GREEN MARKETING. THE CASE OF TIMBER CERTIFICATION, COMING FROM SUSTAINABLE FORESTS MANAGEMENT, PROMOTION

Papadopoulos, Ioannis[1]; Karagouni, Glykeria[2]; Trigkas, Marios[3]; Platogianni, Evanthia[4]

[1]*Department of Wood & Furniture Design and Technology, Technological & Educational Institute of Larissa, Greece*

[2]*Department of Wood & Furniture Design and Technology, Technological & Educational Institute of Larissa, Greece*

[3]*Department of Wood & Furniture Design and Technology, Technological & Educational Institute of Larissa, Greece*

[4]*Department of Wood & Furniture Design and Technology, Technological & Educational Institute of Larissa, Greece*

Purpose - The present research examines the possibility of certifieded timber promotion with sustainable forest management, developing an effective green marketing for the enterprises and the involved institutions of the Greek sector of timber.

Design / methodology/ approach - 55 specifically structured questionnaires, prototypes for the aim of the research, were collected from the Greek timber enterprises, on April 2009. The questionnaires were processed and analyzed with the statistical program SPSS of ver17.0, using descriptive statistics and correlation analysis. The main purpose was the investigation of knowledge, use and promotion of certified timber that emanates from forests under sustainable management, planning thus the green marketing.

Findings - The Greek enterprises of the timber sector, express a great interest on the protection of forests all over the world ranging from illegal loggings to their rational management. At the same time, they wish in their overwhelming majority the sustainable management of Greek forests to be certified.

These enterprises believe that the movement of green buildings reaches with a slow however pace also Greece and forecast that green consumers are prone to offer an additional percentage of about 6% on price, in order to buy certified timber products.

There exists big confidence in most Institutions of Higher Education (Universities and Technological Institutions) for the promotion of certified timber products. Companies propose their publicity through newspapers and magazines, as well as Internet portals of high approach.

Finally, the reflections on the growth of this new market of timber are expressed and discussed.

Practical Implications - The knowledge of the market of certified timber and the future developments in the next 5 years constitute a precious tool for the enterprises of timber, as well as the whole of the institutions involved in order to take proper decisions and conquer an important share of the market of green consumers. We also propose an effective way of green marketing applications.

Originality / value - It is the first research on green marketing and the promotion of certified products of timber in the Greek market, while similar work is very limited even on an international level.

Research Paper

Keywords: Green Marketing, Timber Certification, Forest Sustainability, Marketing Planning, Timber Market, Marketing Research

INTRODUCTION

Green marketing

In our days the environmental problems concern all active citizens, as well as enterprises and institutions all over the world much more than those thirty years ago. International researches show that the consumers worry more for the environment and change gradually their behaviour (Arbuthnot, 1977; Simons, 1992; Diamantopoulos et al., 2003). Thus, a market has begun to develop for viable or sustainable products, whose position the active consumers want to strengthen, since it is a way to contribute - although indirectly - to the protection of the environment (Cornwell and Schwepker, 1995; Cleveland et al., 2005).

The enterprises gradually recognize the various competitive advantages and the enterprising opportunities (Johri, 1998) that arise from this ecological consuming approach, entering the word "green" in many of their activities. Thus, in parallel with the concept of Corporate Social Responsibility, the concept of "green marketing" has also been cultivated with sufficiently effective practices.

As "Green marketing" we could name the planning, development and promotion of products or services that satisfy the needs of consumers in quality, output, accessible prices and service, without however a negative affect on the environment with regard to the use of raw material, the consumption of energy etc (Davis, 1991; Kangis , 1992; Meffet and Kirchgeorg, 1994; Jain and Kaur, 2004; Peattie and Grane, 2006; Grant, 2008; Pride and Ferrell, 2008).

Surely, green marketing must be more than either a green way of marketing, or the marketing of so-called green products according to Kangis (1992). Green has to refer both to the method and to the product. This is why the very idea of green marketing needs considerable development and analysis, with closed rules and integrity in economic, scientific, academic and ethical terms.

According to the literature, the environmental parameter has been included in the strategy of marketing from the beginning of 1990s (Herbigand and Butler, 1993; Lampe and Gazda, 1995; Peattie, 1999).

Notwithstanding the existing obstacles, "green marketing" progressively gains continuously more supporters, specifically in sectors that concern the climatic change and forest protection.

In Greece, even if we are in the initial stages of this tendency, green marketing is expected to strengthen and influence the market even more. It is reported that in the USA the "green market" is calculated at 250 billions $, while 63 million of consumers are directed towards products that either protect the environment contrary to the conventional ones, or have been produced with processes that respect the society and the environment. The same consumers are prone to spend an additional 7 -20% in order to buy pure "green" products and reject the non-viable alternatives, offered to them by the conventional market (Reitman, 1992). According to a recent research, at a world level, the positive fame of a company about its environmental responsibility is

determined by the 53% of consumers (roughly 1 billion) as a decisive reason that makes them buy and use its products (Spanos, 2008).

The "green consumer" concept was the epicentre of the environmental marketing strategies of the "win – win" type, as well as the key concept, on which marketing academicians and professionals focused at the end of 80s and in the beginning of 90s (Diamantopoulos et al., 1994; Elkington, 1994; Shrivastava, 1995; Porter and Van Der Linde, 1995; Chan and Lau, 2000). Wagner (1997) showed that at market segmentation using demographic criteria *"Socio-demographic attempts to profile the green consumer have not always yielded strongly indicative results, and the results produced in one study have been repeatedly contradicted in another".*

Of course, in order to forecast consuming environmental conscience, it is necessary to investigate the social demographic variables (Jain and Gurmeet, 2006), since thus we can achieve a better policy mapping for the placement of green products and the determination of the strategy of a marketing - mix that will be the most suitable for the various green market departments.

Generally, today we observe an increase of the ecological conscience of consumers which results in the increased demand for green products, a phenomenon that is well exploited by a great number of enterprises, which start offering green products and services (Chan, K., 1999; Ottman, 1992; Peattie and Ratnayaka, 1992; Salzman, 1991; Vandermerwe and Oliff, 1990).

A relevant research has elected that the consumers that are interested in environmental matters take their purchasing decisions with criteria beyond the usual consuming models. Thus, it is observed that they reject excellent technical products because they are conscious of their damaging consequences in the environment due to the productive process or their disposal or because this is a way to show that they disapprove certain activities of their producers, suppliers or investors (Drucker, 1973; Bernstein, 1992; Peattie, 1995; Peattie, 1999).

In 1991, the 13% of all new products, sold in the USA made some sort of environment claim (Davis, 1991; Horovitz, 1992). The bigger problem both for marketers and consumers appears to be the environmental terms that are used for the promotion of their "green" or "ecological" products. Terms as recyclable and friendly to the environment have suffered hard criticism and today are avoided by the enterprises because of the difficulty of their definitions' documentation (Lampe and Gazda, 1995). In the USA, in 1990 a research showed that the problem faced when promoting "green" marketing was the increased number of consumers that did not believe in the companies' environmental statements (Schwartz, 1990). Thus, the creation of marketing strategies that used sonorous messages of sustainability met serious difficulties for the enterprises and specifically their creators (Shelton, 1994).

In their research Lampe and Gazda (1995) pointed out that " *every aspect of the product: design, production, packaging, use and disposal, provides an opportunity for a company not only to protect the environment bust also to benefit from positive consumer attitudes towards the environment* ".

In the Greek market, a recent research (2009) realised by the Athens Laboratory of Research in Marketing in collaboration with the Centre of Sustainablitity (CSE) about the "green marketing" proved among others that the overwhelming majority of the consumers (92.8%) has a positive attitude towards the enterprises that are sensitive on environmental matters. This

result represents mainly women of bigger age, married with children, housewives and pensioners. The 96.4% declare that the enterprises are compelled to contribute in the protection of the environment, while the 56% of these avoid products made by enterprises that do not respect the environment. The same research elected that the more basic reasons that enterprises strategize for the protection of the environment are in order to improve their image in the market (4.54), to differentiate from competition (3.92), to gain publicity (3.84), to increase their sales (3.63), to achieve favourable taxation (3.54) and finally to really contribute to the protection of environment (3.47).

Pittee (1995), Van Dam and Apeldoorn (1996) elected that ideas round what it could constitute sustainability for enterprises or at least sustainable marketing are: a redefinition of the "product", a willingness to change markets, an emphasis an benefits from product use, marketing communication that aims to inform rather than just impress, a focus beyond current consumers needs, a willingness to manage demand and expectation downwards, an emphasis on cost instead of price and taking more responsibility. Finally, Grant (2008) points out that "sustainability changes everything", while Johri (1998) shows that the future of green marketing strategy passes through the perception that consumers like "green" messages.

In the European Union there exist organisations that support enterprises to develop in a sustainable way, providing modern and practical methodologies and applying environmental and social criteria, such as the: Centre for Sustainability and Excellence (CSE), Global Reporting Initiative (GRI), United Nations Global Compact, European Foundation for Quality Management (EFQM), European Business Ethics Network (EBEN), European Committee (EC) etc (Avlonas, 2008).

"Green marketing" is considered by many researchers as an important opportunity for the enterprises to innovate even more and acquire an important advantage against the competition (Ottman, 1998; Kaufman, 1999; Laroche et al., 2001).

Pride and Ferell (2008) consider that the objectives of green marketing should be: a) to eliminate waste, which should focus on the production of products without waste instead of getting rid of waste, b) to re-invent the concept of product in order to become consistent with the environmental commitment, g) to price the products portraying the real cost, which means high value for the money of the consumer and d) to create profitability via the creation of operational occasions that derive from the environmental conscience in the market.

In a study that was realised in the Great Britain, the researchers initially concluded that in general the ecological attitude of consumers changed positively. Nevertheless, these tendencies were not translated into real purchasing behaviour (Donaldson, 2005). This study reported the strong faith of consumers in the known commercial brands and in the feeble behaviour referring to the "green" claims, which was the main cause behind the consuming failure to interpret their concerns beyond the environment in their behaviour.

A comparative study examined how British and Rumanian enterprises promoted their green products in international markets. The conclusions presented are that while the British enterprises had focused their attention on the world fame of their products in order to promote the green claims to international consumers, the Rumanian ones had rested in the sales of agents supporting their green claims in the foreigner markets (Gurau and Ranchhod, 2005).

In a recent study (Alsmadi, 2007) that investigates the environmental behaviour of Jordanian consumers, a high level of environmental conscience is revealed. Unfortunately however this positive tendency and preference in the "green" products does not appear in the practice, obviously because this consumers have a stronger faith in the traditional products and a small confidence in the green statements. The above obstacles are further strengthened by the lack of environmental conscience by a lot of enterprises and the existence of a large scale of prices for the same product, many of which included an impetuous estimate of environmental responsibility. The same phenomenon has been presented in other researches too (Ottman, 2004; Donaldson, 2005; Cleveland et al, 2005).

Recognizing the role that the consumers can play in the protection of environment and ensure a better life for the future generations so much the governments, as well as the non governmental organisations have begun to aim at environmental campaigns in this consumer – target group (Wasik, 1992; Grunert, 1993; McGougall, 1993).

Grunert (1993) finds the important differences between the persons that belong to different professional groups with regard to various environmental departments of conscience. Although the contact of profession with the environmental conscience differs from product to product, the results general show that are the groups referring to housekeepers and/or professionals and services that have the strongest environmental conscience with regard to most of the environmental fabrications.

Naturally, all consumers are not always fervent and factual supporters of the protection of environment and certainly are not particularly influenced by the "green" marketing. However, they constitute a target group which can prove particularly profitable and effective for the enterprises that will be activated in the sectors of production and disposal of friendly to the environment products (Diamantopoulos et al., 2003; Jain and Kaur, 2006).

Creating more sustainable marketing strategies is expected to be a difficult process, since the majority of consumers still ignore what is finally mend by sustainability and remains undecided about the capability of enterprises to contribute to the protection of the environment. Becoming winners of this battle will be the key challenge for marketers of the new millennium (Davis, 1993; Peattie, 1999; Jain and Kaur, 2003; Murphy, 2005).

Timber certification coming from sustainable forests management

Today the “activation” of society for the protection of the environment has set the protection of forests and their rational and sustainable management, as priorities of its "agenda".

The negotiations of the first period of the Kyoto protocol obligations (2008-2012) and the following one (after 2013) are being in development. Key subjects, related to the forests include the reduction of emissions from the deforestation and the devalorisation of forests and the economies of forest management and the harvested forest products (Stevens et al., 1998).

This interest began as an organised movement, from the beginning of 80s, when it was decided the commercial embargo (boycott) of the tropical timber from the European and American markets. However this metre created enormous social problems to the populations of these countries, so in 1990 a non governmental environmental organisation was constituted

under the name "Alliance for tropical forests – RFA" aiming at the promotion of products from forests of sustainable management. In 1993 the Council of Forest Management or Council of Care of Forests (Forest Stewardship Council – FSC) was founded in collaboration with environmental organisations, wood processing industries and big forest owners, while in 1999 a new institution, the PEFC was founded by the small forest owners of Central Europe (Hansen, 1997; Humphiries et al., 2001; Cashore et al., 2003).

Finally, today the certified forest regions reached the 320 million hectares worldwide in the middle of 2008 (UNECE and FAO, 2008).

The sustainable managed certified forests occupy the 8.3% of total extent of forests all over the world and the 13.4% of forests that they manage. The countries of Western Europe have certified more than the 50% of the total extent of their forests, in North America more than the 1/3, while in Africa and Asia only 0.1%. Roughly the 80-90% certified forests in the world are found in northern hemisphere, where the two thirds of world production of round timber are produced. More from half (57%) of the certified forests are found in Northern America (UNECE and FAO, 2005).

Globally the United Kingdom, the USA and Germany have the most certified institutions, while outside from UNECE region, Japan, China and Brazil are the leaders in this classification (UNECE and FAO, 2008).

According to the report of FAO (2007) the certification of the management of forests and the production of timber products with labels play a very important role in the social role of forests. The environmental importance of raw materials used by the timber sector predicates both to state and common opinion to show a special interest in the application of regulations and safety valves against the waste of the specific materials (Stevens et al., 1998).

The fundamental aims and objectives of forest certification are: a) the improvement of the management of forests, b) the guarantee of new markets, capable for the absorption of produced certified products and g) the control of certification of all processes up to the sale of final products, in order to safeguard their sustainable origins (Hansen, 1997; Hubbard, 2005; Sustainable Green Ecosystem Council, 2008).

In a relative research (Tosiaki et al., 2006) is pointed out that in Finland, where there exists some important experience on the forest certification, the enterprises of the timber sector do not have any expectations of gaining more money from an "additional price" paid by the consumers. On the contrary, they do so because they believe in the viability of their forests and for their own well being within the frame of their corporate social responsibility. Besides they consider that through this certification, they will play a more dynamic role in the exploitation of new markets.

Both in the USA, what in W. Europe there are promoted development programs on "green buildings" which increasingly influence the conditions of the market for forest products in both positive and negative ways (World Green Building Council, 2008; UNECE and FAO, 2008). The movement of "green purchasers" that was developed during the last years in N. America and W. Europe starts appearing in a slow but regular pace in Greece, creating a niche market area. The possibility of exports in countries with increased "green" purchasing public is particularly seductive.

Today the number of Greek consumers of biological, ecological and certified products is rather limited, although a slow increase has been forecasted (Stamou, 2005).

The certification of the sustainable origins of forest products can be used by the Greek enterprises that are activated in the timber sector as an effective Marketing tool for the extension in new markets and the improvement of their ecological profile (Juslin et al. , 2002; Poku - Marboah et al. , 2005; Papadopoulos and Karagouni, 2007)

According to the ever memorable Professor of the Faculty of Forestry in AUTH Dr N. Stamou (2005):

- the certified products of timber sooner or later will prevail and check this market that will emanate from sustainable and environmentally friendly managing forests
- The role of the consumer with environmentally friendly behaviour –final purchaser of products of timber –will become continuously more important, so that products of timber that will not emanate from sustainable managing forests will not be able to easily find a place in the market.
- The enterprises with certified products of timber will be gradually developed.
- The existence and viability or the exclusion of enterprises of timber in the market will be directly influenced by the environmental sensitization of citizens.

In the market of forest products there exists an important amount of research that has dealt with the certification of sustainable management of forests and certified products of timber that emanate from this forests (Hansen, 1997; Karna et al., 2003; Rametsteiner and Simulab, 2003). Many researchers underlined the eagerness of consumers to pay some price for the purchase of certified products (e.g., Rametsteiner, 1999; Jensen et al., 2003; Ozanne and Vlosky, 2003). Still, there is not much research done on the promotion of certified products in the timber and furniture market (Juslin and Kansen, 2002; Tosiaki et al., 2006).

In order to cover this void, the aim of this research was the investigation of Greek enterprises and involved institutions on timber subjects, in order to map the existing situation and analyze the prospects of growth of certified products of timber coming from sustainable managing forests. Besides, one of our intentions was the location of the benefits and prospective reflections that could result when entering such products to the market. The analysis would lead to the determination of the 4 Ps of green marketing (product, price, place, promotion), so that Greek enterprises and Greek consumers are supplied with green products effectively and contribute directly and / or indirectly to the protection of the environment in the best possible ways. This research aspires to constitute a precious tool of effective application of green marketing in this direction with medium-term or even long-term objectives.

METHOD OF RESEARCH

The data of this primary research were collected using the method of questionnaire formulation, collection and elaboration. The questionnaires were specifically structured for the aim of the present research, according to the basic principles of marketing research (Gordon and Langmaid, 1988; Tull and Hawkins, 1990; Doyle, 1998; Aaker et al. 2004). The essential

preconditions of green marketing, that is the responsibility, the transparency, the reliability and the perspicacity as well as the connection with the strategy (Avlonitis, 2008) were also taken into account. The researchers are special scientists and addressed the company executives with personal interviews. The questioned sample was selected after particular processes, when considered capable to answer.

The research questionnaire included 3 different groups and comprised by 37 questions in total. The first team included 9 questions relative to the general characteristics and the profile of each enterprise (name, address, legal form, year of foundation, activities, main products, occupied personnel etc). The second group included 11 questions relative to the application of the directive of European Union that referred to the CE marking for the products of timber in Greece and finally 17 close-type questions on knowledge, use and promotion of certified timber from sustainable managing forests in Greece.

55 enterprises and institutions were randomly selected. They are all directly related to the Greek timber market and they were questioned during their presence at the International Trade Show of FURNIMA (Furniture Machinery Exhibition) carried out in Thessalonica, in March 2009. The questions were structured to be short and comprehensible in order to be pleasantly answered.

The pilot application of the questionnaire in five companies revealed the weak points of questions that needed more elaboration, which led to a further improvement of the questionnaire quality in its final form (Dillman, 2000).

The data were registered, processed and analyzed with the special statistical program SPSSWIN ver 17.0. The analysis includes Frequencies, descriptive statistics (Descriptives) and Crosstabs, controls of independence among all the variables with the X^2 criterion, correlation analysis and analysis of variance (t - test) (Norusis, 2007; Howitt and Cramer, 2003).

RESULTS

The green marketing mix, the reflections on the certified timber market development when it comes from sustainable managing forests and the profile of the enterprises involved in this research are presented in the following paragraphs.

The green product – The certified timber coming from sustainable managing forests.

The concept of certified timber, as well as the concept of forest viability appears to be familiar at roughly half of those involved in the Greek market of timber (Figure 1). Still, the concept of certified timber produced from sustainable managing forests is rather hazy for the 24% of the asked. The relevant analysis regarding the legal form of the enterprises showed that no LTD and Trade Companies is familiar to the concept, while the 61.5% of SAs have a good knowledge on it. X^2 controls showed that the knowledge of certification appears to relate statistically positively with the annual turnover of the enterprises (Pearson X^2 = 19.136, Cramer ' s V = 0.516 for sig. level > 90%, Approx. Sig = 0, 085). More concretely, the bigger the annual turnover of an enterprise, the more the knowledge that exists about the real significance of certified timber products from sustainable managing forests.

According the years of operation it appears that the enterprises that have been founded during the decays 1991-2000 and 1981-1990 possess the deeper knowledge of the concept at a percentage of 66.7% and 58.8% respectively. The knowledge of this concept is well under the mean for the newer enterprises (year of foundation > 2000), as well as the oldest ones (< 1980).

Things are quite different when asking about the concept of the sustainable forest management; it is noted that the 87.5% of new enterprises (year of foundation after 2000) and the 66.7% of the ones founded during the decade 1991-2000 reveal a much better knowledge of its significance. Besides, the significance of forest viability is familiar to the forest world since the 19th century, while hardly the last seven years it appears to be widely used in other sectors - at least in Greece. Concerning the number of occupied personnel it appears that the enterprises that have less than 10 employees (60.0%) possess the deeper knowledge of the concept.

The knowledge of the concept is related statistically negatively with the annual turnover of the asked enterprises (Pearson X^2 = 11. 619, Cramer's V = 0.5 68 for sig. level> 90%, Approx. Sig = 0.071). More concretely, the smaller the annual turnover of an enterprise, the more the knowledge that exists about the concept of sustainable forest management.

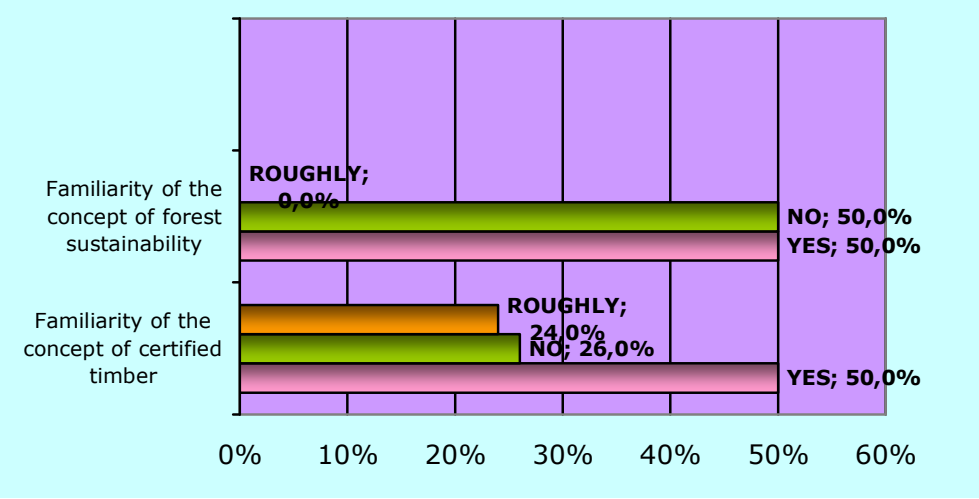

Figure 1. Knowledge of the concepts of certified timber and sustainable management of forests

Figure 2 presents the interest of the interviewees in the protection of forests all over the world from both illegal loggings and the non- rational management. It appears to be important at a percentage of 94.1% (62.7% "too much" and 31.4% "very much") and it proves the sensitivity of Greek institutions of timber concerning the protection of sources of the products they process, trade or manage. This interest is far more than natural if we remember the devastating fires in summer 2007 that burnt to ashes more than 200.000 hectares of forest in Greece. This fact appears to create favourable conditions for the promotion of certified timber from sustainable managing forests.

According the crosstab analysis, individual enterprises show a great interest at a percentage of 29.6%; well bellow the mean (62.7%). This can be explained, since individual enterprises are run by the entrepreneur him/herself and everything has to be done by him/her. Consequently their interest for the protection of forests comprises a secondary interest.

What seems rather strange is the fact that the enterprises that declared a minor interest in forest protection are the very big ones, i.e. those that occupy more than 100 employees. Furthermore, there exists a statistically significant negative correlation between the interest of forests' protection from illegal logging and their sustainable management and the number of occupied personnel (Pearson X^2 = 41. 277, Cramer's V = 0.586 at a sig. level> 99.9%, Approx. Sig = 0.000). That is to say, the more the personnel number the less the interest for the protection of forests. In other words, the more impersonal the enterprises the more they focus in profits and the more indifference they show, since they leave problems to be resolved by other more "romantic" actors.

A small percentage of enterprises (3.9%) shows no interest in the consequences of thoughtless logging of forests on the timber market, while the overwhelming majority declares that they will be very negative at a percentage of 45.1% and simply negative at a percentage of 51.0% respectively.

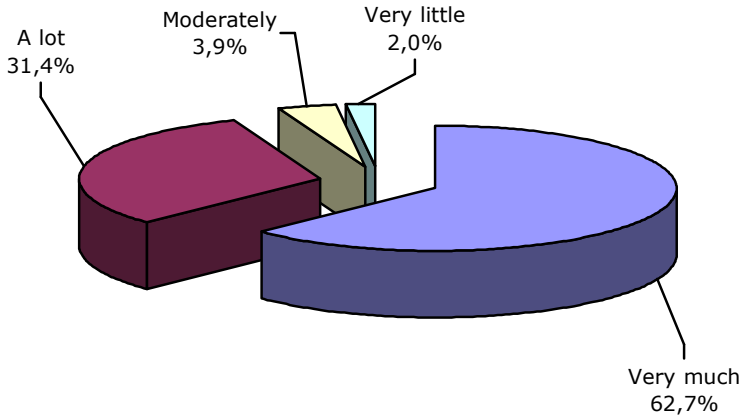

Figure 2. Interest for the protection of all forests in the world from the illegal loggings and their non rational management

The first impressions of the asked enterprises about the predominance in the market of timber from certified forests are presented in Table 1. The tendency of necessity for direct imposition of this opinion in the market of timber is slightly ahead at a percentage of 35.3 %. They further believe that there will shortly appear a kind of pressure from the consumers to the enterprises of timber and furniture to produce certified products at a percentage of 31.4%. Of course, in this question there is also some reserve and reflection expressed on the difficulties of application of such an undertaking from the 1/3 of asked enterprises. Finally there is also the pessimistic view of the 9.8% that considers that such an application will create big problems for their enterprises.

a/a	***Predominance of certified timber in the market***	***Percentage %***	***N***
1	*This opinion is immediately imposed to prevail*	*35,3*	*18*
2	*Difficulty in the application in the market*	*33,3*	*17*
3	*There will be pressure from the consumers to the enterprises of timber and furniture to produce certified products*	*31,4*	*16*
4	*Sooner or later this opinion will prevail*	*27,5*	*14*
5	*There does not exist consuming conscience for use of products that protect the environment*	*27,5*	*14*
6	*It will influence considerably the structure and the composition of the market of products of timber*	*23,5*	*12*
7	*There will exist pressure from the state to timber and furniture enterprises to produce certified products*	*13,7*	*7*
8	*It will create important problems in the enterprises*	*9,8*	*5*

Table 1. Opinions of asked enterprises on the predominance of timber from certified forests in the market

In Greece the only sustainable certified forest is the "Mainalo forest" in Peloponnesus since 2004, although it is not also particularly known even in the Greek market. A 45.1% declared the certification of Greek forests for production of timber through sustainable management as very essential (while a percentage of 51.0% declared it as simply essential (Figure 3). That was quite normal after the above mentioned thoughts on forest protection. Besides we should also point out that in any case the overwhelming majority of Greek forests are sustainable managed but they just lack a "formal" certification.

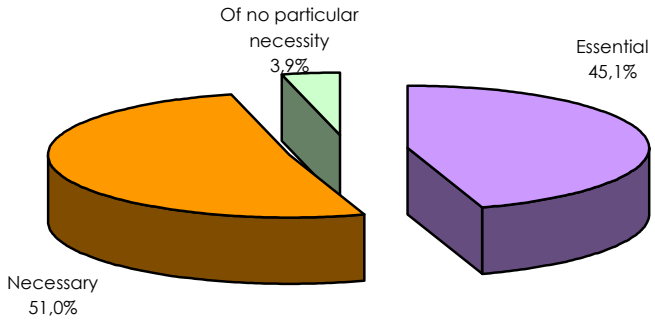

Figure 3. Opinions on the necessity of certification of Greek forests for the production of timber from sustainable management

In a first research in the Greek timber market, we posed the question of knowing the movement of "green" buildings; that is to say buildings that have the minimal possible consumption of energy and use materials that protect the environment. This is applied with success in the USA initially and in certain countries of Western Europe with success the very last years. In all "green" building manufacturing the raw material is timber from sustainable managed forests.

According to UNECE and FAO (2008) the policy of promotion of "green buildings" contributes to the continuously stronger promotion of timber certified products from certified forest regions. Norway, Finland and Luxembourg use certified timber to a large extent because of the high degree of certification of their forests, while Switzerland, Slovenia, Czech Republic and Liechtenstein have created a relatively good market of certified timber, specifically in the retail sector of "do it yourself". In Germany and the United Kingdom a lot of products in the manufacturing sector bear labels of certification. In France, where the use of timber in the manufactures today is relatively low (10%), the objective is to increase it to 12.5% till 2012. Finally, Italy appears to be particularly active in the sector of green buildings, although there is only a 5.3% of enterprises that produce doors, windows and floorings that have been certified relatively.

In the Greek market even if the presence of "green" houses is very timid, it is shown by this research that this movement is almost known to Greek enterprises at a percentage of 62.7% (Figure 4). This fact denotes that there is no need of a big promotional effort in order to inform Greek enterprises on this subject. This finding is further confirmed by the fact that the 94.1% of these declare that green houses might create a positive set also in Greece (Figure 4). Where will be supposed to give particular emphasis is the intense advertising informative movement towards consumers and particularly those that constitute initially the target - market ("green consumers").

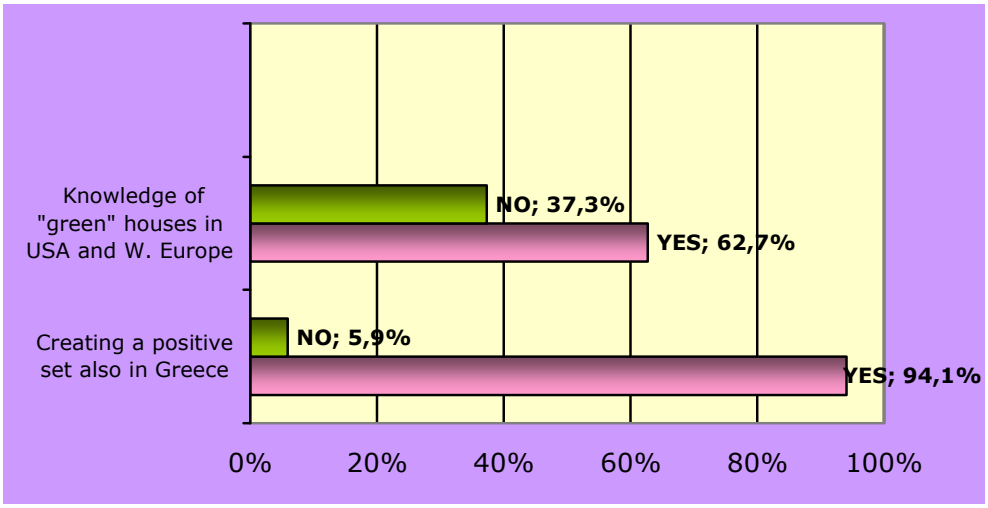

Figure 4. Knowledge of the "green" houses movement in W. Europe and USA and prospects of creation of a positive current also in Greece

The forecast of Greek timber enterprises on the growth of the institution of "green" houses in Greece refers to the next decay at least, with the majority (42%) declaring that this will happen after 10 years, while the same percentage forecasts a development during the next 5-10 years (Figure 5). GPs appear to be the most optimistic at a percentage of 22.2%; they believe that this institution will be developed very shortly in 3-5 years, while the Ltds in their bigger percentage (66.7%) believe that "green" buildings will start creating some important current in the Greek market in 5-10 years.

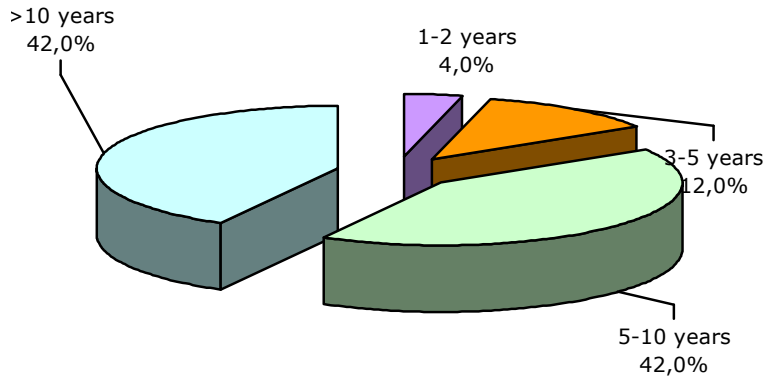

Figure 5. Years in which a development of "green buildings" is expected in Greece

Green pricing

Figure 6 presents the additional percentage that the enterprises consider that consumers are prone to pay in order to choose certified timber from sustainable managed forests or those that are supplied with furniture products and know that these have been produced using certified timber as raw material. Their majority (41.2%) believes that it must not exceed a 1-5% of their conventional value. The weighted average of this additional price amounts in 5,6%. A similar research (Owari et al., 2006) showed that this rate for the Finnish timber oscillates from 1-4%.

Control X^2 showed that the additional percentage of money that the consumers would pay for the above product is statistically related a) with the legal form of the sample enterprises (Pearson X^2 = 37.249, Cramer's V = 0.465 at a sig. level>95%, Approx. Sig = 0.011). That is to say, individual and GPs consider that this percentage should be the lowest possible (under 5%), while the Trade Companies have the tendency to propose much higher percentages, and b) with the annual turnover of the enterprises (Pearson X^2 = 38.112, Cramer's V =0.514 at a sig. level>95% Approx. Sig = 0.034, kendall 's tau - c = 0.056), that is to say, the smaller the annual turnover of enterprises the bigger the percentages they propose for the consumers to pay. Obviously they wrongly believe that it constitutes a good "occasion" in order to increase their income.

The same Figure (6) further presents the estimates made by the enterprises of the research sample that the demand of certified timber will lead to increase of prices comparing with the already existing relevant products in an average weighted level of 9.8%.

A rather important divergence (4.2%) is observed when comparing the two above mentioned percentages, that is to say what consumers are prone to pay (5.6%) and the increase in the prices of the market (9.8%). It is the Greek market alone that eventually will show the price of balance.

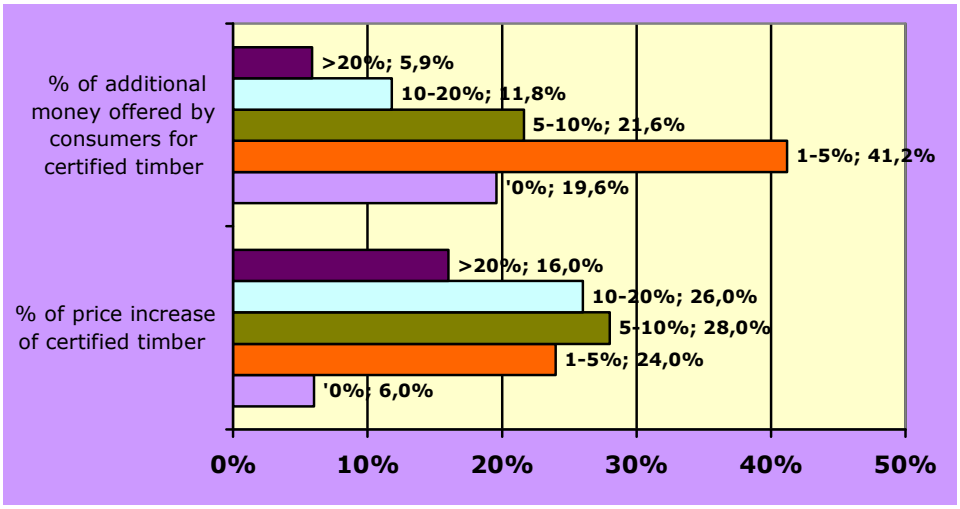

Figure 6. Percentages (%) on a) price increase because of certified timber concerning "traditional – conventional" products and b) the additional money consumers are prone to pay in order to buy certified timber or furniture end – products which will guarantee safety and will emanate from environmentally protected regions

Green marketing channels

Tables 2 and 3 present the proposed institutions that are directly or indirectly involved in the disposal of certified timber from sustainable managed forests or general named "channels of internal communication". Their sorting showed that the institution that the sampled enterprises consider as the first timber promotion priority are the wood working industries (mean 1.88) with lumbermen and furniture producers following.

Among the institutions that support the timber and furniture sectors, that is to say the channels of exterior communication, Universities and Technological Educational Institutes appear to enjoy the bigger confidence. They are considered independent, objective institutions with specialised knowledge (mean 4.58). The public opinion makers (4.94) and the contractors – constructors (5.02) follow.

Control X^2 showed that the big confidence given by the asked enterprises to Universities and Technological Educational Institutes appears to relate statistically with the annual turnover of the enterprises (Pearson X^2 = 70. 051, Cramer 's V = 0. 569 at a sig. level>95%, Approx. Sig = 0,021, kendall's tau - c = 0,052), that is to say, the smaller the annual turnover of the enterprises the

more they entrust the institutions. This is due to the characteristics of the Educational Institutions that were mentioned before.

The relevant controls X^2 for all the institutions resulted that there does not exist any statistically important relation among them at least for a confidence level > 90%.

α/α	***Institution***	***Mean***	***Sorting (%)***		
			1	*2*	*3*
1	*Lumbermen*	*1.94*	*40,8*	*32,0*	*26,0*
2	*Timber processing industry*	*1.88*	*24,5*	*48,0*	*26,0*
3	*Furniture producers*	*2.22*	*34,7*	*20,0*	*48,0*

Table 2. Channels of internal communication through which the message of certified timber disposal is supposed to pass (scale 1-3 with 1 = most important)

α/α	***Institution***	***N***	***Mean***	***Std Deviation***
1	*Universities and TEI*	*50*	*4,58*	*2.56*
2	*Public opinion makers*	*49*	*4,94*	*2.95*
3	*Contractors-constructors*	*50*	*5,02*	*2.45*
4	*State institutions*	*49*	*5,27*	*2.56*
5	*Private Consumers*	*50*	*5,43*	*3.13*
6	*Architects*	*50*	*5,54*	*2.35*
7	*Government*	*50*	*5,74*	*3.89*
8	*Civil Engineers*	*50*	*5,80*	*2.75*
9	*Interior Designers*	*50*	*5,98*	*2.62*
10	*Public Service*	*49*	*6,10*	*3.03*

Table 3. Channels of exterior communication through which the message of certified timber disposal is supposed to pass (scale 1-10 with 1 = most important)

Green marketing communication - Green promotion

The publicity and promotion of certified timber that comes from sustainable managed forests constitute a necessity for the 63.8% of enterprises that participated in this research (Figure 7).

Control X^2 elected that the above necessity relates statistically significantly with the legal form of the asked enterprises (Pearson X^2 = 25.453, Cramer's V = 0. 571 at a sig. level>99.5%, Approx. Sig = 0.005). That is to say, the individual enterprises and LTDs consider this necessity much bigger than the SAs which do not consider it too important.

The concept of the promotional energies is presented in Figure 8.

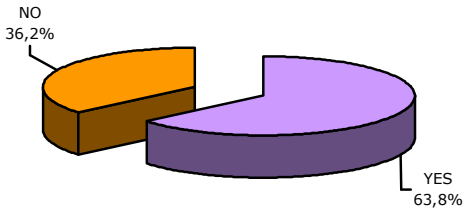

Figure 7. The publicity and the promotion of the use of certified timber as a necessity in percentages %

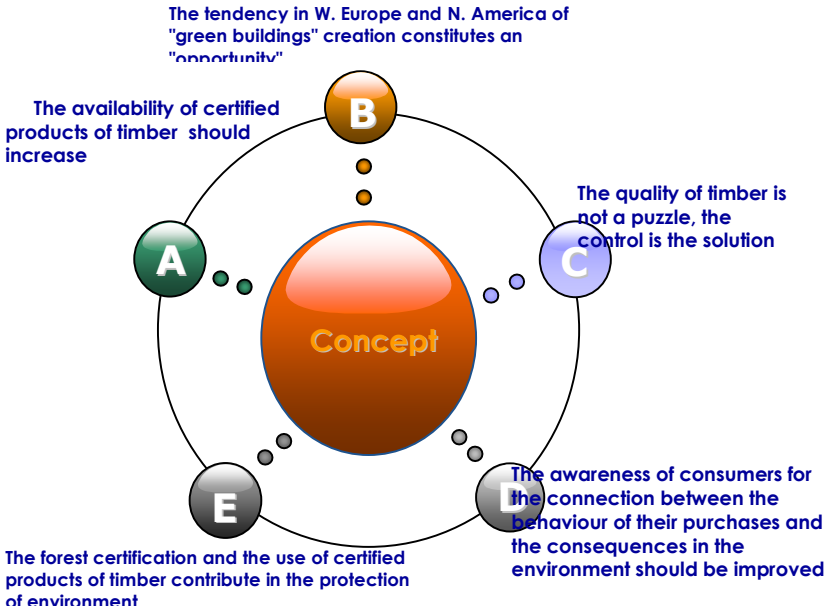

Figure 8. The promotion concept of certified timber use

Communication actions proposed by the enterprises of the present research (Table 4) as necessary are the traditional means (newspapers and magazines) ranking first at a percentage of 60.7% and immediately afterwards the use of Internet with the publicity of certified timber (that emanates from sustainable managed forests) in high visiting portals (50.5%). The use of Internet ranking high when evaluated as a means of communication was also noted in a relative research for the Finnish timber (Owari et al., 2006). There seems to be a rather small preference in collaborations with non governmental organisations or consumers unions (28,1%) as well as the use of Internet through special web pages such as facebook, blogs etc Particularly the last

mentioned media are not too familiar to the asked enterprises, which do not seem to know their effectiveness in the message promotion.

Press publicities could be communicated in Greek special magazines of the timber and furniture sector (eg Epipleon, Wood And Furniture etc), or sector bulletins that could be interested in such information such as engineering and interior design magazines, as well as decoration magazines addressed at consumers and Sunday newspapers.

The main aims of the events and meetings could: a) the reinforcement of public environmental conscience, b) the encouragement for a wider use of timber, c) the emphasis on the quality of wooden manufactures and furniture production and d) the diffusion of technical information on the products of timber

α/α	***Communication actions***	***Percentage %***	***St.dev***
1	*Publicity in newspapers and magazines*	*60,7*	*31,8*
2	*Internet and portals of high visiting rate*	*50,5*	*33,1*
3	*Creation and frequent mission of material at professionals and technical companies*	*47,6*	*28,7*
4	*Frequent newsletters to sent as SMEs and professionals*	*46,0*	*33,8*
5	*Organisation of events – meetings*	*39,1*	*26,6*
6	*Whole - page advertisements*	*39,0*	*25,4*
7	*Collaborations with Non governmental organisations, consumers unions etc*	*28,1*	*23,5*
8	*Internet through Facebook, Blogs etc*	*20,2*	*24,2*
9	*Other*		

Table 4. Percentage % of use of communication actions for the promotion of certified timber

The reflections

Table 6 presents the reflections brought up in discussion by the enterprises referring to the entire subject of green marketing and the promotion of certified timber from sustainable managed forests, in order to specify suitable measures and limit any risk as far as possible.

The most important question they place is the extent to which consumers, the conditions of the market and the competition allow the turn to green marketing. The second place belongs to the problem of the price, the guarantees and the economic benefits such as discounts – if any- that will support the product. Both questions are rated with a 4.15 (with 5 to mean totally important). Product cost accounting (3.89) receives an intermediate importance, while distribution channels and the network of intermediaries seam to slightly puzzle them.

Since all 12 factors presented at Table 5 are related to each other, a cross-correlation analysis was contacted using Pearson correlation. The results are presented in Table 6.

At a significance level of 0.01 the factors that influence one another are:

1. The factor "Raw Materials, brand name, package, size, colour and general appearance of product" called Product Characteristics from now on with the one referring to " Distribution channels and more specifically networkS of intermediaries " (Pearson correlation coefficient = 0.462)
2. The factor of Product Characteristics with the "best quantity of production " (Pearson correlation coefficient = 0.385)
3. The factor about the capability of the existing productive capacity of enterprise referring to mechanical equipment, technical knowledge, building installations etc to cover the new needs with the one asking about the sufficiency of enterprises (salesmen, distribution means, employees in the marketing department etc) (Pearson correlation coefficient = 0.383)
4. The factor dealing with the price, the guarantees, and the economic benefits such as discounts – if any- that will support the product, with the Product Characteristics (Pearson correlation coefficient = 0.382)
5. The factor of the height of new investments with the variable cost and the overload the constant cost, the disposal expenses, publicity and generally production (Pearson correlation coefficient = 0.377)

α/α	***Communication actions***	***Importance***	***St.dev***
1	*The extent to which consumers, market conditions and the competition allow this development.*	*4.15*	*0.93*
2	*The price, the guarantees, and the economic benefits such as discounts – if any- that will support the product*	*4.15*	*1.04*
3	*Raw Materials, brand name, package, size, colour and general appearance of product*	*3.98*	*1.06*
4	*The capability of the existing productive capacity of enterprise referring to mechanical equipment, technical knowledge, building installations etc to cover the new needs*	*3.89*	*1.00*
5	*The variable cost and the overload of the constant cost, the disposal expenses, publicity and generally production*	*3.89*	*1.07*
6	*The process and the time of replacement of traditional timber with certified*	*3.83*	*1.09*
7	*The height of new investments*	*3.78*	*1.05*
8	*The sufficiency of enterprises (salesmen, distribution means, employees in the marketing department etc*	*3.74*	*1.11*
9	*The venture for the enterprise and the degree of uncertainty*	*3.60*	*1.36*
10	*The best production quantity*	*3.55*	*1.16*
11	*Choice among self financing or other financing forms such as borrowing, Leasing etc*	*3.53*	*1.21*
12	*Distribution channels and more specifically the network of intermediaries*	*3.45*	*1.23*

Table 5. Reflections for the production and disposal of certified timber (Scale of importance 5-1, with 5 =the most important)

From literature review (Stamou, 2005) it appears that the most basic criteria in order to make a decision on certified timber products correlate substantially with the additional profit which Greek enterprises will reap from the materialization of such a decision. They mainly refer to:

a) The size of the recorded demand of certified timber products

b) The sufficiency of this size so that will be able to guarantee the change from the traditional enterprising policy to the one of certified products

c) The positive probability of an increasing demand in the market of certified timber products

d) The expectation of businessman of certified products of timber it has concrete advantages in this market

e) The expectation of better prices of certified timber products against the prices of "traditional" ones

f) the obligatory application of current relative legislation

g) The competitiveness of enterprises in the creation and development of new products, in the case they have to produce and offer both "traditional" and certified products.

THE PROFILE OF ENTERPRISES

Most enterprises (31.7%) declare the trade of products of timber, as their exclusive activity, while only a 14.6% are producers (mainly of particle boards).

In regard to the legal form of enterprises that participated in the present research, the bigger percentage (37.2%) are individual enterprises followed by SAs with a 30.2%, GPs (20,9%), Ltds (7.0%) and Trade Companies (2.3%).

The enterprises occupy roughly a mean of 23.8 employees. Small companies (10-50 employees) comprise the bigger percentage (47.5%), micro firms (<10) the 40.0%, medium ones (51-100) a 10.0% and finally there is a 2.5% with above 100 employees.

In their majority the enterprises are mature and experienced that have been founded before 1990 at a percentage of 63.4%, while an important percentage (22.0%)of them have been founded during the last decay (after 2000).

Finally, with regard to the annual turnover the 38.9% of the enterprises present a turnover of 1.000.000 – 5.000.000 €, the 25.0% a 500.000 – 1.000.000 €, an 11.1% above 5.000.000 €, while there is another 11.1% with less than 100.000 €.

Variables	t-test	Pearson correlation coefficients											
		1	2	3	4	5	6	7	8	9	10	11	12
1. The extent to which the consumers, the conditions of market and the competition allow this development.	30.519	.180											
2. The extent to which the existing productive capabilities of enterprises in mechanical equipment, technical knowledge, building installations etc can cover the new needs	26.559	.100	1.000										
3. The extent to which the existing capabilities of enterprises (salesmen, means of distribution, employees in the department marketing etc) suffice	23.075	.235	**.383****	1.000									
4. What will be the variable cost and how much will be overloaded the constant cost, the expenses of disposal, publicity and generally production	24.994	-.058	.111	.361*	1.000								
5. Which is the best quantity of production	21.047	.017	.201	.112	.260	1.000							
6. What are the channels of distribution and specifically the networks of intermediaries	19.208	-.064	.215	.308*	.219	.235	1.000						
7. Raw Materials, brand name, package, size, colour and general appearance of product	25.350	.312*	.148	.168	.095	**.385****	**.462****	1.000					
8. The price, the guarantees, and the economic benefits such as discounts – if any- that will support the product	27.294	-.082	.327*	.165	.210	.309*	.218	**.382****	1.000				
9. The process and the time of replacement of traditional timber with certified	24.091	.210	.102	.107	.208	.145	.269	.281	.004	1.000			
10. The height of new investments	24.381	.005	.267	.370*	**.377****	.071	.244	.115	.289	.178	1.000		
11. Choice among self financing or other financing forms such as borrowing, Leasing etc	19.959	-.191	.208	.264	.028	.328*	.187	.196	.160	.037	.239	1.000	
12. The venture for the enterprise and the degree of uncertainty	18.101	.180	.143	.246	.209	.214	.188	.105	-.186	.289*	.213	0.343*	1.000

Table 1: *Pearson correlation coefficients of reflections on the production and disposal of certified timber*

*** Correlation is significant at the 0.01 level (2-tailed).*

** Correlation is significant at the 0.05 level (2-tailed).*

CONCLUSIONS – PROPOSALS

The key findings derived from this study are as follows:

- The Greek enterprises of the timber sector show a great interest in the protection of forests in all the world from illegal loggings and traditional management. This big sensitivity of Greek enterprises appears to create favourable conditions for the promotion of certified timber that comes from sustainable managed forests. Bigger enterprises express relatively a weaker interest in the protection of forests.
- The asked enterprises wish in the overwhelming majority the certification of the sustainable management of Greek forests.
- The asked enterprises believe that the movement of green buildings comes also in Greece but in a slow pace. They forecast that the green consumers are prone to offer an additional price of a 6% roughly in order to buy certified products of timber.
- A particular emphasis in the green marketing should be given in the intense advertising informative movement of consumers and particularly in those that constitute initially the target – market of "green consumers".
- There exists a big confidence in most Institutions of Higher Education (Universities and TEIs) which are considered capable to promote the certified products of timber.
- Publicity is proposed through newspapers, magazines, as well as the Internet, specifically by high visiting portals.
- Finally, companies express fundamental thoughts and problems on the growth of this new timber market mostly referring to the probability of such a development and the role of consumers, market conditions and the competition as well as the price, the guarantees, and the economic benefits that will characterize the product.

The timber market depends directly on the growth of forestry. Synergies are necessary for the sake of the world economy and the protection of environment. It is well established that the certification of forests and products of timber contributes in the protection of environment.

The structured strategy of green marketing can be seen as an antidote in the economic crisis of today and even more afterwards.

The timber sector owes to maintain the quality of products at high levels and to decide composed movements in pricing, so that it maintains its fame and at the same time to be found at a high level of integration when the crisis settles.

The tendency of "green buildings" construction should be supported all over Greece. At the same time motives should be given to certify the Greek forests, which are even today under informal sustainable management.

The realisation and promotion of the above mentioned activities are essential for an effective publicity of certified timber. It requires however the combined actions of the relevant institutions such as confederations, Higher Education Institutions, non governmental organisations, editors, volunteers etc.

With regard to the means of communication and promotion of certified timber, the so - called *social media* could be also more developed, with Facebook groups such as "Green Buildings", "Forests under sustainable management", "Use of only Certified Timber Products" etc

Consumers should become aware of their power to contribute in the protection of environment even through the purchase of certified timber. Besides, the timber that is sold and comes from sustainable managed forests offers a lot of profits in many directions.

Literature review has shown that the majority of successful enterprises that trade certified products of timber have incorporated environmental matters in their commercial strategies and in their practices.

The present research could be continued, investigating the intention of Greek consumers to use certified timber from sustainable managed forests, after the diffusion of the findings of the present research.

The state is called to apply a forest policy which will adapt in the global developments and ensure the viability of forest exploitations Policies should also be able to support and strengthen the first steps of enterprises that supply sustainable certified timber.

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