficiencies are found, the verifier validates the environmental statement.

Successful verification constitutes the basis for the application to register in the EMAS system. To this end, a company should submit an application (together with the validated environmental statement) to the appropriate regional director for environmental protection. If the application meets all the requirements, an organisation is informed about the positive result of the application process. After the company in question has paid all applicable fees, it is provided with a registration number and from then on it can use the EMAS logo (Fig. 4.3).

Figure 4.3. EMAS Logo

Source: http://emas.gdos.gov.pl/stosowanie-logo-emas (access: 25.09.2015)

The EMAS logo was created to provide enterprises with an additional tool for shaping a positive image of the company in its environment. Only companies with a valid registration can use the EMAS logo, in compliance with the following rules:

- the logo must be always accompanied by the organisation's registration number, with the exception of promotional or marketing activities related to the EMAS system itself,
- only the official logo is valid,
- if the organisation comprises several sites, with only part of them registered, the use of the EMAS logo is restricted only to the registered sites and its use cannot suggest that the whole organisation is registered,
- preferably, the logo should be also present on the environmental statement.

The EMAS logo cannot be used on product packaging and in conjunction with comparative claims concerning other activities and services or in a way that may create confusion with environmental product labels.

4.4. Costs and benefits of EMS

An efficient environmental management system enables an organisation to reap measurable benefits, not only in the area of economy and finance. Ejdys (2007, p. 294) suggests that the benefits related to EMS implementation can be divided into internal and external ones (generated in the company's environment).

The first category includes:

- lowering operational costs by minimising the consumption of raw materials, water and energy,
- minimising the costs, by reducing environmental fees for using the environment (thanks to reduced amount of solid waste, waste water and emissions as well as an increased amount of recycled waste) or minimising the risk of penalties for non-compliance with environmental standards,
- minimising the risk of breakdown or accident occurrence and their potential consequences thanks to previously prepared emergency response procedures,
- lowering the costs of insurance for companies whose activities may lead to serious breakdowns,
- access to preferential loans for pro-ecological investments,

- improved competitiveness in markets that attach importance to an environmentally-friendly approach in business,
- the possibility of providing services to principals requiring their subcontractors comply with high environmental standards, or possibilities of submitting bids in tenders where having an operating EMS is one of the selection criteria.

Among the internal non-economic benefits, we can name:

- improved quality and safety at work, through increased awareness of employees and their involvement in the organisation's activities,
- more effective management of a company (precisely defined objectives, tasks and implementation procedures, responsibilities assigned to each workplace, supervision and control over undertaken activities),
- acting in accordance with binding legal regulations,
- faster and easier access to permits or decisions relating to the activities of an organisation,
- increased self-control, responsibility and ecological awareness of employees (they will identify themselves more easily with an entrepreneur known for his/her environmentally-friendly approach).

A number of benefits of implementing EMS can also be identified in a company's environment, namely:

- improvement of the company's image and increased credibility in stakeholders' eyes, e.g., investors, business partners or public authorities, resulting from its ability to demonstrate that it operates in accordance with the laws in force,
- better chances to build sustainable commercial relations,
- better relations with clients, local communities and public administration through maintaining an open dialogue with all interested parties.

The introduction of EMS in a company implies a need to incur certain costs. This concerns companies which decide to implement the system on their own and those who decided to use consultancy services alike. These costs may include: allocation of appropriate resources for tasks related to the implementation

of the system or hiring appropriately qualified staff, co-operation with external consultants and the costs of adjustments to environmental regulations, if the organisation has not met them before. Depending on the size and specificity of the company, the costs may vary considerably. Additionally, an implemented EMS involves further costs connected with the environmentally-friendly modernisation of the company and the functioning of the eco-management system itself. Therefore, they should be taken into account in the company's economic calculations of its pro-ecological activities (Lisowska-Mieszkowska 2007, p. 14).

4.5. EMS in practice

According to European Commission data, 9,794 sites[24] and 2,928 organisations are registered under EMAS in the EU. Data for Poland are 129 and 46[25] respectively. In industry, the largest number of registrations was recorded in waste management, energy and gas supply, chemical production as well as in the food production sector. In the services sector, the largest number of entities operating EMS under the EMAS standard are those in public administration, accommodation and education. An interesting observation can be drawn from the data on the structure of EMAS registrations by organisation size (comp. Fig. 4.4). A similar level of interest in EMAS can be observed among large and medium, as well as small and micro enterprises.

What is interesting is that in the EU, by far the most popular are EMS based on the ISO 14001 standard. According to the Eco-Innovation Observatory data, over 105,000 organisations had them in 2012[26]. In Poland, the standard was granted to almost 1,800 companies. The ISO statistics indicated that 301,000 entities had ISO certificates in 2013[27], most of them being based in China, Italy and Japan.

[24] A 'site' means geographically separated areas subject to the management control of an organisation, with control covering activities, products and services, including the entire infrastructure, equipment and materials; a site is the smallest unit taken into account for the purposes of registration (Article 2 of EMAS Regulation).

[25] Data accessible at http://ec.europa.eu/environment/emas/register/reports/reports.do (accessed on: 14.09.2015).

[26] http://database.eco-innovation.eu/indicators/view/99/1 (accessed on: 14.09.2015).

[27] Data from ISO Survey of Management System Standard Certifications, http://www.iso.org/iso/iso_survey_executive-summary.pdf (accessed on: 14.09.2015).

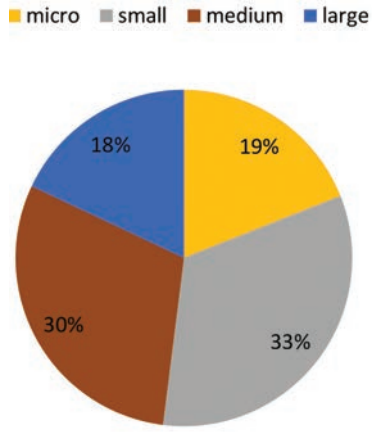

Figure 4.4. EMAS registration by organisation size
Source: http://ec.europa.eu/environment/emas/register/reports/reports.do (accessed on: 14.09.2015)

The majority of entities implementing ISO in Poland are manufacturing companies[28], which results from the scale of environmental hazards connected with industrial activities. Most of them are relatively large organisations, that is the ones employing over 250 staff. Almost all companies implementing formalised eco-management systems recognise these systems' role in minimising the negative impact of business activities on the environment through the reduction in amounts of waste generated, minimising the harmful emissions to the atmosphere, and lowering the demand for natural resources. The majority of companies also stress the positive effects of EMS on their market standing, their competitiveness and the reduction of operational costs due to lower consumption of resources. It seems that the Polish market does not offer incentives for EMAS or ISO holders in the form of lower insurance premiums or easier access to financing. At least, Polish entrepreneurs do not seem to perceive that implementation of EMAS or ISO sufficiently translates into such benefits.

The years to come will no doubt bring a variety of environmental management systems. Even though environmental management systems are optional now, in the future they might be a prerequisite to many companies. This is because environmental management systems are part of the widely accepted and important concept of sustainable growth.

[28] The following section based on: Matuszak-Flejszman (2009).

Questions and assignments

1. What are environmental aspects? Formulate a map of impacts on the natural environment for a selected company.
2. Design a few environmental performance indicators for a chosen company.
3. What are the mandatory elements of the environmental statement? Find an example of the statement by any company and verify its conformity with the provision of the EMAS Regulation.
4. Name the benefits and costs of EMS introduction.

Literature

Ejdys J. (2007), *Koszty i korzyści systemu zarządzania środowiskowego*, [in:] Poskrobko B., *Zarządzanie środowiskiem*, PWE, Warsaw.

Kuna-Marszałek A. (2011), *Rola sformalizowanych systemów zrządzania środowiskowego we współczesnej gospodarce światowej*, [in:] Rymarczyk J., Domiter M., Michalczyk W., *Problemy regionalizmu i globalizacji*, "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", Wroclaw.

Kuna-Marszałek A., Marszałek J. (2011), *Znaczenie sformalizowanych systemów zarządzania środowiskowego w przedsiębiorstwie*, [in:] Sułkowski Ł. (ed.), *Firmy rodzinne – determinanty funkcjonowania i rozwoju, Współczesne aspekty zarządzania,* "Przedsiębiorczość i Zarządzanie", vol. XII, zeszyt 6, wyd. SWSPiZ, Lodz.

Lisowska-Mieszkowska E. (2007), *Systemy zarządzania środowiskowego – rozwój i funkcjonowanie w Polsce*, "Ochrona Środowiska i Zasobów Naturalnych" nr 30.

Marcinkowski A. et al. (2010), *Ekozarządzanie w przedsiębiorstwie*, Centrum Informacji o Środowisku, Warsaw.

Matuszak-Flejszman A. (2009), *Benefits of Environmental Management System in Polish Companies Compliant with ISO 14001*, "Polish Journal of Environmental Studies", Stud. Vol. 18, No. 3.

PN-EN ISO14001:2005, *System zarządzania środowiskowego. Wymagania i wytyczne stosowania*.

Regulation of the European Parliament and of the Council (EC) No. 1221/2009 of 25 November 2009 *on the voluntary participation by organisations in a Community eco--management and audit scheme (EMAS)*, Official Journal of the EU 342, 22.12.2009.

Sałek-Imińska A. (2003), *System zarządzania środowiskowego w świetle wymogów współczesnej gospodarki*, [in:] *Ochrona środowiska a procesy integracji i globalizacji*, A. Budnikowski, A. Cygler (eds.), SGH, Warsaw.

http://dx.doi.org/10.18778/8088-016-0.06

Chapter 5

ENVIRONMENTAL MARKETING STRATEGIES

Tomasz Serwach

A growing concern for the natural environment is one of the factors that increasingly determine actions adopted by enterprises. Companies operate to earn profit through responding to arising opportunities and threats, therefore, they should not ignore environmental issues in their business strategies, including marketing ones. Restrictive environmental standards, the increasing environmental awareness of consumers and the availability of clean technologies stimulate market opportunities as well as create additional risks. Thus, enterprises should select environmental strategies to balance their potential benefits and costs.

This chapter should provide the reader with an insight into environmental marketing strategies as well as demonstrate the reasons for their implementation. Defining these strategies is a starting point. The second part describes business motivations to implement environmentally friendly actions. The third one presents environmental marketing strategies, and the final part of the chapter contains conclusions and a set of questions addressed to the reader.

5.1. Definition and idea of corporate environmental marketing strategy

Considerations relating to corporate marketing strategies should start with providing definitions of this term. Corporate strategy is defined as: "the pattern of major objectives, purposes, or goals and essential policies and plans for achieving those goals, stated in such a way as to define what business the company is in or is to be in and the kind of company it is or is to be" (Jain 1999, p. 8). In other words, "this is a company's game plan for achieving its goals" (Kotler, Keller 2012, p. G8).

The term of a marketing strategy is described as "the marketing logic by which the company hopes to create customer value and achieve profitable customer relationships" (Kotler, Armstrong 2012, p. 677). According to Jain (1999, p. 23), "marketing strategy focuses on ways which enable an enterprise to outperform its competition effectively, using its unique strengths, to deliver improved benefits to the consumers." An effective marketing strategy should be characterized by (Jain 1999, p. 23):

- clear identification of the market;
- good linkage between the company's strengths and market needs;
- operations carried out in key business areas are better when compared to those of the competition.

Taking these elements into account, Jain indicates that the development of a marketing strategy requires that three key decisions should be made (Jain 1999, p. 24):

- Where should we compete? In other words, it is necessary to identify the market;
- How should we compete? It is necessary to identify the tools which will enable the enterprise to compete with other entities;
- When should we compete? This is perceived as a need to select the time of market entry.

Taking the above comments into account, we may now consider a definition of the environmental (or pro-environmental) marketing strategy of an enterprise. It is a narrower term in relation to the corporate environmental strategy, which has been described by Banerjee et al. (see Cater, Prasnikar and Cater 2009, p. 58) as "the extent to which environmental issues are integrated with a firm's strategic plans." The corporate environmental marketing strategy means a set of actions undertaken by an enterprise to benefit from its strengths and focus them on meeting the environmental needs of consumers (and potentially of other stakeholders). Stanton and Futrell define this term as "all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, with the emphasis that these activities create the smallest possible negative impact on the natural environment" (see Cater, Prasnikar and Cater 2009, pp. 58–59).

In the context of Jain's considerations, we can present characteristics of an effective environmental marketing strategy:

- clear identification of the market;
- linking environmental strengths of an enterprise with stakeholder needs in relation to environmental protection;
- environmental protection oriented tasks are delivered better than those of the competition.

Chodyński (2011, p. 124) recognises that corporate environmental marketing strategies should also be characterised by the following features:

- orientation on prevention;
- addressing risk and planning;
- support of high level management.

It has already been mentioned that the term environmental marketing strategy is rooted in a broader term, i.e. corporate environmental strategy. Based on the subjective criterion, several other strategies which address the subject of environmental protection may be distinguished; they are described in Table 5.1.

Table 5.1. Constituent strategies resulting from corporate environmental strategy (based on the subjective criterion)

Strategy	Description
Purchasing environmental strategy	This strategy covers the long-term management of the supply chain to increase the importance of recycling, reusing and reducing the use of resources.
Production environmental strategy	This strategy addresses environmental requirements in diverse aspects of the production process, e.g. product development, the use of production capacity and stock management.
Personnel environmental strategy	This strategy involves training personnel and stimulating their environmental awareness, which translates into their active participation in the enterprise's environmental protection activities.

Source: Author's own compilation based on Cater, Prasnikar and Cater (2009), p. 59.

Bearing that in mind, one may claim that corporate environmental strategy is a rather holistic approach aiming at being eco-friendly, and an ecological/environmental marketing strategy is one of the measures taken to achieve such a goal.

5.2. Enterprises' motivation to adopt environmental marketing strategies

The subject of environmental protection is reflected in various aspects of companies' operations, including their marketing strategies. Therefore, it seems reasonable to identify factors that motivate enterprises to coordinate their strategies with the requirement of environmental protection. Kaczmarek (2011, p. 507) lists three key reasons for adopting this approach. They include:

- an increased number of standards and regulations addressing the issue of environmental protection;
- consumers who are more sensitive about this issue and related social pressure to improve quality of the environment;
- technological progress focused on the decreasing importance of technologies which degrade the natural environment and the increasing importance of pro-environmental technologies.

All these factors are interrelated as they mutually impact one another. This is graphically demonstrated in Figure 5.1.

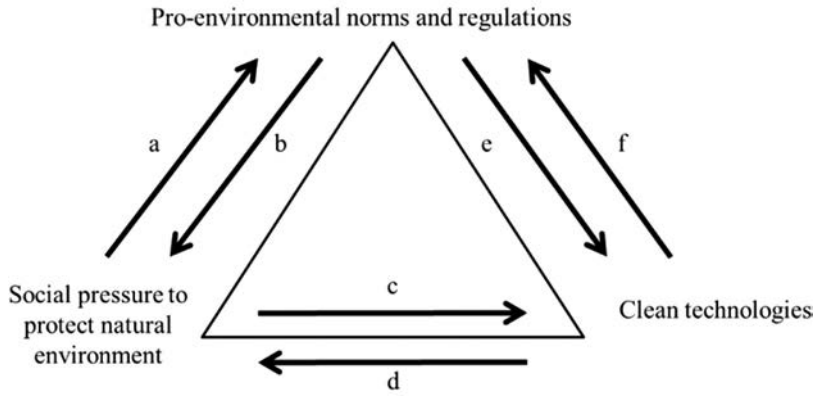

Figure 5.1. Interactions among motivations to adopt environmental marketing strategies

Source: Author's own compilation

Society's attitude is increasingly focused on protecting the natural environment from degradation, which influences such aspects as legislation and results in adopting such laws that encourage people to act in an environmentally-friendly

manner (arrow a). On the other hand, citizens must adapt to the binding standards and regulations by taking such actions as limiting the consumption of goods that affect the environment and increasing their spending on goods which comply with pro-environmental legal requirements (arrow b). Consequently, this results in shaping a consumption pattern that facilitates the improvement of the natural environment, as it provides a bottom-up stimulus for enterprises to adopt pro-environmental solutions.

Social pressures also lead to the development of new technologies which are characterised by improved environmental parameters (arrow c). On the other hand, such technological solutions, particularly if they are implemented in the final goods, facilitate the development of social awareness focused on the concern for environmental conditions (arrow d). It is clear that the development and implementation of such technologies represent a response not only to consumers' behaviours but also to the binding, and sometimes planned, regulatory solutions (arrow e). At the same time, willingness to extend the application of pro-environmental technological solutions is expressed through the adoption of standards and regulations focused on environmental protection (arrow f).

Other sources divide the motivations to adopt environmental strategies into four major groups (see: Cater, Prasnikar and Cater 2009, pp. 57–58):

- regulations – establish legal and economic limitations to business activities; it should be stressed that the degree of impact created by the regulations depends on the sector in which specific entities operate;
- public concern – an external force which impacts businesses and is related to activities of various groups of stakeholders (e.g. green activists) and the consumers themselves;
- expected competitive advantage – a belief that an enterprise may gain an advantage over other companies operating in a specific sector due to the implementation of pro-environmental goals;
- top management commitment – an external care of the company management for the natural environment which results from a fear of stricter regulations or high environmental awareness of consumers.

The impact of these motivations on corporate marketing strategies is presented in Figure 5.2.

It should be emphasised that empirical analyses confirm that enterprises are led by these motivations when deciding upon their environmental marketing strategies. Cater, Prasnikar and Cater (2009) studied Slovenian entities in terms of reasons that

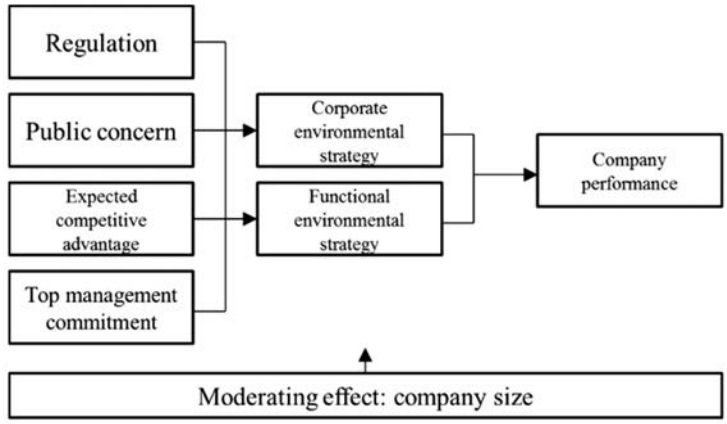

Figure 5.2. Model of environmental strategies and motivations

Source: Cater, Prasnikar and Cater (2009), p. 59

have contributed to the adoption of such strategies. The respondents, i.e. representatives of companies with at least 50 employees, were asked to respond to specific statements using a scoring scale from 1 to 5 (1 means complete disagreement with a specific statement, and 5 – complete agreement with the statement).

The responses indicated that Slovenian enterprises were becoming more pro-environmental mainly due to the fact that their top management was fully committed to the idea of environmental protection. Other motivations were also important, and social pressures represented this attitude. Occasionally, there were significant differences in responses provided by the representatives of large and small enterprises, which is a key finding. The latter group, for instance, was influenced by a stronger pressure of consumers, who expected that the enterprises would develop products presenting greater environmental values. That situation could result from the fact that large enterprises had a greater potential to adopt a pro-environmental attitude (e.g. due to greater financial resources), and their activities were more visible to consumers and other stakeholders.

In this context, it is worth emphasising that Esty and Winston (2009, p. 20) indicate that enterprises most influenced by environmental protection-oriented social pressure:

- own reputable brands,
- operate in sectors which significantly impact the environment,

- have an offer which depends on natural resources,
- are subject to significant on-going regulation-related burdens,
- can become subject to new regulations in the future,
- have operations which involve significant greenhouse gas emissions,
- operate in sectors which intensely compete for qualified labour force,
- have a strong pro-environmental image.

Many of these characteristics indicate that it is mainly large enterprises that need to adopt pro-environmental attitudes, however, small ones also need to address environmental protection in their marketing strategies. The reference literature lists several reasons for this situation (see: Esty and Winston 2009, pp. 19–21):

- The subjective scope of legislation is extended – regulations which concern large enterprises in many cases also cover smaller ones;
- smaller enterprises hold an advantage in terms of technology development, which can result from their greater organisational flexibility, hence, they can generate significant benefits from the development of so-called clean technologies;
- pressure groups (such as green activists) can perceive small enterprises as a target of their actions – for instance, the emission of pollution produced by a single individual does not raise the same objections as those produced by a company (regardless of its size);
- technological progress reduces the cost of activity monitoring, even in small enterprises, also in terms of their compliance with environment-related requirements;
- larger customers force smaller suppliers to implement measures to reduce negative impacts on the environment – this is evident particularly in the situation where the environmental values of a final product depend on the environmentally friendly aspects of intermediate goods;
- due to their flexibility, smaller enterprises have a greater ability to respond to new market trends – for instance, they are more efficient in managing gaps created by consumers who are aware of the threats resulting from the degradation of the environment.

To conclude considerations concerning the motivations that direct business towards the adoption of an environmental marketing strategy, we may observe that such activities are in line with the idea of corporate responsibility. This is a multi-layer concept which can be represented in the form of a pyramid (Figure 5.3).

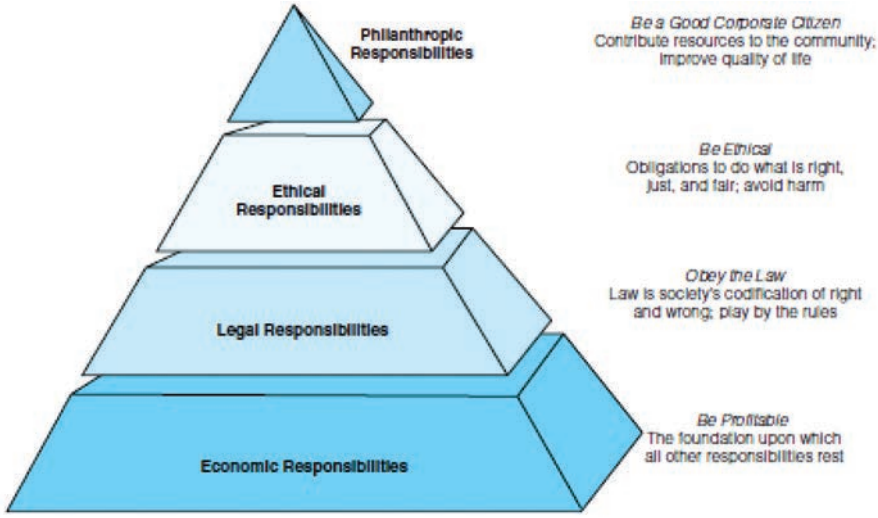

Figure 5.3. The pyramid of business responsibility

Source: Carroll (1991), p. 42 (cited after Farrell, Hartline 2011, p. 63)

The greater effort of an enterprise in the area of environmental protection involves the need for being responsible vis-à-vis society. A company, which fulfils environmental requirements aspires to produce as many social benefits as possible, and, in a way, it gives up planning and delivering its individual business targets.

5.3. Types of corporate environmental marketing strategies

The corporate environmental marketing strategy reflects the attitudes of enterprises in relation to environmental protection. These attitudes are mainly based on the classification of motivations followed when adopting environmental strategies. The literature distinguishes four types of such attitudes (Kaczmarek 2011, p. 508):

- the legislation-focused approach – this strategy is implemented to respond to the publication of new rules and provisions on the environment;
- the market approach – this strategy expresses the green preferences of consumers;
- stakeholders' approaches – extends the previous attitude, taking also other groups interested in environmental issues into account;
- the "dark green" approach – this approach emphasises the need for the organisation to operate in greater harmony with nature.

It should also be stated that when an entity adopts an ecological marketing strategy, it must specify how it should change its marketing mix components to address environmental issues. Some key questions in that area are presented in Table 5.2.

Table 5.2. Marketing mix in an ecological context – key questions

Marketing mix element	Key questions
Product	What is the impact of the firm's product on the natural environment? Do the inputs and packaging affect the environment? Are different product features (like packaging) necessary or is it possible to eliminate them?
Price	Is there a pool of consumers who are willing to pay higher prices for an eco-friendly product? How does the usage of ecological inputs influence the firm's prices? Are there public programmes subsidizing the usage of ecological products and are the firm's clients aware of those programmes?
Place	How does the way a firm reaches its consumers (e.g., through the selection of means of transport) affect the environment? Does the time of delivery increase congestion? Does the usage of proecological transport have an impact on the speed of delivery and/or the quality of the product?
Promotion	Is the material used in promotion detrimental to the environment? Are consumers aware of the firm's proecological attitude? (e.g., through information on cerificates a firm obtained) Do the firm's communication channels efficiently reach environmentally conscious consumers?

Source: Author's own compilation.

A really holistic approach towards environmental issues necessitates the adaptation of each markeing mix element to new opportunities and risks. It is hard to imagine a company which focuses its pro-ecological efforts on only one aspect of the marketing mix.

5.3.1. Active and passive strategies

The literature devoted to the subject often distinguishes the following four key types of corporate environmental strategies (Wiśniewska 2004, p. 94, Kaczmarek 2011, p. 509):

- aggresive – uses all possible measures to adapt the production process to environmental requirements and transform the organisational structure to combine the aspect of environmental protection with the various tasks of a given entity;
- innovative – identified with the search for new technologies, constructions and goods which foster an attitude of environmental protection;
- defensive – its implementation involves withdrawing products that do not comply with environmental requirements from the company's offer, and eliminating technologies with low environmental parameters;
- passive – its implementation involves the company adapting to binding environmental regulations only.

These strategies can be classified by dividing them into two groups. The first two strategies are often referred to as active ones as they respond to actions implemented by the authorities and to market signals, while the other two are referred to as passive as they only respond to newly adopted regulations (Wiśniewska 2004, pp. 94–95). Active strategies reveal a significant commitment of an enterprise to activities, which prevent the degradation of the natural environment. They improve the image of the enterprise and facilitate its expansion into new markets or segments developed by consumers with high environmental awareness. However, the need for environmental investments involves a readiness to accept additional risk.

On the other hand, passive strategies are preferred by enterprises, which view environmental protection as an issue of secondary importance that only (or almost only) generates additional costs. Reasons why enterprises reduce their environmental activities to the bare minimum (see: Wiśniewska 2004, p. 95) include:

- the enterprise's impact on the environment is marginal, which may result from the specificity of the sector or the size of a given production unit;
- the enterprise's attitude towards the environment does not significantly impact its market position – e.g. the market is monopolised;
- the enterprise's financial standing is so weak that it is unable to invest in environmental protection;
- a comparison of estimated necessary expenditure and expected benefits demonstrates that environmental activities are pointless for the enterprise;
- management do not see environmental protection as a problem, or are of the opinion that by investing in environmental protection the enterprise will not improve its financial performance.

It should be added that the above-mentioned classifications (composed of four and two elements) concern corporate environmental strategies and, as such, they condition environmental marketing strategies. For instance, it seems obvious that a passive strategy (e.g. type 4) will impact the marketing activities of an enterprise, which will focus on adapting its product composition or publish information that the environmental parameters of a manufactured product meet binding regulations. The enterprise will neither deliver R&D activities to develop a new and environmentally friendly product nor increase its expenditure to position a specific product in the context of its environmental aspects.

The presented classification of environmental strategies is also consistent with the classification by Tilley (1998, pp. 69–71), who distinguishes four environmental strategies of small enterprises:

- the resistant strategy – ignores environmental protection-related pressure, meaning no relevant actions are implemented;
- the reactive strategy – reacts to external pressure, which mainly results in compliance with basic standards and provisions; actions are often taken on an ad-hoc basis to reduce costs;
- the proactive strategy – a more determined engagement of an enterprise in environmental protection, however, still distant from questioning the enterprise's modus operandi as an organisation; environmental actions implemented by the enterprise in many cases are innovative, however, they do not represent a holistic attitude towards environmental issues;

- the sustainable strategy – a fundamental modification of all aspects of the enterprise's operations in terms of its impact on the natural environment; apart from implementing environmental activities in the field of production (e.g. implementation of environmentally friendly technologies), this strategy integrates the need for environmental protection with how the enterprise is organised and managed.

5.3.2. Competitive environmental strategies according to Orsato

Marketing strategies are closely related to how an enterprise decides to compete. Thus, environmental marketing strategies can also be viewed in terms of forms of competition that companies adopt. Orsato lists four key corporate competitive environmental strategies (Orsato 2006, pp. 130–137):

- eco-efficiency,
- beyond compliance leadership,
- eco-branding,
- environmental cost leadership.

This classification addresses the source of an enterprise's competitive advantage (i.e. whether the company attempts to differentiate itself from the competition or bases its position only on low cost and price), as well as the content of environmental actions implemented by the company (organisational processes or offered products and services). Where an enterprise is focused on its offer, it is quite easy to assign its specific environmental actions to specific products or services. The introduction of a new product characterised by significant environmental strengths is an example of this approach. Where an enterprise is focused on its processes, it is hard to assign environmental actions to specific activities, and they apply to the organisation as a whole. Figure 5.4 presents the strategies identified by Orsato.

An eco-efficiency strategy assumes that an enterprise can become more productive and reduce costs due to the minimization of various types of waste. This approach makes a lot of sense, particularly in the case of enterprises that do not have sufficient funding to implement measures that would differentiate them from the competition. For instance, the cost of obtaining a certificate to confirm that business operations are environmentally friendly (e.g. ISO 14001) may exceed the capacity of many small and medium-sized enterprises. Orsato (2006, p. 133) adds that this is a favourable strategic option for entities which:

Figure 5.4. Generic Competitive Environmental Strategies

Source: Orsato (2006), p. 131

- operate in a sector of industry,
- ncur relatively high costs of production;
- produce waste and/or by-products in the course of production.

Esty and Winston (2009, p. 106) provide various examples of how this strategy is applied in practice:

- AMD, a manufacturer of computer microprocessors, reduced water consumption necessary to clean silicon wafers from 18 to 6 gallons per minute;
- General Mills reduced the quantity of packaging by reducing packaging volume, and saved 890,000 lb of paper;
- in the field of energy savings, UPS saves three million gallons of fuel annually by requesting its drivers not take left turns.

In terms of marketing, this strategy generates significant benefits: for instance, the modification of packaging, such as the one introduced by General Mills, enables a company to impact the frequency of purchases or gain an entry to new market segments. It also reduces waste and thus offers benefits in marketing the organisation in general. Reduced paper consumption, particularly in large and bureaucratic enterprises, may result in significant savings and represents an intuitive example of this approach.

Leadership strategy, in turn, is connected with efforts undertaken to distinguish an enterprise in the market. A possibility of avoiding price wars with other companies is the key benefit of this strategy. Additionally, it seems that this strategy enables companies to communicate their environmental attitude and actions better that the Eco-Efficiency strategy. It is due to the fact that its implementation often requires companies to obtain environmental certificates or to declare that they have adopted an environmental management code, etc.

It seems that this strategy is appropriate for enterprises which meet the following conditions:

- their buyers (both natural persons and companies) highly value the environmental characteristics of the supplied products – e.g. a producer of a final good can request that the supplier acquire specific certificates;
- their operations are closely related to creating an image of an environmentally friendly business;
- they try to avoid price-based competition – this may result from their willingness to develop consumer loyalty or to recover the investment expenditure as soon as possible.

The two presented strategies assume that organisational activities will be adapted to environmental requirements. However, it also seems that strategic options, which involve the impact on the environmental aspects of products and services, increasingly often influence the consumers. The beyond compliance leadership represents this strategic option. Under this strategy, the enterprise aspires to reduce costs, and ultimately the prices, of environmentally friendly products. Orsato (2006, pp. 136–137) describes an example of Ecolean, a Swedish manufacturer of packaging. This company has a 25% advantage over the prices of its competitors. The reduction was mainly accomplished by replacing plastics with calcium carbonate used in the production process. As a result, the Ecolean offer gained an environmental value as well as becoming cheaper – calcium carbonate is an easily accessible ingredient as it is a chemical compound universally available in the earth's crust.

An eco-branding strategy is the final option which allows enterprises to differentiate their offer from their competition. According to Orsato (2006, p. 134–135), there are three conditions that apply:

- consumers must be willing to pay higher prices for the environmental features of the product they want to purchase;

- consumers must receive reliable information on the environmental features of products and services;
- the differentiation method introduced by an enterprise should be difficult to copy for the competition.

This strategy can be applied by enterprises operating in the B2B (*business-to-business*) sector as well as in the sector of consumer products. The former may inform their clients about the benefits provided by reduced energy consumption or reduced generation of by-products, while the latter can fill the gap for consumers who care about environmental issues. Avoiding price competition is the key benefit which can be obtained from this strategy, e.g., Swedish companies which use the KRAV label, price their products by 10–100% more than their competitors.

Several key factors should be addressed when selecting or implementing one of the above-mentioned strategies. Esty & Winston (2009, pp. 129–132) state that it is necessary to:

- ensure that the company's offer includes other advantages, not just environmental ones;
- adapt the company's operations to the requirements of specific segments;
- analyse consumers' willingness to pay higher prices.

The focus on environmental features as the key strength of a product may be treacherous. It may work only in cases where the environmental value of the product significantly impacts the standard of living. In other situations, the environmental features should only complement an appropriately high value or other favourable use-related characteristics. That was a lesson learnt by Shell, which introduced fuels with a smaller sulphur content in Thailand. Due to the high population density in Thailand and major traffic jams in large cities, the air is heavily polluted, and that is why the new fuel became a success. However, its introduction in the Dutch market resulted in Shell's market failure. Environmental awareness of Dutch consumers seems high, however, only by highlighting the fact that new fuel increases the power of the engine did it contribute to increased sales. This example demonstrates that if the need for environmental protection is not urgent (e.g. due to the low level of pollution in a specific country), and enterprises have no funding or sufficient competence to differentiate their offer based on features other than environmental values, then they should select low cost strategies (eco-efficiency or cost leadership).

The efficiency of a strategy also greatly depends on a company's skills to adapt to the specificity of the segments. The activities of the Monsanto corporation, which successfully sells genetically modified foods in the U.S.A., but which, however, is not able to attract EU consumers, represent an example of such a failure.

Taking into account the need to provide an offer with other typical attributes, such as high quality, we should note that there are some attributes that should be emphasised on the B2B market, with others for the consumer goods market. In the case of the former, energy savings resulting from the application of environmentally friendly supplies, machinery and equipment, etc., are important to buyers. The different features of a product or a service, such as ease of use, will be important to the final consumer. Thus, if an enterprise selects a strategy based on differentiation, it should adapt it to each of the segments it serves.

The final recommendation of Esty & Winston (2009, p. 132) says that it is important not to expect that consumers will be willing to pay high prices for green products. Intuition prompts people with high environmental awareness to accept higher prices for a product's lower environmental impact. Esty & Winston refer to examples of interviews with representatives of large enterprises who suggest that a group of such consumers is rather small and represents slightly more than ten per cent of the market. Although the price premium due to environmental merits can be quite high (which is confirmed by data for Swiss producers from the energy sector – see Figure 5.5), the final revenue does not necessarily have to be satisfactory.

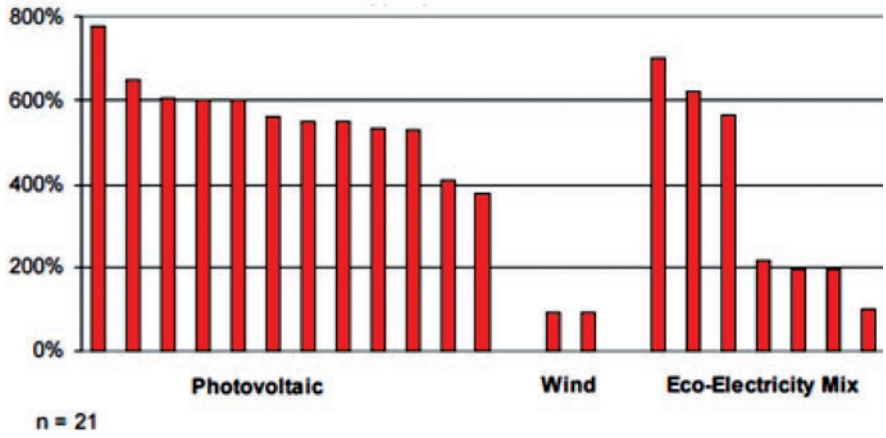

Figure 5.5. Price Premium for Swiss Eco-Electricity Products (%)

Source: Wüstenhagen (1998), p. 3

This indicates that differentiation-based strategies should only be applied in situations where we have identified a relatively large segment of consumers who accept increased price levels. If, however, its size is limited, enterprises should focus on strategies based on low cost and prices. If the cost of, e.g., obtaining environmental certificates or implementing environmentally friendly technologies is high, companies are tempted to transfer such costs to consumers. However, such an approach must be limited – one can raise prices only to a specific level. This finding is confirmed in Figure 5.6, which demonstrates the negative dependence between the level of prices of environmentally friendly products and their market share.

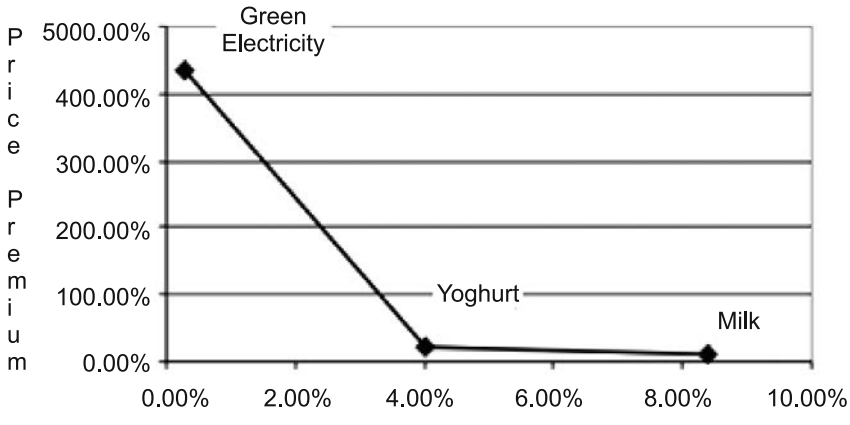

Figure 5.6. Market Share and Price Premium of Average Swiss Green Electricity, Bio-Yoghurt and Bio-Milk Products

Source: Wüstenhagen (1998), p. 5

It seems that product with a high price premium (being the additional mark-up which stems from the proecological features of the particular product) can gain only a limited market share.

5.3.3. The Ansoff Matrix – the environmental version

The so-called Ansoff Matrix is a simple structure which presents corporate marketing strategies in relation to the product and market. It is presented in Figure 5.7. In its basic form, the matrix does not address environmental issues, however, it can be used to describe behaviours of enterprises in terms of environmental protection.

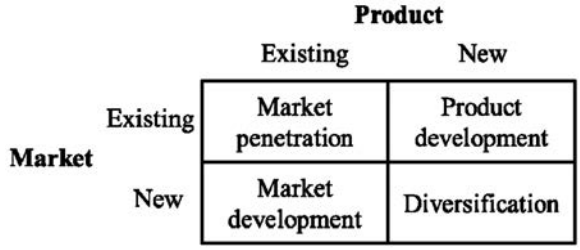

Figure 5.7. The Ansoff Matrix

Source: Author's own compilation

An ecological market penetration strategy involves the sale of an existing product on a market which is currently served by the company. This strategy is the simplest strategic option of all the options presented in this paper. One may intuitively assume that two types of enterprise are particularly predestined to implement this strategy. The first is enterprises which have already expanded into many markets (thus, they do not need to enter new markets) and, at the same time, their offer includes a universal product (which, however, represents environmental features). The second is enterprises which have just launched an offer with environmentally friendly goods (thus, they focus on their existing market as they have a good knowledge of its specificity, they do not introduce new products and only monitor the reaction of their existing consumers in relation to their current offer).

Enterprises which intend to address the needs of their respective markets in a comprehensive way can implement a strategy of eco-product development. Assuming that an extended line of products offered to consumers will increase their loyalty towards the brand and, hence, to the enterprise, the entity will aim at enriching its offer with new environmentally friendly products. The fact that in the course of strategy implementation the enterprise is oriented towards the group of consumers whose needs have already been recognised is a relevant advantage of this strategy.

On the other hand, the need for market identification is a feature that characterises market development strategy. It also ensures economies of scale in production as it involves the possibility to offer a currently manufactured environmentally-friendly product to new consumers. A foreign market entry with the existing offer is an example of this approach (e.g. as a result of increased income available to society and the resulting increased interest in green goods).

The diversification strategy is the last option shown in the Ansoff Matrix. It involves the development of both the portfolio of products and the markets,

which makes this option the most expensive and means it bears a high risk of failure. However, if this strategy is implemented successfully, the enterprise becomes independent of various fluctuations occurring on specific markets or related to production and the sales of specific products.

***

In the face of new challenges related to the need for environmental protection, companies increasingly often decide to implement environmental marketing strategies. Factors which contribute to such decisions include national regulations, a growing social pressure and the availability of green technologies. It should be emphasised that some enterprises are more likely to implement these strategies, and examples include entities with reputable brands or those which operate in sectors that significantly impact the environment. At the same time, small and medium-sized enterprises should also consider the adoption of environmental marketing strategies because of, e.g., the expanding scope of environmental regulations or the requirements of larger customers.

The literature lacks the finally approved classification of environmental marketing strategies, however, it contains numerous references to various active and passive strategies. The classification also provides an option to apply the environmental concept of Orsato's competitive strategies or the Ansoff Matrix, although the selection of a specific strategy is a complex and multi-aspect process. Enterprises which adapt their marketing activities to environmental requirements should address various factors such as available funding, dependence of their sales on environmental image, the type of sector, and the environmental attitude of clients or their readiness to pay higher prices.

Questions and assignments

1. Why are large enterprises more vulnerable to external pressures which force them to become more environmentally friendly?
2. Should small enterprises address environmental requirements in their marketing strategies? List reasons which support your answer.
3. Why do some enterprises prefer passive activities in the area of environmental protection, and why do they decide to only adapt their offer and business activity to comply with binding legislation?
4. List examples of enterprises operating in your country which implement specific competitive environmental strategies identified by Orsato.

5. When is it reasonable to apply the low-cost environmental strategies described by Orsato?

6. List examples of firms following four strategies summarized in the Ansoff Matrix (in the context of ecology).

Literature

Cater T., Prasnikar J., Cater B. (2009), *Environmental Strategies and Their Motives and Results in Slovenian Business Practice*, "Economic and Business Review", 11(1), pp. 55–74.

Chodyński A. (2011), *Odpowiedzialność ekologiczna w proaktywnym rozwoju przedsiębiorstwa*, Oficyna Wydawnicza AFM, Krakow.

Esty D.C., Winston A.S. (2009), *Environmental to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage*, Hoboken, NJ.

Ferrell O.C., Hartline M.D. (2011), *Marketing Strategy*, Cengage South-Western, Andover.

Jain S.C. (1999), *Marketing Planning & Strategy*, Cengage South-Western, Andover.

Kaczmarek B. (2011), *Formułowanie polityki i strategii ekologicznego rozwoju przedsiębiorstwa – zarys problematyki*, "Budownictwo i inżynieria środowiska", No. 2, pp. 507–510.

Kotler P., Anderson G. (2012), *Principles of Marketing*, Pearson Education, Harlow.

Kotler P., Keller K.L. (2012), *Marketing Management*, Pearson Education-Prentice Hall, Upper Saddle River, NJ.

Orsato R.J. (2006), *Competitive Environmental Strategies. When Does It Pay to Be Environmental?*, "California Management Review", 48(2), pp. 127–143.

Tilley F. (1999), *Small-Firm Environmental Strategy. The UK Experience*, "Environmentaler Management Intenational", Vol. 25, pp. 67–80.

Wiśniewska A. (2004), *Strategie proekologiczne w zarządzaniu przedsiębiorstwem*, (in:) M. Kistowski (ed.), *Studia ekologiczno-krajobrazowe w programowaniu rozwoju zrównoważonego. Przegląd polskich doświadczeń u progu integracji z Unią Europejską*, pp. 91–98, Uniwersytet Gdański, Bogucki Wydawnictwo Naukowe, Gdansk–Poznan.

Wüstenhagen R. (1998), *Pricing Strategies on the Way to Ecological Mass Markets*, Environmentaling of Industry Network Conference, mimeo.

http://dx.doi.org/10.18778/8088-016-0.07

Chapter 6

GREEN PUBLIC PROCUREMENT

Tomasz Dorożyński

The aim of this chapter is to provide didactic support in the area of international business. Its scope covers the fundamental issues connected with the system of public procurement in Poland in the light of binding regulations in the European Union. Due to the environmentally-friendly profile of this textbook, one of its parts focuses on public procurement that involves environmental aspects, i.e., **green public procurement**.

The chapter offers general knowledge and discusses practical issues linked mainly with the EU and Polish public procurement procedures. It is based on economic and legal literature and the author's practical experience. The chapter is supplemented with a list of the most up-to-date literature as well as questions & assignments and examples.

6.1. Legal regulations

6.1.1. European Union law

The system of public procurement in Poland is based on EU regulations, which have a direct (by means of Regulations) or indirect (by means of Directives) effect on domestic regulations.

Two Directives are of key importance for the national system: classical and sectoral. The former concerns the coordination of procedures for the awarding of public works contracts, public supplies contracts and public service contracts (Directive 2004/18/EC; Directive 2014/24/EU). It regulates almost all legal aspects of the common procedures, including: principles, rules and clauses in the awarding of public contracts, thresholds, specific situations, excluded contracts, reserved contracts, service contracts, preparation and procurement procedures, rules on advertising and transparency.

The second key Directive, the so-called sectoral one, coordinates the procurement procedures of entities operating in the water, energy, transport and postal services sectors (Directive 2004/17/EC; Directive 2014/25/EU). The main reason to adopt principles coordinating the awarding of contracts in these sectors is the variety of ways in which national authorities can influence the behaviour of these entities, including participation in their capital and representation in the entities' administrative, managerial or supervisory bodies. Another valid reason why it is necessary to coordinate procurement procedures applied by the entities operating in these sectors is the closed nature of the markets in which they operate, due to the existence of special or exclusive rights granted by the EU Member States concerning the supply to, or operation of networks for providing the service concerned.

Obviously, there are many supplementary regulations that are also important for the practice of a smoothly functioning public procurement system in the European Union. They include:

a) the regulation specifying the so-called EU thresholds above which tenders must be advertised by the Publications Office of the European Union (Regulation of the European Commission (EU) No. 1336/2013; Commission Communication (EU) No. 2013/C 366/01);

b) the regulation establishing the Common Procurement Vocabulary based on a tree structure comprising codes of up to nine digits associated with wording that describes the supplies, works or services forming the subject of the contract (Regulation of the European Commission (EC) No. 213/2008);

c) implementing the regulation establishing standard forms for the publication of notices in the field of public procurement (Regulation of the European Commission (EU) No. 842/2011).

6.1.2. National legislation

National legislation in the field of public procurement is very extensive. This is primarily due to the fact that the procedures cover a variety of aspects, such as the conclusion of contracts, infrastructural investment, R&D projects, education, culture and sports. Hence, when dealing with public procurement, we very often have to apply regulations from other areas. A narrower scope of national legislation on public procurement includes, first of all, the Public Procurement Law,

implementing acts, jurisprudence, legal opinions and decisions of the National Appeal Chamber.

Public Procurement Law (Act of 29 January 2004 Public Procurement Law, hereinafter referred to as the PPL) stipulates the principles and procedures for awarding public contracts, legal protection measures and bodies competent for matters covered by the law (Art. 1).

The currently binding Public Procurement Law replaced the previous Act on Public Procurement enacted in 1995. One of the major premises behind the fundamental change in legislation on public procurement was the need to fully harmonise Polish and Community (EU) legislation. Compliance of the national law with the *acquis communautaire* was one of the principal conditions in the opening up of the European public procurement market to Polish entrepreneurs and public entities. Moreover, it enabled Polish beneficiaries to implement projects co-financed with the EU Structural Funds, the Cohesion Fund and other related programmes of the European Commission.

The Law on Public Procurement has got a very clearly identified **sectoral scope and is addressed to specific entities**. When it comes to sectors, public procurement covers three categories: **supplies, services**, and **construction works** (for more see Art. 2 PPL).

With respect to entities, we can distinguish two parties to public procurement proceedings: **contractors** and **contracting authorities**.

A contractor is understood as a natural or a legal person, or any organisation without legal personality, which applies for the awarding of a public contract, has submitted a tender or concluded a public procurement contract (Art. 2 p. 11 PPL).

The term "contracting authorities" is much more extensive and complex. It is designed to identify entities which, pursuant to Art. 2 p. 12 PPL, are bound by the PPL. The catalogue thereof is identified in Art. 3 PPL. They are mainly entities from the public finance sector (Art. 9 of the Act on Public Finance) and entities that are dependent, either in financial or organisational terms, on public finance operators. We need to stress that under the current legal arrangements, private operators also may, in specific circumstances, be obliged to apply the Law or to select suppliers in accordance with basic principles governing the awarding of public contracts, i.e., non-discrimination, fair competition and transparency principles. A good example in this case is provided by the wording of Art. 3 para. 3 PPL, which indicates that entities in the public finance sector may make the granting of co-financing of projects dependent upon the application of the above principles in the disbursement of these funds.

In 2014, the total number of contractors reached 36,796 (in 2013 – 37,557), out of which more than 16,000 contracting authorities revealed that they had

awarded contracts following procedures laid down in the Public Procurement Law. The remaining contracting authorities awarded contracts under the scheme of statutory exemptions. Territorial local government units were the most numerous group among the contracting authorities (Fig. 6.1).

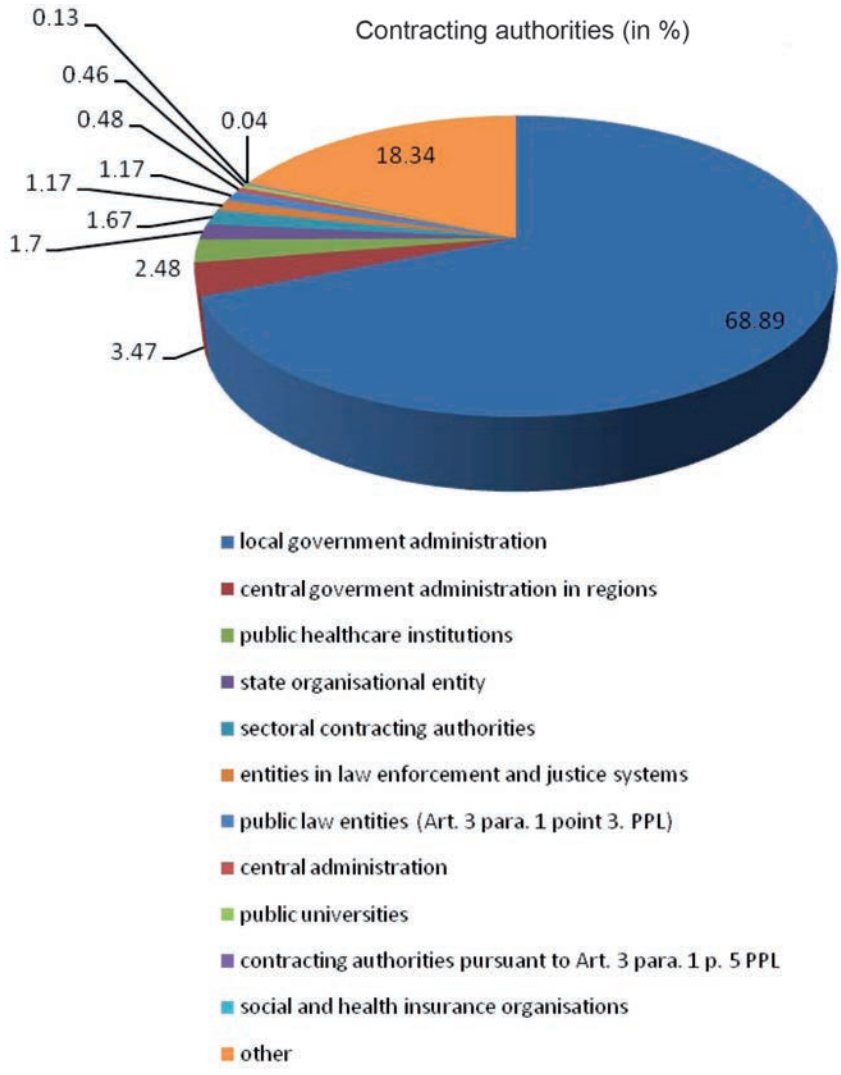

Figure 6.1. Contracting authorities in 2014

Source: Author's calculations based on the *Report on the Functioning of Public Procurement in 2014 (2015)*

The identification of what sectors and entities are covered by the Law allows us to define public contracts. Thus, in accordance with the provisions of Art. 2 p. 13 PPL, public contracts are **commercial contracts concluded between a contracting authority and a contractor for the provision of services, supplies or construction works.**

However, the definition remains incomplete if we do not identify the source of funding. Public contracts are contracts financed or co-financed with public resources. Their exhaustive list can be found in Art. 5 of the Act on Public Finance (Act of 27 August 2009 on Public Finance, Dz.U. 2009, No. 157, item 1240 with further amendments).

In the public procurement literature, but also in popular readings, we can come across the notion of the **system of public procurement**. It also appears in Law, although it is not explicitly defined. Nevertheless, we may risk defining it. Thus, a public procurement system is understood as an institutional and legal environment with procedures and principles that determine the proceedings leading to the awarding of public contracts. The system is supervised by the President of the Public Procurement Office in cooperation with the Public Procurement Council.

The public procurement system is based on the following four basic principles:

1) **the principle of fair competition and equal treatment of contractors**, which ensures that at all preparatory stages and within the award procedure contractors are treated in an impartial and objective way;

2) **the principle of tendering**, meaning that tendering (restricted and open) are the two basic ways of awarding public contracts, and contracts may be awarded under any other arrangements only in exceptional cases laid down in the PPL;

3) **the principle of transparency**, which guarantees openness of procedures for the awarding of a public contract, in particular the publication of information which should be made available to all interested parties, transparency throughout the proceedings, transparency of documents in the proceedings, and due diligence when it comes to the duty to inform on the part of the contracting authority;

4) **the principle of written documents**, which means the procedure is conducted in writing, irrespectively of the value of the contract; in particular, the exchange of information in the course of the procedure should be in writing as well as the tender and the contract, with the exclusion of the applicability of an electronic signature.

6.2. Types of contracts

The first category of public contracts covers **supplies**. Pursuant to Art. 2 p. 2 PPL, supplies should be understood as the purchase of products, rights or other goods based on the purchase, supply, rental or lease contract. Supplies are covered by many detailed provisions of the Law. An example is a dynamic purchasing system, which consists in the electronic awarding of contracts within a limited period of time for generally available supplies acquired under a purchase contract (Art. 2a PPL).

The second category includes **services**. Services cover all considerations that are neither public works nor supplies. For the purpose of public procurement, services are divided into two categories: **priority** and **non-priority**. Their list can be found in the regulation based on the classical and sectoral directives (Regulation of the President of the Council of Ministers of 28 January 2010 on the list of priority and non-priority services, Dz.U. 2010, No. 12, item 68). It included, e.g., accommodation, catering, legal advisory, educational, training, leisure, cultural, and sports services. The break-down is important for the awarding of public contracts. Non-priority service contracts do not need to observe deadlines for the submission of applications to be admitted in the procedure or deadlines for filing the tenders, they are not covered by the duty to make a deposit or present documents to confirm compliance with conditions identified for the procedure, a ban on adopting assessment criteria dependent on the contractor, or reasons for the adoption of negotiating procedures with publication, competitive dialogue and electronic bidding. Hence, in the case of non-priority services, we may speak of simplified procedures.

The last category includes **public works**. In accordance with the provisions of Art. 2 p. 8 PPL, they are understood as the delivery or design and delivery of construction works specified in regulations issued based on Art. 2c, or the construction of a building, using any means, in accordance with the requirements of the contracting authority. In the regulation of the President of the Council of Ministers based on Art. 2c PPL, we can find the list of construction works, including the preparation of the building site, erection of complete buildings, making roofs and roof structures, construction works connected with building highways, roads, airports and sports facilities, finishing work, and many others (Regulation of the President of the Council of Ministers of 3 December 2012 specifying the list of construction works, Dz.U. 2012, item 1372).

When it comes to value, public works represented the major part of the Polish public procurement market. In 2014, the value of contracted works accounted for 40% of the total expenditure. Supply contracts in 2014 represented 31% of all outlays, while service contracts accounted for 29% of the total value of awarded contracts. The structure has remained quite stable over recent years (Fig. 6.2).

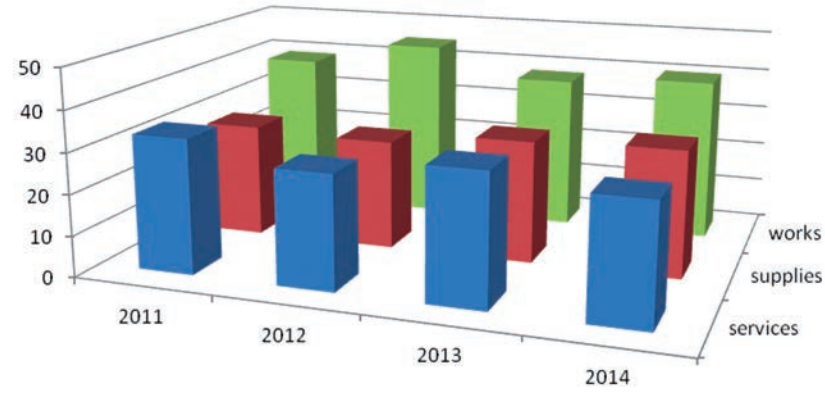

Figure 6.2. Public procurement market in the period 2011–2014 in value terms (in %)

Source: Author's calculations based on the *Report on the Functioning of Public Procurement in 2014 (2015)*

In qualitative terms, the structure of the public procurement market presents a slightly different picture. The number of procedures for awarding works contracts in 2014 accounted for 26% of all procedures. Supplies contracts in 2014 represented 39% of all awarded contracts while service contracts accounted for 35% (Fig. 6.3).

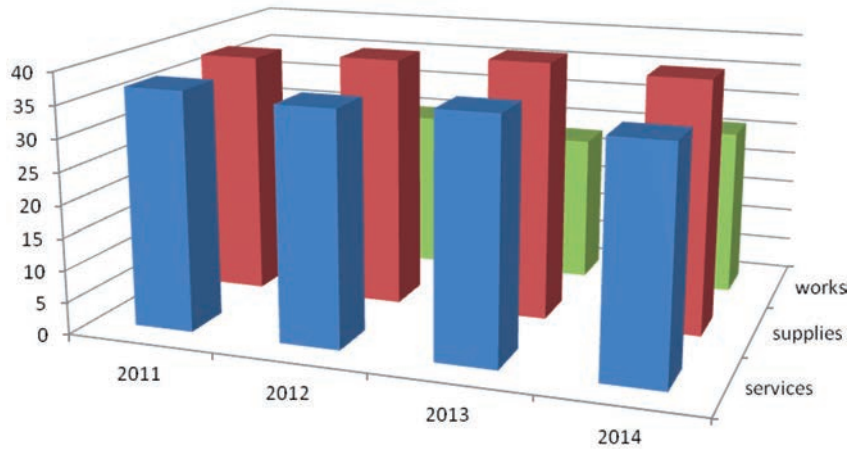

Figure 6.3. Public procurement market in the period 2011–2014 in quantitative terms (in %)

Source: Author's calculations based on the *Report on the Functioning of Public Procurement in 2014 (2015)*

6.3. Awarding procedures

In accordance with the Public Procurement Law, a contracting authority may select one of eight procedures for awarding public contracts. They differ with regard to how proceedings are arranged and with reasons behind their application. According to the principle of tendering, only two tendering procedures (open and restricted) can be applied always and under any circumstances. The remaining procedures are available to contracting authorities only in specific situations identified in the Law.

Table 6.1. Public contract awarding procedures

No.	Procedure	Description
1.	Open tender	An open tender is a procedure whereby any interested contractor may submit a tender in response to a public notice giving information about the tender.
2.	Restricted tender	A restricted tender is a contract awarding procedure in which – in response to a public notice – any economic operator may request to participate and whereby only those economic operators invited by the contracting authority may submit a tender.
3.	Negotiations with publication	Negotiated procedure with publication is a contract awarding procedure in which, after a public notice has been published, the contracting authority invites contractors admitted to the procedure to submit initial tenders, without quoting the price, and negotiates with them and then invites them to submit tenders.
4.	Competitive dialogue	Competitive dialogue is a procedure whereby, after a public notice has been posted, the contracting authority conducts a dialogue with the candidates admitted to that procedure, and selected candidates are invited to tender.
5.	Negotiations without publication	Negotiated procedure without publication means the contracting authority negotiates the terms of a public contract with selected contractors and the authorities invite them to submit tenders.
6.	Single-source procurement	Single-source procurement is a procedure whereby the contracting authority awards a contract after negotiations with a single contractor.

7.	Request for quotations	Request for quotations is a procedure within which the contracting authority requests quotations from selected contractors who are invited to submit tenders.
8.	Electronic bidding (auction)	An electronic auction is a procedure within which contractors submit subsequent tenders undercutting each other on a form on a website which enables them to input necessary data online; tenders are classified automatically.

Source: Author's study based on the Public Procurement Law.

Out of the eight procedures, open tendering clearly dominates. For several years already, the procedure has been applied in more than 80% cases in Poland. This is surely a positive sign as the procedure is the most competitive way of selecting a contractor. The second most often applied procedure is the single-source procurement, reserved for exceptional situations, which excludes fully open procedures. However, there is a set of premises that must be met to justify the adoption of single-source procurement (Art. 66 and 67 PPL).

Table 6.2. Public procurement procedures in qualitative and quantitative terms in the period 2011–2014 (in %)

Procedure	2011	2012	2013	2014
	Share of contracts			
Open tendering	82.07	84.43	81	82.19
Single-source procurement	13.9	12.26	14.73	13.42
Request for quotations	2.91	2.34	3.16	3.14
Restricted tendering	0.64	0.56	0.56	0.74
Negotiations without publication	0.17	0.15	0.16	0.21
Electronic bidding	0.13	0.17	0.26	0.21
Negotiations with publication	0.14	0.07	0.1	0.08
Competitive dialogue	0.04	0.02	0.03	0.01

Tab. 6.2. cont.

Procedures	2011	2012	2013	2014
	Share of total value of contracts			
Open tendering	67.55	67.56	80.42	75.75
Single-source procurement	8.07	9.62	8.02	9.13
Restricted tendering	10.75	7.38	5.54	8.11
Negotiations with publication	1.24	12.60	2.27	6.24
Request for quotations	0.38	0.33	0.31	0.28
Negotiations without publication	9.98	2.34	0.28	0.24
Competitive dialogue	1.99	0.12	3.08	0.17
Electronic bidding	0.04	0.05	0.07	0.08

Source: Author's calculations based on the *Report on the Functioning of Public Procurement in 2014(2015).*

Open tendering also dominates, although to a smaller extent, in terms of the value of contracts. Other procedures enjoy a bigger share, i.e., single-source procurement, restricted tendering, and negotiations with publication.

6.4. Exemptions

Public Procurement Law provides for a wide catalogue of situations to which the law does not apply. These exemptions concern concrete **institutions**, as well as **general situations** that apply to all entities.

When it comes to institutions, the law does not apply to some contracts awarded by the National Bank of Poland connected with, inter alia, the delivery of tasks concerning the monetary policy, trading in securities, national and foreign debt servicing, issuance of notes and coins and the management thereof, accumulation of foreign currency reserves and the management thereof, accumulation of gold and other precious metals and keeping bank accounts, and making pecuniary settlements among banks (Art. 4 p. 2 PPL).

Similarly, in the case of Bank Gospodarstwa Krajowego (Bank of National Economy) the law does not apply, inter alia, to contracts connected with responsibilities linked with the servicing of funds established, entrusted or transferred to Bank Gospodarstwa Krajowego based on separate laws or the implementation of central government programmes, operations on the intra-bank market connected with the management of State Treasury debt and the liquidity of the state budget, or responsibilities in the area of banking performed by Bank Gospodarstwa Krajowego (Art. 4 p. 2a PPL).

There are many more general exemptions which apply to all participants of the public procurement system. The Law does not apply to, e.g.:

- job contracts (art. 4 p. 4 PPL),
- contracts whose value does not exceed the amount equivalent in PLN to EUR 30,000 (Art. 4 p. PPL),
- contracts for research and development works and research services which are not fully paid by the contracting authority or the benefits of which shall not be consumed solely by the contracting authority for its own needs (Art. 4 p. 3 letter 3 PPL),
- contracts for the purchase, preparation, production or co-production of content intended to be broadcast on the radio, TV or streamed on the Internet (Art. 4 p. 3 letter g PPL).

6.5. Sectoral contracts

Separate regulations on public procurement are connected with sectoral contracts. They are based on the Directive of the European Parliament and of the Council No. 2014/25/EU on procurement by entities operating in **water, energy, transport** and **postal services sectors**.

There are at least several reasons why these sectors have been regulated in a separate way. First and foremost, in the opinion of the EU institutions, it is due to the impact of national institutions upon the behaviour of entities operating in the water, energy, transport, and postal services sectors, including participation in their capital and representation in the entities' administrative, managerial or supervisory bodies. Another valid reason why it is necessary to coordinate procurement procedures applied by the entities operating in these sectors is the closed nature of the markets in which they operate, due to the existence of special or exclusive

rights granted by the EU Member States concerning the supply to, or operation of the networks for providing the service concerned. Hence, these regulations have been designed to ensure a real opening up of the market and fair competition in the application of public procurement regulations in these four sectors.

Sectoral public procurement rules apply when a contract is awarded in one of the following types of activities (examples):

- the extraction of gas and oil and its natural derivatives and exploring for or extracting brown coal, coal and other solid fuels,
- the management of airports, sea or inland harbours and making them available to air, sea or inland carriers,
- the provision of services to networks that offer public services connected with the generation, transfer or distribution of electricity, gas and heat, or with the supply of electricity, gas and heat to such networks or the management of such networks,
- the provision of services to networks that offer public services connected with the production or distribution of drinking water or to supply such networks with drinking water or managing such networks,
- the provision of services to networks that offer public services in railway, tramway, trolley bus, cable or automated transport,
- the provision of services to networks that offer public transport services in bus transport,
- postal services.

The awarding of sectoral public contracts is covered with the so-called EU thresholds specified in separate provisions, if the value of the contract is equal to or exceeds amounts laid down in the provisions issued based on Art. 11 para. 8.

In 2014, 2,581 sectoral contracts were awarded in Poland. Sectoral contracting authorities represented only 1.67% (613 reports) of the total population of contracting parties. However, it does not reflect the real importance of the market of sectoral contracts. Their value in 2014 exceeded PLN 36bn, meaning, they accounted for ca. ¼ of the total public procurement market in terms of value. And 2014 was not an exceptional year with regard to that (Table 6.3)

The highest amount was disbursed in electricity and energy sector, over PLN 14.291bn. The highest contract of PLN 4.399bn was awarded by TAURON

Table 6.3. Sectoral public procurement in Poland in 2011–2014

Sectoral procurement	2011	2012	2013	2014
Number	2,490	2,054	2,826	2,581
Value (in bn of PLN)	43.7	41.9	34.1	36.7
Construction works*	10	48	28	35
Supplies*	36	20	35	30
Services*	54	32	37	35

* value share (in %)
Source: Author's calculations based on the *Report on the Functioning of Public Procurement in 2014 (2015).*

Wytwarzanie S.A. in Katowice for the construction of an energy block. Enterprises operating in the production, transport, and distribution of gas and heat spent ca. PLN 5.747bn, in railway transport, ca. PLN 5.158bn. They were followed by: exploration and extracting sector of coal and other solid fuels – PLN 4.752bn; urban railway, tramway, trolley bus or bus transport system – PLN 2.389bn; exploration and extraction of gas and oil – PLN 1.649bn, and the water sector – PLN 1.373bn.

6.6. Public procurement market

The value of contracts awarded in the public procurement market based on the Law is estimated on the basis of annual reports of the contracting authorities. In 2014, it reached PLN 133.2bn and was PLN 10bn lower than in the previous year (Fig. 6.4).

The highest value so far was reported in 2010, PLN 167bn, partly due to the contracting timetable and disbursing EU funds under the National Cohesion Strategy 2007–2013. In the case of procedures starting from the lowest statutory threshold (EUR 14,000/30,000, respectively) up to the so-called EU thresholds, amounts reported by the contracting authorities totalled PLN 40.0bn (in 2013 – PLN 41.0bn; in 2012 – PLN 38.3bn; in 2011 – PLN 40.6bn). For award procedures above the EU thresholds, estimates based on annual reports show the contracted amount of ca. PLN 93.2bn (in 2013 – PLN 102.2bn; in 2012 – PLN 94.4bn; in 2011 – PLN 103.5bn).

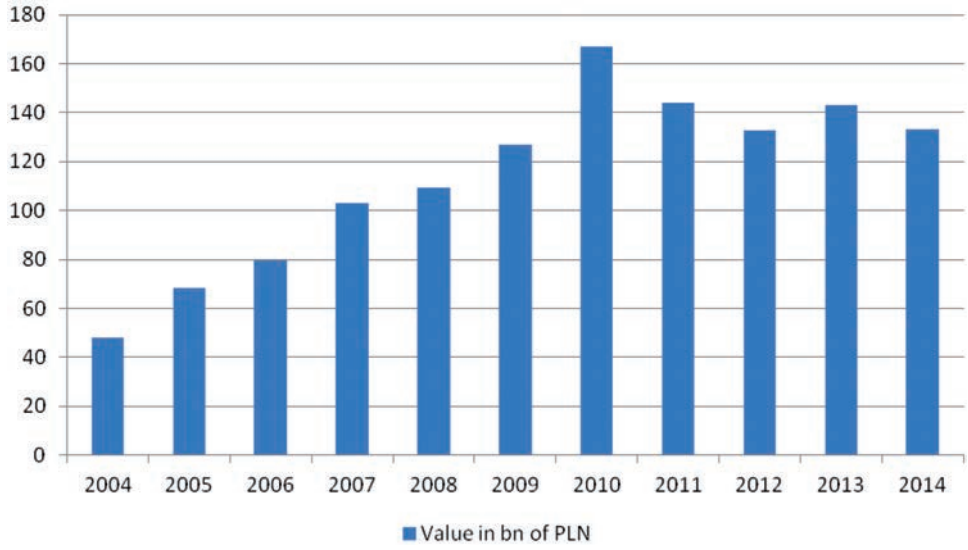

Figure 6.4. Public procurement market in the period 2004–2014 (in bn of PLN)

Source: Author's calculations based on the reports on the functioning of public procurement in the years 2004–2014, Public Procurement Office, Warsaw

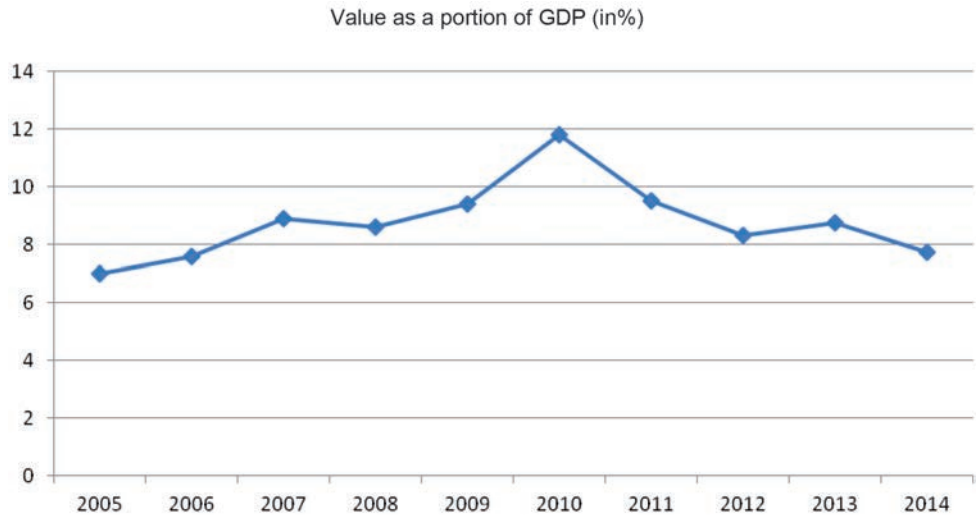

Figure 6.5. Value of public procurement market as a portion of GDP in the years 2005–2014 (in %)

Source: Author's calculations based on reports on the functioning of the public procurement system for the years 2005–2014, Public Procurement Office, Warsaw

Compared to GDP, differences in individual years were not so big, ranging within the last 10 years from 7% in 2005 to almost 12% GDP in the record-breaking year 2010 (Fig. 6.5).

It is worth adding that, in accordance with the amendment adopted in 2013 on contracts awarded with the exclusion of statutory procedures, the scope of data transferred nowadays by the contracting authorities in annual reports allows the expenditure outside of the scope of regulatory provisions to be estimated.

Hence, in 2014, based on an exemption from the PPL identified in Art. 4 and in Art. 136–138, the awarded contracts were worth ca. PLN 97.2bn (in 2013 – PLN 74.7bn). Out of this amount, PLN 28.3bn (in 2013 – PLN 23.8bn) was spent on contracts not exceeding the equivalent of the statutory threshold (EUR 14, 000/30, 000 respectively) in PLN. These sums also help us make a realistic assessment of the value of the public procurement market for contracts awarded outside of the scope of the PPL.

6.7. The internationalisation of the Polish public procurement market

The internationalisation of the Polish procurement market is influenced by the participation of Polish enterprises in the European market and by the involvement of foreign operators in the public procurement market in Poland.

In the first case, the limitation to the European market, and de facto to the EU market, results from the availability of data under the so-called common procurement system. It includes a Supplement to the Official Journal of the EU (including TED – Tenders Electronic Daily), which enables the value of contracts awarded by entities from one country to entities in other EU Member States to be estimated. That obviously covers contracts whose estimated value exceeds thresholds laid down in Art. 11 para. 8 PPL, i.e., contracts above the EU thresholds.

The available data show that Polish contractors are making attempts to win contracts in the open EU public procurement market. So far, their success rate is far from impressive. As we can deduce from notices published in the Official Journal of the European Union (OJ EU), in procedures for contracts above the EU threshold, in 2014 Polish contractors won only 82 public contracts. In the same year, the OJ EU published ca. 170,000 notices of tenders and competitions, and almost 50,000 in the so called New Member States. In previous years, the success rate was not high either. (Fig. 6.6).

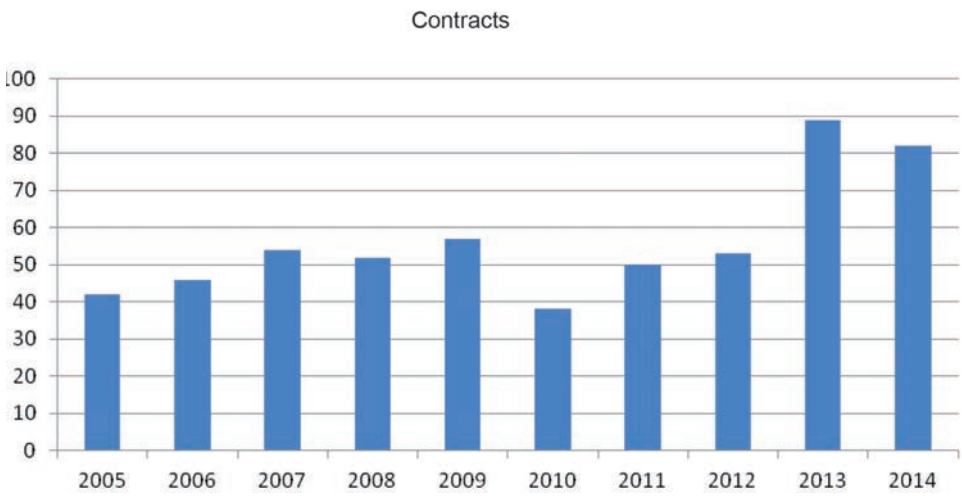

Figure 6.6. Public procurement contracts awarded to Polish contractors in the European market in the years 2005–2014

Source: Author's calculations based on reports on the functioning of the public procurement system for the years 2005–2014, Public Procurement Office, Warsaw

Tenders submitted by Polish contractors were selected by contracting authorities in procedures organised in neighbouring countries and in the new EU Member States. The list includes mainly contracting authorities from the Czech Republic (20 contracts), Germany (17 contracts) and Hungary (9 contracts). When it comes to types of contracts, supplies clearly dominated (46) followed by services (31). Only five contracts were awarded for construction works. The total value of awarded contracts amounted to EUR ca. 309 million and was lower than in the previous years (in 2013 – EUR 430m; in 2012 – EUR 486m).

If we want to assess the activities of foreign operators in the Polish public procurement market, we can see that, for some years, the percentage of these contracts has remained stable. In 2014, ca. 3% of contracts (701 cases) were awarded to foreign contractors. However, if we take into account their value, the share of foreign contractors is much higher, which demonstrates the important role foreign contractors are playing in the Polish market of public procurement. In 2014 it reached 14% (PLN 13.5bn), and 13% (PLN 13.6bn) in the previous year.

The highest number of contracts in 2014 was awarded to entrepreneurs from the United Kingdom (170 contracts; 24%) and Germany (118 contracts; 17%). They were followed by the Czech Republic, France, and Spain (7% each) as well as Belgium and Switzerland (6% each). Contractors from Italy were awarded

Table 6.4. Foreign contractors in the public procurement market in Poland in the years 2010–2014

	2010	2011	2012	2013	2014
No. of contracts (share in the total amount)	570 (3%)	622 (3%)	608 (3%)	704 (3%)	701 (3%)
Value of contracts, bn of PLN (share in the total value)	12.3 (12%)	13.7 (12%)	7.5 (8%)	13.6 (13%)	13.5 (14%)

Source: Author's calculations based on reports on the functioning of the public procurement system for the years 2005–2014, Public Procurement Office, Warsaw.

5%, and from Austria and the Netherlands 3% of contracts. 2% of contracts were awarded to contractors from Ireland and the United States.

When it comes to the value of contracts awarded to foreign contractors, the structure looked completely different. The highest contracted value was reported for enterprises from Spain and Germany (31% of the total value of contracts per country, i.e. ca. PLN 4.2bn each). Contractors from Italy received 16% of the total value of contracts, 10% were awarded to the UK and 4% to contractors from the Czech Republic.

6.8. Public procurement for a better environment

Green public procurement (GPP), besides social clauses, currently represents one of the leading directions in the system of public procurement in Europe and in Poland.

In accordance with the definition of the Public Procurement Office, its primary objective is to encourage the contracting authorities to purchase goods, services and public works representing a lower burden upon the environment throughout the entire life cycle compared to goods, services and public works intended for the same purpose that would be contracted otherwise.

In other words, green public procurement covers measures which help public operators and other contracting authorities to include environmental criteria and requirements in their purchasing practices, i.e., in awarding public contracts. This way, they opt for solutions that limit the negative impact of the subject matter of the contract throughout its entire life-cycle and contribute to the development and dissemination of environmentally friendly technologies and processes.

When executing a public contract in accordance with the rules described above, the contracting authority should take account of at least one environmentally

friendly aspect at all stages of the tendering process, in particular when: identifying needs, specifying the subject of the procurement, identifying technical specification, selecting the award criteria or the way the contract should be executed.

Green procurement procedures are expected to consider environmental issues to the widest extent possible in awarding contracts. In this context, the GPP should be interpreted in a wider sense than just potential benefits connected with the purchase price. They should ensure savings to public authorities throughout the entire life-cycle (Green public procurement, 2009).

In 2008, the European Commission drafted a comprehensive study on actions connected with turning the GPP idea into reality (Commission Communication, 2008).

It stressed that every year public authorities in Europe spend the equivalent of ca. 16% of the EU's GDP on purchases of, e.g., office equipment, construction materials, vehicles, services such as the maintenance of buildings, transport, housekeeping and catering, as well as public works. Hence, public procurement may shape production and consumption and significant demand of public institutions for environmentally friendly goods will create or expand markets of environmentally friendly products and services. This may and should encourage entrepreneurs to develop environmentally friendly offers.

The Commission identified ten "priority" sectors for the GPP. They were selected based on what they could offer in terms of improving the environment, public spending, the potential impact on the supplies, setting an example to other consumers, political sensitivity, the existence of appropriate and easily applicable criteria, the availability of products in the market and their economic performance.

Sectoral priorities include:

1) construction,
2) restaurants and catering services,
3) transport and transport services,
4) energy,
5) office equipment and computers,
6) clothes, uniforms and other textile products,
7) paper and printing services,
8) furniture,

9) cleaning agents and services,

10) equipment used in the healthcare system.

According to the assessment of the European Commission, the dissemination of environmentally friendly public procurement should be accompanied by coherent criteria applied by the EU Member States in order to avoid distortions on the single market and to decrease competitiveness within the EU. A single set of criteria could significantly reduce the administrative burden for the contractors and public administrators who pursue green public procurement. Common GPP criteria would be especially favourable to enterprises operating in several EU Members States, and in particular to small and medium-sized enterprises which have limited possibilities to cope with differentiated procedures of awarding public contracts (Commission Communication, 2008).

6.9. EU environmental criteria

The European Commission undertakes measures to develop common criteria for green public procurement to be applied in the EU Member States. The criteria have been developed for product groups which were considered the most appropriate for the implementation of the GPP both in terms of the value of the contracts and the environmental impact. At present, the EU environmental criteria cover 20 product groups, e.g.: copying and graphic paper, computer hardware, furniture, food and catering services, gardening products and services, interior lighting, bathroom fixtures, etc.

For each product group there is a product sheet for green public procurement. It identifies, among others, its use, key environmental impact factors, contract awarding criteria and their verification, conditions for the execution of the contract and additional conditions concerning, e.g., the packaging. The criteria are usually broken down into two categories:

a) core – includes criteria appropriate for any contracting institution in all Member States that cover key environmental impact factors. They have been developed in a way that implies minimum additional effort at minor cost increases;

b) comprehensive – criteria intended for institutions that wish to purchase the best products available on the market. They may involve some additional effort connected with the verification or negligible cost increases compared to other products representing the same functionalities.

6.10. Product sheet for computer hardware (example)[29]

1. **Definition and scope of application**

Office computer hardware includes two sets of products: computers and screens.

To define the criteria (guidelines) for green public procurement, this product group is divided into six categories:

a) personal computer (desktop computer, integrated desktop computer, "thin client"),

b) screen (if supplied together with the computer),

c) keyboard (where supplied together with the computer),

d) external power supply (where supplied together with the computer),

e) notebooks (including tablets),

f) discrete graphics processing unit (where supplied together with the computer).

2. **Core criteria** for desktop computers, laptops and screens focus mainly on technical specifications connected with energy consumption since this aspect is identified as having the biggest environmental impact. Core criteria also include some simple, understandable (and easy to verify) criteria concerning the lifespan of the product. These criteria have been selected based on the environmentally friendly EU labelling, the Blue Angel and Nordic Swan labels.

3. **Comprehensive criteria** cover subsequent aspects included in the specifications and considered at the stage of awarding a contract:

a) energy management functions,

b) noise emission,

c) mercury content in LCD screens used in antireflection coatings,

d) hardware dismantling,

[29] Drafted based on the document *EU criteria for green public procurement for computer hardware*, www.uzp.gov.pl (access: September 2015).

e) content of recycled materials and the possibility of their re-use,

f) use of flame retardants in plastic elements, described with certain risk-phrases (carcinogenic, mutagenic or toxic for reproduction).

4. **Core environmental impact factors**:

a) energy consumption and related CO_2 emissions,

b) contamination of air, soil and water, smog, bioaccumulation or threat to the food chain, and dangerous impact on water organisms caused by dangerous components (e.g., mercury content in LCD screens and flame retardants),

c) negative impact on the health of workers caused by noise, stress in people sensitive to such sounds,

d) energy consumption, the use of limited resources and harmful emissions connected with the manufacturing of computer hardware (raw materials, computer manufacturing),

e) generating waste, including packaging and their final disposal.

5. **Approach in line with the GPP principles**:

a) purchase energy saving models,

b) purchase products with reduced content of harmful components and promoting take back options,

c) purchase products with reduced noise emission,

d) design with recycling, longer utility periods in mind and promoting take-back options,

e) ensure recycling of used packaging,

f) more frequent use of recycled packaging,

g) safe disposal (recycling, re-use) of final products.

6. **Selected core criteria**

a) All products must comply with the latest ENERGY STAR energy efficiency standard.

b) Desktop computers must be designed so that the memory is easily accessible and can be replaced or modernised, the hard disc (or elements that fulfil its function) and CD or DVD drive should be replaceable.

c) Notebooks and laptops should be designed so that the memory is easily accessible and can be replaced or modernised.

d) The antireflection system in LCD screens does not contain more than on average 3.5 mg mercury per lamp.

e) Packaging: if cardboard boxes are used, they must be manufactured from at least 50% recycled materials.

f) Energy saving functions should be presented together with the hardware (for all products).

g) The tenderer must ensure the availability of spare parts for a period of at least 3 years after production has ceased.

7. **Selected comprehensive criteria**

a) The tenderer must ensure the availability of spare parts for a period of at least 5 years after production has ceased.

b) Substances used in plastic parts that pose a threat to health.

8. Verification

Products marked with type I environmental labels which comply with the above criteria will be considered as meeting the requirements. Other appropriate evidence can also be approved, e.g., manufacturer's technical documentation or reports from studies conducted by an approved body (e.g., a body authorised to write reports from studies in accordance with the ISO 17025 standard), which demonstrates that the criteria have been met.

9. **Contract award criteria**

a) Additional points are scored for easy dismantling and recycling of plastic elements.

b) Additional points will be scored if the external, plastic casings of a computer, screen and keyboard are made of at least 10% post-consumer recycled materials by mass.

10. Financial aspects

When awarding a contract, it is recommended to apply the "total cost of ownership methodology". It means that the contracting institution, when assessing tenders from the point of view of the best value for money, considers not only the purchase price of the product but also the cost of its life cycle throughout the estimated period of its use. These costs include the purchase price, the cost of maintenance and other services, the cost of energy and other consumable materials (such as paper and ink) needed to use the equipment and all costs of disposing of a used up product. This is how the contracting institution may take account of environmental aspects when assessing both product quality (using environmental technical specifications or contract awarding criteria) and price (considering the cost of the life cycle).

6.11. Share of green public procurement in the market

The idea of green public procurement is not commonly applied in practice in Poland. Abundant and up-to-date data on the subject can be found in the monitoring report *Sustainable public procurement in Poland* prepared by the Fundacja CentrumCSR.PL under the project "Reinforced monitoring of sustainable public procurement in Poland". The report refers to, among others, the application of socially responsible public procurement and non-price assessment criteria of tenders. A large part of the report is devoted to green public procurement.

Over the monitoring period, i.e., from the beginning of July till the end of December 2014, 584 notices were published on websites of various (contracting) institutions. They concerned, inter alia, contracts for office computer hardware, furniture, graphic and copying paper, vehicles and transport, gardening products and services, cleaning agents, textiles, and catering. Environmental aspects were applied in 22.8% of the analysed procurements. They featured most often in procurements connected with office computer hardware and vehicles. Hence, a clear majority of the monitored procedures made no reference to environmental clauses.

We also need to stress that the result was undoubtedly influenced by the way the sample was selected for the survey. Procurement contracts were not selected at random but purposefully. The sample included only the procurement to which appropriate GPP clauses apply. Moreover, as stressed by the authors of the survey, some contracts were contracts for vehicles where such clauses are forced out by the law. And finally, some contracts were "green" only in parts. Environmental criteria were specified only for some out of several dozen computer sets. Thus, we

may conclude that surely the share of green public procurement in the Polish public procurement market is smaller than the 22.8% estimated in the survey.

***

Public procurement plays a very important role in the economy. If applied correctly, it ensures fair contacts between public and private sectors, consistent with market rules. Besides regulating contracting arrangements, rules that apply to procurement procedures for supplies, services and public works may fulfil additional functions. The green public procurement idea is one such example. It helps to achieve a certain added value when spending public resources (on various, not necessarily environmental, objectives). There are also additional benefits to the environment that stimulate innovative technological solutions. The practical implementation of these intentions calls for a change in the approach to public procurement and, first of all, shifting away from the primacy of "the lowest price" in public procurement proceedings.

Questions and assignments

1. What is public procurement?
2. Define the subject-matter and sectoral scope of the Public Procurement Law.
3. According to the law, who is obliged to apply it?
4. Discuss the profile of the public procurement market in Poland.
5. Assess the internationalisation of the Polish public procurement market.
6. What is green public procurement?
7. How should green public procurement be applied in practice?

Literature

Act of 27 August 2009 on Public Finance, Dz.U. 2009, No. 157, item 1240 with further amendments.

Act of 29 January 2004 Public Procurement Law, Dz.U. 2004, No. 19, item 177 with further amendments.

Commission Implementing Regulation No. 842/2011 of 19 August 2011 establishing standard forms for the publication of notices in the field of public procurement and repealing Regulation (EC) No. 1564/2005.

Commission Regulation (EC) No. 213/2008 of 28 November 2007 amending the Regulation (EC) No. 2195/2002 of the European Parliament and of the Council on the Common Procurement Vocabulary (CPV) and Directives 2004/17/EC and 2004/18/EC of the European Parliament and of the Council on public procurement procedures as regards the revision of the CPV.

Commission Regulation (EU) No. 1336/2013 of 13 December 2013 amending Directives of the European Parliament and of the Council 2004/17/EC, 2004/18/EC, and 2009/81/EC in respect of the application thresholds for the procedures for the awarding of contracts.

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions, Public procurement for a better environment, Brussels 16.07.2008, COM (2008) 400.

Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 concerning the coordination of procedures for the awarding of public works contracts, public supplies contracts and public service contracts.

Directive of the European Parliament and of the Council 2014/24/EU of 26 February 2014 on public procurement and repealing Directive 2004/18/WE.

Directive of the European Parliament and of the Council 2014/25/EU of 26 February 2014 on procurement by entities operating in the water, energy, transport, and postal services sector, repealing Directive 2004/17/WE.

EU criteria for green public procurement for computer hardware, www.uzp.gov.pl (access: September 2015).

Green Public Procurement, Public Procurement Office, Warsaw 2009.

Regulation of the President of the Council of Ministers of 28 January 2010 on the list of priority and non-priority services, Dz.U. 2010, No. 12, item 68.

Regulation of the President of the Council of Ministers of 3 December 2012 specifying the list of construction works, Dz.U. 2012, item 1372).

Reports on the Functioning of Public Procurement in 2004–2014, Public Procurement Office, Warsaw.

Stosowanie zrównoważonych zamówień publicznych w Polsce. Raport z I etapu monitoringu, Fundacja CentrumCSR.PL, Warsaw 2015.

LIST OF TABLES

LIST OF FIGURES