The Consequences of Climate Change and Social Responsible Behaviour

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Abstract: Taking in account its implications, the climate change is an economic and social issue. The dimensions of this phenomenon are dramatic and because of that, the international and regional organizations and public have initiated different adaptation and mitigation measures in order to cope with this problem. The private sector is also preoccupied by this topic and financial institutions, companies, portfolio investors and exchanges have tried to adapt to this new challenge. On financial market, the innovation is intense, and in some directions, this phenomenon is determined by climate change. New financial products have been lunched and the interest of investors for these products is high because they have additional speculative and hedging instruments. In addition, the behaviour of public authorities, investors and corporations has been changed, in some extent, by the climate change. For example, the public authorities from developed countries initiated different green public procurement policies, the corporations run social responsible programs with an environmental component, and portfolio investors are focused on environmental, social and governance (ESG) issues in order to make social responsible investment.

Key-Words: climate change, innovation, finance, exchange, carbon, corporate social responsibility

1 Introduction

At the first site, the climate change is an environmental problem, but its determinants and implications transform it in a complex issue with social and economic sides. If we analyze the implications on the long term, the climate change is a challenge for the development.

The climate changes are caused by natural factors like solar variability, volcanic eruptions and human factors. On one hand, the climate models set up by specialists have estimated that the human activities like the burning of fossil fuels or deforestation have a major impact on climate change. On the other hand, the climate change affects human activity. So, there is a strong inter-correlation between climate change and human activity [G. Zaman, 2005, p. 118, V.Vasile, M Bălan, 2008, p.1].

The public authorities are awarded about the climate change implications in economy and human life. The weather and climate change have many effects on agriculture, tourism activity, infra-structure, constructions industry and so on. Because of this reason, many steps have been done at international, regional and local level. In a first stage, since the early 1990s, many countries have implemented ***climate change-related policies*** and many international organizations like the Organization for Economic Co-operation and Development and the World Bank have implicated in the straggle against climate change. There are many instruments used in order to control the climate change: energy or carbon taxes, tradable permit schemes and the project-based flexibility mechanisms. The Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC) set up two project-based flexibility mechanisms: Clean Development Mechanism (CDM) and Joint Implementation (JI).

The companies from developed countries have the possibilities to gain emission credits by investing in emission reduction projects in other countries. The value of investments in these projects is huge, for example, public authorities and private companies have allocated over USD 11 billion for CDM funding to 2012 [OCDE, 2007, p. 2].

The most vulnerable subjects to climate change are the developing countries and the poorest populations if we take in account the main consequences of this phenomenon: water scarcity, sea-level rise, food insecurity, spread of diseases, damage from floods, and desertification of arable land. Additional problems in these countries are determined by the great dependence on natural

resources, the lack of financial resources and the limited implication of public institutions in this field. So, climate change is a global issue, but the developed countries must take the leader role in order to cut the emissions and to assist the developing countries in the fight against the global warming and its consequences. In addition, the public authorities and companies try to find new alternative funding sources in order to meet their sustainable development objectives [J. Andrei, M. Botezatu, 2010, p. 230].

At international level, the public authorities from developed and developing are preoccupied about their impact on the environment and their possibilities to have a friendly behaviour to the environment and a contribution in the fight against the climate change. In fact, some preoccupations belong to international organizations like OECD that adopted a Recommendation on green public procurement in 2002. After that, many countries like USA, Japan, Canada, Australia, South Korea, China, Thailand and Philippines launched ***sustainable procurement policies.***

In European Union, the public authorities spend large amounts of money - around 16% of the Gross Domestic Product- to buy products and services. Because they have an important economic power, they can have a dramatic contribution to the development of markets for environmentally friendly products and services and to the stimulation of innovation in eco-technologies. The promotion of a Green Public Procurement (GPP) Policy has additional effects on the whole supply chain and, in the end, the private companies will be stimulated to use green standards in their procurement activity.

The European officials have initiated a harmonisation process in order to promote unique environmental criteria for products and services in order to avoid the distortion on the single market and the reduction of EU-wide competition. In this respect, the main instrument used by the EU to establish and develop environmental criteria and to use the GPP in the fight against climate change is the Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy.

In addition, European Commission recommended to the member states to adopt national action plans for GPP by the end of 2006 in order to reduce the negative impact of public authorities on the environment and to promote the use of environmental technologies, products and services. Until June 2010, 21 of members adopted these plans and Bulgaria, Estonia, Greece, Ireland, Hungary, Romania were in the process of set up of these framework.

In the European Union, the preoccupations regarding the social policy are very intense, and aspects like employment opportunities, social and labour rights, decent work, social inclusion, accessibility and design for all, ethical trade, promotion of corporate social responsibility, protections against human rights abuse, promotion of SMEs are issues present in the main policies run by European officials in order to design the European social model. The European social model has two major objectives: sustainable economic growth and improvement of living and working conditions. In order to achieve this model, the public authorities can use their purchase's capacity and promote a policy for ***socially responsible public procurement.***

2 The climate change related investment and financing strategies

The modern economies were built on oil, gas and coal. For example, in the European Union, 80% of the primary energy supply is provided by fossil fuels. The main challenge of climate change and the key ambition of authorities is the development of a ***low carbon economy*** with the help of consumers and companies [A. Do Paço, L. Varejão, 2010, p. 181].

For this reasons, many steps must be done in some fields of science like materials, chemistry, physics, nanotechnology or biotechnology in order to find new way of producing and consuming energy. In the European Union, the Strategic Energy Technology Plan (SET-Plan) promotes the clean, efficient and low carbon technologies that are the motor of prosperity and development.

For the implementation of this plan, the European authorities have drawn up Technology Roadmaps 2010-2020 and European Industrial Initiatives for wind energy, solar energy, energy networks, bio-energy, CO_2 capture, transport and storage, nuclear fission, fuel cells and hydrogen. *All these initiatives have a major financial side, because huge public and private investments are needed in the next decade in order to achieve the goals proposed.*

The estimation of public and private investment for wind initiative for the next ten years is €6 bn, and the contribution of this form of energy will be 20% in 2020 and 33% in 2030. The number of futures skilled jobs is 250,000. For solar initiative, the public and private investment is estimated for the next ten years to €16 bn and the solar energy will have a contribution up to 15% of European energy in 2020. The impact on labour force market

is the creation of 200,000 jobs. Taking in account the use of different types of energy, public and private investment is needed in order to set up energy networks; the estimation of this investment is around €2 bn in period 2010-2020.

The use of bio-energy implies the set up of 30 pilot plants and a long-term research program; so in this field, there is needed € 9 bn of the public and private investment in the next ten years. The results of this investment will consist in a 14% contribution of bio-energy to European supply of energy and 200.000 local jobs until 2020. The carbon capture and storage technologies and the research programs will require a total public and private investment around € 13 bn in the next ten years. The use of nuclear energy in safety and efficient conditions require a new generation reactor type – the Generation-IV reactor and a research program for the development of new materials and components that will improve the industrial and economic viability of these reactors. The estimation of the public and private investment for the next ten years is €7 bn.

The Joint Technology Initiative (JTI) on fuel cells and hydrogen has, for the period 2008-2013, a budget of € 470 mil, but in the next years 2013-2020, additional public and private funding are needed, the estimation being around €5 bn.

In the European Union, the key role in financing this investment is play by the European Investment Bank. In 2007, at the annual forum of the European Investment Bank „Investing in Energy, Mastering Climate Change" was launched Risk Sharing Finance Facility (RSFF) in order to provide a support to development and innovation projects. At the beginning, the funds provided by this bank have been directed to the projects regarding renewable energy efficiency, engineering and biotechnology. This facility was drawn up because the financial institutions are reluctant to finance companies for various research projects because of the high level of risks.

So, this Risk Sharing Finance Facility (RSFF) is a response to this situation and an instrument for Europe to reach the target of investing 3% of its GDP in research. In this way, small and medium enterprises, public companies have a better access to debt financing for innovation and research projects and the underlying risks of financing is share between the European Investment Bank and the European Commission.

In the period 2007-2013, the two institutions will provide €2 bn and the available instruments are corporate debt financing, project financing and mezzanine financing.

In conclusion, ***the investment patterns will change in order to mitigate and adapt to climate change.*** According with United Nations` specialists [UNFCC 2008, p. 20], the most dramatic shifts of investment are taking place in power supply sector, but some changes in investment comportment are requiring by adaptation and mitigation measures in fields like infrastructure, agriculture forestry and fisheries.

The investment shift must be sustained by financial incentives that cover the risks assumed by companies, and by set up of the carbon market. Another challenge is the increase of funding that is needed to mitigate and adapt to climate change. Besides the international financial institutions implicated in financing various projects (like International Bank for Reconstruction and Development or International Financial Corporation), *there are many private or public-private funds that finance and catalyze important investments in low carbon projects*. For examples, carbon funds like the Prototype Carbon Fund, the Spanish Carbon Fund, Italian Carbon Fund or the BioCarbon Fund [WB 2008, p. 21-66] finance projects like afforestation of 20,000 hectares of degraded and eroded state-owned and communal agricultural lands throughout Moldova, afforestation of 6,852 hectares of public land in Romania or soil conservation in Moldova. These funds are set up by public authorities from developed countries, but private companies participate to gather the money necessary for investments. These funds are only one instrument used by public authorities in order to reach emission reduction targets imposed through Kyoto Protocol.

The importance of private financing is demonstrated by a recent report of United Nations Framework Convention on Climate Change - UNFCCC. According to this report [UNFCCC 2008, p. 5], the private sector investments constitute the largest share of investment and financial flows (86 per cent) that will sustain the future adaptation and mitigation measures for climate change. So, the financial markets contribute to reach of the climate policy goals.

According with Kyoto Protocol, the financial institutions like pension's funds and banks can play seminal role in the transition to a low carbon economy, because they act like brokers for carbon trading or as financiers for low carbon investment projects [B. J. Richardson, 2009, p. 597].

In addition, in accordance with climate policy, the concept of social responsible investment gains new dimensions: companies and financial institutions must be ethical investors that track not only to

maximize their profits but also to invest socially and ecologically [D. Kralj, 2009, p. 221].
So, the climate change has determined many changes:

- the public policies have been modified in order to cope with this challenge; for example, the European authorities have been integrated the climate change issue in the policies regarding the energy, poverty reduction, sustainable development etc.;
- a new industrial revolution has been started because new types of energies are used and new energy production ways appeared;
- the dramatic adjustment of our stile life;
- the behaviour of consumers is changing because many clients buy intelligently;
- new markets have been established: the market for eco-friendly technologies or market of social responsible products;
- a new economy is set up: the low carbon economy.

3 The social responsible behaviour of transnational corporations and low carbon economy

The expansion of transnational corporations generates many conflicts with the societies where they activate. These conflicts are determined by the discrepancies between private and social costs and benefits and the different visions regarding what is fair for corporations and society. The climate change is an important issue for transnational corporations because they are important carbon emitters and low carbon investors. In fact, transnational corporations generate problems and solutions to climate change [UNCTAD 2010, p. 99].

The impact of transnational corporation on environment is dramatic because they are major global industrial players in many fields like: power, oil & gas, cement, iron & steel, transport, waste management, chemicals etc. According with UNCTAD, the global efforts to reduce GHG emissions must begin with the power sector, taking in account the effect of power production on the environment. In this field, the transnational corporations can have an important role through the low carbon investment in environmental friendly process, products and services, if we notice the foreign expansion after 1990.

For example, the CEZ Group is a transnational corporation based on the Czech Republic, but present in 10 countries of Central and South Eastern Europe. In 2008, the CEZ Group bought a 600 megawatts wind farm project in Romania. The implications of this deal are important for Romania and the foreign investor:

- for Romania, it is the most important project for wind energy production;
- this will be the largest onshore wind farm in Europe, until the end stage at the end of 2010;
- the energy production from this wind farm will account around 10% of the renewable market in Romania;
- through this project, the CEZ Group have strengthened their position in Romania;
- this initiative is a way to meet the targets of reducing CO2 emissions and to respond to the energy-climatic policy of the EU.

There are many drivers of foreign direct investment, but the environment and climate change cause the appearance of new determinants for low carbon foreign investment. For example, the investors' pressure, the stakeholders' expectations and business trends play an important role in the low carbon activities of transnational corporations and implication in activities of social responsibility [M. Kubenka, R. Myskova, 2009, p. 324].

The transnational corporations have many possibilities to support the low carbon economy: (1) the development of R&D in hard and soft technologies and the upgrade of the technologies and the process in order to promote the reduction of GHG emissions; (2) the creation and promotion of low carbon products and services like electric cars, power-saving electronics or renewable energy equipment;(3) the local suppliers of transnational corporations can be persuaded or supported to use low-carbon technologies and local customers can be assisted in order to reduce the GHG emissions; (4) the launch of social responsibility programs in order to change the behaviour of customers regarding the environment protection and climate change. According with UNCTAD, low-carbon FDI flows in major low-carbon business fields (renewable, recycling and low-carbon technology manufacturing) amounted to $90 billion in 2009 [UNCTAD 2010, p. 99].

In order to support the efforts of transnational corporations, the public authorities must play the catalyst role in order to move towards low carbon economy. The public authorities must integrate "green and responsible" elements in the foreign investment promotion strategies. The strategies used are different because the main objectives are different: climate change adaptation and mitigation, the development of the renewable energy or green energy sector, the development low carbon sectors like services. The public authorities have many

instruments for use to achieve these goals. For example, in countries like China, India and Korea, low-carbon special economic zones have been set up and some GHG mitigation targets are imposed for companies that profit by sustainable infrastructure and incentives framework.

4 The climate change related products and social responsible investors

The financial innovation is a reality o f the last twenty years and the climate change determined the launch of the many products and the set up of many investment strategies. *The climate change related products and investment strategies are considered to be a part of "green investment" which is classified as a part of social responsible investment (SRI) world* [Deutsche Asset Management, 2007].

The results of climate change impact on financial market are amazing: many over-the-counter products or exchange-traded instruments like catastrophe bonds, green bonds, ethical indices, derivatives contracts on weather are available. These products are used for speculative purpose or hedging strategies by companies, institutional investors, public authorities or small investors.

The universe of indices is huge, but every day, new indices are set up. In order to offer ethical financial instruments for portfolio investors, a new type of indices – ethical indices are available on financial market. These indices consist of shares issued by blue chips companies traded on exchange that meet certain criteria regarding environment protection, human right and business ethics. The first global indices that track the performance of sustainability drive companies were Dow Jones Sustainability Indices launched in 1999. In addition, the Dow Jones Sustainability World Index is used as underlying asset for futures contracts traded on Chicago Climate Futures Exchange. Another leader in index world – FTSE Index Company – calculates FTSE4GOOD Indices that measures the performance of enterprises that meet the corporate social responsibility standards.

The innovation is very intense on bond market. For example, the catastrophe bonds or CAT bonds are issued by insurance companies, re insurers, corporations and public authorities in order to transfer the catastrophe risk to investors like institutional investors, hedge funds, pension's funds, bond funds or companies from insurance field.

The issue of this type of bonds is an alternative to traditional insurance/reinsurance. So, the capital market offers instruments for insurance industry and cover events like earthquake, windstorms, river floods, hurricanes or tornados.

Another impact of weather and climate change on bond market is the issue of green bonds. In the year 2008, the International Bank for Reconstruction and Development made a major innovation on capital market: the launch of green bonds. The capitals raised by these securities are used for financing mitigation and adaptation measures implicated by climate change. The first issue was done in November 2008 and the loan was denominated in Swedish Krona (SEK) and it was a response to a demand of Scandinavian investors. Since then, other three issues of green bonds have been launched. The recent event was at the beginning of 2010, when World Bank and Daiwa Securities Group launched, for Japanese investors, green bonds. This issue raised funds (over USD 110 million) for projects financed by International Bank for Reconstruction and Development in countries in order to meet the criteria of low carbon development.

The World Bank puts the capital markets to work and sustains the low carbon economy through launching new fixed income instruments: CER-linked Uridashi bonds (nicknamed CO2L Bonds or cool bonds) issued together with Daiwa Securities Group and Eco-3Plus Note issued by ABN AMRO for investors from Luxembourg, Netherlands and Belgium (World Bank 2008b, p. 38). For example, through cool bonds, the World Bank finances a CDM (Clean Development Mechanism) project to a hydropower plant located in Guizhou Province in China. In the first stage, the coupon of these bonds is fixed – 3%, but, in the future, the coupon will be linked to the performance of the CER (Certified Emission Reductions) market. Through new financial instruments, the institutional investors that normally do not participate in carbon market can buy these bonds and became an indirect player on emissions trading. Taking in account their face value, these bonds are affordable for institutional investors.

The climate change imposed new merchandise: the carbon and a new market have been set up: the carbon market. The carbon market has two segments: the regulation-driven market established under the rules of Kyoto Protocol and the voluntary market, created earlier by the conservation organization in order to find new ways to finance their projects (Hamilton 2007, p.10).

The regulated carbon market has three fundamental mechanisms: Emissions Trading (ET), Joint Implementation (JI) and the Clean Development Mechanism (CDM). The specialists of

the World Bank (WB2008c, p. 8) consider that the engine, perhaps even the laboratory of the carbon market is the European Union Emissions Trading Scheme (EU ETS). Under the Kyoto Protocol, every country must fulfil its emissions reductions commitments and can purchase and sale carbon credits. Because of that, the European authorities have set up since 2005 a trading scheme for its members. From 2008, this scheme is used by 30 countries – 27 EU members' states, Norway, Iceland and Liechtenstein and covers over 10,000 installations in the energy and industrial sectors.

Due to the dramatic efforts of European authorities in order to fulfil its international commitments, this trading scheme is strictly regulated and has been improved (for example, the aviation sector will be under this scheme from 2012, the carbon dioxide from petrochemicals, ammonia, aluminium and other greenhouses gases like nitrous oxide will be included under this scheme from 2013). The EU ETS was designed with three periods. In the first and second periods, according with national allocations plans (NAPs), every installation in the member states has receives emissions allocations units (EUAs). A EUA represents a permit to emit 1 000 tons of CO2. If an installation makes investments in environment friendly technologies and cut its carbon emissions, the surplus units are sold.

In these periods, some drawbacks have been observed: in the first stage (2005-2008), the lack of verified emissions data determined an excessive allocation of allowances in some member states and some sectors; the allocation of allowances by installations was made according with different national methods and that threaten fair competition in the internal market. Because of that, after public consultation and discussions, the European legal framework for trading scheme has been improved for the third period (2013-2020). The numbers of allowances will decrease annually and the allocation will be done at European level, so the national allocation plans will not be needed anymore.

Taking in account the principle ***"the polluter pays***", more than half of emissions allowances will be auctioned compared with less than 4% in the phase two. In order to respect the rules of the internal market, each member state will set up and develop its own auctioning infrastructure or will cooperate with other states to develop regional or EU-wide platform of auctions. The result consists in the development of carbon market: 1.3 billion EUAs will be auctioned each year, potentially raising €25-40 billion annually (WB 2008c, p.10). Other countries like Australia, Japan and several states US have set up their own regulations and legal mandatory programs in order to reduce greenhouse gas emissions associated with the economic activities. In the USA, there is not available a national program, only regional programs like Regional Greenhouse Gas Initiative (RGGI) or The Western Climate Initiative.

The voluntary carbon market is the „place" where the companies, the NGOs and the individuals buy „carbon credits for purposes other than meeting compliance targets" [D. Chaudhry 2008, p.9]. On this market, institutions and companies can buy carbon credits to offset their emissions, companies or individuals can purchase carbon credits for retirement or sale or they can donate GHG reduction projects in exchange for credits. The high interest of companies, institutions and portfolio investors for carbon trading has generated the establishment and development of exchanges like Chicago Climate Exchange (CCX) or segments for carbon credits at stock and commodity exchanges.

The exchanges are important players on social responsible investment market because they have the power to promote ESG (environment, social and governance) principles among the listing companies and to launch ESG related products. The exchanges have many possibilities to act on SRI market through promotion ESG standards for the listing companies; launch of many sustainability indices or the set up of specialized markets for specific social responsible investment or specialized exchanges are established to trade ESG related products [WFE, 2009, p.15].

For example, the climate change determines the establishment of dedicated exchanges for carbon products. The most active exchange on carbon market is the Chicago Climate Exchange (CCX) that has launched in 2003 a cap and trade system for all six-greenhouse gases. The members of this exchange are emitters of greenhouse gases like components of the Dow Jones Industrial Average (like DD, IBM and UTX), Fortune 100 companies like Ford, Motorola, International Paper, electric utilities like American Electric Power, two US states (Illinois and New Mexico), several counties and cities like Chicago and Aspen and universities like Michigan State University, University of California, San Diego or University of Oklahoma. All the members have made a voluntary but legally binding commitment to the CCX Emissions Reduction Schedule. Through this reduction schedule, the annual emissions allowances are allocated in order to meet the goal of 6% reduction in GHG emissions from a standardized baseline. The members that reduce their emissions beyond their targets have the

possibility to sell the surplus allowances or to bank them for future use. The members who overpass the allowances must purchase additional allowances. In fact, on this exchange, the tradable product is named the Carbon Financial Instrument (CFI) contract, that represents 100 metric tons of exchange allowances or exchange offsets. Besides members, there are offset providers or aggregators, that are owners or offset projects that destroy, sequester or reduce GHG emissions, and liquidity providers like professional traders or hedge funds that do business on this exchange for reasons other than compliance – speculation or hedging. The baselines, annual emissions data and offset projects are verified are reviewed by an independent non-governmental body – the Financial Industry Regulatory Authority (FINRA).

The Chicago Climate Exchange has set up two derivatives exchanges: Chicago Climate Futures Exchange (CCFE) and European Climate Exchange. At European Climate Exchange, there are two types of carbon products traded: EU allowances (EUAs) and Certified Emission Reductions (CERs) through spot, futures and options contracts. The interest of investors for these types of contracts is demonstrated be the rise of volume of CO2 traded and the increase of notional value of contracts traded.

Table 1. The volume and notional value of ECX Contracts

	2005	2006	2007	2008	2009
Tones of CO2 traded (million)	94	452	1000	2800	5100
Notional value (billion Euro)	2.1	9	17.5	55.9	68

Source: http://www.ecx.eu/media/pdf/ecx%20pres%20-%20february%202010.pdf

BlueNext is another European environmental exchange that was set up by NYSE Euronext and Caisse des Dépots in 2007. This exchange is leader on the spot market for CERs and EUAs, but since middle of 2008, futures contracts on CERs and EUAs are available too. The role of this exchange on the spot market for environmental related products is demonstrated by the choose of the World Bank that at the end of last year, decided to begin regular sells CERs through this exchange. In this way, the World Bank, as trustee for the Adaptation Fund, monetizes the CERs obtained through the Clean Development Mechanism (CDM). The Adaptation Fund was set up in order to finance adaptation projects and programs in developing countries that are parties to Kyoto Protocol. This fund is an instrument for fight against climate change.

5 The preoccupations of international organisations regarding the social responsibility: UN Global Compact

Social responsibility is a concept that has attracted the attention of international organizations such as United Nations or the OECD, but also led to increased private initiatives by corporations or other organizations. Among the most important private initiatives is the Caux Round Table, which was founded in 1968

Global Compact (GC) is an initiative of former UN General Secretary - Koki Annan witch, in a speech at the 1999 World Economic Forum, launched the idea of a partnership between the United Nationals and companies worldwide to achieve sustainable development objectives that has this organization. In practice, the Global Compact is a network between the various entities that have interests in social responsibility: companies, unions, government agencies, cities, civil society organizations, business associations, academic organizations etc.

Global Compact is a public-private initiative that offers companies a framework for developing, implementing and promoting sustainability principles and practices related to four major areas of concern: human rights, labour standards, environment and fighting against corruption. The management of risks and opportunities of these four areas is considered a way to create long term value, which is beneficial for both companies and society in general. Commitment to the principles of business supported by the Global Compact is demonstrated by the large number of participants, over 7700 companies and stakeholders from over 130 countries.

The adoption of these principles is voluntary, but companies that are members of the Global Compact network assume a commitment to implement and promote these principles and in this sense, they must introduce specific measures.

- GC principles become a part of business strategy, daily operations and organizational culture;

- GC principles are integrated into decision-making for the highest leadership;
- companies must contribute to the dissemination of development goals (including the Millennium Development Goals) through partnerships;
- companies are required to insert in the annual report a description of how it was done to implement these principles and how they are supported development objectives (communication progress);
- promotion of responsible practices and GC principles among partners, customers, consumers and society in general.

Due to the importance of education on training of future managers and specialists in areas such as social responsibility, business ethics or societal marketing, academic organizations are an essential component of the Global Compact platform. Furthermore, academia has brought some constructive criticism on the operations carried out by GC and by available resources and infrastructure; this sector contributes to the knowledge and understanding of corporate citizenship and social responsibility, but also to the promotion of GC principles at local and international level.

As social responsibility is not the exclusive prerogative of the companies, Global Compact has promoted since 2007, The Principles for Responsible Management Education-PRME which creates the framework to promote social responsibility by incorporating in the research and teaching plans of universal values of social responsibility.

Even if the notions of corporate social responsibility and sustainability are promoted in academia, they have not become the priority in the education of economists, for this reason, the universities and the business schools will gradually improve curricula and research and teaching methodologies and institutional strategies through the promotion of these principles. In late 2010, these principles are shared by more than 340 academic institutions that form the managers, one third of whom are located in Western Europe and North America.

In addition, an educational institution specializing in this field was even founded. The Responsible Investment Academy is an Australian government-funded institution that works with the Secretariat of PRI (Principles for Responsible Investment) to support institutional investors who have signed the Principles for Responsible Investment to provide educational resources for training specialists in the field of responsible investment.

This institution offers courses on the implementation of Responsible Investment Principles, the integration of ESG (environmental, social and corporate governance) in securities analysis and portfolio construction, the commitment of investors as shareholders, voting policies, sustainable development, climate change and the transition to low carbon economy, human rights, labour standards, water and energy security.

Because cities can make a significant contribution to creating a sustainable society, which requires integrating economic, social, political and environmental, the principles developed by Global Compact for corporations can be translated to the administrative entities (cities) in terms of governance and urban management.

GC program for cities was launched in 2003 and supposes the adoption of the 10 principles of social responsibility developed for companies by cities. To accommodate the 10 principles in the towns, GC program aimed at close cooperation between companies, public authorities, universities and civil society so that towns face very complex problems so that they also have a contribution positively to the sustainable development of national economies.

This program was designed on three levels of commitment so as to achieve a progressive involvement of cities in terms of commitment, recognition and tools used. Cities program is a component of the Global Compact initiative, which focuses on urban component, and it is based on Melbourne methodology. This methodology involves the inter-relationships between companies, public authorities and civil society. First steps taken towards the creation of this program were done by Melbourne city, whose authorities have sent a letter to the originator of the UN Global Compact - Kofi Annan, in 2001, expressing their support for the ten principles developed and promoted, and asked to join this platform. Given the purpose of creating the UN Global Compact Platform, Melbourne city has been refused, but Kofi Annan has agreed to initiate a pilot project (Utility Debt Spiral Project) to demonstrate the usefulness of involving cities to promote social responsibility.

In conclusion, the cities are responsible to entities operating in their area of action and can have a significant contribution to the promotion of social responsibility and sustainable development [C. Lazăr, M. Lazăr, 2009, p.312].

In general, GC principles for cities are similar to those promoted for companies, the guidelines being

labour standards, human rights, and the environment and fighting corruption.

6 Conclusions

The impact of climate change on financial market is developing each day, because the financial innovation is very intense and the participants are very active.

Many financial organizations, public authorities, portfolio investors and private companies are implicated on the carbon market in order to set up the legal framework, to find money to finance environmental friendly projects or to make transactions with carbon credits for hedging or speculative purpose.

At international level, the European authorities made sustained efforts and established a legal framework and set up the European Union Emissions trading Scheme (EU ETS) in order to fulfil its international commitments according with the Kyoto Protocol. The key role in financing ***environmental friendly investment*** is played by the European Investment Bank. Besides the activities of the European Investment Bank, we remark the implication of International Bank for Reconstruction and Development that established many environmental funds and sustained the process of innovation on capital market through the launch of different types of bonds like green bonds or cool bonds.

On capital market, ***a new commodity – the carbon - is traded on specialized exchanges*** like Chicago Climate Exchange, BlueNext.

The spot, futures and options contracts on carbon credits are available on these exchanges and many companies, universities, counties and cities are members of these exchanges. In fact, exchanges are the main promoters of social responsible investment on the capital markets.

The behaviour of investors on capital market is changing. The exchanges, portfolio investors and consultant firms made efforts to promote the ESG (environmental, social and governance) principles for investment. In this way, ***the universe of social responsible investment is expanding***.

The importance of the ESG issues for portfolio investors is demonstrated by the official figures regarding the dimensions of the social responsible investment market: in USA, around 11% of the assets under professional management are involved in socially responsible investment and in Europe, the share is 17%.

The interest of investors for ESG issues is demonstrated by the set up of the *Principles of Responsible Investment (PRI) Initiative - a voluntary framework supported by UNEP Finance Initiative and UN Global Compact.* Over 830 asset owners, investment managers and professional service partners are signatories of these principles. The survey conducted by PRI Initiative in 2010 demonstrates the high implication of investment institutions in ESG promotion and integration: over 95% of asset owners and 87% of investment managers promote an investment policy that incorporates the ESG issues; and around 50% of respondents have a dedicated ESG specialist in their organizations. [UNPRI, 2010, p. 4].

Dynamic of social responsibility concept is closely linked to the emergence and evolution of the concept of sustainable development. Intense environmental concerns, pressures from the public, globalisation and the promotion of strict legal measures have changed the way of doing business [V Srivastava, A. Sahay, p. 7].

For example, the transnational company ExxonMobil has experienced the negative reaction of European consumers' reaction to the company's refusal to sign the Kyoto Protocol on preventing global warming.

Therefore, we are seeing to the shaping and development of social initiatives such as environmentalism and consumerism that have led companies to become more socially responsible, and have determined legislative changes to protect the environment and consumer protection.

Globalisation and technological progress have led to an increase in ***ethical consumerism***, more and more consumers taking the product purchase decisions based on social or environmental criteria aimed at companies.

From the perspective of social responsibility, the competitive pressures of globalisation focus not only on transnational corporations, but also on companies that are in the supply chain, for this reason, large companies have initiated programs to promote social responsibility for subcontracting firms or supplier firms in developing countries.

So, a weather issue – the climate change – has multiple implications on the activities and behaviour of companies, consumers, portfolio investors, consultant firms, central and local public authorities, international organisations and financial entities like stock exchanges and banks.

The actions of different economic entities are shaped by a new concept: **social responsibility**. The social responsibility of economic entities acquire new meanings given by very specific characteristics because they are part of a globalizing economic and social environment, at the confluence of the obligations and rights levels influenced both the

economic and social environment of the country of origin and of the host country.

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