

### Impact of economic crisis on biodiversity

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**Abstract.** Closely related, the global economic crisis affects the current state of the environment. Although the countries of the world were bound by international environmental agreements, such as The Kyoto Protocol 1997, reducing emissions of greenhouse gases by 2010, they are unable to see or to continue investments start to achieve that objective. Paradoxically, due to the negative growth of the global economy more countries will meet Kyoto targets more easily. Great companies worldwide were forced to abandon solar energy projects, investments in wind farms, some governments are forced to seek protection against bankruptcy, those involved in the "green sector" are forced to adapt their strategies to the global financial crisis, the difficulties in accessing credits and that the global economy is in free fall. The effects of global financial crisis has environmental repercussions as well, not only on the economy. However, many of intentions to invest in the green economy in the long term remain valid, even if there are some delays in the start of projects. The overall development is closely linked to nature, with important implications on the environment. Global demand exceeded the power of humanity regeneration of earth resources and the natural environment is deteriorating rapidly.

**Key Words:** alternative energy, green economy, the impact economic.

**Introduction.** The overall development is closely linked to nature, with important implications on the environment. Global demand exceeded the power of humanity regeneration of earth resources and the natural environment is deteriorating rapidly.

Economy, the engine of our existence itself, depends entirety of the Earth's natural systems and resources. Depend on the planet's climate system for agriculture environment and the hydrological cycle to provide drinking water. Each of us depends on the products and services provided by natural ecosystems. In last six decades, the world economy in terms of GDP (Gross Domestic Product) has grown at a fast pace: in 1950 global GDP was 4 trillion Euros and in 2007 over 42 trillion. This increase - more than ten times - was determined by several key factors, especially the movement of raw materials and goods - all coming from the environment. In contrast to this growth, the environment was and continues to suffer: Europe's mountain ranges glaciers are melting, the Arctic ice cap in summer retreats and thinning faster than ever. In 2007, surface ice was half that measured in the 50<sup>s</sup>. The worldwide, more than one billion people, mostly poor, have their food and living from fishing. But half of the natural fish population has been overfished, with the risk to industry in this field to disappear by 2050 if current trends do not change radically.

**The project aims.** The paper aims to give some considerations to environmental-economic dependency relationship, because there are companies without natural environment, natural environment but there is no society. To the degradation we see around us is lack of awareness of the values that matter in this relationship.

**Objectives of the project.** The main challenge now is to find solutions to restore investor and consumer confidence. In the long term, the main challenge is adjusting principles guiding reform the international financial system, mainly on transparency, improving regulations on securities accounts, ensuring proper regulation of markets, firms and financial products, ensuring the integrity of financial markets on market manipulation and fraud, and strengthening cooperation between financial institutions in

the world (upgrading governance structures of the IMF and World Bank). Ethical business is missing from this list of challenges ahead.

**Methodology.** Those involved in "green sector" are forced to adapt their strategies to the global financial crisis, the difficulties in accessing credit, loans more expensive and that the global economy is in free fall. Effects of global financial crisis have environmental repercussions, not only on the economy. Thus, "New Energy Finance" (market research company), the calculated total amount spent to finance projects related to clean energy. In the last half of 2008 it decreased by 25% and reached \$ 18 billion, the same rate recorded at the beginning of 2009.

New Energy Global Innovation Index - an indicator of the stock market seeking actions of companies worldwide that use alternative energy, innovative technologies and services based on renewable energy has been the same 25% reduction in late 2008. Prices of EU carbon allowances dropped from 30 Euros to less than 20 Euros, making green investments less, or not at all attractive. However, many of intentions to invest in the green economy in the long term remain valid, even if there are some delays in the start of projects.

In 2006, Lord Nicholas Stern issued the "Report on the impact of climate change on the economy". He estimated the immediate cessation of emissions of greenhouse gases would significantly reduce the cost impact of climate change. If they act now, costs would be lower and higher efficiency than if they acted later. Way costs of measures to tackle climate change by stabilizing emissions of carbon dioxide in the atmosphere would be about 1% of GDP annual world by 2050. But the lack of measures would cost much more and can reach 20% of global wealth. Forecasts were gloomy report "climate warming will have an effect comparable to the two world wars, the global economy could fall by up to a fifth".

At the "Scientists Conference" in Copenhagen in March 2009, Lord Stern warned that "underestimated the risks of global warming and the damage they can cause and that there are" serious risks "if temperatures rose by 4 to 7°Celsius by 2100. Agriculture will be destroyed and life would be impossible on most of the planet. "Also, review recent estimates report published in 2006, led to the appreciation of its author that" inaction could cost 50% more than the maximum previously appreciated, threatening to reach a third of global wealth and reducing per capita consumption of the planet".

British Prime Minister Gordon Brown said at a press conference before G20 Summit in London in April 2009 that, "in fact, living a decisive moment for the world economy. We must make a choice. Or leave the recession to continue retreat into isolationism and protectionism, or react against recession".

Due to global economic crisis and lack of concern for countries to protect the environment, the relationship between economy and environment has worsened. Economy and environment are closely interrelated: the economy can not exist without a robust and healthy environment. Worldwide, it is estimated that failure to take measures to mitigate the effects of climate change on the environment will result in costs of at least 5% of the world economy, i.e. 20% annual decrease overall product without taking into account the loss of ecosystems and species disappear completely by altering Earth's climate.

However, the gloomy forecasts for the environmental deterioration is a new warning that aims to contribute to understanding by governments of the world, the potential effects of the planet, if patterns of production, consumption, growth and current life will not change. Better global governance is essential to manage environmental-economic report, through the intervention of States must lead the international system so as to overcome in the shortest time global economic crisis without causing accelerating environmental deterioration.

**EU environmental policy strands.** Environmental policy has following objectives: environmental protection, improving its quality, protect public health, prudent and rational utilization of natural resources, promoting measures at international level on environmental problems of regional and global dimensions.

Among the most important tools used in environmental policy are: legislation, in particular Directives setting environmental quality standards (levels of pollution) rules for industrial procedures (emission standards, operating etc.). Rules for products (limit concentration or emission for a given product) and action programs for environmental protection and financial aid programs.

EU environmental policy has emerged as a separate field of community concern in 1972, driven by the United Nations Conference on environment held in Stockholm the same year. In 1997, environmental policy becomes horizontal policy of the European Union, which means that environmental issues will necessarily be taken into account in sectoral policies.

EU environmental policy is supported by a number of institutional actors involved in the preparation, definition and implementation, and are in constant consultation with member governments, with various industrial organizations, NGOs and reflection groups. The various tasks that have synergy character clearly indicating they contribute to environmental policy and ensure its objectives both at the legislative level and at the implementation level.

Underlying objectives of EU environmental policy are stipulated by Article 174 of the EC Treaty are:

- preserve, protect and improve the environment;
- protection of human health;
- prudent and rational utilization of natural resources;
- promoting measures at international level to treat regional environmental issues and more.

In March 2010 the European Council adopted a new target for biodiversity to replace the expiring 2010 target. New target aims to halt the loss of biodiversity and ecosystem services by 2020, restore them in so far as possible and increase the EU's contribution to combating global biodiversity loss.

Current biodiversity policy framework will enable the EU to achieve its main objective for 2020. Thus, the Council asked the Commission to develop a new strategy including objectives and measures and actions feasible and effective in terms of cost, to achieve the objectives. Council requested that the strategy reflects the final results of the tenth Conference of the Parties to the Convention on Biological Diversity held in Nagoya, Japan in October 2010 and be completed as soon as possible after that meeting.

Reference system of the European Union biodiversity for 2010 show that, on average, only 17% of assessed habitats are in favorable conservation status and that up to 25% of animal species in the European Union are in danger of extinction. Most ecosystem services can not provide optimal quality and quantity of basic services such as crop pollination, ensuring clean air and water and control flooding or erosion, on which many economic activities.

Europe's biodiversity is still seriously threatened by habitat loss due to land use change and fragmentation, pollution, overexploitation or use non-organic resources, invasive species and climate change. All these elements have pressure constant or increasing in intensity. The same is true internationally. This threat stems from indirect factors related, for example, demographic and cultural choices, lifestyle, by market failures and the structure, size and growth.

Degradation and loss of biodiversity, environmental consequences, economic and social impacts, both at EU level and internationally. For example, loss of coastal wetlands affects society as a whole by reducing the risk of flood control, water purification reduction, reduced recreational and leisure services and lower carbon storage.

Some sectors are particularly affected because it relies on biodiversity and ecosystem services, either directly or indirectly. Biodiversity loss has also consequences for jobs, because in Europe a job in six is somehow related to the environment and diversity, either directly or indirectly. It also limits provide more ecosystem services

essential for maintaining health, the provision of food and drinking water to ensure a clean air and medicines. It also has a significant impact on territorial cohesion of the European Union as biodiversity and ecosystems reinforcing the social fabric and identity of many European regions.

The actions proposed in this document focuses on areas where the EU can add value and have a mobilizing effect. It is obvious that, in the absence of similar action by Member States, those measures will not be sufficient to achieve the target to halt biodiversity loss.

The main objective for 2020 will depend on a combination of measures at EU level and at national, regional or local level in accordance with the principle of subsidiarity. It may be necessary that actions differ from one Member State to another or from one region to another. Thus, the specific objectives are identified taking into account the factors that led to the failure to achieve the European Union target for 2010 and need to reflect international biodiversity targets. An assessment of EU legislation and current policy indicates that there major gaps at policy level in terms of two direct causes of biodiversity loss: climate change and pollution.

There are significant gaps in terms of land use change, overexploitation or use non-organic resources and invasive alien species. As a result, three specific objectives focus on covering these issues. An equally operational objectives and options for different levels of ambition in according to their potential to improve reference system by 2020, to achieve the main objective and vision a reality. The operational objectives are:

- general objectives:
  - halting the loss of biodiversity and degradation of ecosystem services in the EU by 2020;
  - restoring ecosystem services wherever possible;
  - enhancing the EU contribution to averting global biodiversity loss.
- specific objectives:
  - full implementation of the Birds and Habitats;
  - increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity;
  - ensure the sustainable use of fisheries resources;
  - combating invasive alien species;
  - maintaining and restoring ecosystems and related services;
  - contribution to avoid loss of global biodiversity.

**Objectives.** There are several objectives as follows:

1. Halting the deterioration of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that by 2020, compared to current assessments: to be 100% more habitat assessments and 50% more species assessments conducted under the Habitats Directive indicate an improvement in the conservation status, and to have 50% more species assessments under the Birds Directive made indicating a secure or improved status.

2. Year 2020 will be effective forest management plans or equivalent instruments, in accordance with sustainable forest management for all forests that are publicly owned and for forest holdings above a certain size to be defined by Member States or regions and communicated in their Rural Development programs receiving funding under the Rural Development Programme of the European Union, in order to obtain a measurable improvement in the conservation status of species and habitats that depend on or are affected by forestry and a improve provision of ecosystem services compared to the reference system of the EU for 2010.

3. Achieving maximum sustainable yield (MSY) by 2015. Obtaining a distribution of population by age and size, indicating good health reserves, through fisheries management in a way that does not have significant adverse effects on other stocks, species and ecosystems will thus be possible achieve good ecological status by 2020, in line with Strategy Framework Directive Marine.

4. By 2020, identify and prioritize invasive alien species (IAS) and ways of introduction, control and eradication of priority species and management input pathways to prevent the introduction and establishment of new IAS.

5. Maintaining and improving ecosystems and related services by creating green infrastructure and restoring at least 15% of degraded ecosystems by 2020.

6. Increase by 2020, the EU contribution to averting global biodiversity loss. For both targets, improvement will be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest under Objective 1 and the restoration of degraded ecosystems under Objective 2.

For smaller forest holdings, Member States may provide additional incentives to encourage adoption of management plans or equivalent instruments that is consistent with sustainable forest management.

For each objective, we propose a coherent set of complementary measures needed to attain it. Likely effects of these measures are analyzed on the basis of ecological, economic and social differences by the type of measurement where appropriate.

Since the measures are detailed and analyzed in impact studies to be carried out in the context of other policy proposals pending, the impact will be evaluated primarily in a qualitative way. Orders of magnitude of aggregate quantitative impact are indicated where possible, also, as an illustration, are examples of specific cases, usually at the project level. Distribution impacts within the EU and international impacts expected are also evaluated where appropriate.

Lately, the idea of fighting the economic crisis and solve environmental problems through major government investment in "green" energy and infrastructure has become increasingly appreciated. Promoting eco-innovations will allow also the economic recovery and European industry, thus investments made today will protect future jobs.

Although some European countries have used economic crisis to reduce the amounts necessary for environmental protection, the majority supported financial efforts in research and development in new technologies related to the environment and green infrastructure. Green investments and measures on environmental and energy can be observed only in a few years.

**Case study - strategies for conserving biodiversity in the Danube Delta.** In 2010, the GD no. 986/2010 on the establishment, organization and functioning of the Council for developing and coordinating the implementation of a program of socio-economic development of the area "Danube Delta", published in the Official Gazette of Romania, Part I, no. 669 of 30 September 2010. The analysis started in this context emphasized the need for creating a unified strategic framework, namely the development of coherent policies, whose implementation will lead, within the appropriate time to eliminate major development issues. Priorities and policies are: one Government Programme 2009-2012; one National Strategic Reference Framework (NSRF) 2007-2013; one National Reform Programme 2011-2013; one Operational Programme Human Resources Development 2007-2013; one ROP; one SOP Environment; one Rural Development Programme 2007-2013; one Program South East Europe Transnational Cooperation; an integrated Human Resources Development 2009-2020 (SIDRU); culture development strategy in 2007-2013, with reference to South-East Development Region.

The aim of this strategy is the economic and social development of the Danube Delta area. Tools identified in this framework aimed at providing real conditions to eliminate the shortcomings of development and based on the following general objectives: a lifting living standards reap the economic and cultural potential one Environmental protection and sustainable exploitation of natural.

To ensure population stability and existence of ecosystems in Biosphere "Delta", the strategy aims to achieve the following specific objectives, structured areas of competence of the institutions responsible for implementing the strategy:

- health: developing networks and emergency primary health care, increasing access to health care information, improving the quality of medical services provided;

- education: optimization of the school network, adapting provision to labor market needs, raising skill levels of human capital and develop new skills to adapt to technological and organizational changes in companies;
- transportation: infrastructure development and shipping, safer navigation on inland waterways, preventing pollution from ships, maintaining the viability of transportation infrastructure;
- regional development and tourism: rural infrastructure development, rehabilitation and modernization of county roads and local infrastructure development of housing, transport and infrastructure improvements of utilities, development objectives with tourism potential;
- culture: protecting and preserving the architectural heritage of the Danube Delta, professional and business growth, developing cultural tourism, development of handicraft traditions;
- environmental: efficient management system, biodiversity conservation, public infrastructure in the Danube Delta, developing partnerships in support of Reserve management, improving the legislative framework;
- agriculture: preserving traditional occupations in the Danube Delta, rehabilitation and modernization of land reclamation, organic expansion.

### ***Solutions for implementation of specific***

*Developing primary care networks and emergency.* In order to accomplish this goal, the Ministry of Health aims to promote a program of building clinics in Delta, furnished, equipped and manned as standard. MoH rating on the level of primary health services coverage Delta perimeter, reflecting the need to optimize this activity. In this respect, it is estimated that in addition to primary healthcare centers to be built, it requires planning and provision of call centers with and without personal.

Intervention plan will be determined locally based on an assessment of care needs. The initiative will be promoted with the support of the Romanian Government and local authorities and will be subject to a funding program that will run for 3 to 5 years.

*Improving the quality of medical services provided.* During the implementation of the program of construction of primary health care centers will be promoted measures to increase the role of preventive medicine to maintain health of the population through public information campaigns on the skills of medical staff employed in newly created units and developing their communication skills in dealing with applicants last medical services.

*Optimizing operation of the school network.* In order to improve the quality of education and training, the learning process can be supported and complemented by the implementation of distance learning solutions for exceptional circumstances where students can get to school or to organize activities such as "after school" and remedial education. Given the experience of projects developed by the Ministry of Education, Youth and Sports in partnership, to date, it is considered appropriate to implement a system of modern distance education, integrated reformer XXI century learning, better preparing graduates for the labor market in particular local market.

*Increase skill levels of human capital.* One of the strategic priorities for development of vocational and technical education system is the opening and training by the company to the social, economic and cultural adaptation performed including continuous supply of professional qualifications to labor market requirements. Local Institutional Action Plan (LEAP) Tulcea County for the period 2009-2013 appears also to expand its training courses for adults, given that the studies indicated the following: 70% of employees not have access to training in the last 5 years, 50% have never attended a course of training, and nearly 70% of those who change their job qualifications acquire new skills through workplace and self-training. These types of qualifications are not institutionalized forms that provide quality retraining, the affected individual performance.

*Develop and shipping infrastructure.* Its targets for this field pursuing new objectives shipping infrastructure, in accordance with the new requirements of transport, while removing obstacles to navigation and navigation improvement.

Maintenance and repair concerns current jobs and work required to maintain minimum technical characteristics of existing shipping infrastructure, and ensuring the ongoing minimum navigation depths and minimum depths port basins and berths.

Developments in recent years reveal a revival of tourism boats. Also, you can see tremendous growth in the number of recreational vessels belonging to private individuals. These realities are absolutely necessary to develop touristic port. In this context, the Ministry of Transport Strategy for the period 2011-2015, sets the following priorities for the Danube Delta area: completion of the Sulina Canal bank protection, rehabilitation and modernization of port infrastructure in the port of Tulcea, Tulcea achieve Harbor Marina.

*Increasing safety on inland waterways.* It is the most complex project launched in Romania the concept of intelligent systems shipping, given that covers all Romanian Danube ports (23 sites) and providing naval transport operators. The system is organized hierarchically into three levels, according to the organizational structure of the Romanian Naval Authority: the centrally located RNA, with terminals at the Ministry of Transport and Border Police of the Ministry of Administration and Interior, the regional level in Constanta Turnu Severin, Giurgiu, Galati and Tulcea local levels in 22 ports of Sulina in Moldova Veche.

*Prevention of pollution from ships.* From 2010 menus two projects that aim to increase the quality of reception and processing waste from ships and pollution intervention, through the acquisition of ships, installations and equipment and carrying out infrastructure works needed to answer/processing residues from mining activity navigation and port.

*Maintaining the viability of transportation infrastructure.* To achieve its objective of maintaining the viability of the road network, the National Company of Motorways and National Roads carried as part of its long-term strategy, a comprehensive program of road rehabilitation.

*Biodiversity conservation.* Awareness of biodiversity conservation is essential for the existence of the Delta ecosystem. Conduct information and awareness campaign on biodiversity protection Danube Delta Biosphere Reserve "Danube Delta - Paradise almost lost!" seeks active involvement of citizens in protecting the environment.

*Upgrading public infrastructure in Danube Delta.* Reducing the negative impact of waste on the environment and long-term planning activities can be performed by the Master Plan for integrated waste management system. Another important aspect is the exploitation of renewable natural resources through conservation and promotion of occupational and cultural traditions of the people of Delta.

*Developing partnerships in support of Reserve Management.* Partnerships to support the development programs, the contribution of each partner being an important element in achieving the objectives. Under these facts, the Ministry of Environment and Forests is considering implementing projects in partnership: "Up-Grade Black Sea Scientific Network", "Network of Protected Areas of the Danube River - Transnational Strategy Development and Implementation of the River Natural Heritage Conservation Danube", "Ramsar Regional Initiative for Black Sea coastal wetlands", "Sustainable Transport and Mobility in Tourism Regions along the Danube", "Western Black Sea Coast Marine".

*Protection and conservation of the built heritage of the Danube Delta.* Protecting and preserving the national heritage of the Danube Delta is the restoration of national and local objectives so that they become tourist attractions, cultural centers, educational centers of reference, research centers, etc. Restoration has an indirect effect, namely

economic development in a sustainable way and sustainable development will generate private initiatives that will reduce dependence on state subsidies cultural activities.

Any request for restoration of monuments in the Danube Delta must come through a bottom-up approach, starting from the central state institutions owner to ensure a solid advice on how conservation and enhancement, as well as sources of available funding.

Ministry of Culture and National Heritage, together with the Ministry of Transport and considering initiating a project to rehabilitate and refunctionalisation European Comisiunii Palace Danube Sulina, with the aim of providing a model of good practice and increase the attractiveness of the area for tourists and cultural.

European Danube Fees, established in 1856, following the Treaty of Paris, built a number of buildings in the town of Sulina, including the palace. Protocol to the Convention on the Regime of Navigation on the Danube on 18 august 1948 (Belgrade Convention), all European Comisiunii belongings were transferred to the Danube River Administration of the Lower Danube, administration established under art. 20 of the Belgrade Convention. Since "European Danube Fees" was the first European institution known this, building should be of interest not only to the Romanian state but also for the European Union, fully deserving its place in "cultural route of the Danube".

*Efficient management system.* Conservation of ecosystems requires effective management of the Danube Delta Biosphere Reserve. It is essential to develop a high-resolution digital cartographic necessary development plans, strategies and management schemes in the Danube Delta Biosphere Reserve (DDBR). A significant contribution to this aim can be to implement projects such as "Better Management and Implementation of NATURA 2000 sites acronym BE - nature", funded under the Programme South East Europe Transnational Cooperation and "preparatory assistance for the establishment of trilateral Biosphere Reserve" Delta Lower Prut and Danube Region "between Romania-Moldova-Ukraine" (part of the United Nations Development Programme).

Developing the tourism potential targets balanced and integrated development of the tourist area of the Danube Delta and the Black Sea resorts is an objective of the Ministry of Rural Development and Tourism, the first step towards being the construction of the three mini-ports - Saint George, Murighiol and Sarichioi - the amount required to complete these investments amounted to 68,087,603 lei. At the same objective will intervene for tourism infrastructure development and rehabilitation Sulina and related infrastructure for public utility networks in rural Delta, which is of interest in terms of tourist attractions.

**Monitoring, evaluation and reporting. Institutions responsible.** For the implementation of this Strategy will be implemented the following measures:

- evaluation and constantly updated by the institutions responsible for implementing the measures, the set of indicators for monitoring the implementation of the Strategy objectives;
- developed by the Ministry of Finance, the budget estimates multiannual annual review for the principal officers of the state budget in order to ensure continuity of funding objectives;
- obligatory ministries represented in the Inter founded in 2010 on the establishment, organization and functioning of the Council for developing and coordinating the implementation of a program of socio-economic development of the area "Danube Delta" to provide an annual report on the implementation of the Strategy on their own field of competence, based on monitoring specific indicators and concrete measures to eliminate potential problems and proposals for adjustments to targets and deadlines.

**Conclusions.** In 2006, Lord Nicholas Stern issued the "Report on the impact of climate change on the economy". He estimated the immediate cessation of emissions of greenhouse gases would significantly reduce the cost impact of climate change. If they act now, costs would be lower and higher efficiency than if they acted later. Way "costs

of measures to tackle climate change by stabilizing emissions of carbon dioxide in the atmosphere would be about 1% of GDP annual world by 2050. But the lack of measures would cost much more and can reach 20% of global wealth. Forecasts were gloomy report "Climate warming will have an effect comparable to the two world wars, the global economy could fall by up to a fifth."

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