How environment-friendly is the modern society?*

Cismas Laura Mariana, Părean Mihai Olimpiu
Boldea Monica, Miculescu Andra

Abstract The economic development based solely on natural resource extraction activities has major negative effects for society. In these circumstances the mining projects (such as the one related to the Rosia Montana) may have serious social effects. Therefore there is a need for sustainable and more diversified economic activities. At a first sight, modern civilization, of a consumer type character, the modern activities that rely on information technologies are environment- friendly, but these also require the consumption of resources, and the equipment supporting them contains elements which are very harmful for nature especially if the optimal conditions are not met regarding recycling. Tourist activities are also an important issue for the environment.

Key Words: modern civilization consume, economic activities, environment

1 INTRODUCTION

The goods and services provided to the society by the environment have always been disregarded or economically undervalued. They remained outside the market mechanism or the price system, or they were connected circumstantially to the economic levers' system, from the dominant positions of the economic policy, even if they have continually proved their vital character.

Generally, the (physical) environment, in addition to being a productive factor generating primary inputs acquired by the productive process, is also the "bin" for waste products of production and consumption processes, which may or may not be absorbed depending on the assimilative capacity of the environment taken into consideration. On the other hand, one of the current functions of the environment is the one as provider of services of recreational character, or others related to the concept of quality of life, the demand of which is determined by the society's level of development.

A fundamental concern was the availability of resources, the findings being at times optimistic, pointing out that science, technology and the fact that man would be able to reach outer space will solve the problem, and at times detained, being said that it would not be appropriate to rely on the continuous upgrading of technologies able to provide cheap energy, and at times even pessimistic (such as the findings in the Report to the "Club of Rome" entitled "Limits to Growth", a study published by D.H. Meadows, and others, in 1972), foreseeing the depletion of resources in less than a century and the collapse of humanity.

Addressing how the consumer must take into account the fact that unexpected changes on the resources of future generations may have repercussions regarding the optimization of the consumption of the present generation. [2, pp 8]

The environment problems generated by the anthropic activity emphasise the fact that the accomplishment of the well-fare of the society does not reduce to a simpleaccumulation of goods and services. The measure of well-fare must be reformulated, passing from the evaluation scale based on the capacity of individual accumulation of goods (enriching) to the one founded on the collective use of common goods. Thus, the idea of substitution of the economic interest with the notion of preservation interest of the future generations' heritage is promoted. [8, pp. 26]

A great importance will have – with the onset of the natural-human crisis regarding contemporary development – the awareness of the human beings towards the fact that society is not eternal, that meeting the needs of a normal life should be done by taking care of other nonhuman life forms**.** [13]

2 THE BI-UNIVOCAL CHARACTER OF THE RELATION ENVIRONMENT – ECONOMY

Any economic process evolves between two poles – the production and the consumption - that are interdependent, thus recognizing the active role of each of them. Production requires *inputs* of raw materials, etc. and a system of technologies that should make a certain return on those inputs in consumer goods, within the specific pathways, which are strictly necessary, but also within adjacent paths.

The relationship "environment - economy" reveals two components:

- support provided by the environment for economic inputs, in the form of raw materials, production space, energy, biodiversity, which constitute a "safety valve" for the environment. This "valve" is defined in relation to the available potential of an appropriate stock, which means that the environment provides support for economic inputs within certain limits;
- environmental stocks, involved in maintaining the ecological balance, the structure of which may change together with the changes occurred in the quality of technology.

The relationship "economy – environment" can be seen as:

- a material "message" toward the environment, represented by emissions, waste, natural degradation, etc., resulting from the activities of production and consumption, whose size depends on the performance of the two poles;
- all effects induced by the material "message" of the economy toward the environment, depending on its successive stages: if the "message" is addressed to some fragile areas, the effects are greater and, if it addresses areas with stable features, the effects are less significant.

The intensity of the effects depends equally also on the "message" level: when it exceeds the capacity of recycling available to the environment (recycling, however, is not a specific function of the environment, but one of adaptation, which requires additional energy consumption, putting pressure on the ecosystem's energy flow), there occurs the phenomenon of actual pollution that affect the specific functions of the environment.

2.1. THE IMPLICATIONS OF MODERN CIVILIZATION ON THE ENVIRONMENT

The current consumer behavior, the convenience which we pursue in our everyday life regarding transportation

determines a number of situations that cause some inconvenience.

The city is a hub of civilization, compared to a place where people, life and happiness came together, as was considered previously. The noises, the smoke caused by the large number of vehicles, make today's city seems almost a gigantic arsenal. The same issue stands out when assessing "optimal" parking charges or the amounts returned to the road construction as well as the use of modern technology of the "cost-benefit analysis." Economists can add to the social costs of motorized traffic an estimate of the community's cost due to the number of fatalities, by calculating the cost for a person killed as a loss of his/her possible future financial contributions to the national product. However, it is a way that has the quality of maintaining a low cost for the motorized community, as we may not take into account the number of elderly people or children in the total number of victims. Many of them do not contribute at all to the national product and, according to this principle, their loss to the nation is negligible.

The advantages of a city are obvious. Seen as a commercial center, it can attract buyers and sellers from all over the area or even across the country, offering a wide range of specialized services. In the past, the city was a cultural, artistic and scientific center. And today, only the city, the municipality or the metropolis can provide a public sophisticated enough to form a large daily audience for symphony orchestras, operas, ballets, theaters, etc. But as the city is bigger, the more time and more resources must be spent on moving goods and people. Even telephone communications can become difficult with the increasing numbers in trade and professions. Any increase in the density of the buildings in the centers of cities there are added traffic difficulties which have passed the point of mutual frustration.

Every person who chooses to live in a big city has no idea of the extra costs they impose on others and inevitably, in particular, in the short period to supplement the existing accommodation is not possible, even on roads or public transport facilities. In the more congested central area, only a few thousands of immigrants may reduce, to a remarkable extent, the standard of comfort of all previous inhabitants of the area. If the city's immigrants arrive from other parts of the country or elsewhere, with comparable standards, the degree of discomfort suffered by the present inhabitants, although incompatible with any optimal situation will remain within certain acceptable limits. Such migration will not proceed if the conditions in such areas are worse than they expect, in general. If, on the other hand, there are immigrants coming from countries that have standards of living, health or comfort, much lower than those prevailing in the receiving country, the standards of the neighborhood in which immigrants may choose to establish may fall sharply before the standards themselves begin to act as a disincentive for future immigration. Indeed, immigrants may wish to bear the conditions worse than those back home because those who come first will be ready to endure difficult conditions over a period of one year or two, in the hope of improving their situation later, while others are resigned to live in squalid conditions for a period of several years, to raise, at least initially, some money to return to their country of origin or to bring their families a well. Moreover, there is always a temporal difference, probably measured in years, occurring between the worsening of the living conditions in parts of the city where immigrants live and the general appreciation of this fact in their homelands.

Due to the increasing number of automobiles, the suburbs extend towards the periphery, in an attempt of the residents to "get rid of everything." It thus is being created an environment in which, while it is increasingly difficult to travel in, to own car becomes more and more indispensable to many. The existence of a personal automobile encourages the geographic dispersion of houses, shops or places for entertainment and of a variety of consumer services, which are spreading, increasing the need for private cars (in many cases they are indispensable). Based on a combined approach, the personal automobile sometimes appears as his own car is essential for other reasons, namely, a large part of our economy, also a mobile part is linked to automobile production. In developed countries, a certain dependence is promoted, even supported, a dependence which is probably more psychological than of economic nature, regarding the car industry and all its ramifications. They grew and the vested interests became more important. [9, p. 123]

A building in town is now sometimes regarded by its owners as being more of a financial acquisition. But it can be further seen by the same owners as being more than a financial acquisition. It can be a good or an obligation towards the city. An imposing building is a source of pride and joy for the citizens, while its degradation is a source of discomfort and disgust. Assuming that the city's architecture influences the mood, the atmosphere, the humor and even the character of its citizens, when considering civic pride, pleasure and sense of the community which can be inspired by the architecture of a city, there is a strange finding regarding our variety of civilization, as we generally leave the initiative of designing our cities up to commercial interests and their approval at the discretion of advisers, and we do this, more often than ever in history, the financial considerations are paramount.

In terms of the increased development in recent years in some cities, but also in many resorts, which showed reminiscent of the local nature before, there is a special urgency to recognize these social costs. The local architecture has been overwhelmed by the new architectural trend everywhere, an *ad hoc* one. The same thing happened, having even catastrophic consequences, immediately after the war when there were concrete "match boxes" built and a "new" piece of architecture occurred, considered equally appropriate and monotonous in all cities. The architects' opinions must be heard and maybe then there will be less "pressure" put on them, in order to search for new forms and methods of using materials, just due to the fact that they are not traditional. For a large number of people, traditional materials and old styles are more pleasant than modern buildings that are fashionable, despite their functionality. We may consider of being lovely, still, many examples of the architecture of centuries past. The statues and old buildings are fairly valued not only because of the historical associations and for their inherent beauty and humanity. Most of this architecture is indicative of the

best features of the respective periods, for their space, scale, fun and splendor. It is a feeling of relief spotting them from among the uniformity of most of the buildings in the modern cities.

2.2 THE IMPACT OF ECONOMIC ACTIVITIES ON THE ENVIRONMENT

There are complex industrial processes regarding the use of raw materials, during which various pollutants are released in the environment. It often takes years for a specific effect to be noticed on the environment.

Over 200 years ago Adam Smith wrote, in *The Wealth of Nations*, "Of all the costly and uncertain projects leading most of the candidates to bankruptcy, maybe none is more ruinous than the search for new silver and gold mines." The industry followers, on the other hand, argued that mining can be a powerful drive, even a necessary one for the economic growth. They argue that poor countries that undergo and support environmental and social expenditures will be able to rely, in the long run, on jobs created by mining. But practical results disprove these claims. [11, pp 224]

In 2000, the mines around the world ensured around 900 million tons of metal - leaving behind about 6.6 billion tons of tailings. For each ton of copper used are disposed 110 tons of rock and tailings and are overburden further 200 tons of soil. For gold, the ratio is about 300 000 tons of waste per ton of gold brought into the market - which would translate, roughly, into three tons of waste for a wedding ring [15, pp. 150]. Much of this waste is contaminated with cyanide and other chemicals used to separate metal from ore.

Chemical innovations have also contributed to the twofold trend toward the mining of low-grade minerals and the exploitation of surface mines. In the late nineteenth century, American chemists have patented the method of treatment with cyanide to separate gold from ore. Today all the gold mines, from Africa to Nevada, use this technique. This method was intended to be used in the case of Roşia Montană. Cyanide dissolves in water, then it is sprinkled or sprayed over the heaps of crushed ore to dissolve the bits of gold. After removing the usable metal, the piles of ore are treated to reduce the concentration of cyanide, although they are never completely removed. A spoonful of cyanide solution of 2% concentration can kill an adult. There is no method to safely store millions of tons of material. In recent years the catastrophic discharges of mining waste have resulted in the mass death of fish, soil and water pollution and also affect human health. In 2000, for example, a dam broke in Baia Mare. This accident was responsible for discharging 100,000 tons of waste water and 20,000 tons of sludge contaminated with cyanide, copper and heavy metals in the Tisa river and further into the Danube - destroying 1,240 tons of fish and polluting drinking water sources aimed to cater for 2.5 million people. That same year, major mining accidents occurred in Borşa, but also in Gallivare (Sweden), Guangxi (China), Cajamarca (Peru), Tolukuma (Papua New Guinea), Sichaun (China) [15, pp. 145].

In developing countries the dependence on minerals slows and even reduces the economic growth - a phenomenon that economists called the "resources' curse". The economists Jeffrey Sachs and Warner Andrew Harvard studied 90 developing countries for which the ratio of natural resource exports and the gross domestic product registered high values for the period between 1970 and 1990. They found that the dependence on the export of natural resources and the growth rates *per capita* are inversely proportional. Richard Auty, economist at the Lancaster University in Britain examined the economic growth in 85 countries between 1970 and 1993 and noted that during this period small countries, rich in heavy minerals (such as copper, bauxite and tin) have registered negative growth rates of the gross domestic product, with an average of 0.2% per year [1].

The inverse relationship between mineral wealth and economic well-being proved to be valid even in the case of rich countries where mining was practiced. Persistent poverty is common also to another series of traditional mining regions around the world: Rio Tinto in Spain, Bihar in India and Potosi in Bolivia [15, pp.145]. The mining areas in Romania are among the poorest regions of the country.

The economists have given different explanations to the *resources' curse*. One would be that the mining of raw materials intended for export is far less profitable than processing the materials or the manufacturing of finished materials. Secondly, countries that have turned mining into the center of gravity of their economies found that to venture everything on this sector was an uncertain bet, given the fluctuations and the general downward trend in the world mineral prices.

Other causes may be related to how resource revenues are distributed. Mineral-rich countries have invested, usually, little in social services like education or health care. [9]

While countries like USA, Canada and Australia have had a tradition of ore mining, this industry was not the main drive of their economic development. These three were advanced countries with high income and stable economic and political institutions when they began developing their natural resources. The domestic availability of natural resources offered these countries a competitive advantage. But once transportation costs and trade expansion decreased, a national mineral reserve is no longer a prerequisite for the economic growth, as it was centuries ago. In fact, natural resource poor countries such as Japan or South Korea have grown faster than mineral-rich countries. [3, pp.814]

For Romania mining and the restructuring of this sector represents an important social-economic problem.

The environmental impact of mines extends beyond the threat upon habitats. Mining is one of the major sources of polluting the planet. Metal melting contributes about 19 million tons of sulfur dioxide in the atmosphere causing acid rain - about 13% of global emissions [15, pp 136]. In many cases people were forced to leave their habitats due to the dramatic changes occurred in their lifestyle.

Mining therefore was not proved to be an economic gain either on short term or on long term. Its attractiveness, often ephemeral, introduced the term "ghost-town" in the American vocabulary a century ago. Unfortunately this term tends to become more and more familiar to the Romanian vocabulary; there are powerful pre-requisites for such settlements in Romania, which are

strongly linked to the mining activity: Anina, Bălan, Zlatna localities in the Jiu Valley.

Mining provides only an undersized number of jobs: globally, the mining of non-combustible mineral offers work for 5 million people. Preparation and refining of minerals takes up about 8 million other workers. And in many parts of the world these services are declining. An ILO (International Labor Organization) study shows that between 1995 and 2000, 32% of miners in 25 major mining countries have lost their jobs [15, pp.151]. Mining workers are made redundant once the activity shuts down, the expenditure is reduced or following investment in labor-saving technologies. The shutting down of mines and the rehabilitation of the environment represent enormous costs, which are generally supported by national governments, because no mining company can cover such expenses.

Economics shows that, in general, consumers maximize the utility factor to get income and price performance, and producers maximize the profit factor, originating in the price performance, so that no individual price becomes better without another worsening. The Pareto optimum can be achieved through a price mechanism and a decentralized and voluntary exchange of goods. In case waste should occur with polluting effect on nature, only the voluntary exchange and market mechanisms are not able to correlate production with the environmental quality requirements, especially where the normal limits of the pollutants' "assimilation" are exceeded. [7]

The link between the economy and environmental protection may be the "resource conservation" principle which is not too far from the first law of thermodynamics - the principle of energy conservation - applied to the economy [6].

The resource conservation equation has led many researchers to accept the modern philosophy of the growth boundaries. The fact that the impact of the economic activity on the environment is unacceptable proves that the prices of products and of technologies do not accurately reflect the use of the natural resources by the economic system. Distortion is caused by the fact that not all natural resources are market able goods, while others have zero or near-zero price (air, public parks, river water, roads with car traffic, etc.).

According to the producers of goods, the prices of products and of the economic activity in general, should not reflect the cost of environmental protection, the concern for its quality being a moral duty. On the other hand, the integrated environmental protection requires also natural resource protection, which, to a certain extent, may represent a restriction on the economic development process. A compromise would be possible, but the priorities of the two areas must be highlighted: of the economic activity and of the environmental protection.

2.3 THE NEGATIVE IMPACT OF MODERN ACTIVITY ON NATURAL RESOURCES

The toxic substances used to produce semiconductors, circuit boards and monitors may cause pollution. Due to the fact that computers are rapidly depreciating, their repair is expensive compared to the price of new products. When computers are discarded, the lead in the monitors, the mercury and chromium in the central processing unit, the arsenic and halogenated organic substances in the devices are all threats to health. For example, in order to produce a computer of 25 kg, 63 kg of waste may be generated, including 22 toxic ones [16, pp. 151]

The net environmental effect of using information technology is not very clear. Computers require electricity and consume paper, and the Internet forwards advertisements and programs that can cause people to buy products that consume resources. But there are countless ways to use information technology in order to bring environmental benefits (e.g. replacing materials and energy with data, transport or communication).

The manufacturing of computers requires energy and water. The production of silicon semi-conductors that are part of the computer "chip" consumes a lot of energy and water. Only one big factory producing semiconductors, which turns out 5,000 sheets of 20 cm per week, may consume as much electricity and water as a small town. [16, pp 151]

Cleaner production processes and early efforts to reuse and recycle information technology can reduce environmental hazards regarding production and disposal, but the most profound ecological effects of the information technology will result from its use probably. There is enough data to estimate some of the environmental effects of information-related equipment operation, such as paper and electricity consumption of computers. However, much less is known about the extent to which materials and fuels can be preserved when people replace activities that demand more natural resources by the exchange of information.

The paper is a resource whose consumption is linked to the use of the computer. Between 1988 and 1998 the average consumption per capita regarding paper for printing and writing increased by 24% in industrial countries. [16, pp 151]

Another important requirement for information technology tools - even if relatively modest - is electricity. A typical desktop computer with a monitor consumes 120-180 watts, the same as about two light bulbs. Among the efforts to make computers more efficient, there is the automatic disconnection, including also the introduction of the computer that consumes less than 30 watts, or full decoupling of the machine when not in use. The Energy Star campaign of the Environmental Protection Agency has helped stimulating the production of computers and other efficient office equipment - this efficient equipment consumes per year only half the power of the conventional one. A 1998 report of the World Resources Institute highlights electronic products "Sharp" and the "Instantly Available PC" of the "Intel" company, which bring electricity consumption just below the one achieved by Energy Star. [17]

Moreover, the increased energy consumption in many industrial countries has been slower than the economic growth, this gap appearing to be caused by information technology, which is transforming the production and trade. [7]

Computers and other office equipment represent the fastest growing energy demand. Another problem related to energy is whether information technology

becomes so efficient that the need for transport shall be reduced. The electronic transmission of data can more and more replace the burning of hydrocarbons, so that search engines will ultimately prove to be more important and more widespread than the ones of internal combustion. Videoconferencing is increasing in industrial countries, but it is not clear whether they produce an overall reduction of traffic.

Although telecommunications may replace, in many cases, the actual movement, they can stimulate transport in various ways - allowing people to live farther apart, keeping people up-dated through conferences, events and shops they can reach by traveling, and making the time of traveling more productive through mobile phones and pagers. No telecommunications technology in history was associated with a net reduction of traveling. Between 1880 and 1910 telephones have evolved parallel to the first commuter trains and subways; between 1920 and 1940, radios have evolved in parallel with cars and planes; and between 1950 and 1970, television – with the highways and commercial aircraft. New information technologies, which allow people to work more easily at home, can play an important role in reducing traffic congestion, but they will not eliminate the need for an integrated transport and of planning the use of public transport.

Similarly, both ecological opportunities and dangers accompany electronic trade, as more people and companies buy and sell products over the Internet. For example, online companies can avoid waste having a limited stock. Products such as books, music, photos and videos can be purchased in an electronic form and sent directly via the Internet, saving materials and energy. And the popularity of some electronic auction houses as "E-bay" indicates that the Internet can help people who possess used products to make contact with those who can use them, transforming waste into resources. However, such environmental benefits could easily be undone if the spread of information technology would lead to an increase in the consumption of products that harm the environment or the human health.

The stress accumulated by people during their participation in achieving increased production causes a desire to "escape" on weekends or holidays in nature. This calls for tourism and thus tourism, besides having a significant contribution to the economic growth, it also causes more long-term negative or even insurmountable effects on the beauty of nature.

The damage caused by large population movements to those induced by mass tourism is a short step, and one that opens the prospect of an immeasurable destructive potential of the economic growth. In recent decades there has been a shock to our scarce land resources, to the natural beauty. In this case, the conflict of interest is between, on the one hand, tourists, travel agencies, industries of traffic and ancillary services, and on the other hand, all those who care for preserving natural beauty. Just for preserving the natural beauty as much as possible nature reserves, national parks, etc. are being set up.

There is a conflict of interest between present and future generations. A fairly large percentage of the human species forms a part of the regular invasion of tourists, but it is the result of estimating travel well below the involved social costs. Regarding the expenditure of the tourist there is not taken into account the additional costs of congestion they impose on all others (tourists and residents or the additional loss of peace and fresh air, or damage suffered by the landscape, all as a result of required additional constructions). Furthermore, it is clear even for the most sensitive person loving nature that any personal sacrifice he/ she would make, it will have no practical effect on the reduction of mass tourism, except his refusal to drive a car that will not reverse reaction regarding the increasing road congestion. There is a temptation for him to travel earlier and more frequently before the fuss of potential tourists should irretrievably ruin certain areas - to "enjoy the places before the crowds arrive", as advertisements encourages us. This is because they represent tourist trade in a competitive mix, in order to find all the places, once quiet, for hiking, beauty and historical interest, actually destroying them, often irrevocably. Areas which were once quiet and nice are now standardized by the dust and noise induced by the motorized traffic. The Greek Islands have become Aegean resorts. In Romania there are plenty of such examples: Bran-Moeciu, the Olt Valley, etc. [5, pp.95]

Degradation induced to tourist sites are primarily caused by the absence or low level of their operating facilities or organization regarding tourism (sightseeing, taking part in specific actions, etc.). Thus, the absence or the poor state of access roads to a sightseeing location would diffuse tourists over wide areas, and the lack of specific facilities (stairs, fences, signs, etc.) lead to an anarchic movement, to car accidents and to the damaging of the educational – cultural and recreational message of that particular area.

Tourism, like any other human activity, being a consumer of space and resources, may implicitly participate in the degradation and pollution of the environment and of tourism potential, either by the direct pressure of tourists on the landscape, flora and fauna or other tourist attractions that they can partially or totally damage by the misconception of equipping and turning account of some areas, which are tourist attractions.

The negative impact of tourism is manifested and most strongly felt in the national parks. Tourism can be a positive tool for the growth of a country from an economic, social, cultural and environmental point of view. The action factors with substantial negative impact on environmental quality in national parks are presented in Table 1. [10, pp.127]

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Table no. 2

Types of negative impact which should be reduced

	Factors of action	Impact on the quality of the environment	Observations
	1	2	3
1	**Increased tourism**	Environmental disturbances, changes in animal behavior	Irritation, loss of environmental quality in tourist services. Visitor access should be reduced.
2	**Excessive development**	The emergence of rural housing, inappropriate urban agglomerations of population and infrastructure	Difficult facilities of urban type
3	**Recreational activities**		
a) at the park's limits		Perturbations of the fauna	Unproper influence during the breeding periods; pollution
b) fishing		Of no kind	Unwanted competition for natural predators
c) pedestrian safari		Disturbances on the flora and fauna	Overexploitation, error in trails and access routes
4	**Pollution**		
a) sonorous		Voluntary coverage of natural noise	Irritation on wildlife
b) waste		Degradation of the natural landscape, familiarizing the fauna in residues	Disruption of aesthetics. Risks to health, fauna, inhabitants, visitors.
c) vandalism		Damage to the panels installations, existing facilities for natural elements	Loss of quality of the natural elements. Damage to equipment existente
5	**Animal feeding**	Changes in animal behavior. Danger for tourists	Withdrawal of ordinary animals
6	**Vehicles**		
a) excessive speed		Accidents and fauna mortality	Profound ecological change
b) off-road driving at night		Degradation of soil and vegetation	Disturbances on flora, fauna
7 | **other activities**			
a) collecting natural memories		Gradual destruction of natural curiosities, natural disturbance processes	shells, snails, horns, various trophies, rare plants
b) collecting/ cutting firewood		Destruction and high mortality of small vertebrae	Disturbances on the balance of wildlife and natural food chains

c) tracking, excavations	Reduction of natural habitats, changes, drainage, landscape and reduce violations of environmental values through inappropriate construction	aesthetic values and environmental destruction. Degradation of ecosystems
d) high voltage lines, telecommunications	Destruction of vegetation and soil	aesthetic repercussions
e) water artificial alerts, supply of salt (NaCl)	Abnormal concentration of wildlife species. Degradation of vegetation	The need to refresh/ change the soil
f) introducing local, exotic plants and animals	Competition for the natural, wild flora	Confusing the public. Perturbations occurred in the natural food chain.

*Sursa:*** - Guide à l'intention des autoritès locales: Development durablè du torism,* OMT, Madris, 1999, p. 137

Solving the economic problems would require taking also into consideration the ecological problems that have adverse effects on man and the environment in which he lives, so any economic decision can not exclude the ecological side of this decision. [14]

Though, the positive aspects of tourism should also be highlighted. As an integrative part of the national economy tourism excels its economic role directly, first through the contribution it has to create regional and national income and the acquiring of foreign currency, then through the positive effect it has upon the social-economic and cultural growth of certain areas in the country and upon the internal monetary flow, and indirectly by the influence it exerts upon other branches of the national economy. Considered an economic activity, tourism includes a various range of services, such as: informative services, the sale of travel, transport, accommodation, treatment in spas, activities of entertainment and pleasure. Consequently, at the level imposed by its role and functions, tourism appears as a result of the concerted and combined effect of multiple branches. Some of these, for example construction, the industry of electric and thermal energy, engineering, the textile industry, agriculture, the food industry – are considered as supplying branches, and what they supply is involved either in the material base of tourism, or in the production offered by public food supply. Other branches, like transport, goods' circulation, communications, and culture compete independently in order to meet the needs of tourists. The large number of branches which are involved in catering tourism shows that the "product" of tourism can be of high quality only if all the elements involved in its creation, or are an integrative part of its structure, are as well of high quality.

Turning account of the attraction for tourism can contribute to the economic growth of the urban centers, which are currently in decline, or of the peripheral rural areas, mainly by favoring the setting up and development of local enterprises, thus transforming the areas with low economic competitive character into areas attractive towards investors. The activity of tourism creates demand for a large range of goods and services, acquired later on by tourists and companies of tourism, including goods and services created by other economic sectors (commerce, constructions, transport, the food industry, confections and footwear, the small industry and handicraft). Last but not least, tourism creates opportunities for regional and local economic growth and has a lasting contribution to creating new employment forms by turning into account the cultural and natural patrimony; in addition, a significant part of the newly created jobs involves a regional opportunity to absorb the female work-force.

The role of tourism in the regional economy, and implicitly in the national economy, refers mainly to a superior capitalization of available resources, which involve the economic and cultural rise of certain inhabited areas, the development in a territorial structure, the setting up of fields of activity which might absorb part of the workforce, it may also be an activating element of the global economic system, respectively a means of diversifying economic structures, parameters of education and training, has a calling for ecology, it imposes measures to protect the environment and the basic values of the human life (water, air, flora, fauna) and it also represents a lever to diminish the inter- and intra-regional disparities.

3. THE IMPACT OF ENVIRONMENTAL PROTECTION ACTIVITIES ON JOBS

In early 1800, British workers preferred to destroy the machines that were able to replace the work-force, rather than accept the cutback in jobs. They were known as ludds, named after their leader, Neill Ludd, whose role seems to have been significant. Concerns about the people who are to lose their jobs because of technological progress currently exist as well. [10, pp. 50]

The economic system set up by the Industrial Revolution embodies a swirl - a continuous stir and change - which, even if pushes the society forward, introduces a certain degree of uncertainty in the lives and activities of the people. In today's Europe as elsewhere in the industrial world, more than 10% of all jobs disappear every year, being replaced by jobs in various new professions and, sometimes, in new firms.[3, p. 815]

This defect is magnified, being more socially destructive, in times of fundamental structural changes. New technologies and industries arise, and old ones disappear; some regions prosper while others decline;

new jobs and employment opportunities are created, while others fall victim to technological progress. In case of a transformation, probably as important as that of 200 years ago, developing a "knowledge economy" and the path toward economic globalization leads to a real concern regarding job security, the obsolescence of occupations and the trend in salaries.

While computers (the Internet and their associated technologies) reshape the economy, another challenge can be noticed: the urgent need to shift toward a sustainable economy. With the expansion of the industrial system, concerns have increased regarding the environment, starting from the local pollution (although serious) during early industrialization in Britain to the degradation and modification of natural systems worldwide.

Often representatives of industries that oppose these changes seek to show that sustainability is synonymous with economic uncertainty. First, for reasons different for achieving sustainability, deforestation, mining, heavy industries - as the ferrous and steel industries - are already much less important today for the economic development than they were once, and they are even less important for jobs. Several decades ago, economists believed that the level of energy and raw materials' consumption goes hand in hand with the gross domestic product, meaning that the reduced consumption of resources was equal to a lower growth and fewer jobs. But this direct link has already been severed, a higher efficiency of resources enabling the production of several goods and services while reducing the burden set on natural resources. The rapid development of information and communication technologies could support a sustainable economy.

It is possible that a new economy should emerge, securing sufficient employment without inducing serious environmental disturbances. However, in case of any fundamental economic change, there are transitional costs. People caught in the change vortex will resist unless they see a future for them. Workers, communities and affected areas - particularly those dependent on the mining of raw materials - will require help to master new procedures, technologies and trades. New policies are needed to encourage job creation, workers' education improvement and their skills' upgrading, thereby easing the transition process. A new economy will not be viable unless it is sustainable, both in the environmental and the social point of view. [9, pp 290]

The economic restructuring process is tender because a job does not only provide economic security but, often, also identity or purpose; its loss - even temporarily - can be a traumatic experience. For the affected individuals and families there is little consolation in the fact that environment related job losses are probably fewer compared with those occurred due to "normal" changes in a market economy. The public policy should facilitate the transition towards a sustainable economy, helping individuals and communities; this may involve retraining programs and skills' improvement, and special programs for regional development.

Table no. 2

Likely effects on employment of sustainable, repairable, and improvable products

The life-cycle phase of a product	Observations	Impact on jobs
Design and production	Required is the intensive redesign of products (and of production processes)	Positive
Consumption of energy and materials	Fewer products, which require less material, although more robust materials are required	Negative
Manufacturing/Assembly	Fewer products More sustainable production, a.s.o.	Negative?
Distribution/Transport	Fewer products A better (local) traffic from consumers toward repair shops, remanufacturing and backwards	Joint
Maintenance	Revitalization of neglected activities; high consumption of work-force	Positive
Remanufacturing	Limited at present	Positive
Modernization	Limited at present; high consumption of work-force	Positive
Consultation	Counseling on extending the product life and substitute goods with services	Positive
Oust at the end of the life-cycle	Fewer products to oust A more intensive recycling and dismantling parts and components for their re-use, higher consumption of work-force, cremation and storage	Positive

Source: *** - *Starea lumii 2000*, Raportul Institutului Worldwatch asupra progreselor spre o societate durabilă (the Worldwatch Institute report on progress toward a sustainable society), Editura Tehnică, Bucureşti, 2000, pp. 208

Reducing fossil fuel consumption is one of the main objectives in focusing towards a sustainable economy. The large-scale burning of these fuels leads to massive air pollution problems and is responsible for the global climate change. Companies who oppose efforts to avoid this phenomenon considered attracting the unions' support, arguing that an alternative energy policy would wipe out jobs. Even without an alternative energy policy, the number of jobs in many of these industries is already in decline, often even if production is increasing. Avoiding or postponing a responsible environmental

policy will not do anything to save these jobs; in turn, this may even accelerate their disappearance. [17]

Coal mining finds itself in the same situation, as oil refineries, electrical power companies and energy-

In today's industrial economies, many products, some of which are sustainable themselves, have become "common goods": large quantities can be produced with such ease and at relatively little monetary cost, that there are many incentives for them to be considered goods that can be discarded after use, rather than be considered products intended for a prolonged use. If sustainability is not regarded as important, then it is possible that management should assign low priority to dexterity, capability and skill, and that labor input will be considered more a cost factor rather than a way to ensure quality.

A sustainability strategy would accelerate work orientation from resource mining and primary sectors to the supply of services, as shown in Table 1.

For trhe mono-industrial areas in Romania, such as, for example, the Jiu Valley, Anina, Balan, etc., the economic difficulties and high unemployment can be overcome by investing in renewable energy. In developing countries, even in Romania, where a large number of people have no access to electricity, the renewable energy sources can provide electricity faster and cheaper than expanding high tension power lines or building new power plants and can contribute to the economic development. [12]

A sustainable economy requires a transportation system different in structure and details. Instead of the current "manufacture-use-removal" system, with a one-way flow from raw materials to products and waste, there could appear a "manufacturing – disassembly - remanufacturing" system, able to take over and collect items that need improvement and repair, being afterwards redistributed to consumers. Such a system would probably be more focused on exchanges within the local and regional economies rather than on supply and shipping over long distances.

4. CONCLUSIONS

In the process of accumulating the means of production and of economic growth based on technical progress there appears the need for the society to effectively protect natural resources, and to take measures to combat the negative effects on nature. Given the objective need regarding the protection of the natural environment in order to meet current and future needs of the economic growth process it is necessary to take into account some requirements of which we can mention: "discovering and highlighting new natural resources, creating substitutes, the use of smaller quantities of material resources, by using appropriate techniques and technologies, and products that consume less energy and raw materials; the recovery and the re-use of waste, of materials and parts; priority should be given to the use of renewable resources and taking measures to ensure their renewal; during the use of resources which are not to be renewed, to take into account the interests of future generations and the possibilities to discover or manufacture replacements by artificial techniques; the application of green technologies keeping in mind pollution abatement; increasing the intensive industries, as the iron and steel industries. Coal industry is increasingly characterized by larger companies, but small in number, with larger equipment and less need for manual labor.

importance of environmental issues in the process of technological selection; to reduce and eliminate the accumulation of means of destruction towards society and nature"[4].

Industrial activity causes major environmental changes. Not all industries have the same environmental impact, but some have a huge impact.

Another idea that we should highlight is that the social costs of long-term environmental damage are very high. For example, in the case of mining, the natural resources (land, forests, air, and water) are inputs into the system, and the outputs are: ore, soil erosion, air emissions, air pollution. The use and destruction of natural resources, as well as the effects of environmental destruction must be quantified into costs to the national economy. The assessment of these costs must take into account:

- the (temporary or permanent) loss of resources available for other usage;
- the cost to remedy environmental damage, including the rehabilitation of quarries, the cleaning of rivers that are polluted by drainage of acid water.

Therefore, the implications for a more sustainable development include: the need to greatly reduce the dependence on fossil fuels, mining and deforestation, to restructure the energy and transport sectors as well as changing technological processes in order to minimize waste production. There are worries that such measures will cause serious economic disruption and massive job losses, these worries being intensively cultivated by industries that resist change.

For now there are many ways to "break" the parallelism between the economic growth and the negative impact it has on the environment. If the impacts of the economic activity on the environment are unacceptable, this is proof that the price of products and technologies do not accurately reflect the use of natural resources by the economic system.

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