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Department of Planning and Regional Development  
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**“Green Entrepreneurship and Small to Medium-sized Enterprises in  
Clusters and Networks”  
Region of Thessaly**

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**Abstract**

This study is about Small to Medium-sized enterprises of the Greek economy and more specific analyses the situation of the Region of Thessaly. Small to medium-sized enterprises are very important to improve the competitiveness of Greek economy because competitiveness indicators in Greece are in very low levels and the first step of changes must be from the small to medium-sized enterprises as they are the base of our economy (“think small first”). If we imagine that almost 95% of the whole enterprises in our country are small to medium-sized, it is easy to understand that investments for more eco friendly enterprises are an imperative need. The need for the environmental protection leads the enterprises to adjust their outputs under a new economic system that called ‘Green economy’<sup>1</sup>. **Green economy** is a fast growing new economic development model in contrast to the existing ‘black economic model’ based on fossil fuels, such as coal, petroleum, and natural gas. The green economy is based on knowledge of Ecological economics that aims at addressing the interdependence of human economies and natural ecosystem and the adverse impact of human economic activities on climate change and global warming. These are the reasons that the European Union provides economic resources in order to help these enterprises through the development programs (NSRF 2007-2013) that EU has created. One way to transform the enterprises to Green enterprises is to use innovations in the productive process. Furthermore the competitiveness can achieve by the creation of Networking and Clustering between the enterprises. Both of them are cooperation of enterprises of same sector with common aim to achieve benefits and profit. That make the enterprises better and stronger with more economic independence and so they can apply the term “Green entrepreneurship”.

**Keywords:** Green Entrepreneurship, Green Economy, Small to Medium-sized Enterprises (SME), Networking, Clustering.

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<sup>1</sup> ‘Green Economy’: Is the economic activity which trying to reducing the use of fossil fuels, decreasing pollution and greenhouse gas emissions, increasing the efficiency of energy usage, recycling materials, and developing and adopting renewable sources of energy (McCarthy, M. (2008, February)).

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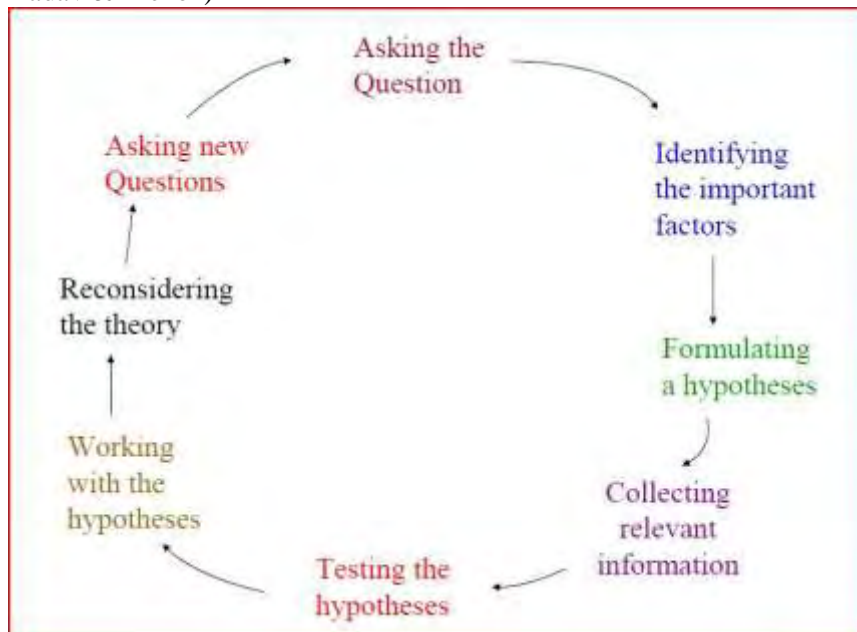
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## METHODOLOGY OF THE RESEARCH

### DEFINITION OF RESEARCH

The purpose of a research study is to find answers to a question close to the real situation of the problem that we analyse in our study. We are implying that the process is being undertaken within a framework of a set of approaches (qualitative, quantitative and the academic discipline) while uses procedures, methods and techniques that have been tested for their validity and reliability. Validity means that correct procedures have been applied to find answers to a question. Reliability refers to the quality of a measurement procedure that provides repeatability and accuracy. To have an effective research study we must to succeed that it is designed to be unbiased and objective which means that you have taken each step in an unbiased manner and drawn each conclusion to the best of your ability and without introducing your own vested interest.

Figure A: Scientific Method of Acquiring Knowledge of Problem Solving (By courtesy of Yadav & Menon)



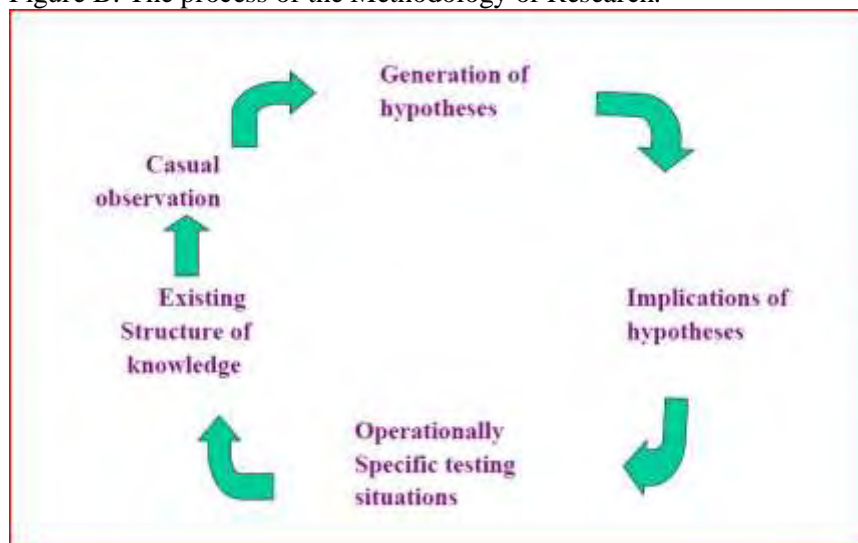
(Source: [www.authorstream.com](http://www.authorstream.com))

The scientific research is not just a theoretical approach of the subjects that analyzed in it but is a specialized, systematic and objective analysis which includes specific steps with the support of scientific methods and statistical processes (Vitouladiti, 2000:48). Basic aim of this type researches is to answer in the following three simple but important questions (Filiass, 1998):

- “what” (object of the research)
- “why” (expediency of the research)
- “how” (methodology of the research)

The object of the research consists in the determination and the formulation of an inquiring problem and consequently in the delimitation and the clarification of its terms. The most essential and important phase of an inquiring process is the expediency of the research. Moreover, the validity of inquiring process and accordingly the field of generalisation and application of its results is only satisfying when its methodology is realised through techniques and tools which are scientifically acceptable (Vamvoykas, 1988). The process of a research study must have certain characteristics and must, as far as possible, be controlled, rigorous, systematic, valid and verifiable, empirical and critical.

Figure B: The process of the Methodology of Research.



(Source: [www.authorstream.com](http://www.authorstream.com))

**THE RESEARCH PROCESS OF THE CURRENT STUDY**

The current analysis-research is a result of a process that came through secondary research. It was a process of critical examination of the existing Greek and foreigner bibliography through the study of relative books, newspapers, scientific magazines as well as published articles in selected web pages of internet. However, this examination led at the same time to the creation of concrete personal opinion of the researcher, in regard to the existing situation about the SME in the Greek Region. For this reason, the above theoretical approach is also supplemented by data of primary research which not only led to the verification of ascertainment of theoretical approach, but also examined questions and gave answers in further questions that concern the confrontation of administrative accountancy in Greek SME.

The primary research took place in the Region of Thessaly and more specific in the city of Larissa, Volos, Trikala and Karditsa from September 2010 until March 2011, to a small number of enterprises (25 questionnaires) but at least representative to depict the existing situation of the Greek SME in the Region of Thessaly. The data that collected were extracted with the help of a questionnaire (Chapter 4, paragraph 4.3) with the following structure of questions. There were three types-categories of questions; the first ten (10) questions were about general information of the specific enterprise, the next three (3) questions were according to Green Entrepreneurship and the connection which exist between the enterprise and the above term and the final six (6) questions were about Clusters and Networks.

The persons that have been chosen to answer the questions of the research were the owners of the enterprises in their majority. In cases that the communication with those persons was impossible, the next choice was the person in charge for the economics of the enterprise. In the second case the answers were more specific and the researcher had to explain them less about their meaning and content due to their knowledge in this type of matters. The authorized personnel helped the process of the research to be less timeless.



**PROCESSING AND ANALYZING DATA (primary research)****QUESTIONNAIRE****A. General Information**

1. Name of enterprise/Discreet title: .....
2. Address: .....
3. Phone Number: .....FAX: .....
4. E-mail Address: .....
5. Person in charge: .....
6. Legal form of Enterprise  
 Individual                       Ltd.                       S.A.                       Other
7. Year of Foundation: .....
8. Turnover (mean of last three-year period): .....
9. Number of occupied personnel: .....
10. Person that supplement the Questionnaire  
(Full Name/Attribute in the enterprise): .....

**B. Green Entrepreneurship**

1. Do you know about the significances “Green Economy” and “Green Development”?  

15 YES                      10 NO

  - 1.a. If know about them
    - A. Do you believe that your enterprise can be characterized as “Green”?  

5 YES                      10 NO
    - B. Do you believe that its application can serve better the objectives of your enterprise?  

11 YES                      4 NO
  - 1.b. If you do not know about the above significances, which do you believe are the most important reasons in your opinion?

**Lack of information from Public Institutions like Commercial Chamber, Region, Ministry of Growth etc.** .....

.....

2. Which from the below subsidized programs, you consider that they provide in your enterprise the possibility of become a "Green Enterprise"?

<b>9</b>	« Transformation in new conditions »
<b>4</b>	«Green infrastructures»
<b>3</b>	«Green Enterprise 2010»
<b>6</b>	Other Programme (Which one) ..... .....
<b>3</b>	None

3. Does your enterprise participate in any of the following Programmes?

-	«Transformation in new conditions»
-	«Green infrastructures»
-	«Green Enterprise 2010»
<b>4</b>	Other Programme (Which one) ..... .....
-	None

### C. CLUSTERS/NETWORKS

4. Do you know about any kind of forms of collaboration between enterprises and if yes which from the below?

**6** Clusters                      **4** Networks                      **15** None

5. Does your enterprise constitutes member of the below collaborations and which one?

**0** Clusters                      **0** Networks                      **25** None

6. Place in order of precedence the most important obstacles for the growth of Clusters/Networks:

(1: most important obstacle, 5: least important)

<b>1</b>	Lack of information
<b>3</b>	Lack of/low subsidy
<b>4</b>	Lack of specialized personnel
<b>2</b>	Weakness of self-financing
-	Other obstacles (refer them analytically)

7. Place in order of precedence according to your opinion the most important reasons that prompt the enterprises in the foundation of Clusters/Networks? (1: most important reason, 10: least important reason)

7	Weakness of application of new technologies from the Enterprises as units
8	Improvement of productive process
2	Improvement of productivity of the enterprise
4	Improvement of competitiveness
5	Availability of proper and lending funds
6	Improvement of quality of products/services
3	Long-term viability of the enterprise
1	Increase of turnover
9	Common use of good practices
-	Other reasons (refer them analytically) .....
	.....

8. How much important according to economic results, you consider that is the foundation of Clusters/Networks?

• For the enterprise as a unit: (scale of evaluation)

8                      9                      1                      5                      2  
 Very important    Important        Neutral        Less important    Insignificant

• For the market: (scale of evaluation)

10                      8                      -                      4                      3  
 Very important    Important        Neutral        Less important    Insignificant

9. According to your experience, have you to refer anything relative with the types of collaboration of enterprises?

.....  
 .....  
 .....

THANK YOU FOR YOUR TIME

To conduct the empirical research and therefore completing the questionnaire that already presented above was selected a specific number of firms-enterprises. It has already indicated that the companies that surveyed, was twenty-five (25). The following table shows the name of the enterprise, the area where the company is located and the name of the person as owner.

Table I: Enterprises of this current empirical research.

	<b>DISCREET TITLE</b>	<b>LOCATION</b>	<b>PERSON IN CHARGE</b>
01	CROCUS FLORA S.A.	Almiros-Magnesia	Pappas Ks.
02	ELAIOURGIKI MAGNISIAS S.A.	Volos	Kourgias G.
03	BIOMAR HELLENIC S.A.	Velestino-Magnesia	Lagos P.
04	XOIROTROFIKI A.E.	Almyros	Printzos K.
05	MEAT MANUFACTURE	Velestino	Printzos K.
06	NITSIAKOS TH. S.A.	Trikala	Nitsiakos Th.
07	DELTA INDUSTRY	Farkadona	Oikonomou A.
08	FAGE PROCESSING INDUSTRY	Trikala	Tsiakos K.
09	BES Z-F.A. MANOURAS S.A.	Trikala	Manouras A.
10	AGROKTINOTROFIKI KARDITSAS S.A.	Kalampaka	Ntallas Ch.
11	XOIROTROFIKI S.A.	Karditsa	Zafeiris K.
12	KTINOTROFIKI S.A.	Karditsa	Kotrotsios N.
13	TSOLAKOS S.A.	Karditsa	Gkousiaris G.
14	EVAGGELOPOULOS S.A.	Sofades-Karditsa	Evangelopoulos M.
15	ELBAK S.A.	Larissa	Karampasis G.
16	ABGO S.A.	Larissa	Apostolou S.
17	APOSTOLOU P.	Larissa	Apostolou S.
18	WINE COOPERATIVES TYRNAVOU	Tyrnavos	Sikalas V.
19	DELMONDE	Larissa	Tatsis
20	INTRACOM MANUFACTURES S.A.	Larissa	Tziotis S.
21	MPOTIS ALUMIL	Larissa	Mpotis I.
22	AL. CHATZIDIMOULI	Larissa	Chatzidimoulis V. & Ir.
23	TOURSOUNIDIS ENERGY	Larissa	Toursounidis M.
24	TOURSOUNIDI ZOI	Larissa	Toursounidis K.
25	TOURSOUNIDIS ENERGY OIL	Larissa	Toursounidis K.

(Own Processing)

The enterprises that took part in the current research answer in two main questions which each one has its further questions. The first question that an enterprise called to answer was about "Green Entrepreneurship" and its connection with this term. From the 25 enterprises, the 15 of them knew the term "Green Economy" and "Green Development" while the other 10 enterprises ignored the existence of those significances. It is important to refer that their knowledge about "Green Entrepreneurship" were in very low levels and the researcher had to explain them many terms about it. Accordingly to the first question there was another one (question 1.a. with two more sub questions A. and B.) for those that knew what we call "Green Entrepreneurship".

From the fifteen (15) entrepreneurs only five (05) of them believe that their enterprise can be characterized as a "Green" one of course according to their own judgment and criteria about this significance. Beside the fact that the majority of them (a percentage of 66,66%) can not use the term "Green" about their enterprise, although they believe (a percentage of 73,33%) that it is an important policy which can improve the operation of the enterprise as a unit. Eleven (11) of the people that we ask in our research said "YES" at the question we refer before, which means six (6) more than those whose enterprises are "Green". The research examines also the reasons that many people with enterprises ignored the existence of the terms "Green Economy" and "Green Development". The most important of them was the lack of information due to their own indifference and of course due to minimal help from Commercial Chambers, Region, Ministry of Growth and other public institutions.

Afterwards they called to answer in other two questions (question B.2 and B.3.), where they should evaluate some of the programmes that are related with "Green Entrepreneurship" and help in its distribution. Those questions were not difficult to be answered by those who were well informed about this object and the actions of each programme. Furthermore those who did not know anything about actions of "Green entrepreneurship" should be informed relatively by the researcher, so that we have a complete picture for the preference of enterprises in subjects that concern the growth of enterprises in combination with the protection of environment.

Question's B.2 aim was to examine which from the existing programmes serves better the needs of enterprises that participated in the present research, always in order to the personal opinion of entrepreneurs.

The table that follows presents the answers of the entrepreneurs, as these resulted from the research:

Table A: The preference of entrepreneurs for subsidized programmes, that allows enterprise to be changed in “Green” one.

<b>9</b>	« Transformation in new conditions »
<b>4</b>	«Green infrastructures»
<b>3</b>	«Green Enterprise 2010»
<b>6</b>	Other Programme (Which one) ..... .....
<b>3</b>	None

(Own Processing)

Afterwards, question B.3 that follows presents only the enterprises that participate in some kind of programmes that already have been mentioned. It is important to refer that from the twenty five (25) enterprises that participated in research only four (4) of them answered positively in this question. In this research it is important the fact that also four (4) of those enterprises have selected to use photovoltaic, to upgrade their enterprise. This is the most simple but also widespread way that usually select the enterprises, because photovoltaic are easy in their application. “Table B” that follows shows concretely which programs prefer the entrepreneurs so that they make their enterprise “Green”.

Table B: Subsidized programmes, in which participate certain enterprises of the current research.

-	« Transformation in new conditions »
-	«Green infrastructures»
-	«Green Enterprise 2010»
<b>4</b>	Other Programme (Which one) ..... .....
-	None

(Own Processing)

Finally, follows the third category of questions in which the enterprises are called to answer regard to the significances of “Clusters” and “Networks”. As in the previous category of questions, thus and in this one the researcher analyzed the two significances so that is easier the completion of questionnaires. In this point it should be referred that the knowledge of individuals that was asked about those two categories of collaborations between the enterprises was limited or still at this certain case was unknown. This explains clearly the absence of those types of collaborations between the enterprises, not only in the region of Thessaly but also and in the remainder Greek market.

In question C.4. there were six (6) answers from those that knew the existence of the term “Cluster”, four (4) about the term “Network” and the big number, analogically to the sample of the research, of the fifteen (15) answers that had know idea about the existence of those two terms. Also disappointing was the result of the question C.5. which had as a purpose to find if there are enterprises-members of “Clusters” or “Networks”. In other words none of the enterprises of the research was a member of these types of collaborations or even more had the future plan to be in this place.

After this first step of the simple counting of the enterprises that had connection or not with “Clusters” or “Networks” they had to place in order of importance the reasons of this situation. The interviewees called to mark from 1 for the most important obstacle for the growth of “Clusters-Networks” until 5 for the least important one. According to the total answers of the research the results are depicting in the following table (Table C).

Table C: Obstacles in growth of “Clusters/Networks” in order of importance.

1 <sup>st</sup>	Lack of information
2 <sup>nd</sup>	Weakness of self-financing
3 <sup>rd</sup>	Lack of/low subsidy
4 <sup>th</sup>	Lack of specialized personnel
-	Other obstacles (refer them analytically)

(Own Processing)

The most important obstacle and in the first place of our classification is the “lack of information” for the enterprises. This could be happens due to their own indifference but also due to the indifference of the Public Institutions (Commercial Chamber, Region, Ministry of Growth etc.). As a second reason is an economic factor and more



specific is the “weakness of self-financing” from the SME. As a result the enterprises are not able to risk their own capital (if it exists) for an uncertain success with low percentages of economic growth. The same importance with the second reason has and the third which has to do with the “lack of subsidy” from the national institutions. In most cases, it is really difficult and bureaucracy is a very important difficulty.

As we can see economic resources, as a factor of productivity process, are the foundations for an enterprise regardless of its size. A competitive enterprise must also has an other one important characteristic, which is the specialized personnel and the ongoing development of its employees. The majority of SME in Greece lacks of specialized personnel in many fields.

By continuing with the questions of the research, the enterprises are called to refer the most important motives to be members of a “Cluster/Network”. The process was as simple as in the previous question, but in this case the numerical scale started from 1 (most important reason) and ended to 10 (least important reason). The following table (“Table D”) depicts the total results of the research and the ascending order of the main reasons as they answered by the enterprises.

Table D: The reasons that enterprises seek to be members of “Clusters/Networks”, in ascending order.

1 <sup>st</sup>	Increase of turnover
2 <sup>nd</sup>	Improvement of productivity of the enterprise
3 <sup>rd</sup>	Long-term viability of the enterprise
4 <sup>th</sup>	Improvement of competitiveness
5 <sup>th</sup>	Availability of proper and lending funds
6 <sup>th</sup>	Improvement of quality of products/services
7 <sup>th</sup>	Weakness of application of new technologies from the Enterprises as units
8 <sup>th</sup>	Improvement of productive process
9 <sup>th</sup>	Common use of good practices
-	Other reasons (refer them analytically)..... There were no answers in this section.

(Own Processing)

The main criteria for enterprises to create collaborations between them are usually economic and their purpose is the sustainability and viability of the units in the contemporary competitive market. In other words the increase of turnover and the improvement of productivity of the enterprise are two essential objectives to be achieved to have the enterprise a long-term viability. Those types of collaborations

help not only the enterprises as units but also make markets more competitive and upgrade the sectors that that are members.

Relative with those economic factors of enterprises is the question C.8. that separates in two parts, about the enterprise specifically and about the market in general. The rating scale starting from the characterization “Most important” and ended to the “Insignificant” one (the intermediate stages are detailed in the questionnaire that given above).

Analytically, in the first part of this question the answers of the enterprises that evaluate the importance of “Clusters/Networks” are listed in the following table (Table E).

Table E: Importance of “Clusters/Networks” in economic terms for the enterprise as unit.

<b>Numerically</b>	<b>Percentages (%)</b>	<b>Evaluation Scale</b>
8	32%	Very important
9	36%	Important
1	4%	Neutral
5	20%	Less important
2	8%	Insignificant

(Own Processing)

The percentages are clearly depicting the opinion of the entrepreneurs according to their experience about the requirements of the market. The majority of the participants (68%) evaluate as “Very important” (32%) and as “Important” (36%) for an enterprise to succeed a profitable cooperation in long-terms in order to be viable and competitive in its sector of products. Finally, only the 20% believes that it is worthless for their enterprise to take a risk like that.

In the second part of question 8 about the participation of these types of co-operations in the market’s share the results are depicting in the following table (Table F). The changes are negligible according to the previous question, which means that the profit for the enterprise and the market is the same in terms of viability.

Table F: Importance of “Clusters/Networks” in economic terms for the market.

<b>Numerically</b>	<b>Percentages (%)</b>	<b>Evaluation Scale</b>
10	40%	Very important
8	32%	Important
-	-	Neutral
4	16%	Less important
3	12%	Insignificant

(Own Processing)

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## **Abbreviations**

NSRF: National Strategic Reference Framework  
OPC II: Operational Programme of Competitiveness and Entrepreneurship  
PPC S.A.: Public Power Corporation  
EEB: Energy Efficiency of Buildings  
E.SY.D: Hellenic Accreditation System  
GNP: Gross National Product  
EL.STAT: Greek Statistical Service  
GAV: Gross Added Value  
ROP: Regional Operational Programme  
SOP: Sectoral Operational Programme  
ETCP: European Territorial Co operation Programmes  
ICT: Information and Communication Technology  
B2C: Business to Consumer  
B2B: Business to Business  
SME: Small Medium Enterprises  
MED: Programme of Mediterranean Space  
JTS: Joint Technical Secretariat  
MC: Monitoring Committee  
MA: Managing Authority  
CA: Certifying Authority  
AA: Audit Authority  
JTC: Joint Technical Secretariat  
SCP: See Contact Points  
NC: National Coordination  
PDO: Protected Designation of Origin  
EERP: European Economic Recovery Plan  
ESIF: European Solar Industry Federation  
HEPO: Hellenic Foreign Trade Board

## CHAPTER 1

### 1. Green Entrepreneurship

#### 1.1. What is Green Entrepreneurship?

Definition: “green entrepreneurship” means minimizing its environmental imprint, that is to say total environmental and social cost that results from the action of any enterprising activity. Obviously the “green enterprises” should have profits employment in workers, but also should have permanent extension of their share of market seek”.

“Green Entrepreneurship” is a type of economic activity which is targeting to protect the environment and the nature as a result of its process. This point is helping us to understand the function of a green enterprise. An enterprise which belongs to this category of the “green enterprises” chases not only the possibility of making profit, but is also responsible to protect the environment and has social concerns. This responsibility of the “green enterprise” for the environment it is recommended to take place not only by its products or its services, but also by its production processes. It is very important to refer that the natural recourses are not in abundance and that is the main reason that the production processes must be very friendly with the natural recourses and the environment.

In order to be a green enterprise successful and functional in that way there is the need to have a common “green enterprising perception” which is based on three imperative steps. First, the enterprise is part of the natural environment and all the natural recourses are the base of the production process. So it is totally expected that the maintenance of the recourses is the desirable result as it can be an enterprise viable. Second, we can see that the reduction of the natural resources it creates the need to develop a “smart productive system”, which is friendly to the environment. This second effort can help to minimize the huge reduction of the natural recourses that take place in the last decades. Third and most important is about the “quality of life”. To be succeeded this target is imperative need for the enterprise to provide qualitative products or services to their consumers, proportion in their needs. Those three steps are very important for an enterprise to become “green” and to ensure its viable future.

### 1.1.1. Why we need Green Entrepreneurship?

The last decades all who were involved in the production process had only one target to succeed, the maximizing of the total gain of the enterprise by any means. As a result of this ongoing situation is the huge reduction of natural resources (e.g. oil, water, energy and more other raw material). These natural resources are very precious for the economic and the environmental sustainability from a little enterprise to a big city and even a country. It is more desirable and sought for everyone in the planet to anticipate than to restore the “environmental damages” that caused due to irresponsible use of the natural resources. The most important reason is to protect our environment, our natural habitat and by succeed this we can easily have and economic profit the same time.

When we talk about a small to medium size enterprise it is hard to understand how can help its economic condition by following an environmental policy for its production process. We can say by sure that it is economically suitable for an enterprise of this size. The functional cost is the first that can be reduced in a “green enterprise”.

### 1.1.2. Green Entrepreneurship in Small and Medium Size Enterprises

When we talk about SME we mean the enterprises of a certain size of employees or annual turnover. According to the criteria of the Commission the enterprises can be categorized in micro, small and medium enterprises. Those criteria are defined from the Recommendation 2003/361/EC and are summarized in the table below:

Table 1.1.2.: Criteria about the size of the enterprises in Europe

Enterprise category	Headcount	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 million		≤ € 43 million
Small	< 50	≤ € 10 million		≤ € 10 million
Micro	< 10	≤ € 2 million		≤ € 2 million

(Source: europa official web page)

(Own Processing)

The adoption of the idea for a widely spread “green entrepreneurship” not only can make better the environmental conditions, but also can give a big advantage to the Small and Medium Enterprises. The question that created in this level of analysis is the one that follows below:

“Why the adoption of an environmental way of thought is very important and profitable for a Small and Medium Enterprise?”

The use of ecological ways of planning, production, promotion, disposal and finally the use of the products and services of an enterprise is an important investment with long term profit. First of all, there is economic profit for the enterprise with many ways and sometimes with the contribution of European Programs. Some ways are mentioned in the text below:

- It can reduce the functional cost of the enterprise.
- The “green market” creates new opportunities for the disposal of the “green” product or service.
- There are more suitable conditions that attracting “green” investments.
- The enterprise can have better terms of insurance, when it has less possibilities to harm the environment.

## 1.2. Existing Situation

As we refer above the need to maintain the environment and its recourses in high levels and of course in desirable level is the reason that led to the spread of the idea for “green entrepreneurship”. The “green entrepreneurship” constitutes a realistic action for the environmental dimension of viability (Kotsani Ch., Tsakos G, April 2009)<sup>1</sup>. It is a common truth that the protection of the environment and the smooth living with it, constitutes that “is not only subject of quality of life, but is also a survival subject”. The consumers and the enterprises prefer more and more the “green products and services” due to their friendly action to the environment. The total amount of such completed actions of “green enterprises”, it leads to more productive but also profitable enterprises to the frame of viable growth and responsibility. In the current reality “green entrepreneurship” provides a competitive advantage, while

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<sup>1</sup> ““Green Entrepreneurship”: Reality or alibi”, Kotsani Ch., Tsakos G, April 2009.

combines beginnings and values with social, cultural and environmental initiatives, constituting with that way a conscious engagement for the viable growth.

According to the most recent conclusions of Council of Environment (March 2009), is expressed the complete support in the “green” meters that are proposed in the European Economic Recovery Plan (EERP).

If an entrepreneur takes the decision to change his enterprise to become “green” or start from the beginning a “green enterprise” then is like he makes a long-term investment. We must refer in this point that this type of enterprises is a costly one, but it has a direct and simultaneously positive impact to the image of the enterprise. The exploitation of this value includes concrete conditions for the effective application of action of “green enterprise”. The planning, the organization and the incorporation in the corporate frame of operation are essential steps for the achievement of appreciable results. To be a successful effort the transformation of a regular enterprise to a “green enterprise” it is essential the contribution of the administrative personnel, the working personnel and finally the consumers.

“Green entrepreneurship” is a brand new idea in businesses and the decision to apply all the necessary actions is clearly up to the entrepreneur’s perception. The most important reason which sets this dilemma is the high cost that needed to follow a “green policy” in the enterprise. Also the inactivity toward “green actions” does not constitute negative factor for an enterprise, as it was also the existing situation up to recently for the enterprise. We must to refer that “green entrepreneurship” is not obligatory and as we said above due to the high cost is not so widespread in the Greek Market.



## CHAPTER 2

### 2. Green Products and Services

It is very important to refer that the products and the services of a “green enterprise” are able to improve the quality of the natural environment and they can reduce the impact of the human intervention on it. There are many ways for an enterprise to succeed this target, for example for some enterprises is about services of saving energy, the production of energy from renewable resources, the commercial promotion of products from the local community with “green” characteristics. There some examples of enterprises with “green” conscience and products.

First of all, is the ecotourism agency of Mesta on Chios island and its work is analyzed in the text below. According to its website, masticulture is a type of travel agency and organizes ecotourism-based activities programmes that take part all over the island and provides combined activities through the region. This specific agency has “green” way of thought and simultaneously has the faculty to teach its participants how important the nature is to the human activity.

“Masticulture is a locally owned and operated small scale travel bureau in the **mastic** village of **Mesta** on **Chios’ island** in the **Aegean Sea**. It works under an official Greek National Tourism Organization (GNTO) licence as a general tourism office (**travel agency**). It is the first and only tourism company specialising in **ecotourism** on the island. It provides a broad variety of activities related to Chios island environment (natural and social) as well as the people, businesses and associations representing the **local traditions and culture of Chios**. Masticulture puts together ecotourism packages that combine hospitality and **outdoor activities** related to all the things that compose the culture of Chios: its customs and traditions, popular arts and crafts, agricultural labour and produce, architecture, and much more. All this takes place on an island that has remained broadly untouched by the tourism development of the last few decades. Chios has also managed to keep its rural societies present because of its active agricultural sector, which until today continues to be the chief source of employment for the many of villagers on the island, whilst also functioning as a prime factor in Chios ' sustainable development.

Masticulture belongs to and operates with the help of Mesta's inhabitants, while also cooperating with locals throughout the island.”

(Source: [www.masticulture.com](http://www.masticulture.com))

Second example of “green entrepreneurship” and much more representative, are the agro-touristic cooperatives of women in Greece, because they combine the local biological products and their friendly to the environment transformation. These types of enterprises are very gently to the environment, because they use products that come from biological cultures and their transformation become with biological ways too. The effort for the feminine cooperatives began in 1950 from the Hellenic Ministry Agriculture that founded a cooperative of women in Grevena. According to statistical views of the Hellenic Ministry the agro-touristic cooperatives of women in Greece are 108 until today. Some of their occupations are the following and are relative with the production of traditional foods or sweets, clothes and objectives that used in the past years, while other feminine cooperatives are also restaurants, cafeterias or catering companies ([www.enet.gr](http://www.enet.gr), Newspaper of Eleutherotypia, 01/08/2005).

## 2.1. Energy efficiency and saving

### 2.1.1. The enterprise and the consumption of energy products and services

The optimization of energy output and the economic exploitation of energy offer the possibilities of saving energy and simultaneously high levels of economic profit. To be succeeded an undertaking like this is not necessary to be invested huge amounts of money, but it is also achievable with less economic sacrifices. The reduction of the negative consequences to the environment can also be succeeded with the adoption of a “green” organizing system for the enterprise. That means the same mechanical equipment with no extra economic cost for upgrades to the enterprise. It is only an idea that must be part of the way of thought of all the members-employs in the company. Finally, the time of damping is very small for measures of that type that constitutes important factor for the imposition of measures like that.

### 2.1.2. Measures of energy efficiency

First and foremost the enterprises in Greece should give more attention to the construction of a completed and effective plan about energy efficiency in buildings and in the way of their operation. The most important changes must take place in the air conditioning, in the electric and electronic equipment and in the lighting of the buildings.

#### A. Air conditioning: Heating/cooling

The enterprise should make maintenance of its equipment in regular base with the help of a specialized crew in those certain type of problems. This maintenance should take place in the beginning of a period in order to there are better results and less problems. The cost, in this case, is in the lowest levels and the equipment works properly longer time.

It is widely known that oil was for many years the most widely spread fuel for the heating of a building. The last years we have many new forms of fuels to be used for the same reason, like the natural gas and biomass. The only problem to use these two types of fuels is that the enterprise should change its equipment and more specific must change certain types of boilers. In other words, natural gas is less costly and its price in the market defined as a percentage of the price of oil, crude oil and liquid gas. Biomass is more difficult in its utilization and its use can be widely adopted in rural areas where there are plenty of raw materials (wood, oil-stone, remnants of rural products etc.).

The next step is to equip properly the building to keep heat/cool inside it and to reduce perceptibly the consumption of energy. This can be succeeded by using double glass and more insulated frames for the windows. This can reduce the waste of energy in the half and as a result the economic cost of the enterprise. To maximizing the efficiency of the equipment is also another easy way to have desirable results by reducing the internal heat at the winter days and by increasing the cool air at the summer days. At the summer this can be confronted by 4 different ways:

- By reflecting the sun-light.
- By preventing the entry of sun-light.
- By removing the accumulated heat of the building in the night hours.
- And finally, by deteriorating the internal sources of energy.

## B. Electric and electronic equipment

The minimizing of the total cost for an electric/electronic appliance must be an important priority for an enterprise not when it buys one but when it uses it. That means the minimizing of the energy consumption for an appliance. The easy way to check the amount of the energy that consumed is the “Energy Labeling”, an ecological label that informs the consumers for the environmental imprint of the product in its life time. The choice of the suitable appliance for the enterprise is an important subject as we can see. The ‘table 2.1.2.B.’ analyzes the cost and the consumption of some electric devices.

Table 2.1.2.B.: Cost and consumption of electric devices

Electric Device (Stand By)	Consumption in kilowatt/hour	Maximum prices annually Cost of electricity in Euros	Emissions of CO <sub>2</sub> in kilos
Television	193	16,6	212
Video	263	22,6	289
Decoder	149	12,8	164
DVD	131	11,3	144
Stereo	210	18	231
CD Player	61	5,2	67
Tape Player	53	4,6	58
Radio	44	3,8	48
Speaker	79	6,8	87
Computer’s Screen	88	7,6	97
Printer	70	6	77
Computer’s Speaker	44	3,8	48
Scanner	53	4,6	58
Photocopy Machine	88	7,6	97
Microwave Oven	105	9	115
Electric Oven	158	13,6	174
Washing-machine	61	5,2	67

(Source: Greenpeace)

## C. Lighting of the Buildings

As we refer above the consumption of energy become higher while an enterprise keep its buildings enlightened. When the enterprise spent energy for lighting its buildings without think “green” then the consumption of energy reaches until 4-5 times more than it could be. The old type of lamps is less friendly to the environment and at the same time costs to the enterprise more than the lamps of low consumption. Their duration also is much more less than the second type of lamps and that means more expenses as a total. The solution of this problem seems to be the replacement of the old lamps with those of the low consumption and then the use of light sensors to reduce the pointless use. The next table (Table 2.1.2.C.a) gives the equivalence of power between the two types of lamps (the common lamps and the low consumption lamps). The second one table (Table 2.1.2.C.b) analyzes the consumption of energy and money of the low consumption lamps.

Table 2.1.2.C.a: Equivalence of power between common and low consumption lamps

equivalence of power (Watt)	
low consumption lamps (fluorescence)	common lamps (glow)
5 W	25 W
7 W	40 W
11 W	60 W
15 W	75 W
20 W	100 W
23 W	120 W

(Source: PPC S.A.)

Table 2.1.2.C.b: Consumption of electricity and money for the contemporary lamps

Consumption of electricity and money for the contemporary lamps				
Lamps	Operation	Power (W)	Consumption (KWh)	Cost (€)
Common 100 W	1 hour	100	0,10	0,01
Common 60 W	1 hour	60	0,06	0,006
Low consumption 20 W (the same results with a common 100 W lamp)	1hour	20	0,02	0,002

(Source: PPC S.A.)

### 2.1.3. The enterprise and its investments in energy

Except the enterprises that can make changes in order to reduce the huge consumption of energy there could be and some new enterprises which their purpose will be the facilitation and guidance for a successful outcome. The investments that can be as an important step for this effort are deposited in the text below.

The first investment is focusing its efforts in the use of renewable sources for the production of energy. Types of renewable sources are the aeolian energy, biomass, solar energy, geothermic, hydroelectric and they are accessible for any type of enterprise. There can also open new enterprises which can invest in the market of the suitable equipment for the production of this type of energy. About aeolian energy we can say that an aeolic park which in speed 8m/sec it attributes 1600KW, then in speed 4m/sec it attributes only 200 KW. To minimize the lost energy and to succeed better results the aeolic park must be located in the properly place where there are no abnormalities in the ground, buildings or trees that would prevent the right operation and they decrease the efficiency of the park due to spins of the air. The use of a turbine that attributes 600KW, in regular conditions, deters the expulsion of 1200 tons of CO<sub>2</sub> annually that would be removed in the environment if used other sources for production of electric energy, as e.g. coal. It is a way to product energy, friendly for the environment and definitely safe ([www.physics4u.gr](http://www.physics4u.gr)).

Another very important investment for the enterprise is a new technique for the European Union and this is the energy efficiency of buildings and it can be applied in industry as well as in any kind of buildings. In that way it succeeded the maximizing of the energy performance of buildings and as a result the final aim, the reduction of energy loss. When we talk about energy efficiency<sup>1</sup> we have to deal with a process of estimation of an energy system and its real energy that consumes as also the factors that influence it as well as the possibilities of saving energy. The minimizing of energy loss will simultaneously contributes in reduces of energy costs and may result in a financial cost saving to consumers if the energy savings offset any additional costs of implementing an energy efficient technology. Reducing energy use is also

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<sup>1</sup> Definition: Efficient energy use or else energy efficiency are the efforts to be reduced the amount of energy required to provide products and services (“Energy Efficiency Policies and Measures in Greece”, ‘Monitoring of Energy Efficiency in EU 27, Norway and Croatia, ODYSSEE-MURE’, CRES, Athens, September 2009).

seen as a key solution to the problem of reducing greenhouse gas emissions (“Energy Efficiency Policies and Measures in Greece”, ‘Monitoring of Energy Efficiency in EU 27, Norway and Croatia, ODYSSEE-MURE’, CRES, Athens, September 2009).

## 2.2 Recycling and waste reduction

To be succeeded the idea of the “green entrepreneurship” and as a result to become a way of life for all the enterprises in our country it has to be first part of our selves, in other words way of thought. First of all, someone who thinks “green” has a friendly attitude to the environment and tries by any mean to succeed this. One very important possibility for all these is the recycling and the waste reduction not only as persons but also as enterprises. The process of recycling can reduce increasingly the waste of raw materials and as a result to maximize the waste reduction. Every type of enterprise can help in this effort that take place for the reduction of the waste of energy in our country and according to its products or services it can apply the suitable plan for the certain situation.

### 2.2.1 Waste management and measures

Waste management is necessary for the preservation of the environment and for the improvement of the existing situation. If we want to subscribe the process of waste management we can say that:

“**Waste management** is the collection, transport, processing, recycling or disposal, and monitoring of waste materials. The term usually relates to materials produced by human activity, and is generally undertaken to reduce their effect on health, the environment or aesthetics. Waste management is also carried out to recover resources from it. Waste management can involve solid, liquid, gaseous or radioactive substances, with different methods and fields of expertise for each.”

(Source: [www.eurojournals.com](http://www.eurojournals.com))

The differences between the enterprises are the most important difficulties that not give the opportunity to create a common system for the waste management. Every type of waste has its own way of elaboration but every enterprise can accomplish its own waste management. A representative example about the above argument is the packing materials that used in the process of packing to an enterprise. The suitable materials are the solution to the reduction of waste due to the fact that the use of recycling materials will improve significantly the problem we discuss for. The organic waste of the enterprises can be reused for additional uses as a fertilizer in the enterprise or at area near to it. As organic waste can be described any kind of waste that is biodegradable which means it can be broken down by other living organisms and it originates from any kind of organic substance.

It is already known that recycling attributes in the waste reduction, because due to recycling the bulk of the raw materials that used in the production of paper and other stuff like that tends to adjusted to the needs of the market. In other words the already used paper can be collected in specialised units and after a certain elaboration will be disposable in the market to be in use again. Recycling (the collecting process of the materials) is a simple and costless process for every type and size of enterprises and all the enterprises can join it. The only necessary equipment is the recycling bin for the suitable material, other bin needs for paper, other for glass, other for metal etcetera.

In the text below there are some of the recycling companies in the region of Thessaly:

- “Theodorou D. – Scrap Recycling” is a company that recycles scrap metals<sup>2</sup>, it operates since 1973 and it locates in the city of Volos. More specific it collects and recycles scrap metals like iron, aluminium, stainless, lead and also recycles electric and electronic appliances ([www.scrap-theodorou.gr](http://www.scrap-theodorou.gr)).
- A company that deals with the paper recycling is named “Telios” and is located to the Industrial Area<sup>3</sup> of Larissa. Its work is to collect the useless paper and then to convert it in that way as can be reused.

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<sup>2</sup> Scrap is a term used to describe recyclable materials left over from every manner of product consumption, such as parts of vehicles, building supplies, and surplus materials. Often confused with waste, scrap in fact has significant monetary value.

<sup>3</sup> Industrial region or industrial area refers to a region with extremely dense industry. It is usually heavily urbanized.



### 2.2.2. Water management

Water is a precious good for the humanity and its existence has catalytic role because it is basic component of the living organisms. Does not exist in abundance on the planet and every year the lack of water becomes more and more perceptible. Any kind of use should take place with conscience and it is imperative need to avoid the waste of huge amounts of water. We are all depended with the existence of the water and we have obligation to ourselves, first and foremost to adopt a “green” behaviour as units. A more organized effort as a second step and the most effective as well is water management. About water management now we can say that it is the activity of planning, developing, distributing, managing, and optimum use of water resources under defined water polices and regulations which means that it is a very inter-disciplinary field. Water management also involves actions like handling the water in the natural environment which includes monitoring the amount of water in the environment, seasonal and annual changes in water levels and checking the cleanliness of water supplies on the planet. The final aim of this effort is to be succeeded the water reservation from people and enterprises mostly in order to reduce their water usage.

### 2.3. “Green” Supplies

If an SME wants to turn into a “green enterprise” it is not enough to have a “green” production of products or services but also needs to ensure the collaboration with “green” suppliers. It is important for an enterprise to know that the quality of the raw materials it uses is not only satisfying but also exceptional. When we talk about “green” supplies for an enterprise which its production is relative with food or rural products then the raw materials should definitely come from certifying biological cultivations. The biological products are a simple way to ensure the enterprise by itself the good quality of its supplies.

The official certification of the products can assure the enterprises about their quality and their destination of origin. For the rural products there are two types of certification, AGRO 2.1 and AGRO 2.2 that certify the production. The products of the secondary sector can be certified with the following certifications: HACCP, ISO or ECOLABEL. We will refer more details for those types of certification at next chapters. Certification is also necessary for the industrial products/services and there are some certifications in this area too (EMAS, ECOLABEL etcetera).

## 2.4. Environmental management and certification

### 2.4.1. About Environmental management

Every enterprise with environmental conscience owes to be concerned to its obligations about the environment and to become this true with the better possible way the enterprise owes to realize an effort to operate according to the environmental management. The enterprise should operate in a way that will not aggravate the existing situation of the environment. More specifically, the environmental management is the management of interaction by the modern human societies with, and impact upon the environment. The need for environmental management can be viewed from a variety of perspectives. Environmental management is therefore not the conservation of the environment solely for the environment's sake, but rather the conservation of the environment for humankind's sake ([www.derm.qld.gov.au](http://www.derm.qld.gov.au)).

### 2.4.2. Certification systems that exist

The implementation of environmental management for an enterprise is not enough to characterize its products and services as friendly to the environment but also needs the certification by an official organization. Some types of certifications are analyzed in the text below:

- ISO 14001:2004. ISO is an International Organization for Standardization and its main purpose is to promote the development of the international certification models. This model can be applied at any type of enterprise with the prospect of the environmental management in order to be more efficient. More specific this standard is useful for designing and implementing an effective environmental system. This standard to be applied in an enterprise requires the collaboration with a specialized organization in matters like the environmental management. These organizations are certified from the Hellenic Accreditation System (E.SY.D.) S.A. which established in 2002 and is a private liability company operating in favour of the public interest with the responsibility of the management of the accreditation system in Greece ([www.esyd.gr](http://www.esyd.gr)).
- EMAS. It is a voluntary organisation of the European Union and is in charge for issues about environmental management and for the certification of the enterprises that use the specific standard in their production process. The Eco Management & Auditing Scheme is not only a certification standard of environmental management but also promotes the on going improvement of the enterprises about their environmental conscience and as a result to inform the enterprises about the continuous development at this sector. The last modification of EMAS was in 2009, published on 22 December 2009 and entered into force on 11 January 2010 ([ec.europa.eu](http://ec.europa.eu)).
- ISO 9000. Is an international standard for the enterprises and the most important characteristic is that is not stagnant but its requirements changes over time. ISO 9000 constitutes a “family” of standards for quality management systems. Below we can distinguish some of its requirements that must to be abided by the enterprises to certify the organisation about their quality management system. More specific is about ISO 9001:2008 and includes
  - A. a set of procedures that cover all key processes in the business
  - B. monitoring processes to ensure they are effective
  - C. keeping adequate records
  - D. checking output for defects, with appropriate and corrective action where necessary
  - E. regularly reviewing individual processes and the quality system itself for effectiveness
  - F. facilitating continual improvement ([www.iso.org](http://www.iso.org)).

- **ECOLABEL.** It is also known as “green sticker” and it is labelling systems for food and consumer products. Some of those labels quantify pollution or energy consumption by way of index scores or units of measurement; others simply assert compliance with a set of practices or minimum requirements for sustainability or reduction of harm to the environment. Usually both the precautionary principle and the substitution principle are used when defining the rules for what products can be certified with the named “green stickers” ([www.systranet.com](http://www.systranet.com)).
- **HACCP.** Hazard Analysis Critical Control Point (HACCP) is a type of certification and works with a point system that confirms the quality and the environmental nature of foods and drugs to ensure the consumers about food safety and pharmaceutical safety that addresses physical, chemical, and biological hazards in order to prevent them rather than terrify them. HACCP is used in the food industry to identify the quality of food, so that the enterprise can take the “green light” for friendly to the environment products. This evaluation is known as Critical Control Points (CCPs) and can be taken to reduce or eliminate the risk of the hazards being realized. The system is used at all stages of food production and preparation processes including packaging, distribution, etc. ([www.fda.gov](http://www.fda.gov)).

### 2.4.3. Ecological Brands

The ecological brands are widely known and give the chance to the enterprises to promote their ecological action in order to distinguish the consumers which products/services are friendly to the environment and in that way to prefer them through others. This can be enough profitable for the enterprises in many ways and categories like in the economic and in the environmental sector.

- This specific symbol (Figure 2.4.3.a) is the most widely used in the market and informs the consumers about the origin of the specific package of product with this symbol on it. More specific this symbol gives information about recyclable raw materials that used in the production of other products.




Figure 2.4.3.a
- The European Flower (Figure 2.4.3.b): created in 1992 and is the same for all the countries members of the European Union. It is also accepted from other countries that are not members of the EU. It is also accepted for services except products after a regulation of 2000.




Figure 2.4.3.b
- The Swan of Norway (Figure 2.4.3.c): It has been consolidated in the Nordic market in 1989 by Council of Ministers and constitutes a neutral and reliable Nordic Environmental Label. This label is accepted in other countries also members of this eco-labelling scheme. This label is a type of licence and after three years of the first ratification the owners have to put in for a new one ([www.greenlabelspurchase.net](http://www.greenlabelspurchase.net)).




Figure 2.4.3.c
- Blue Angel-“Der Blaue Engel” (Figure 2.4.3.d): It was the first eco-label and made its appearance in the market in 1978. It was created on the initiative of the Federal Minister of the Interior and approved by the Ministers of the Environment of the federal government and the federal states ([www.blauer-engel.de](http://www.blauer-engel.de)).




Figure 2.4.3.d

## CHAPTER 3

### 3. Clustering and Networking for Small to Medium sized Enterprises

#### 3.1. Definitions

The establishment of enterprising collaborations can yield important profits for the Greek economy but the most important of all is that will strengthen the operation of enterprises that collaborate one with each other. The ongoing increase of the global market sets new parameters between the enterprises' competition and the economic survival of the local economies depends on the competitive action of enterprises. The development of economic issues like recession, inflation, development etc, is influencing in high rates the global market and due to this situation the enterprises are inter-depending.

To be confronted problems like those above the enterprising collaborations like “networking” and “clustering” are the most common collaborations and the most effective. In Greece those two types of enterprise collaboration appear to be in form of cooperatives, usually with members enterprises of the same sector. The small size of the enterprises is the most important factor for the differences between the global “clusters” and the Greek ones. The global competition is hard and the requirements for a strong enterprising collaboration need a strong competitive internal market in national level.

##### 3.1.1. Clustering

With the term “clusters” we mean competitive enterprises usually placed in neighbouring regions and with common targets like the development of scale economies, access in resources, direct and valid information in order to reduce the production cost, to improve their operation and their competitiveness. A strong “cluster” can remain like this if exploit effectively a comparative advantage of its region (e.g. local products/services, sightseeing etc). Except the enterprises that participate in a “cluster” there are also some other enterprises with supportive character like Chambers, technological institutions, research institutes, universities to offer their services. This collaboration gives to the enterprises the advantage to

develop new technologies and the opportunity to surpass difficulties relative with their business activities. Usually the decision to establish a cluster is common from all the collaborated enterprises.

Moreover clusters are constituted each time for different purposes, for example to increase the competitiveness of a SME, to support the collective research, to succeed “cleansing” of an entire industry, to apply systems of environmental management. For these reasons exists in the bibliography a variety of different definitions, which almost in its entirety includes the significances of geographic adjacency, networking and specialization.

To be more specific and precise it is significant to be referred that there are many similar definitions for the term of “clusters”. The person who referred to the term “cluster” and made it popular was Michael Porter in “The Competitive Advantage of Nations” (1990) and he defines “cluster” as a group of enterprises collaborated in similar or related activities within a national economy in order to increase the productivity of their own units. In 1992 Schmitz defined cluster as a group of enterprises belonging to the same sector and operating in close proximity to each other. In 1998 Porter redefines “clusters” as geographically concentration of interconnected firms and institutions in a particular sector. The linkages existing between the firms are very important in strengthening competition.

Another important characteristic of “clusters” is the term complementarity. "Clusters are sets of complementary firms (in production and service sectors) public, private and semi-public research and development institutions, which are interconnected by labour market and /or input-output and/or technological links" (Steiner and Hartmann, 1998). In 2000 Elsner was the one who determine the type of connection between the enterprises and emphasized that “clusters” are groups of firms that are functionally interconnected vertically as well as horizontal. Also, said that the particular type of interconnection is determined through the market.

The discrimination between horizontal and vertical “clusters” emanates from the type of the production process of each enterprise. The enterprises of the same production sector, constitutes the horizontal “clusters” while enterprises of different sector are vertical “clusters”. As referred above the enterprises that constitute a “cluster” are usually neighbouring enterprises but thanks to globalization there also “clusters” with enterprises all over the world.

These enterprising collaborations not only promoting the world trade and the competition between the enterprises but simultaneously they strengthen the local market and economy. The purpose of the “clusters” is obvious as we can understand from the following states. First, are able to make widely known the local products that emanate from different small enterprises of their region. By this way the particular product gains a higher share of the market and becomes more competitive and viable towards to other similarly products. The second reason to create a “cluster” is the enforcement of the SME of a region to stand the competition of the strong enterprises and the ongoing changes of the market and the preferences of the consumers.

#### Advantages of a “cluster”

The most predominant reasons for a SME to participate in a type of an enterprising collaboration is the increase of productivity, the efficient organize of production, the administration but also the insertion of new innovations in its proceedings. The category of innovations is strong advantage for a SME because those types of enterprises do not have the opportunity to create innovations due to their small size.

Additionality and collaboration are two major principles with many important advantages and positive repercussions such as the improvement of dexterities, the effective promotion of products and all the kinds of negotiations between enterprises and its customers or suppliers. Also in the internal of these collaborations becomes easier the diffusion of information and achieved collaborations with institutions and inquiring institutes in order to enrich the enterprises their Research & Development.

Succinctly the profits for the SME are referred below:

- Direct and in time information
- Easy access in new technologies and markets
- Development of innovations
- Improvement of their management ability
- Scale economies
- Easy access in know-how



### Disadvantages of a “cluster”

Under certain circumstances “clusters” can constitute suspensive factor for the further growth of its members and in exceptional cases can also cause the downgrade of the region. When “clusters” are supported by few purchasers or an activity of big or few enterprises, as usually happens to lose one of these factors and then turns to be a failure action, even if they remain competitive.

This negative repercussion is really, when happen the following actions in a “cluster”:

- Persist in old technologies.
- The expectations of consumers are unsatisfied.
- Its form is not flexible in order to adopt the changes of the market.
- The number of the customer is not enough to satisfy the needs of the “cluster”.

### Types of Networks or Clusters

The global literature describes four types of “clusters” proportionally with the reason of their establishment (F. Corolleur, B. Pecqueur, 1999):

- **Non-Business Oriented Networks (NBON):** In the first type of “clusters” the enterprises are gathering all together in regular time interval to an organization or to a Chamber which established for this reason. The purpose of those meetings is the exchange of ideas, information and know-how between the enterprises. Also the enterprises formulate some demands to public organizations in order to have their support in subjects as education, technical support, infrastructures etc. Generally, these types of “clusters” point to the creation of collaborations with common services and functions with support from public institutions. Their final objective is the connection between all the enterprises of particular branch.
- **Business Clubs (BC):** In this type of “clusters”, mainly participated similar enterprises that have decided the accomplishment of a common activity. In this case there is not the will to connect all the enterprises of a branch and is hard for new enterprises to join the collaboration and of course the collaboration with

public organizations is impossible. With this certain mechanism are created for the members scale economies and an environment of accessible information.

- **Project Clusters (PC):** The purpose of this third type of “cluster” is the collaboration between enterprises in order to create an innovative product which production process is complicated and demands the contribution of different kind of enterprises. The number of the enterprises/members of a PC is small and the enterprises belong to different branch with additional operation. As a result, R&D is a joint process, that take part all the enterprises to have a successful result.
- **Industrial Districts (ID):** They are based on the geographic concentration of similar enterprises and often they are developed for strategies about local growth and it is necessary the creation of the three types of “clusters” that mentioned before. In this case we can have all kinds of collaboration in order to be succeeded the improvement of competitiveness of enterprises which are in the same region to have diffusion of information and innovation.

### 3.1.2. Networking

The “networks” of enterprises are usually collaborations at least of three enterprises and the purpose of this collaboration is their development through additionality in order to inter-cover the lacks of enterprises in resources and know-how. Networking is usually a team of enterprises that the coordinate their business relations with the contribution of conventions. Some times there are cases of networking that turn into clusters after a certain time period without have this purpose from the beginning. To establish a network the decision has been taken from one enterprise and as the leader of the idea tries to find other partners to collaborate for the success of this undertaking.

An enterprising network has five basic characteristics and these are the following:

Common strategy: The members of a “cluster” must have a common strategic target. This target is the achievement of maximizing the profits of each enterprise, the viability and the confrontation of competitiveness of the market.

Basic dexterities: Through the collaboration the enterprises are completing one to each other by offering their competitive advantage to the total result of the “cluster”.

In other words this process is relative with the additional value of each enterprise that is member of this particular collaboration.

Explicit deal: About this deal the most important clue that we must know is that there is no formal process. This deal might be a formal strict contract or even an informal oral agreement depending on the decision of the participating members.

Trust: According to the previous characteristic (explicit deal) we must to give emphasize to the trust between the members of the “cluster”. The most important is the common acceptance of the collaboration’s strategy and the lack of suspicious ideas according to the liability of the total profit for the viable future of each enterprise.

Technology: The spreading of knowledge and technology from one enterprise to another decreases the transaction cost and time, allowing by that way the effective operation of the “cluster”.

### 3.1.3. Clustering in comparison with Networking

As we already referred above clustering and networking are two types of enterprising collaborations and it is inevitable to have many common characteristics in their operation but also some important differences that make them two opposite significances. To start with the similarities the most important to be initially stressed is the interaction of the enterprises to achieve the aim of common profit and development. This form of collaboration is known in the literature with the name “win-win”<sup>1</sup>. To continue in the same direction must be referred also the common targets, the team spirit and above all the attendance of all the partners. Finally, there are in many cases of “networks” that after a certain time turned into “clusters”, which means the existence of strong bonds between those two enterprising collaborations. Sometimes, we meet in the market cases of simple collaboration between enterprises that under certain circumstances become “networks” and as we referred above they ended up in “clusters”.

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<sup>1</sup> A win-win situation, also called a win-win game or non-zero-sum game in game theory, is a situation by which cooperation, compromise, or group participation leads to all participants benefiting. The term can be applied to many aspects of daily living, and it is contrasted to the zero-sum game or win-lose situation, where the dominant factor is that at least one person wins while another loses (R. McCain “game theory”).

Despite the similarities we refer above between the two collaborations there are also exist certain dissimilarities that give in each concept the special attribute that characterizes it. From the one hand, “clusters” have no determined number of participants and the enterprises are making available in the market competitive products/services. The main body of the enterprises is collaborating directly with other supportive institutions like universities, inquiring institutes etc. The most valuable component to be successful a “cluster” is the partnership between the enterprises and their equivalent attendance. Also the relationships between the partners are horizontal and all of them are take part in small scale in processes like transportation, promotion, R&D, storage other staff like that. On the other hand, networks have limiting number of members-partners and from the beginning of this collaboration the actions of each enterprise are determined and more complicated. More specific we can say that those actions are not feasible for a SME as unit. Also the enterprises are just members of a team and they have no initiatives such as the relations between them are totally rating and determined in any kind of process. The next table (Table 3.1.3.) mentions some special particular characteristics about “clusters” and “networks”.

Table 3.1.3.: Special characteristics about Clusters/Networks

Clusters	Networks
Equivalent attendance of the partners	Rating and determined relations between partners
Non specific number of partners	Predetermined number of partners
The products/services are competitive	The products/ services are additional
Included other enterprises that provide their services to the “cluster” and do not belong in this	All the enterprises are in the same sector of production
The general objectives can differ from those of individual enterprises	The general objectives are the same with those of individual enterprises

(Own Processing)

### 3.2. Existing situation

The productive structure of an economy, determines to a great degree its prospects for development while the importance of each sector is depending on different factors according to the phase of its growth. An economy needs all the sectors to be strong and completed, although the most contemporary and developed are these with competitive secondary (agriculture, stockbreeding and fishery) and tertiary sector of production (energy, manufactures). The primary sector is the base of the economy but is not enough to be the sovereign sector to develop a competitive and efficient result.

The enterprising total in the Region of Thessaly is characterized as precisely it happens in its entirety of the country, from a lot of very small, small and intermediate enterprises that most times have familial or individual structure. Basic characteristic of this type of enterprises constitutes their propensity to retain the cost in low levels and not the undertaking of investment danger with high risk and as a result they have limited growth of turnover, difficulty of follow-up the technical and technological developments but also the weakness of exploitation of presented investment occasions.

The region of Thessaly includes the prefectures Karditsa, Larissa, Magnesia and Trikala. Thessaly is the third region in population in Greece (2000) and produces the 14,2% of the national rural production, the 6,5% of manufacturing production and 5,2% of services. The 1/5 of its product emanated from the agriculture in 1990, percentage that was lightly limited in the 18,6% in 1998. More than the 80% of total exports by Thessaly is constituted by 6 products (Foods, Vegetables and associated products, Caoutchouc and relevant, Cotton, Clothing and associated products). In the products caoutchouc, clothing and clothing except knitted is observed diachronically reduction of indicators above 20% while is increased the indicator of cotton at 29% (Operational Scheme of Clusters/Enterprising Networks Configuration with Decision and Attendance of Collective Institutions as Well as Operation of Local Pacts of Quality (Geographic or with Thematic Approach), ABCDevelopment, February 2008).

The region of Thessaly is located in the centre of Greece and is traditionally a rural region, with the Thessalian plain to constitute the heart of Greek agriculture. A big department of rural production of our country is produced in Thessaly. In Thessaly according to the primary production has been developed an important economic and industrial activity which covers the entire sector of inmates, from the production to the consumption. It is important to refer that the tertiary sector presents the highest levels of growth in the region. The branches with the higher importance are these of the agriculture, the transformation of agricultural products, the branch of furniture, textile, agricultural instruments and services of support primary sector, the tourism and the branch of metals and heavy metal manufactures.

The branch of inmates from the production up to the transformation constitutes for the region of Thessaly the most important economic activity with serious repercussions in the employment of the region.

The next two tables (Table 3.2.a. and Table 3.2.b.) present the contribution of the prefecture in the GNP of each sector and the contribution of each sector in the GNP of the prefecture, for the years 1991 and 2001, respectively.

Table 3.2.a.: contribution of the prefecture in the GNP of each sector and the contribution of each sector in the GNP of the prefecture (1991)

Geographic unit	Primary sector				Secondary sector				Tertiary sector			
	National percentage of attendance		Unit's percentage of attendance		National percentage of attendance		Unit's percentage of attendance		National percentage of attendance		Unit's percentage of attendance	
Greece	100,0		13,47		100,0		28,52		100,0		58,01	
Thessaly	10,83	3	26,16	3	6,52	4	30,31	7	5,33	3	43,53	10
Magnesia	2,00	22	12,97	42	3,05	7	41,91	4	1,43	8	45,12	34
Larissa	4,12	2	23,30	15	2,14	8	25,65	20	2,16	6	51,05	36
Trikala	1,49	25	20,60	24	0,69	28	20,05	36	1,01	21	59,35	19
Karditsa	3,22	11	36,29	1	0,64	32	15,22	50	0,73	28	48,49	43

(Source: EL.STAT. 1991)

Table 3.2.b.: contribution of the prefecture in the GNP of each sector and the contribution of each sector in the GNP of the prefecture (2001)

Geographic unit	Primary sector				Secondary sector				Tertiary sector			
	National percentage of attendance		Unit's percentage of attendance		National percentage of attendance		Unit's percentage of attendance		National percentage of attendance		Unit's percentage of attendance	
Greece	100,0		6,38		100,0		19,03		100,0		74,59	
Thessaly	16,47	2	16,00	1	6,58	5	18,87	6	5,19	4	65,13	9
Magnesia	3,22	12	11,16	24	2,38	9	24,61	8	1,59	9	64,23	42
Larissa	6,56	1	17,02	13	2,96	8	22,91	14	1,98	6	60,07	41
Trikala	3,13	14	20,22	7	0,66	25	12,62	34	0,89	21	67,16	27
Karditsa	3,56	8	25,82	2	0,58	28	12,61	36	0,73	30	61,57	35

(Source: EL.STAT. 2001)

### Analysis

To begin the analysis with the indicators about Greece we can say that it has developed in an economy that provides services. In 2001, the primary sector participates in the configuration of GNP only at 6,38%, secondary participates at 19,03% and tertiary, which is considerably bigger, dominates in the economy with percentage 74,59%.

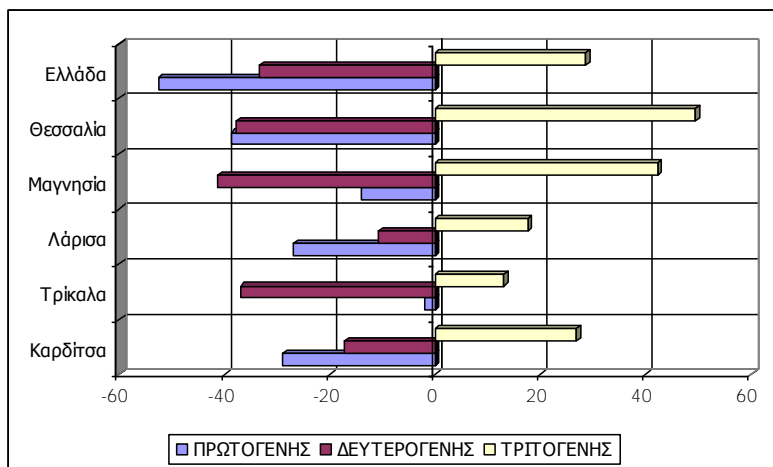
To continue our analysis with the region of Thessaly we have to refer that it produces the 16,47% of total national production of the primary sector. Simultaneously it produces the 6,58% of national production of the secondary sector and the 5,19% of the tertiary sector in national level also. The composition of GNP of Thessaly is also interesting to be analysed. The primary sector participates in the configuration of regional GNP with 16,00%, secondary participates with 18,87%, while tertiary (65,13%) is of course smaller in relative terms from the total of country. The first two percentages are enough high according to the national percentages.

The general tendencies of the above analysis can be more evident with the help of the following diagrams (Diagram 3.2.a. and Diagram 3.2.b.). They depict the changes in GNP of the sectors of the prefectures. In period 1991-2001, the percentages of the primary and secondary sector about production were also decreased in the four Prefectures of Thessaly and as a result the tertiary sector increased.

The region of Thessaly increases its contribution in the product of the primary sector of production despite that the contribution of the sector in this is decreased. This is caused because of the reduction of the primary product of the country with higher

rates than those of the Region (at period 1991-2001). Increase is also observed in the contribution of the Region of Thessaly in the product of the tertiary sector of the country while the contribution of sector in the Region is increased with higher rates than this of the country. In the secondary sector, the contribution of the Region of Thessaly is decreased while the product of sector records bigger reduction in the Region that in the country.

Diagram 3.2.a.: Depicts the changes (%) of the contribution of the three sectors of production in the product of Greece, Region of Thessaly and the Prefectures of Magnesia, Larissa, Trikala and Karditsa (1991-2001).



(Source: EL.STAT. 1991, 2001)

Diagram 3.2.b.: Depicts the changes (%) of the contribution of the Region of Thessaly, and of the Prefectures of Magnesia, Larissa, Trikala and Karditsa in the total product of the three production sectors (1991-2001).

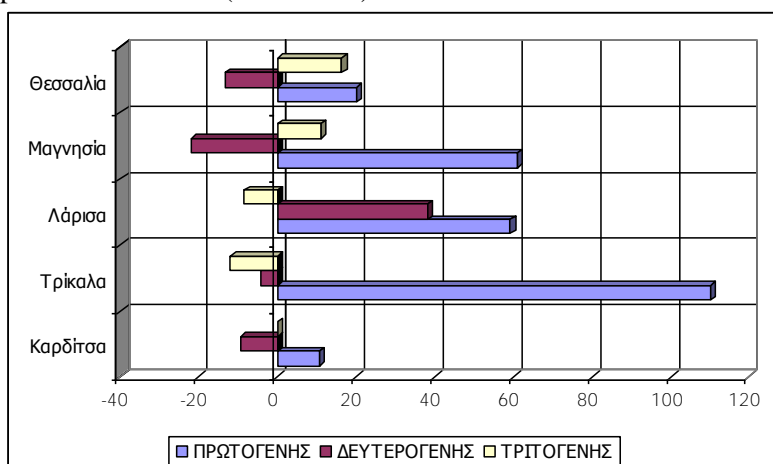


Diagram 3.2.b

(Source: EL.STAT. 1991, 2001)



### 3.2.1. The production sectors

#### 3.2.1.1. Primary sector

The primary sector is still an important factor for the Region of Thessaly and for every prefecture individually as it has high levels of employment and contributes significantly in raw materials important for the procedure of transformation. The plain of Thessaly is the comparative advantage of this Region and follows the adaptability of producers in the new developments of technology and the changes of the market. For the last 10-15 years statistics depict this situation in the Region about the primary sector as the increases so in the bulk of production as in the structure of cultures are significantly high. Those changes are real important if someone thinks that Agriculture has distinguished importance as it participates in the primary sector with a percentage of 66%.

#### 3.2.1.2. Secondary Sector

The secondary sector is the most interesting in this analysis as it is immediately related with the enterprises and constitutes the sector of the raw materials' transformation. Larissa and Magnesia are the two Prefectures with that assemble a representative number of enterprises of the secondary sector and the most of them are in the Prefecture of Magnesia. However, the small productive units and mainly familial which function is in the traditional branches are scattered in Thessaly and mainly in the big urban concentrations and in the road axes.

These two Prefectures had high levels of development and through the years this development was in recession and its consequences were perceptible. It is remarkable that deindustrialization period has begun to be reversed and to be replaced from a climate of retained but real optimism for the prospects of the industry in this Region. This optimistic result is based on the powerful sector of the private investments that exists in the Region of Thessaly and on its ongoing development.

The industrial base of the Region of Thessaly includes three kinds of activities: (a) industries that are installed in the Region, due to adjacency with raw materials, (b) units directed in the internal market but also in the markets of abroad, mainly in Europe and Balkans and (g) industries that were installed in the Region due to geographic or other advantages (like the harbor of Volos, and the workforce of each region), but do not have relation with the local markets of raw materials or the final products. About the categories (a) and (b) the future of their development can be more predictable than this of the enterprises of category (c). The changes that should be expected in the production of the primary sector will create new possibilities of transformation about products, mainly in the agriculture sector, while the internal and external demand grows with corresponding prospects for the units with the same characteristics.

### 3.2.1.3. Tertiary sector

As we referred before the tertiary sector is in great development in countries where the rates of growth are high and have strategic role in the global market so it is important to promote this sector more than it is in the present period. Given the strategic role of these services, it will be necessary to be supported by any means as with the European Programs or with other national developing programs and policies. The University of Thessaly and mainly its technological environment constitutes an important pole of benefit with the productive services that offers to the enterprises, however is in need of supportive enforcement.

Beyond the University of Thessaly that has important inquiring activity, there is also in Thessaly an Educational Technological Institution and a significant number of inquiring centers and institutes. These are hopeful signs for a future development in the tertiary sector and can also be verified with the help of statistical data. This kind of change for the Region of Thessaly from a traditional rural region in sector of services is matter of fact according to the data of the Statistical Service for the year 2005. The Gross Added Value (GAV) from the rural production was decreased at 1,4% concerning 2004 and on the contrary was increased the GAV in the secondary sector (manufacture - industry) at 4,8% and in tertiary (services) at 7,4%.

### 3.2.2. Phases of evolution

The disparities that confronted by the enterprises and the sectors that they belong can be solved with some simple but methodical actions. For the confrontation is about essential importance the training of businessmen in the objects of modern methods of management for the enterprises but also the promotion of policies that will encourage the collaborations of all levels between similar or additional enterprising activities. Those actions are expected to improve considerably the observed in the present weakness of exploitation of executives and resources but mainly the lack of strategic planning so much in local as also in regional level. In the local market the “clusters” and the “networkers” are developed mostly between enterprises of the primary sector and only in specific branches. The results of this undertaking are satisfying and this could be very hopeful as it can be applied with the same success and to the other two sectors of production under certain circumstances and with the collaboration of all the enterprises.

The lack of collaboration is obvious in the “Clusters” and in the “networks” in many functions like the organization of sales of each branch but also in the limited possibilities for activities of projection and promotion in local and international market. Moreover this lack of collaboration causes problems in the most important sector of distribution of products but also in the effective available supply to the local costumers and not only from the services enterprises of Thessaly. Except collaboration the enterprises have to solve the problem with the lack of the specialized personnel or the suitable and on time training of the already existing personnel. This situation is very common in the Greek market and intensified by the fact that the action at this way, are fragmentary and individual, which makes difficult the adaptation of this knowledge from the workforce and much more from the unskilled workers. However, there is a variety of programs by Regional Institutions capable to enforce this lack of skills but therefore the enterprises are not able to ask this kind of support and the results are not so encouraging. Those problems had to do with level that the enterprises of some branches correctly setting up in their operations.

More analytical for some branches that have perspectives and the interest to be developed by exceeding these problems are referred below:

The branch of clothing is an important factor for the economic development of the Region of Thessaly. The branch is constituted by units of small and medium size and they have vertical production process in large scale. Its main characteristic is the big number of involved institutions so much in the production process as well as and in the marketing process. Moreover, the most important factor for the branch of clothing is its labor intensity character, fact that can cause huge problems in its development when there are changes in the labor market. As a result this dependence from the labor cost affects considerably the competitiveness of branch. Thus, the differentiation of working cost remains a decisive factor for the geographic distribution of production, as the big enterprises of clothing seek continuously bases for their production of lower working cost.

Under the pressure of the labour cost, the local industry of clothing was forced to turn itself in actions that would allow it to maintain its competitive character. The solution of the problem was found partially in countries of Balkans that offered a big productive base with the benefit of low cost. Already a big number of enterprises have transported all intensity of their activities (seam-packing), in the neighbouring Balkan countries, while their number is increased continuously.

The activated enterprises and manufactures of Thessaly present themselves to use modern mechanical and other staff of equipment and they are in the centre of the international changes. However, powerful disadvantage constitutes the fact that in the management and the distribution of their products they use traditional methods, giving by this way minimal or none attention in the modern developments and processes for the projection and distribution of clothing. Systems as the networks of telecommunications, the automated systems of delivery and order and the removed via network service of customers is almost completely absent. Finally, as we reported above small infiltration and acceptance present the new and modern techniques of choice and planning out strategic as well as the processes of administration.

In the branch of furniture Thessaly presents the highest concentration of enterprises. Specifically the prefecture of Larissa afterwards Attica, is the second prefecture in national level of number of industries of manufactures branch. The overwhelming however majority of enterprises is kind of familial form and the survival substantially is supported in the long lasting personal employment of businessmen, members of their families on the one hand and in care about their high quality of their products on the other hand. However the branch with the most powerful pressures in each negative economic situation is that of furniture and the present phase (economic crisis) it could not constitutes exception. Of course all the negative repercussions of this situation will strengthen the tendencies of collaborations between the enterprises and the development by that way of “clusters” and “networks”.

The existing situation of enterprises in the Region of Thessaly encounters also problems and in the sector of sales management. In Thessaly are not presented powerful networks organized in such a way that they promote in great quantities the sales per branch or group of companies. This fact comes as result of incomplete collaboration between the enterprises of the same branch but also due to problematic communication and suspiciousness between the enterprises of institutions of Research and Technology and institutions of mapping out of policy and strategy (Management). The strategy of the enterprise about sales is up to the businessman’s perception, without a certain plan of organization and promotion of them. More specific the enterprises are lack in specialised personnel to coordinate the system of sales of the enterprise to the internal and external market.

This phenomenon in the past few year of course tends to decrease while has entered in the market a new generation of executives which have knowledge about the modern forms of communication and briefing, that can develop in important degree the advantages that this developments offer to them. Remains however, questioning the effective connection between need and enterprising solution, while a lot of traditional enterprising structures but also methods are in force. According to what we refer above the reception of correct enterprising solution impends considerably the activated entrepreneurs in the region, fact which many times over compensates completely the advantage of the proximity to raw material of and the traditional knowledge and the creative art that is required for the production of products of a certain branch.

The enterprises owe to watch closely all the changes that concern them so that they correspond in challenges while simultaneously they should focus their attention in the growth of basic and general enterprising tools as also of specialized dexterities. In the present the bulk of enterprises in the Region do not seem to develop the suitable tools of marketing and promotion of sales insisting by this way in traditional methods and techniques that offer in the growth of sales of Region. Finally the enterprises owe to exploit the big reservoir of modern worked out executives that offers to them the existence of third degree faculties in the region and to create the suitable channels of communication and their interaction.

### 3.3. European Programs and financing sources

#### The financing process about clusters

To be established a “cluster” is necessary to be financed in order to have the desirable results for its development and viability. The financing sources of a “cluster” come from its enterprises, the State and financing organizations. The State support the “clusters” clusters in the phase of establishment and development usually for a certain time period and in the phase of its operation for another extra time period. This financing help is important for those types of collaboration in order to be succeeded in the future the possibility to be financed the “cluster” for its own enterprises. It is remarkable that is a very difficult undertaking and requires any kind of support from exterior factors at the duration of its foundation by any mean.

As we refer above the enterprises/members are in charge for the regular operation of the collaboration and those that take care of her resources during its operation. This is achieved with the payment of syndromes by the side of enterprises that have been fixed joint and the financing sums are concrete for all of the members. Also it is anticipated that the brawny enterprises can sponsor by their will the action of the “cluster” to be succeeded the effective operation of the collaboration and of course its viable future. Consequently it is obvious that the collaborations with the largest number of members have so much higher income which emanates from them.

The financing process of third parts that does not belong in the collaboration is described below and it is relative with programs that take place in national level and developing proper funds as also European in their biggest part. The types of programmes that will be analyzed are Regional Operation Programmes (ROP), Sectoral Operational Programmes (SOP) and European Territorial Cooperation Programmes (ETCP).

### 3.3.1. Regional Operation Programme of Thessaly 2007-2013 (ROP)

The ROP of Thessaly is a part of the ROP for the Regions of Thessaly, Mainland Greece and Epirus. The program has a budget of 1,823 billion € and for each administrative region it as follows:

Thessaly: 604.285.714 € or 33,1% of the total.

Mainland Greece: 734.000.000 € or 40,2%of the total.

Epirus: 485.000.000 € or 26,6% of the total.

From the above Total Public Expenditure 1,105 billion € represents the Community funding.

Thus, within the period 2007-2013, the design of the ROP aims at:

Improving competitiveness, openness, quality and innovation capacity of enterprises

- improving accessibility
- the development of human resources
- the sustainable management of natural and built environment and natural resources
- strengthening intra-regional economic and social cohesion
- strengthening of interregional cooperation
- the development of tourism and culture for sustainable development and
- the promotion of digital convergence ([www.espa.gr](http://www.espa.gr)).

The developmental strategy of the ROP of Thessaly, Mainland Greece and Epirus and its reliable application are considered that will contribute decisively in the viable growth of the Region and in its real convergence with the European means. The application of the previous strategy has as basic restriction the availability of resources. For this reason and in the base of terms that it places national and European planning in the frames of Operational Program of Thessaly, Mainland Greece and Epirus have been determined its axes of priority, the main parts of intervention as well as the specialized action.

According to the Region of Thessaly the Strategic Objective and the vision for period 2007-2013 are the acceleration of its real convergence, space and social cohesion and viability via its appointment in Dynamic Regional Pole of Greece with distinguishable qualitative and technologically innovator manufacturing, agriculture, ecotourism and cultural identity in Europe but also internationally. The general objectives of developmental strategy of Region of Thessaly it concerns the economic convergence with the EU in a period of the next 15 years, the viable growth and the reinforcement of the social and territorial cohesion.

The General objectives of Developmental Strategy of Region Thessaly are the following eight:

1. Prove the competitiveness, extroversion, quality and innovative nature of enterprises
2. Extend and upgrade intraregional and trans-regional infrastructures
3. Improve human capital
4. Sustainable management of natural and structured environment and natural resources.
5. Strengthen intraregional economic and social cohesion
6. Strengthen intraregional cooperation
7. Utilise tourism and culture for viable growth
8. Promote digital convergence ([www.espa.gr](http://www.espa.gr)).



These eight General Objectives will be achieved through actions that are to be implemented within the frame of twelve (12) priority axes and only those that are bolded (axes 1, 4, 7, 10) are for the Region of Thessaly:

- 1. Accessible infrastructures and services in Thessaly**
2. Accessible infrastructures and services in Mainland Greece
3. Accessible infrastructures and services in Epirus
- 4. Sustainable growth and quality of life in Thessaly**
5. Sustainable growth and quality of life in Mainland Greece
6. Sustainable growth and quality of life in Epirus
- 7. Digital convergence and entrepreneurship in Thessaly (7.1. Entrepreneurship, competitiveness and innovation and 7.2. Digital convergence of priority axis)**
8. Digital convergence and entrepreneurship in Mainland Greece
9. Digital convergence and entrepreneurship in Epirus
- 10. Technical assistance in the region of Thessaly**
11. Technical assistance in the region of Mainland Greece
12. Technical assistance in the region of Epirus ([www.espa.gr](http://www.espa.gr)).

From the above four (4) axes of the Region of Thessaly this which refers to the SME is the one about the ‘Digital Convergence and Entrepreneurship in Thessaly’ and its analysis about the actions that take place in this sector is the following:

Entrepreneurship, competitiveness and innovation include the actions below:

- The enforcement of technology and know-how haulage and the technological modernization of SME. Innovative Action and services of Improvement of Competitiveness of SME. The action aims in the support of technological level of SME of the Region. The technological modernization of enterprises might be achieved via the replacement of existing equipment or via haulage of know-how, but also via upgrades of existing equipment. The transfer of technology and know-how can become also via the use of patents but also via the provisional presence of special experts in the interior of the enterprise. Also, the action supports the processes, mechanisms and technologies that are essentially in order to an enterprise checks and watches effectively and economically the development of the whole production, ensuring thus the quality of products and the reductions of cost.

- Private Investments of raw materials Transformation. The main objective of the action is the enforcement of investments of the enterprises of the private sector via financing motives. It is remarkable that the accent will be given in enterprises of branch with competitive advantages for the region, as well as in innovative enterprising schemes and in schemes of application of modern and new technologies.
- Enforcement of investments in dynamic branch of services and trade. Objective of this action is to strengthen new investments but also finances the modernization and improvement of enterprises in dynamic sectors of services (services of information technology and communications, research and growth, financing, services of support of enterprises, editorial, health, education) but also trade.
- The promotion of Thessaly as place of investments and production as well as energies of promotion of extraversion of its enterprises. Regional Pact of Quality, export clustering. The objective of the action is the creation of a Pact for the promotion and qualification of the products and services of Thessaly in regional level.
- Interstate and transregional collaborations in order to succeed the Extraversion of the enterprises and organisms of Thessaly. In this action are included the enforcement of cooperation and consortia between enterprises, the creation of mixed enterprises, the common research, the transfer of technology and know-how, the distribution of good practices mainly in the agriculture sector, the international networking and collaboration of inquiring units of Thessaly, organisms of certification and much more.

Digital convergence of priority axis includes the actions below:

- The growth and exploitation of digital content with important local added value. Growth of services and applications Information and Communication Technology (ICT) that cover local needs of transactions [Business to Consumer (B2C), Business to Business (B2B)], exploitation, completion and exploitation of digital cultural - tourist content (B2C, B2B), exploitation and disposal of information of public interest, applications ICT on information, recording and representation, creation of tools for projection and distribution of cultural elements etc. Promotion of innovative products in the local market.

The import of ICT in the Private sector with accent in the local characteristics. The modern technologies in the sectors of Information and Communications (e.g. completed networks of communications, internet, systems of telematics<sup>2</sup>, bases of data, GIS) are decisive tools for the organization and operation, but also for the decision-making process.

### 3.3.2. Sectoral Operational Programme (SOP) “Competitiveness and Entrepreneurship”

The Operational Programme “Competitiveness and Entrepreneurship” details the strategy for the reinforcement of competitiveness and outward oriented entrepreneurship of the Greek economy in the framework of the overall National Development Strategy for the new period 2007-2013. It is calculated that the strategy that is adopted and the ways of intervention that are determined in the Program will have positive effect in the competitiveness, extroversion and business dexterity in Greece and will ensure positive developmental results for the total of Greek economy. The OP provides funding to the eight (8) “Convergence” Objective Regions (Thessaly is one of them), with the contribution of the European Regional Development Fund (ERDF).

The central development objective of the Competitiveness and Entrepreneurship OP for the period 2007-2013 is “the improvement of the competitiveness and outward orientation of the country’s enterprises and production system, with special emphasis

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<sup>2</sup> Definition: Telematics is any integrated use of telecommunications and informatics. Some types of these uses are the following; the use of controlling remote objects, the use in automotive navigation systems and in other referred uses.

on the dimension of innovativeness.” The central development objective consists of three (3) strategic objectives:

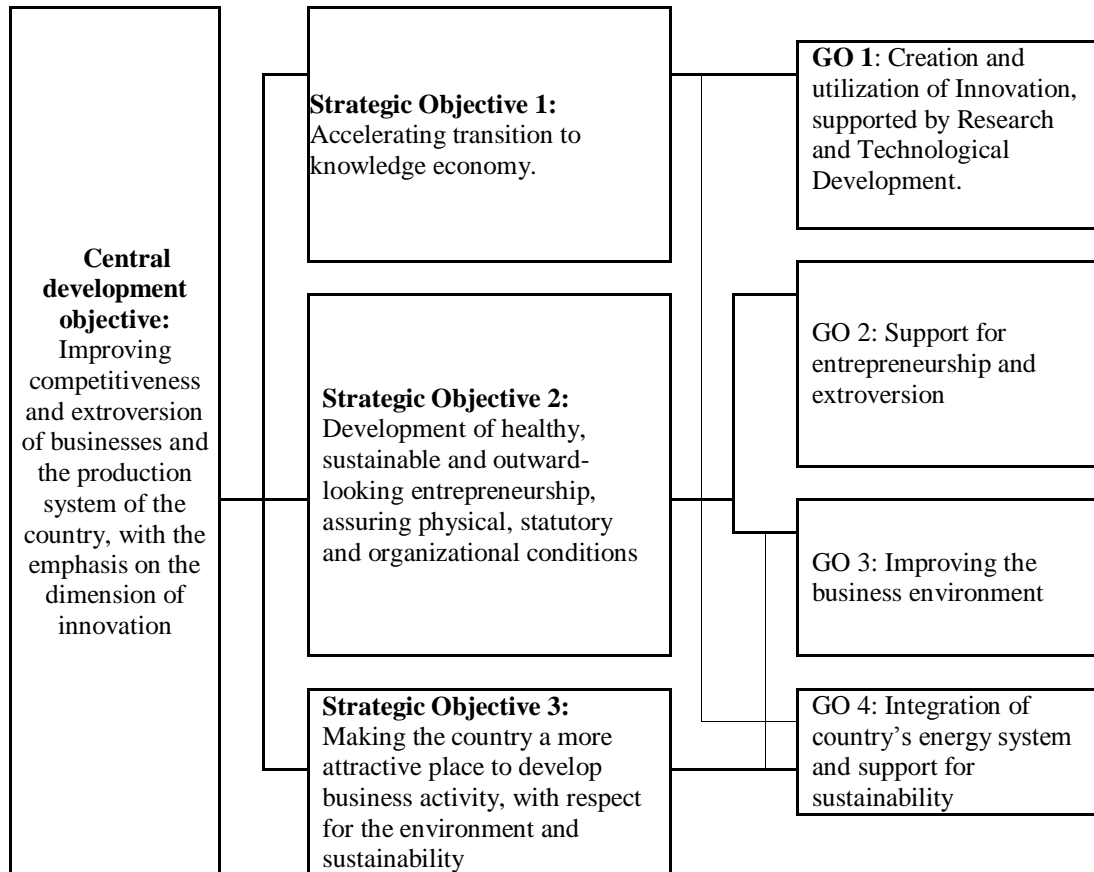
- Acceleration of the transition to the knowledge economy.
- Development of healthy, sustainable and outward-oriented entrepreneurship and securing the natural, institutional and organisational conditions that will allow it to flourish.
- Reinforcement of the appeal of Greece as a hub of business growth, with respect towards the environment and sustainability.

The Strategic Objectives of the OP are more narrowly defined in the form of 4 General Objectives, which respectively correspond in operational terms to the four thematic Priority Axes of the OP, which result from the sectoral synthesis of the object of the Programme:

- Intervention in the sector of Research and Innovation
- Intervention in the sector of entrepreneurship
- Intervention in the sector of support for the business environment and
- Intervention in the sector of energy supply as a condition of achieving better competitiveness.

The links between Central, Strategic and General Objectives are presented in the diagram below:

Diagram 3.3.2.: Links between Central, Strategic and General Objectives



(Source: Own Processing)

The operational Program for the Competitiveness and Business dexterity includes five (5) axes of priority. Only the axes (2) and (3) are important for our analysis and we can see the content of those axes.

- Priority Axis 1: “Creation and utilisation of Innovation supported by Research and Technological Development”.
- **Priority Axis 2: “Reinforcement of entrepreneurship and extroversion”.**
- **Priority Axis 3: "Improvement of entrepreneurial environment”.**
- Priority Axis 4: “Completion of the country’s energy system and reinforcing sustainability”.
- Priority Axis 5: “Technical Assistance” ([www.espa.gr](http://www.espa.gr)).

More specific about Priority Axis 2 know that its actions are foreseen in support of the modernisation of enterprises, the promotion of business collaboration and networking, reinforcement of special forms of tourism, promotion of private initiatives in the culture sector, business excellence, support towards specific population groups for their entrepreneurial development, etc. also wants to succeed the increase of productive investments and surges of Foreigner Direct Investments and in the general qualitative upgrade of offered products and services in all the sectors and branches of Greek economy.

Indicative actions of Priority Axis 2:

The interventions of Axis concern in action of enforcements with basic direction the growth of business dexterity and the improvement of competitiveness and extroversion of enterprises and productive system. In the frame of action of Axis particular accent will be given in the aid of SME as basic tool of support of competitiveness and employment. The axis includes indicatively actions for the enforcement of enterprises about their modernization and upgrade:

- Completed Enterprising Plans to support the productive investments that contribute in:
  - the enforcement of presence of Greek enterprises in domestic and the international markets,
  - the interconnection with international completed systems of production,
  - The growth of permanent collaborations between Greek and international enterprises standardization and certification of products and services, with the adoption of internationally recognized qualitative models, the growth and commercial establishment of logos etc.

The enterprising Plans targeting mainly in:

- the upgrade of intermediate enterprises that faces the problem of expansion,
  - The upgrade in the branch of higher added value and/or upgrade to higher added value in the “traditional” branch.
- Collective Enterprising Plans of enforcement of enterprising “clusters” and “networks” that contribute in:
    - The growth of collaborations and extension of “networks” of industry and trade services.

Indicative actions of Priority Axis 3:

According to the Strategy of Priority Axis 3 the existence of a suitable and healthy exterior environment to support the business dexterity constitutes the most important factor for the enforcement of competitiveness and business dexterity and reduction of enterprising danger. The indicatively actions of this Priority Axis are the following:

- Development of a united and network system of structures to offer support to the business dexterity, production of strategic information in the problems of the market, technological mediation/promotion and diffusion of innovation.
- Actions for the promotion of products and services: completed Programs to support the strengthen of Greek products in international networks with collective way, that contributes in the organized projection of systems of SME, in the enforcement of presence of Greek enterprises in domestic and international markets and in the exchange of experiences.

### 3.3.3. European Territorial Cooperation Programmes

#### 3.3.3.1. Transnational programs

- Program of Mediterranean Space (MED)

The MED is a transnational programme of European territorial cooperation and continues the tradition of the European programmes for territorial Cooperation co-funded by the European commission. It includes the whole Northern Mediterranean seacoast. Its priority, as determined by the new 2007-2013 period aim at strengthening the European competitiveness through Regional competitiveness, employment and sustainable development. Its priorities are:

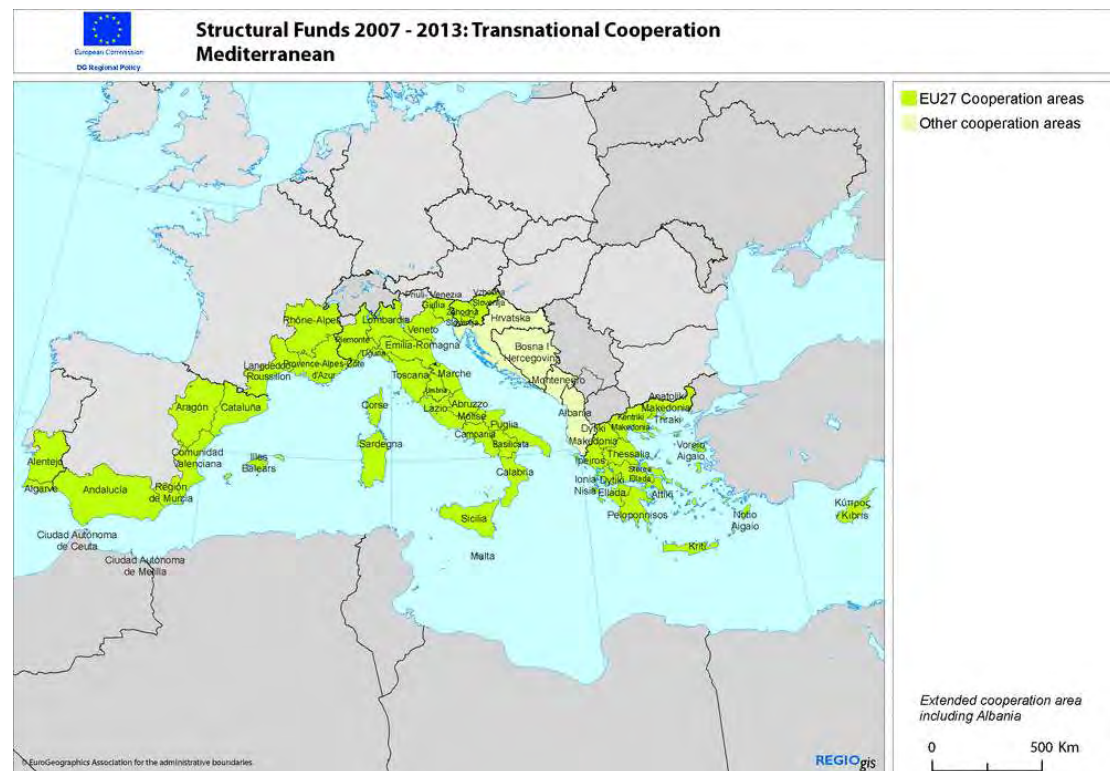
- To improve the area's competitiveness in a way that guarantees growth and employment for the next generations (Lisbon strategy).
- To promote territorial cohesion and environmental protection, according to the logic of sustainable development (Goteborg strategy).

The programme MED has defined specific priorities, an eligible space and implementing structures, especially Joint Technical Secretariat (JTS).

Eligible regions constitute Greece (the entire country), Cyprus (the entire country), Spain (6 autonomous regions - Andalusia, Aragon, Catalonia, Balearic islands, Murcia, Valencia - and the two autonomous cities - Ceuta and Melill), France (4 regions - Corse, Languedoc-Roussillon, Provence Alpes Côte d'Azur, Rhône-Alpes), Italy (18 regions : Abruzzo, Apulia, Basilicata, Calabria, Campania, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Liguria, Lombardy, Marche, Molise, Umbria, Piedmonte, Sardinia, Sicily, Tuscany, Veneto.), Malta (the entire country), Portugal (2 regions - Algarve, Alentejo), United Kingdom (1 region of economic programming - Gibraltar) and Slovenia (the entire country). The attendance, in the program from other regions is possible, but limited. The figure (Figure 3.3.3.a) below depicts the Regions that take part in this territorial European Programme.



Figure 3.3.3.a: Structural Funds 2007-2013, Transnational Cooperation Mediterranean



(Source: [www.programmedeu.eu](http://www.programmedeu.eu))

### Priority Axes and Specific Objectives

There are four (4) Priority Axes that have the MED programme and each axis is composed of several specific objectives as we can see below:

#### Priority Axis 1: Strengthening innovation capacities

- Objective 1.1: Dissemination of innovative technologies and know-how.
- Objective 1.2: Strengthening strategic cooperation between economic development actors and public authorities.

#### Priority Axis 2: Environmental protection and promotion of a sustainable territorial development

- Objective 2.1: Protection and enhancement of natural resources and cultural heritage.
- Objective 2.2: Promotion of renewable energies and energy efficiency improvement.

- Objective 2.3: Maritime risks prevention and strengthening of maritime safety.
- Objective 2.4: Prevention and fight against natural risks.

Priority Axis 3: Improvement of mobility and of territorial accessibility

- Objective 3.1: Improvement of maritime accessibility and of transit capacities through multimodality and intermodality.
- Objective 3.2: Support to the use of information technologies for a better accessibility and territorial cooperation.

Priority Axis 4: Promotion of a polycentric and integrated development of the MED space

- Objective 4.1: Coordination of development policies and improvement of territorial governance.
- Objective 4.2: Strengthening of identity and enhancement of cultural resources for a better integration of the MED space ([www.programmemed.eu](http://www.programmemed.eu)).

- Program of South-Eastern Europe (SEE)

The purpose of the programme is to achieve a common understanding amongst a large number of programme partners. The SEE Programme aims to develop transnational partnerships on matters of strategic importance, in order to improve the territorial, economic and social integration process and to contribute to cohesion, stability and competitiveness of the region. The SEE Transnational Cooperation Programme 2007 – 2013 is characterised by the integrated use of Structural Funds, the Instrument for Pre-accession Assistance and the European Neighbourhood and Partnership Instrument.

The participants at the SEE Programme are eight (8) states of EU (Italy, Austria, Hungary, Slovakia, Slovenia, Romania, Bulgaria, Greece), as well as Moldavia, Croatia, Serbia, Montenegro, Bosnia and Herzegovina, Albania, FYROM and Ukraine (there is no figure to depict the areas that take part the programme that analyzed above).

To continue with the Objectives of the SEE Programme we will first examine the global Objective. The global objective of the SEE Transnational Programme is “the improvement of the territorial, economic and social integration process and

contribution to cohesion, stability and competitiveness through the development of transnational partnerships and joint actions on matters of strategic importance”.

This global objective is supported by three Specific Objectives, which aim at:

- facilitating innovation, entrepreneurship, knowledge economy and information society by concrete cooperation action and visible results;
- improving the attractiveness of regions and cities, taking into account sustainable development, physical knowledge accessibility and environmental quality by integrated approaches and concrete cooperation action and visible result;
- fostering integration by supporting balanced capacities for transnational territorial cooperation at all levels.

The global Objective and the Specific Objectives are accompanied with five (5) Priority Axes:

- Priority Axis 1: Innovation,
- Priority Axis 2: Environment,
- Priority Axis 3: Accessibility,
- Priority Axis 4: Sustainable Growth Areas and
- Priority Axis 5: Technical Assistance.

The Programme in order to be efficient and have successful results has some transnational and national bodies responsible for the management and implementation of the SEE Transnational Programme and those are the following:

-Monitoring Committee (MC)

The overall tasks of the MC are to ensure the quality, effectiveness and accountability of the programme operations, and to select projects for funding.

-Managing Authority (MA)

The MA has the overall legal responsibility for the management and implementation of the SEE OP.

-Certifying Authority (CA)

The main tasks of the CA are to draw up and submit to the Commission certified statements of expenditure and applications for payment and receive payments from the Commission.

*-Audit Authority (AA)*

The AA is responsible for the tasks set out by article 62 of the Reg. (EC) 1083/2006. The Audit Authority is assisted by a Group of Auditors comprising of a representative from each of the Member States participating in the Operational Programme. Candidate and Potential Candidate Countries are not required to participate in the Groups of Auditors. However, they may send an observer in order to gain experience in this field.

The AA and the auditors appointed in the Transnational Group of Auditors shall be independent of the management and control system of the programme.

*-Joint Technical Secretariat (JTS) :*

The JTS is an internationally staffed management unit which is in charge of the daily management of the programme. It supports the Managing Authority, Monitoring Committee and Audit Authority in programme coordination and implementation.

*- SEE Contact Points (SCP)*

SCP are formed and organised in each partner state, which facilitate the effective representation the programme in each SEE Programme country and supports the development of potential transnational projects.

*-National Coordination (NC)*

Each partner state establishes a NC or corresponding national procedures in accordance with its institutional structure. This facilitates the involvement of regional and local authorities, relevant sectoral authorities and institutions, non-governmental organisations and any other socio-economic and institutional partner considered relevant by the concerned partner state. NCs are not entitled to pre-select project applications, as project selection is reserved for the Monitoring Committee's consideration.

### 3.3.3.2. Interregional Programmes

The Interregional Cooperation Programme enables cooperation between regional and local authorities from different countries in the EU.

- INTERREG IV C

More specific INTERREG IV C is a program of cross-border collaboration, which is focused on issues of the agenda of Lisbon and Gothenburg. Through the program are promoted the initiative and the European regions come in contact developing by this way powerful collaborations. Two are the types of interventions that are forecasted in the frame of INTERREG IV C: (1) work of “regional initiative”, that is focused in the exchange of experiences and transport of equitable practices and (2) work of “capitalisation” in which is included the work of “rapid concretisation” for most optimal transport of results and equitable practices in the current programs.

The Strategic Objective of the programme is defined as the:

- Improvement, of the effectiveness of the regional development policies in the fields of innovation, finance, knowledge based economy, environment and risk prevention, through the inter-state cooperation as well as
- Economic modernization and increase of competitiveness in Europe.

The Strategic Objective has two (2) Specific Thematic Objectives that analyzed in the text below:

- First, is the improvement of regional and local policies in the field of innovation and knowledge based economy, giving emphasis on the regional perspective for research and technological development. Also it seeks to support the entrepreneurship of SME, the development of companies and innovation initiatives, the promotion of use of ICT, the employment, human capital and education.

- Second, Specific Thematic Objective is the improvement of regional and local policies in the field of environment and risk prevention. In particular, the actions of this specific objective refer to the prevention and management of natural and technological risks, water and coast management, waste and biodiversity management, preservation of natural heritage, improvement of energy performance, use of renewable energy sources, management of clean and viable public transportation means and management of cultural heritage (Green Economy).

The Priority Axes of the Programme are three (3) and as in all Programmes have already analyzed have vital importance for the achievement of its objectives. The Priority Axes are the following:

- Innovation and knowledge based economy.
  - Protection of the environment and risk prevention.
  - Technical Assistance ([www.espa.gr](http://www.espa.gr)).
- 
- European Spatial Planning Observation Network – ESPON
- ESPON is a programme with main object the study of territorial dynamics in the European territory. The accent is given in territorial structures, tendencies and prospects and in the impact of policy of the EU in the interior of European Union. Also are provided comparable elements with regard to regions and cities of Europe so that be supported the growth of policies, the economic enlargement and the creation of places of work. The mission of the ESPON 2013 Programme is to:
- “Support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory by (1) providing comparable information, evidence, analyses and scenarios on territorial dynamics and (2) revealing territorial capital and potentials for development of regions and larger territories contributing to European competitiveness, territorial cooperation and a sustainable and balanced development”.*( [www.espon.eu](http://www.espon.eu))

- URBACT II

URBACT II is a European exchange and learning programme promoting sustainable urban development. The priorities of new program are focused in the sectors of sustainable urban growth and new initiative of Committee “Regions for the economic change”.

URBACT II has two basic priorities:

Priority 1: cities, models of growth and employment

- Promotion of business dexterity.
- Support of innovation and economy of knowledge.
- Employment and human capital.

Priority 2: attractive cities and cities of cohesion

- Completed growth of regions with disadvantages and threatened regions.
- Social incorporation.
- Urban environment.

To understand the importance of this Programme we have only to check the numbers of its budget and its wide spread through the Region of its action. The table (Table 3.3.3.2.) below is totally representative:

Table 3.3.3.2.: URBACT’s budget for 2007-2013



(Source: URBACT’s site)

- INTERACT

The INTERACT Programme promotes and supports good governance of European Territorial Cooperation programmes. The particular program was drawn, on the one hand to develop the acquired experience of previous programmatic periods on issues of regional growth, cross-border, transnational and interregional collaboration and on the other hand to places new objectives as:

- the contribution in the higher efficiency of the programme management;
- the increasing of the effectiveness of concretisation of the programme;
- Facilitating the transport of know-how and the exchange of knowledge between programmes.

INTERACT is funded by the European Regional Development Fund (ERDF). It helps reform the main regional imbalances in the Community by participating in the development and structural adjustments of regions whose development is lagging behind and the economic and social conversion of regions ([www.interact-eu.net](http://www.interact-eu.net)).



## CHAPTER 4

### 4. Case Studies

#### 4.1. Network of Constructors of Solar Systems (SOLARNET 1998)

The initiative for the creation of this network was the imperative need for:

- Improvement of the quality of reservoirs of hot water that they produce.
- Reduction of cost.
- Adaptation of products in the needs of markets so that can cover the requirements of consumers.

Those were the most important reasons that force a number of five (5) enterprises to take the responsibility and create a strong unit of production of modern technology reservoirs. The weakness of individual enterprises of branch to undertake the action is a result of lack of sufficient potential and due to the high cost of the production process. These are also the reasons that individual members of the network did not advanced in the creation of a unit like SOLARNET, even if they had already strong position in the market of solar systems.

The network SOLARNET, which was founded in 1998 and functioned regularly from the beginning of 2001, concerns the creation of an industry of hot water reservoirs production in Greece and is constituted by the following enterprises with certain activities:

1. FOCO LTD, Industry of production of solar systems.
2. ILIOAKMI LTD, Industry of production of solar systems.
3. SOLE Industrial and Commercial S.A., Industry of production of solar systems.
4. CICERON HELLAS INDUSTRIES LTD, Industry of production of solar systems.
5. CALORIA Industrial and Commercial S.A., Industry of production of solar systems.
6. KOYMAKIS Industrial and Commercial S.A., Commercial network of sales.
7. HELCOM S.A., Supplier of raw materials.

8. HELLAFOAM Industrial and Commercial S.A., Supplier of row materials.
9. KAPE, Benefit of know-how.

The initial planning concerned to satisfy the needs of the members of the 'Cluster', that however would be supposed to correspond in the requirements for new technology, high quality and competitive cost. Moreover, developing the scale economies that already existed, they aimed in a particularly competitive profitable enterprise, manufacturing products for disposal to third enterprises-consumers, the members of the 'cluster' and for direct export. The viability of this 'cluster' is an example for the successful operation of enterprise's cooperation like this, but is not a foolproof plan for all kind of enterprises in the market.

Some very important advantages for the viability of this 'cluster' are the following individual characteristics of the enterprises as units:

- The 'cluster' from the beginning had a very powerful leadership, while the Chairman was a personality international prestige (Chairman ESIF, European Solar Industry Federation). He was a pioneer for the branch in Greece and acceptable from all the members of the cooperation.
- The educative level of all the businessmen was suitable to be succeeded a smooth cooperation between the enterprises-members (all the businessmen were Mechanical engineers and Electricians Engineers).
- The collaborations that developed between the enterprises were individual collaborations and were took part progressively in order to exist confidence through this collaboration between the members.
- The initial economic situation of the enterprises-members was very satisfactory and suitable for the economic reinforcement of the future collaboration.

According to the definitions of the chapter '3.1.1.Clustering' about different types of 'clusters' and 'networks' the conclusion is that the 'cluster' SOLARNET can be subscribed as a 'Project Cluster (PC)' and also in some cases as 'Business Clubs (BC)'. This happens due to the fact that its connections are horizontal but the collaboration took part aiming at the achievement of a concrete and tangible target, in which required various knowledge and specializations, that did not have access every company-member from the collaboration. It is also important that the final target was the growth and production of new products and production's methods (Operational

Programme of clusters-networks configuration with the initiative and attendance of associative institutions as well as the operation of local pacts of quality (with geographic or with thematic approach), ABCDevelopment, February 2008).

#### 4.2. Actions for the promotion of Protected Designation of Origin (PDO) cheeses produced in Greece (CheeseNet 1998-2008)

It was founded on 15 January 2008 in Karditsa with the contribution of a European programme of collaboration of enterprises (Clusters) and supported by the Ministry for Rural Development and Food. This collaboration has also the support of other organisations like Hellenic Milk Organisation, the Hellenic Foreign Trade Board (HEPO) and various cheese-making units. Typically, was characterized as Urban and not speculative enterprise to be succeeded transparency of the management processes of the Programme and also of the resources and the subsidies. The organization CHEESENET has already executed with success a programme of Clusters and has developed an important activity in the sector of promotion of cheese in Greece as also in international level, contributing with this way in the consolidation of increase of consumption of cheese-supplying products.

Additionally, CheeseNet has been contributing - individually or through the Association of Greek Dairy Products Industries (SEVGAP) - towards the promotion of Protected Designation of Origin (PDO) products. This is accomplished through various actions, usually in collaboration with public institutions (Ministry for Rural Development and Food), and by participating in exhibitions and business and commercial events. Based on the results, it is considered the most trustworthy institution today in its sector for the promotion of cheese products in Greece and abroad ([www.cheesenet.gr](http://www.cheesenet.gr)).

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- <http://www.esyd.gr/portal/p/esyd/en/esyd.jsp> (Hellenic Accreditation System S.A., E.SY.D.) (accessible at 04-05-2011)
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- <http://www.interreg.gr/default.aspx?lang=en-GB&page=237> (INTERREG III is a Community initiative which aims to stimulate interregional cooperation in the EU 2000-06) (accessible at 04-05-2011)
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