

**ENVIRONMENTAL PROTECTION, SUSTAINABLE DEVELOPMENT AND
CORPORATE RESPONSIBILITY IN WOOD INDUSTRY.
PART 2: ENVIRONMENTAL IMPACT AND SOCIAL RESPONSIBILITY**

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Abstract:

This paper has two parts. In the first part, using the data from the Human Development Reports of the United Nations we have analysed the Environmental sustainability in EEA Countries by using complex indicators. In the second part of the paper, based on this data and on the analyses of the first part we will analyse other indicators and will present the essential aspects of the sustainable development through the perspective of the way in which Romanian wood industry organisations understand to account for the accepted European social responsibility values.

Key words: *pollution; sustainable development; wood industry; social responsibility.*

INTRODUCTION

The wood industry is a field in which we use, in one form or another, directly or indirectly, all the essential resources: wood, energy, water and air.

At the same time, the wood industry is a field in which the processing of the raw materials has a high technological cost which also produces large amounts of residue, which if not properly used can become high environmental impact residue.

In the same way, the wood processing sector can become a large consumer of energy if the processing technology and the machinery, tools and equipment used are not adapted to a rational use.

The issues of environmental protection and sustainable development are directly linked with the specific wood industry organisation behaviour. And an essential part of this behaviour is the one defined by the social responsibility of the organisation.

OBJECTIVES

In the second part of this paper we will start with the analysis of the major environmental changer that have taken place in the 30 European countries studied, part of the European Economic Area (EEA) plus Iceland, Norway and Switzerland (there was no available data for Liechtenstein). They are:

- Carbon Dioxide Emissions;
- Greenhouse gas emissions;
- Urban pollution;
- Population living on degraded land.

Then we will present the issue of CSR and will disseminate the results of a study carried out on this theme, where a form was sent to 58 wood industry companies. The analysis of these indicators (and of those in the first part of the paper) are targeted at proving the fact that we can not talk about sustainable behaviour if we do not approach the issue systematically: (1) identifying and analysing the real state of the society (the HDI), (2) understanding environmental, economic and social responsibilities, (3) applying clear measures issued by governing bodies (European Commission, European Council, specialised UN bodies, parliaments and governments) and (4) quantifying the effects.

METHOD AND MATERIALS

All the environmental information were taken and processed from the United Nations Human Development Reports – Human Development Report 2011 – Sustainability and Equity: A Better Future for All – HDR_2011 (accessed 2013) – and the 2013 Human Development Report – "The Rise of the South: Human Progress in a Diverse World" published on the 15th of March 2013 – HDR_2013 (accessed 2013).

[Except for Romania and Bulgaria, which are placed in the High Human Development category, with a Human Development Index of 0.786 and 0.782 respectively, for 2012 (ranking 56 and 57th according to the HDI index), the other 28 countries analysed in this paper are in the Very High Human Development category].

Regarding the sustainable and responsible business and corporate and social responsibility (CSR) for wood industry organisations we have used the latest European Commission report from the 25th of October 2011 (COM_2011) on the new policy on corporate social responsibility and have analysed the way in which involved Romanian organisations know and apply these guidelines (the data was extracted for official organisation documents and forms filled out on this subject for 58 wood industry companies).

RESULTS

Indicators

As far as the indicators regarding pollution are concerned, the most important is **Carbon Dioxide emissions**. [**Carbon dioxide emissions, per capita**: Human-originated carbon dioxide emissions stemming from the burning of fossil fuels, gas flaring and the production of cement, divided by midyear population]. In the table below (*Table 1*) we have made a ranking of all the analysed countries in ascending order of the quantity of Carbon Dioxide Emissions per capita, in tonnes.

At the same time we have outlined another indicator calculated from a global level in the HDR: Carbon Dioxide Emissions (average annual % growth) 1970/2008. Unfortunately, we have concluded that at a global level, only 12 countries have managed to reduce these emissions, but with an insignificant margin of maximum 2%: Sweden, Luxembourg, Denmark, France, United Kingdom, Romania, Belgium, Hungary, Switzerland, Poland, Bulgaria and Netherlands. For 8 of the countries we do not have sufficient data for the time frame: Czech Republic, Estonia, Germany, Latvia, Lithuania, Slovakia, Slovenia and Iceland. As far as the rest of the countries are concerned, the Carbon Dioxide Emissions have grown in this period: Austria, Finland, Italy, Norway, Ireland, Spain, Malta, Portugal, Greece and Cyprus.

Table 1

Carbon Dioxide Emissions

| No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-----------|--------|---------|-----------|----------|--------|-------------|---------|--------|-------|----------|----------|---------|-------|-------|---------|
| Countries | Latvia | Romania | Lithuania | Portugal | Sweden | Switzerland | Hungary | France | Malta | Bulgaria | Slovakia | Iceland | Spain | Italy | Austria |
| CDt | 3,4 | 4,4 | 4,5 | 5,3 | 5,3 | 5,3 | 5,5 | 6,1 | 6,3 | 6,7 | 7,0 | 7,1 | 7,4 | 7,5 | 8,1 |
| CDg | 0,0 | -0,8 | 0,0 | 3,1 | -2,0 | -0,5 | -0,6 | -0,9 | 3,0 | -0,2 | 0,0 | 0,1 | 2,0 | 0,8 | 0,5 |

CDt - Carbon Dioxide Emissions per capita (tonnes) in 2008
CDg - Carbon Dioxide Emissions (average annual % growth) 1970/2008

| No | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|-----------|--------|---------|----------|----------------|--------|---------|---------|---------|--------|--------|-------------|---------|----------------|---------|------------|
| Countries | Poland | Denmark | Slovenia | United Kingdom | Greece | Germany | Ireland | Belgium | Cyprus | Norway | Netherlands | Finland | Czech Republic | Estonia | Luxembourg |
| CDt | 8,3 | 8,4 | 8,5 | 8,5 | 8,8 | 9,6 | 9,8 | 9,9 | 9,9 | 10,5 | 10,5 | 10,7 | 11,3 | 13,6 | 21,9 |
| CDg | -0,3 | -1,1 | 0,0 | -0,8 | 3,1 | 0,0 | 1,1 | -0,7 | 3,4 | 1,0 | -0,1 | 0,5 | 0,0 | 0,0 | -1,6 |

Source: HDR_2011_Tables (2013) http://hdr.undp.org/en/media/HDR_2011_EN_Tables.pdf

We have also developed a graphic representation of the evolution of Carbon Dioxide Emission in the EEA Countries to better outline the phenomena (Fig. 1).

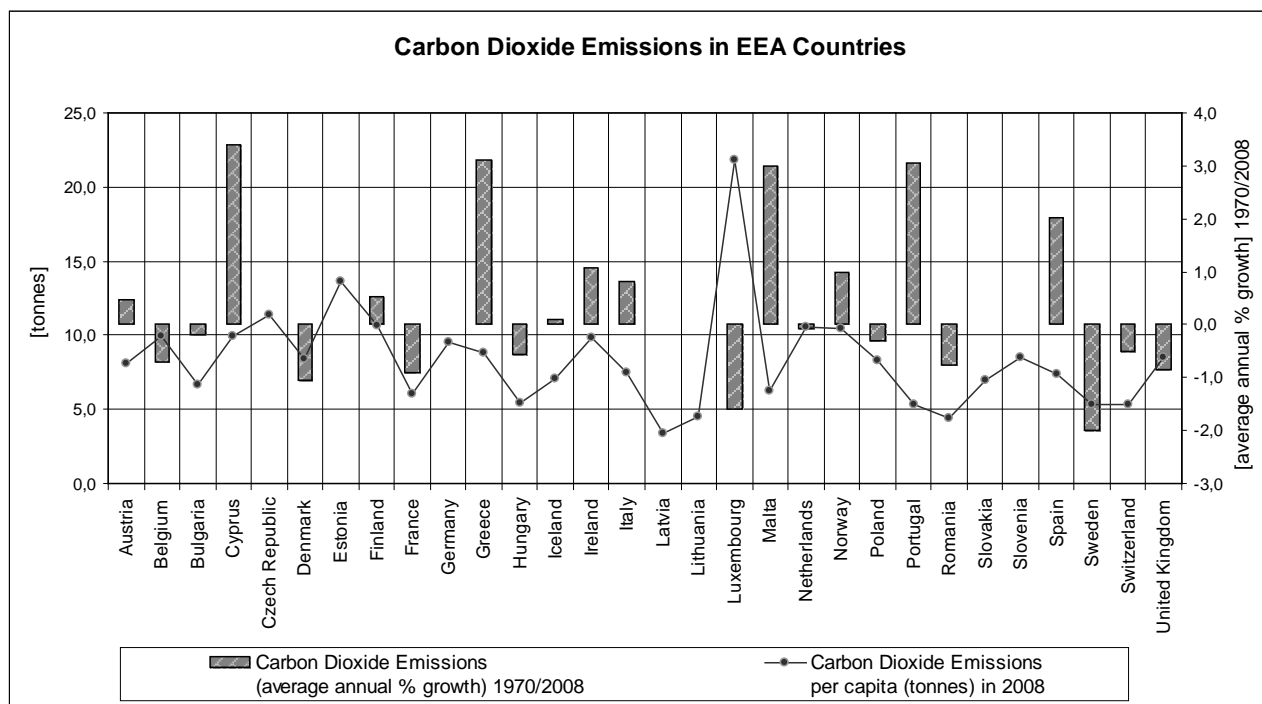


Fig. 1
Carbon Dioxide Emission per capita in 2008 and average annual growth (1970/2008).

Alongside the Carbon Dioxide Emissions, Greenhouse Gas Emissions are also very dangerous. The HDR indicator is **Greenhouse gas emissions per capita** [Emissions from methane, nitrous oxide and other

greenhouse gases including hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride, divided by midyear population. Carbon dioxide emissions are not included - [HDR_2011_Definitions \(2013\) http://hdr.undp.org/en/media/HDR_2011_EN_Tables.pdf](http://hdr.undp.org/en/media/HDR_2011_Definitions_(2013)_http://hdr.undp.org/en/media/HDR_2011_EN_Tables.pdf). This indicator, alongside the Urban Pollution give us a full picture of the pollution level. **Urban pollution:** Particulate matter concentrations in terms of fine suspended particulates, of human-made or natural origin, less than 10 microns (PM10) in diameter that are capable of penetrating deep into the respiratory tract. Data are urban population-weighted PM10 levels in residential areas of cities with more than 100,000 residents. The estimates represent the average annual exposure level of an urban resident to outdoor particulate matter. We consider that the greatest relevance towards the creation of this ranking for the analysed countries should be given to Urban Pollution and so we have arranged the countries based on these ascending values.

Table 2

Urban pollution and Greenhouse gas emissions per capita

| No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|-------|--------|---------|---------|---------|------------|----------------|--------|----------|--------|---------|---------|---------|--------|---------|
| Countries | Malta | Sweden | Romania | Ireland | Estonia | Luxembourg | United Kingdom | France | Slovakia | Latvia | Iceland | Finland | Hungary | Norway | Germany |
| UP | 0,0 | 10,5 | 12,4 | 12,5 | 12,6 | 12,6 | 12,7 | 12,9 | 13,1 | 13,5 | 14,5 | 14,9 | 15,6 | 15,9 | 16,2 |
| GG | 0,9 | 2,1 | 1,7 | 5,8 | 2,3 | 3,5 | 1,8 | 2,3 | 1,4 | 2,3 | 3,3 | 3,4 | 1,6 | 5,8 | 1,9 |
| UP - Urban pollution (micrograms per cubic metre) GG - Greenhouse gas emissions per capita (tonnes of carbon dioxide equivalent) | | | | | | | | | | | | | | | |

| No | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---------|-----------|----------------|----------|---------|-------------|-------|-------|---------|----------|-------------|--------|--------|--------|----------|
| Countries | Denmark | Lithuania | Czech Republic | Portugal | Belgium | Switzerland | Italy | Spain | Austria | Slovenia | Netherlands | Greece | Cyprus | Poland | Bulgaria |
| UP | 16,3 | 16,9 | 18,5 | 21,0 | 21,3 | 22,4 | 23,3 | 27,6 | 29,0 | 29,0 | 30,8 | 32,0 | 33,6 | 35,1 | 50,6 |
| GG | 2,9 | 2,5 | 2,1 | 1,8 | 1,8 | 1,2 | 1,4 | 1,7 | 1,9 | 2,6 | 2,4 | 1,4 | 1,3 | 2,7 | 2,0 |
| Source: HDR_2011_Tables (2013) http://hdr.undp.org/en/media/HDR_2011_EN_Tables.pdf | | | | | | | | | | | | | | | |

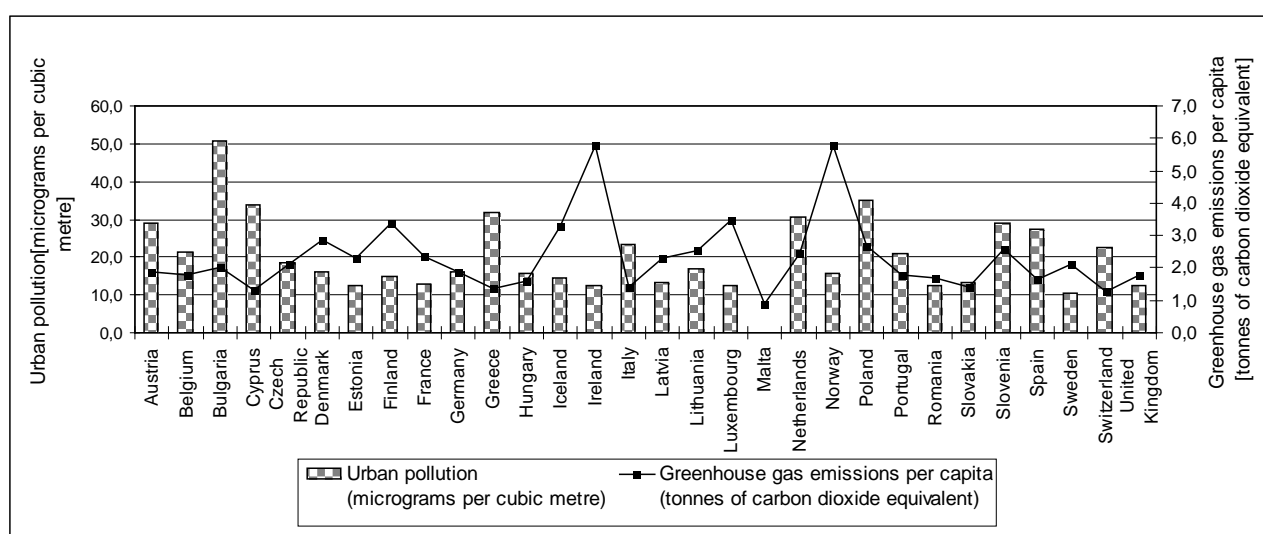


Fig. 2
Urban pollution and Greenhouse gas emission per capita.

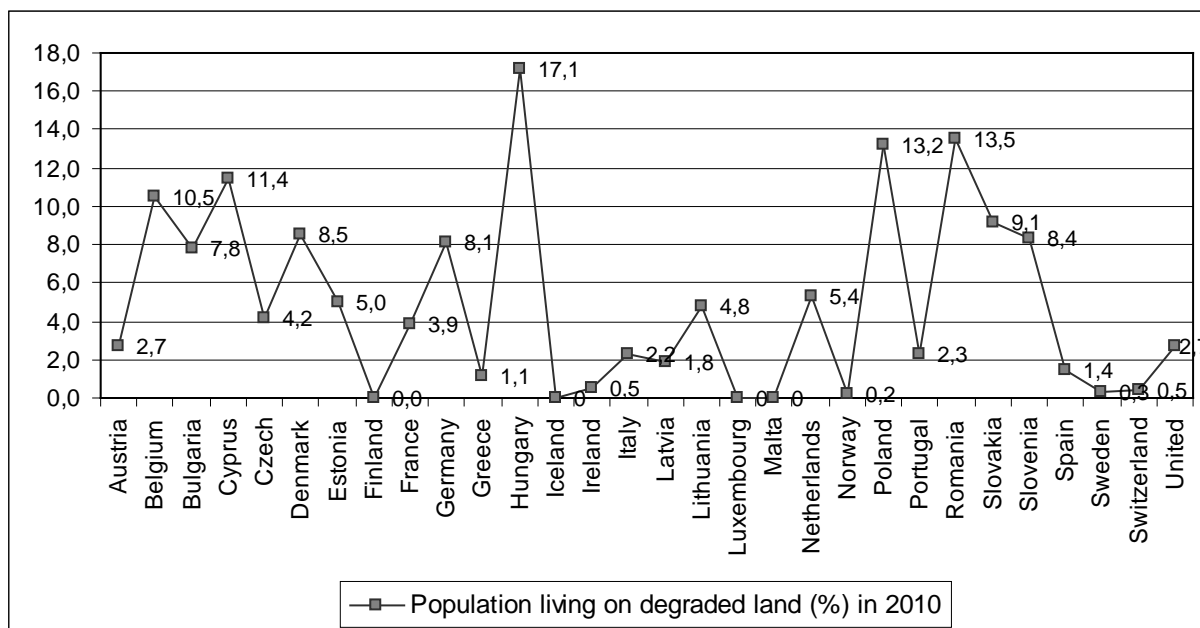


Fig. 3
Population living on degraded land in 2010.

Regarding the indicator which cover the population living in land-degradation areas, we can see that the first spot is held by Hungary (17,1% of the population), followed by Romania (13,5%) and Poland (13,2%). On the opposite end are Island, Luxembourg, Malta and Finland (0,1%).

Corporate Social Responsibility (CSR)

On the 22nd of March 2006 the European Commission published a report regarding social responsibility [CSR] entitled: ‘Implementing the partnership for economic growth and the creation of jobs: Europe the excellence centre for social responsibility’. In October 2011 the European Commission published a new policy on corporate social responsibility.

The CRS concept is defined as follows: “the responsibility of enterprises for their impacts on society”. To fully meet their social responsibility, enterprises “should have in place a process to integrate social, environmental, ethical human rights and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders”.

By analysing this definition it is obvious that the environmental protection, sustainable development and CSR are basically, inseparable sides of the same entity: human development.

This has been the reason why, in the first part of this paper we have analysed The Human Development Report.

The European Commission, in the afore mentioned paper, established a workbook (action-agenda) for the 2011-2014 period.

In this action agenda, eight key directions are described (areas of interest), which are (COM_2011):

- Enhancing the visibility of CSR and disseminating good practices.
- Improving and tracking levels of trust in business.
- Improving self- and co-regulation processes.
- Enhancing market reward for CSR.
- Improving company disclosure of social and environmental information.
- Further integrating CSR into education, training and research.
- Emphasising the importance of national and sub-national CSR policies.
- Better aligning European and global approaches to CSR.

As we have mentioned before, a form had been developed, regarding the issues of knowing and applying the EC rulings regarding CSR.

The from was comprised of 12 questions and was aimed at establishing the way in which wood industry companies are aware of the issue and are capable of implementing the provisions of CSR.

The forms were sent out in 2012, directly or on-line, on Romanian businesses in the field (covering the entire range of wood products). The first stage comprised of 50 forms, out of which 39 received replies (78%). In the second stage 25 forms were sent and 19 replies received (76%). For the majority of the 58 companies which have replied (through the managers or spokes person) we could verify the accuracy of third party information (official documents, web-sites).

Here we have the answers to 4 of the 12 questions:
 [q2] *How well do you know the provisions of the 2006 and 2011 CSR from the European Commission?*
 The answers were (Fig. 4): a. I do not know them [31.2%], b. I know some of them [24.9%], c. I know them well enough to form an opinion [18.8%], d. I know them well enough to understand them [17.5%] and e. I know them very well [7.6%]. We can see that more than half of the respondents [65.1%] are not familiarised with the provisions of the EC regarding CSR (31.2% do not know them at all). Moreover, concerning the previous questions regarding the significance of CSR, 245 of the respondents did not give the right answer. The fact that only 25.1% of the managers of the companies in the study know the provisions of the EC regarding the CSR (only 7.6% very well) is an abnormal situation.

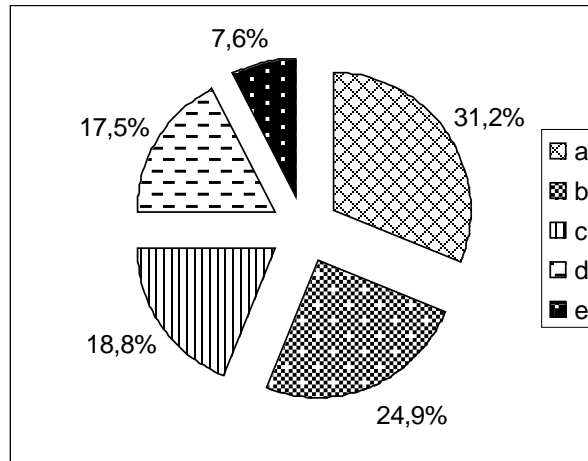


Fig. 4
The degree in which the provisions of CRS are known.

[q7] *On of the CRS measures imposed by the CE for 2011-2014 is improving and tracking levels of trust in business]. How much do you think your customers trust your products/services?*

The answers were (Fig. 5). a. they do not trust them [7.8%], b. little trust [14.5%], c. enough trust [33.1%], d. a lot of trust [28.4%] e. complete trust [16.2%]. The first thing that stands out is the honesty of the answers, first and foremost, proven by the fact that 22.3% of the managers admit that they have serious issues regarding customer trust levels in their business (7.8% have none). The statement above is verified, in fact, by the market shares of the respective companies. A second conclusion which has been drawn is that if a company knows how it is perceived in reality, it can clearly understand and apply more difficult concepts of CSR, such as: "to embrace, support and enact, within their sphere of influence, a set of core values in the areas of human rights, labour standards, the environment and anti-corruption".

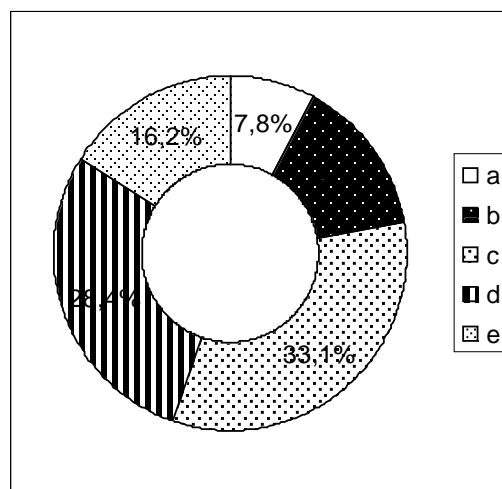


Fig. 5
The degree of consumer trust in the sector.

[q9] *CSR involves many voluntary actions. Do you believe that it would be better for these to become mandatory, in one way or another (become legalised)?*

The answers were (Fig. 6): a. no, they should remain voluntary [63.9%], b. be partially legalised [24.7%] and c. they should all be legalised [11.4%]. We can see that over half of the respondents wish to maintain the voluntary state of some of the CSR actions. This also shows a level of fear towards further legal obligations on top of the existing ones. It is a typical Romanian behaviour, caused by the numerous regulations (quite detailed and sometimes contradictory) and excessive taxation system, which are the main obstacles in the way of normal business development.

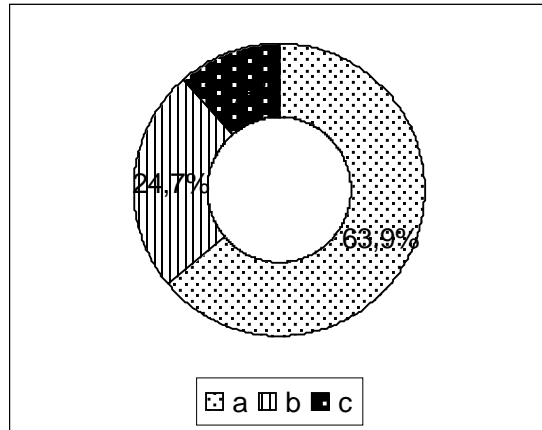


Fig. 6
Voluntary CRS actions perception.

[q12] Do you think that in present day in Romania a wood industry company can organise its activity in such a way as to meet shareholders demands, consumer requirements, sustainable development and environmental protection demands at the same time within the EC provisions for CSR?

The answers were (Fig. 7): a. it is not possible [11.2%], b. possible, but is small proportion [24.75], c. possible, but in small proportion (1/30) [28.1%], d. possible, but not completely (2/3) [27.4%], e. yes, completely [8.6%]. It is obvious that, realistically speaking, the provisions regarding CSR are not, at this time, a priority for Romanian companies and this is not a completely subjective attitude. Nevertheless it is clear that the status quo will change, an opinion that is reinforced by the percentage of those who believe in the possibility of change (even a partial change).

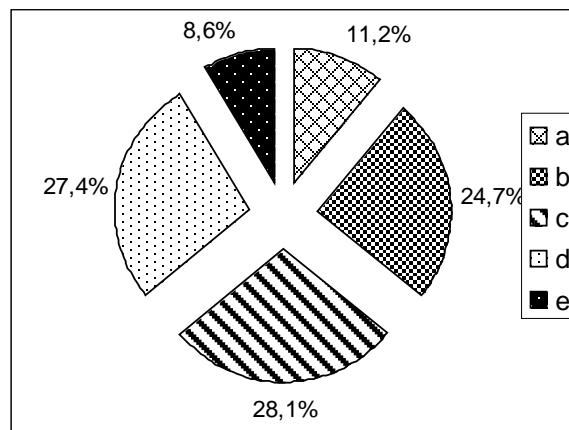


Fig. 7
The possibility of applying CSR provisions.

CONCLUSIONS

Regarding the CRS issue, outside the conclusions presented in the answer analysis for the form, we can add the following:

- Implementing the EC provisions regarding CSR is a difficult task which entails important costs, whether they be environmental, technological change of improvement, learning or innovation
- Of the four main responsibilities of the CSR and first defined by Archie B. Carroll in 1991, the most difficult to implement are not the legal ones, not the ones regarding charity, not even the moral but the economic ones (mostly because of the costs involved).

▪ Not knowing the provisions or norms of the EC will, in most cases, make managers reject from the start, valuable ideas; this lack of knowledge is caused, most of the times, by the fact that these provisions are not properly explained (and exemplified), but are presented as orders or an extra load for the companies.

The line of approach we are suggesting can be defined by the following:

- Organisational management is an integrated part of the complex nature-economy-society system
- Wood industry organisations can decisively contribute to conservation and development of the forestry fund, biodiversity, ecological principles and laws of the natural ecosystems
- Obtaining economic efficiency, profits, meeting divers market economic demands are not incompatible with organisational social responsibility
- Only an integrated approach of all these aspects can lead to viable medium and long term solutions
- The necessary and desired changes in business behaviour demands finding solutions to the problems by a management planned and implemented as an integrated system and not as an instrument to apply some pre-established schemes and a task completion overview.

We believe that the analyses presented here should continue, in all fields. When we reach the point where we will understand that a successful market strategy involves understanding its effects on the human development in the area, then we will become a truly responsible organisation.

Only an integrated solution can be viable in the long run. And as such a solution takes a long time to be understood, developed, applied and sustained. And to do so, an organisation must learn.

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