An Appraisal of the European Union's Community Initiative "Leader Plus" in Greece

Postgraduate Program in European Regional Development

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Supervisor: Prof. Polyzos Serafeim

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Abstract

In Greece, countryside constitutes the majority of the total territories. Throughout the years, Greece has been highly dependent on the agricultural production. In contrast to the main European economies, such as Germany, Italy and France, Greece never had what is widely known as organized heavy industry production (i.e. automobiles, aircrafts, machinery etc.). This process has created inequalities in economic and social terms. The CPI "Leader Plus" project has been introduced to counter these effects. The subject of this thesis is to investigate assess and critically evaluate the outcome of "Leader Plus". To achieve that, the author utilised certain statistical tools, and more precisely the Cluster Analysis and the Factor Analysis techniques to produce certain sets of data to analyse the extent of these inequalities by incorporating measures such as Investments by region and economical sector. The ultimate goal of this analysis is to propose future developments incorporating best practices created as feedback of the results of this research.

Key words: Leader Plus, Common Agricultural Policy, Region Inequalities, Greece.

Στην Ελλάδα, η ύπαιθρος αποτελεί ένα μεγάλο κομμάτι των εδαφών της. Πάντοτε, η Ελλάδα ήταν εξαρτώμενη σε μεγάλο βαθμό στην αγροτική παραγωγή, σε αντίθεση με άλλες χώρες, που αποτελούν τις μεγάλες οικονομίες της Ευρώπης, όπως η Γερμανία, η Ιταλία και η Γαλλία, η Ελλάδα ποτέ δεν είχε αυτό που λέμε βαριά βιομηχανία (δηλαδή, παραγωγή αυτοκινήτων, αεροσκαφών, μηχανημάτων κλπ). Αυτή η διαδικασία δημιούργησε μία ανισότητα στην οικονομική και κοινωνική ανάπτυξη της υπαίθρου. Το Κοινοτικό Πρόγραμμα Leader Plus, εισήχθη από την Ευρωπαϊκή Κοινότητα για να αναιρέσει τις αρνητικές αυτές επιδράσεις. Η πτυχιακή αυτή, σκοπό έχει να αξιολογήσει τα αποτελέσματα αυτού του προγράμματος χρησιμοποιώντας την και Cluster Analysis την Factor Analysis ως μεθόδους ανάλυσης των δεδομένων. Σκοπός είναι να καταδειχθούν οι ανισότητες αυτές δημιουργώντας σύνολα δεδομένων σχετιζόμενα με μεγέθη όπως οι Επενδύσεις κατά περιοχή και οικονομικό τομέα. Τελικός σκοπός του κειμένου αυτού είναι να προτείνει μελλοντικές προσπάθειες που θα βασίζονται σε βέλτιστες τεχνικές (best practices), οι οποίες με τη σειρά τους θα έχουν βασιστεί στα αποτελέσματα αυτής της έρευνας.

Λέξεις κλειδιά: Leader Plus, Κοινή Αγροτική Πολιτική, Περιφερειακές Ανισότητες, Ελλάδα.

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Abbreviations List

CAP: Common Agricultural Policy

CPI: Community Program Initiative

CSF: Second Community Structural Fund

EAGGF – G: European Agricultural Guidance and Guarantee Funds

EEC: European Economic Community

EU: European Union

FEOGA: European Fund for Orientation and Agriculture Guarantee

GDP: Gross Domestic Product

HACCP: Hazard Analysis and Critical Control Point

ISO: International Organization for Standardization

LOG: Local Action Groups

MIP: Mediterranean Integrated Programmes

NGOs: Non – Governmental Organizations

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Introduction

This thesis was written as part of the "Master in European Regional Development Studies" programme of the University of Thessaly and its subject is the assessment and evaluation of the Community Program Initiative (CPI) called "Leader Plus" that was implemented in Greece during the period between 2000 and 2006. In Greece, countryside constitutes the biggest part of the total territories (Managing Authority Leader Plus, 2004). As a direct result of this fact, Greece is classified as a rural country with a commonly accepted opinion that is presented with many opportunities (ibid). However, the facts related to the socioeconomic development that took place during the last decade and even more during the time this thesis has been conducted (ibid); suggest that agriculture will probably undertake major changes in Greece. To be more precise, historical data (ibid) proves that during the last decades rural areas are being deserted by its inhabitants as local population migrates to urban areas mainly for job seeking and improved quality life that is provided in urban areas. Consequently, rural areas have seen a dramatic downfall and a drastic change in the mixture of the local population (O'Connor et al., 2006). This is not the case only in Greece but in other European countries as well. Other reasons of this phenomenon include the extended globalisation of the markets and the parallel exposition of national products of agricultural economy to the ever increasing international competition, the increase in customer demand for quality products in comparison to the policy of common level of living between rural and urban areas inhabitants. In this context, European Committee introduced a new pan – European initiative that would counter the effects of this urbanisation process. This initiative is the outcome of a general policy for reformations called Common Agricultural Policy that has as its main purpose and goal to counter the regional inequalities in economic and social terms by supporting certain strategic development activities.

This thesis focuses on the Community Programme Initiative "Leader Plus" which is the third phase of European Union's initiative for rural development that ran officially from 2001 to 2006, with a main purpose to encourage the active development of local

communities in developing the local rural areas (European Commission, 2006). As it is part of the common agricultural policy it promotes its main goals and aims by utilising certain tools through some organised projects. During this period a lot of actions and projects have been realised according to the main objective of rural development to be achieved. This thesis attempts to investigate; assess and critically evaluate the result of CPI "Leader Plus" in the Greek countryside by utilising certain data. The main data that have been analysed in this text originate from the local (i.e. Greek) Managing Authority of the CPI under the supervision of the Ministry of Rural Development and Food. For the analysis of the data has been utilized a mixture of multivariable methods including in specific the Factor Analysis (i.e. Principal Components Analysis) as well as the Cluster Analysis methods, in order to create the best practice theory and policy for the future implementation of such programmes for the further or initial development of the countryside as well as the development of the regions of Greece in general.

Having said that, it must be stated now that the main objectives of this thesis include:

- The assessment of the effectiveness of the application of the Community Programme Initiative Leader Plus.
- The identification of the evaluation techniques and the utilization of the chosen techniques and finally.
- To investigate the problems in the application of the program and the unachieved goals if any.

The structure of this thesis the follows the literature review (which is the next section) is as follows: the second part is divided into two separate parts. The first part introduces the methodology that has been used for the analysis of the data, the research hypothesis and the information regarding the conduction of the research. The second part of this section includes the presentation of the findings as well as a critical analysis of them in relation to the objectives and the hypothesis of this thesis. The third part concludes this thesis and presents recommendations for the future.

1. Agricultural Development: Analysis of the term

1.1 Defining the Unfavourable Areas

All the instalments of Leader Community Initiative Programme have as main purpose to counter the effects of unequal development between urban and rural areas, or other areas that in general are characterised as unfavourable areas. For the purpose of clarity, the term unfavourable must be defined, in conjunction to regional development. By the term unfavourable areas it is meant the areas that are facing serious problems. These problems are mainly in the field of structural development in terms of agricultural activities. However, the consequences of these problems are present in social, demographic, economic fields.

According to the European Committee (1993), these areas are divided in some separate and distinct areas according to some specific criteria as shown below:

1. Mountainous Areas.

These areas are in regions that are situated at a least altitude of 600m and go as high as 1000m. Another prerequisite is the average ground bent is at least 20%, with a ground characterized by great angles, rough surfaces and altitude height's difference of at least 400m. Due to the high altitude there are some limitations in terms of agricultural activities. These limitations include heavy winter, extremely dry summer, ground bent and other morphological, economic and sociologic disadvantages. As a result of the above, agricultural production requires more money and human effort. Another effect is the isolation of the local population, and finally difficulties in communication and transportation.

2. Areas that are endangered by ecological and economical desolation.

Areas that are endangered by desolation are mostly homogenous in terms of natural conditions for productions and are characterised by:

   - Ground with low productivity in which land reclamation works would not enhance significantly the productivity.

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- The main consequence of low ground and natural environment productivity is lower economic output than the national average.

Finally, in these areas there is a tendency of reduction in numbers of local population. This is directly related to the lower agricultural activity.

3. Areas that are characterised of natural disadvantages.

As unfavourable areas can also be considered areas that have natural special disadvantages in which agricultural activity is necessary for the protection of the local environment and mainly the preservation of the local natural environment and local tourist potential. These disadvantages include bad irrigation (i.e. soil watering), high concentration in salt (and mainly close to coastal areas), soil with high lime or argil concentration, or areas that are protected by certain environment legislation, that limit in great numbers or amount the agricultural activity. Another major disadvantage is considered the high cost of marine transportation to some islands.

1.2 Basic facts and figures related to agricultural development in Greece and Europe

Recent research indicates that Greece has had a constant economic growth as a result of various facts. To be more precise, the Gross Domestic Product (GDP) during the period between 1996 and 2002 has increased by 1,4% (it was 2,4% and became 3,8% by 2002). The following years this rapid growth continued but by less dramatic figures and became stable by 2004 (i.e. 4,8% in the following year and 4,7% in the next one). This growth has been followed by a slight decrease in these figures in conjunction to a decrease in the inflation rates as well (Managing Authority, Leader Plus, 2004). This is also stated in a relative letter by the European Committee (European Committee, 2000), according to which, all rural areas within the European Union are facing a series of problems that are capable enough of affecting in a serious matter their viability and sustainability. In the same text, the European Committee presents what seem to be; according to their experts' opinions, the main reasons and their effects regarding this matter: ageing population, urbanisation and population migration to urban areas, job loss and finally mistreatment of rural areas in favour of urban ones. According to the same source (Managing Authority, Leader Plus, 2004), the diversity of sociological,

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geographical, political, economic and historic factors lead to inequalities in terms of regional development and quality of life. This fact in relation to the ever expanding reliance in the services sector (also known as tertiary) and the secondary sector, create problems in the development of the regions that depend on the primary section.

According to the Ministry of Agriculture (Managing Authority, Leader Plus, 2004), in regional level, the inequalities in Greece created a problem in the function of economy due to the abandonment of agriculture in rural areas, as well as the connected traditional activity of product transformation. To be more precise, in the regions of Sterea Ellada and South Aegean, the GDP was rather high, in contrast to the regions of Eastern Macedonia – Thrace, Western Greece and Epirus, in which regions, the GDP was at rather lowest levels in comparison to the country's overall. However, in the regions of Central Macedonia, Thessaly and Peloponnese, the economic development as a direct result of growth in the primary sector is more dynamic, influential and noticeable. The rest of the regions (i.e. Ionian Islands, North Aegean, Crete and Western Macedonia), although, are characterised by a more light development. It must not be forgotten though, that the mountainous areas consist the 56,4% of the total areas used for agriculture and are characterised by low income, high age average of habitants, low educational level and most of the times luck of social, cultural and other kinds of facilities and thus rendering these areas more dependent on the agricultural – created income. These facts are addressed by the application of Leader Plus objectives.

Responding to these facts, the European Committee, in 2005 changed its rural development policies in order to promote activities in the countryside that are more diversified. The main goal was to preserve the environmental and natural habitats. Another goal was to support farming techniques and technologies that promoted the ideas of sustainability and efficiency. These policies have been realised and applied through the various European funded initiatives, which among them is the Leader Plus.

As Gill (2010) states, another reform (probably the most recent one) takes into account the period after 2013 (i.e. after the end of European Union EU funding and subsidy programs), that builds on the 2008 reform by further decoupling direct payments, drastically change intervention mechanisms by the application of the article 68, further shift of funding to rural development to meet the new challenges that arise by new conditions in the wide area of Europe.

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As part of the European Community's agricultural policy, the targeted funding and practical interventions did a lot in helping counter the inequalities and problems created by the various distortions in the functions of the economic and social life in Greece (Kolymvakis, 2007). According to the same source, even from the very early days of these interventions the positive effects were more than observable. Moreover, according to Petrakis and Psiharis (2004), through the dissemination of the available funding scattered to small projects throughout the country, the European Community interventions have assisted and contributed in the economic support as well as supported the improvement of the standard of living in Greece as well as in Europe.

1.3 Regional Development and Regional Strategy in Greece

The various regions and prefectures, as parts of the Greek territory, indicate different levels of development and perspectives for development as well. This fact is the result of the variance in historical, geomorphological, political and finally, economic factors (Petrakos and Psiharis, 2004). These factors form obstacles that affect the efficiency of regional policies in lowering inequalities that in their term affect the levels of income and employment. As a result, some prefectures are more favoured than others, (namely those with secondary and tertiary sector), while those that are based on the primary sector facing the more unfavourable development problems. This is due to the fact that in rural areas, productivity originated from industries and services is almost absent, and thus capital and technology are more difficult to obtain (ibid). To overcome these effects, and moreover to achieve their practical goals, regional policies and strategies tend to aim on economic growth and thus reducing regional inequalities by offering the opportunity for extended funding in problematic areas (ibid). Building on the previous mentioned facts, Greece tried to exploit every opportunity offered by the European Union since day one of the country's integration to the EU institution to counter the effects of regional inequalities in local inhabitants' lives and jobs. First community funded interventions took place as early as 1986, through the Mediterranean Integrated Programmes (MIP), followed by the First Community Structured Funding Programme concluded in 1993 (Kolymvakis, 2007). It is considered by many that MIP is the beginning of the European regional development policy implementation; due to the fact that the projects have been funded by European sources (Petrakos & Psiharis, 2004).

The regional development strategy; that has been applied in Greece during that period, has been characterised by great dissemination of available funding in small scale structural projects in the whole of the country (ibid). The immediate effects of the application of these programmes were the improvement in life standards in rural areas, the improvement of the local transports network (roads etc.) and finally the modernisation of small agricultural businesses and the foundation of small and medium sized hotels and hospitality facilities in general.

During the next programmatic period (known as the Second Community Structural Fund (CSF in short), the directing of the funds has been diverted in projects of bigger size, of national importance. These projects were meant to enhance the extraversion of the economy and the interconnectivity of the country with others in the area or even further. Another goal set in this period was the economic growth of economies and mainly in terms of competitiveness. Even though, a series of problems occurred, due to these interventions, the final outcome has been more than positive.

The next and final CSF, that was co – funded by EU, Greece and private contribution, materialised twenty five programmes and four community initiatives (such as Urban, Equal and in our case Leader). The focus in this period was people with fewer opportunities in life such as young, unemployed, women and other socially frail groups. Other participants that benefited include local governments and their public businesses, local public services and organisations, small private enterprises in the field of production and social activities (Managing Authority, Leader Plus, 2004). To conclude, it must be noted that the application of regional development policies should be accompanied and compatible with rural development, as long as this is the greater part of the economy in the applied region or country (Loukakis and Theodora, 2006).

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2. The Contribution of the Common Agricultural Policy to the development

2.1 The establishment of the Common Agricultural Policy (CAP)

The agriculture sector constitutes probably the most important factor in the Greek economy and it also plays an important role in the member – states' economies (Delayen, 2007). It must be noted though that this sector faced a huge number of problems that have been recognised since the early days of the European Economic Community (EEC) as an institution. In this context, the EEC suggested the creation and adaptation of a Common Agricultural Policy (CAP) for all member – states, which was the first common policy in the Union.

During the late 1950's and early 1960's, the then members of the European Community created a plan to counter the effects of the food shortage (an aftermath of the World War Two). The main objective was to create a commonly accepted set of actions. The discussion went on until 1960, when the European Commission (part of the then European Economic Community, and today's European Union) proposed the creation of a Common Agricultural Policy as a continuation of the 1958 Treaty of Rome; that defined the general objectives in conjunction to the Stresa Conference in July 1958 (Delayen, 2007). These treaties went into effect in 1963 and are active until today with basic principles and primary goals being:

- A unified market for the free movement of agricultural products in the European Union.
- Financial solidarity settled that all costs of the Common Agricultural Policy had to be financed by the FEOGA (European Fund for Orientation and Agriculture Guarantee).
- Community preference insisted that the European products had to be preferred over imported products.
- Parity and productivity made sure that farmers' incomes were equal to incomes in the other sectors, with reasonable prices of course so that food was accessible to consumers.

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- To assure the availability of supplies.

- To increase agricultural productivity.

- To ensure a fair standard of living for the agriculture community, in particular by increasing the individual earnings of persons engaged in agriculture.

The initial purpose of the adaptation of a common policy for rural development was to reinforce agriculture and counter the limited rural development actions through market measures supported by the CPA. In such context, rural policy can be considered as a part of cohesion policy, and therefore, the development of a regional policy had an effect on EEC's (and then EU's) approach to rural policy in general. Later on, this policy evolved into a rather distinct and separate policy field, requiring clarification on its potential scope (Dax et al., 2011). Contrary to general regional policy, the Common Agricultural Policy (embedding the rural development policy) indicates a more functional, flexible and sectoral approach, rather than a particular administratively defined spatial unit (ibid).

2.2 The effects of the adaptation of the Common Agricultural Policy (CAP)

The Common Agricultural Policy, which is one of the few unanimously accepted by the European Commission's members treaties, increased agricultural production in Europe during the following decades (i.e. 1960's – 1970's) complimenting overall rural and economic growth. However, during the 1980's a lot of market distortions have been observed, with water and solid pollution. Another negative effect of the Policy was the over-produce of goods in numbers that the people in the European Community member countries could not consume, leading to exports of excess products at low prices producing what is called the *dumping* effect (Delayen, 2007). The overproduction and the price manipulation among with the increasing income disparities and the increased transaction cost were some of the serious problems that the European Community had to deal with. All these problems could be interpreted as market divergence at the international level and social divergence within the societal demographic of the European Community's members. These facts led to the need for a *systematic reform* of the objectives and activities of the Common Agricultural Policy (ibid).

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From the year 1981 through today, the European Commission has faced the contradiction of solving **budget problems** by reducing the Common Agricultural Policy to a market – oriented approach and in this way relieving the agricultural expenditure (Ingersent et. al., 1994), while still making feasible proposals destined to respect the principles of the Common Agricultural Policy and to be accepted by the member – states. (Weber and Wiesmeth, 1991), and thus trying to counter the previously mentioned effects. In addition to that, during the 1990's the Common Agricultural Policy came through a period of reforms by the fact that it accounted on average for about 50% of the European Union budget as European Community was pressuring for the dismantling of the "economic protectionist system" through the World Trade Organization, which was guided by the General Agreement on Tariffs and Trade (Delayen, 2007). In addition, the rural regions of the European Union have been facing for many years now, a series of difficulties that have impact on their viability, such as the ageing population, the migration to urban centres and the loss of employment. All these reasons along with the marginalisation of the rural regions (O'Connor et. al., 2006) and the rapidly changing needs of European society (Van der Ploeg et. al. 2000) led to the need for reformation of the Common Agricultural Policy.

In general, the Common Agricultural Policy can be considered to be a success as it managed to attain its initially set goals to guarantee food supplies, since its creation in 1962. Moreover, by undergoing continuous reforms in order to be adapted to the evolution of the European Union and its constantly changing demographics and diversities, the Common Agricultural Policy has significantly helped the agricultural sector of the European Union to overcome serious problems over the years.

3. Previous Leader Implementations in Greece

3.1 Leader I

The first implementation of the Community initiative Leader (i.e. Leader I), 1991 – 1994, has been mainly applied in mountainous and unfavourable areas of Greece (Managing Authority Leader Plus, 2004). The application area of the programme has reached a considerable 30% of the total ground, while the population that took advantage of the programme reached 14% (i.e. around 1.38 million inhabitants) of the total population in Greece.

A number of twenty five projects of holistic approach in agricultural development implemented by an equal number of local action groups took place as part of this programme, while the total budget has reached the amount of 161.8 million Euros. It must be noted that during this period, seven main measures have been realized in a total of 1732 local projects and actions, as presented below:

- Measure 1. Technical support (163 actions and projects).

- Measure 2. Professional – Vocational Training (154 actions and projects).

- Measure 3. Agrotourism (807 investment projects).

- Measure 4. Support to small and medium sized businesses (258 investment projects).

- Measure 5. Exploitation and marketing of local products (264 investment projects).

- Measure 6. Infrastructure Projects.

- Measure 7. Support and financial aid for the creation and the equipment of local collaboration groups (86 projects).

All the above mentioned measures that were part of Leader I, are characterised by the following goals:

  i.   Support of the local economic activity in order to increase competitiveness of local business bodies.

  ii.   Upgrade of the abilities of local human resources through educational and vocational seminars.

  iii. The organisation of local tourist infrastructure and the promotion of local tourist resources.

  iv.   The support and aid of local small and medium sized businesses.

  v.   The creation and maintenance of road network, and finally.

  vi.   The formation of recreational sites as well as the maintenance of sites of cultural heritage.

3.2 Leader II and its implementation in Greece

The second implementation of the Leader Community Initiative (named Leader II), 1994 – 2000, has been applied mainly in rural areas with a main objective to develop complimentary activities in order to retain the local population and prevent them from migrating to urban areas (ibid).

This was designed to be achieved through

  i.   The improvement of living conditions.

  ii. The reconstruction of the productive system in the areas of application by improving the level of social prosperity.

  iii. The promotion of the areas of application by protecting the local environment at the same time.

  iv. The development of soft forms of tourism (e.g. ecotourism).

  v.   The evaluation and promotion of local environmental and cultural goods.

The application area of Leader II reached 70% of the total of Greece territories (which is more than double than that of Leader I), while the benefited population reached a considerable 25% of the total (which can be considered inconsistent to the rise of the application territories). The total amount of local action groups has increased to 56 and there were also 7 thematic programmes within the Leader II framework. The total amount of projects reached a vast number of 3270 while the total budget risen by more than 40 million comparing to Leader I, to a total of 210.7 million Euros (ibid).

Correspondingly to Leader I, in this programme there were also some measures as follows:

♦ Measure 1. Acquisition and development of new abilities. Two (2) projects that included the funding of technical assistance prior to investments realisation (including diagnosis of the needs of the application areas, motivation provision, training of the population, development of collaboration among the local stakeholder, research for funding resources).

♦ Measure 2. Innovative projects of rural development (including actions and funding/investment). Six (6) projects that included provision of technical support for rural development strategies and techniques to local stakeholders, vocational/professional training especially to young people willing to start new rural professional activities, development of agrotourism through systematic investments, support to small and medium sized businesses, market research and marketing/promotion/selling support of local agricultural/forest/fishery production, and finally protection of local environment.

♦ Measure 3. Sixteen (16) projects, referring to inter – state collaboration and co – operation.

4. Leader Plus: Presentation and analysis of the Programme

Leader Plus, 2001 – 2006, is a European funded programme that has been applied in the countries of European Union, among which was Greece. Other countries that participated in this programme are: the United Kingdom, Sweden, Portugal, Netherlands, Luxemburg, Italy, Ireland, France, Germany, Finland, Spain, Denmark, Belgium and Austria. The main goal and purpose of the application of this programme was to improve and sustain both economic prosperity and environmental regeneration of the rural areas of Europe. The main idea is to improve the quality of life of the population of the countryside. Moreover, the programme had as another purpose to attract young people into the rural economy. The goals were set in conjunction to both national and community priorities set during the third programming period of European Union. As part of the overall Leader Plus programme, its Greek branch had two main objectives, to create a sustainable environment of development of the competitiveness for rural areas and to promote the end of the isolation of various regions, on all levels of economic and social life (Managing Authority, Leader Plus, 2004). This was set to be achieved by implementing a set of actions which should meet both the national and community priorities set as part of the 3rd programming period (i.e. employment, equality, environmental protection, etc.). These actions involved better use of natural, human and financial resources, as well as, the discovery of new sources of income, while in the same time protecting the natural and cultural heritage (ibid).

As stated by the Greek Ministry of Agriculture (2011), the people of the countryside should become more actively involved in their own decisions regarding their own rural development strategic goals, be able to make small scale investments, while creating a highly productive economic fibre at the same time. To achieve their goals, countryside people have been prompted to support entrepreneurial activities and collective actions through clustering logic and thus realise their own visions in their regions. The fact that Leader Plus promoted collaboration and clustering as its main implementation schemes, differentiated it from the previous incarnations of Leader programmes, while in the same time retaining the content of them. Such collaboration acts include complementary

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business, joint promotion and marketing on cooperation, and finally collective support business activities, able to secure the viability and complementarity of actions (ibid).

According to the Managing Authority of Leader Plus (2004), this incarnation of the programme preserves the content of the previous implementations (i.e. Leader I and Leader II), while at the same time offering to participants' ad hoc support and more opportunities in new areas. It must be noted that in Leader Plus the main objective was the collaboration between participants in conjunction to the formation of clusters and networks. To be more precise, networks and clusters involved:

♦ Clustering of similar or complementary business.

♦ Joint promotion and marketing.

♦ Cooperation and collective support for business activities.

All of the abovementioned can ensure that the undertaken actions would produce secure and viable results in a complementary fashion.

4.1 The Application of Leader Plus in Europe

As stated by the Managing Authority of Leader Plus (2004), the total budget of the fifteen countries' projects that benefited by the programme, was about 4.2 billion Euros, while the previous programming period the same amount was around 2.2 million Euros. As always, this budget has been divided into two separate sources, the EU funded and the national-private one. The budget has been divided into a total of 893 Local Action Groups (LAG) that represented a total of around 52 million people that benefited of the application of the programme. The number of LAG differ from country to country, where for example Luxemburg has been represented by only four LAG, while Germany by a vast amount of 148, which the biggest number (European Commission, 2005). It is notable that the application area expanded almost in the half of the total European Union's territories.

The distribution of the funding between the EU member states is depicted in the following Table 1.

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TABLE 1 - Funding of Leader Plus in EU, Adapted by the Ministry of Agriculture, Leader Plus figures

EU Member – States (2000-2006)	Budget (€)	Community Contribution (EAGGF- G)	National Contribution	Private/Own Contribution	Number of LAG
Greece	**368.693.321**	**186.129.877**	**69.648.523**	**112.914.921**	**40**
United Kingdom	266.711.020	114.690.197	120.199.456	31.821.367	57
Sweden	147.841.575	41.215.200	59.737.500	46.888.875	12
Portugal	273.309.696	164.453.735	63.259.199	45.380.761	52
Netherlands	206.878.444	83.864.854	66.931.579	56.082.011	28
Luxemburg	9.274.260	2.137.080	6.285.840	851.340	4
Italy	490.413.493	287.996.869	202.416.624	0	132
Ireland	110.017.890	48.745.878	25.351.012	35.921.000	22
Germany	513.172.391	262.910.244	162.498.240	87.763.907	148
France	545.668.888	272.834.444	241.795.836	31.038.608	140
Finland	167.858.644	56.378.322	56.378.322	55.102.000	25
Spain	811.057.791	505.674.879	305.382.912	0	145
Denmark	62.577.832	17.300.208	17.300.208	27.977.416	12
Belgium	35.261.361	16.180.784	16.180.784	2.899.793	20
Austria	178.787.280	76.833.274	29.800.067	72.153.939	56
Total	**4.187.523.886**	**2.137.345.845**	**1.443.166.102**	**606.795.938**	**893**

Source: http://www.minagric.gr/greek/3.3_Leader.html

According to Nardone et al. (2010), the Leader initiative has been perceived in order for the benefited participants to search for innovative solutions to their rural problems. The authors (ibid) also state that the solutions did actually tend to originate from improvement of employment terms and the better facilitation of endogenous resources. As proposed by Barke and Newton (1997), endogenous development is actually a process of local social organisation and utilisation that is characterised by a specific organisational structure that bridges the various individual community interests in order to achieve commonly accepted and agreed objectives, within a specific strategic planning process and an agreed plan for allocation of resources. Barke and Newton (ibid), also state that this process may be regarded as one in which the local stakeholders take control of development activities and strategic planning and that

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benefits are retained within the area of application. During the first two periods of the application of the Leader initiative (1991 – 1994 and 1994 – 2000), these ideas have been widely adopted in a vast amount of 1,200 territories (Nardone et al., 2010). It must be noted though that these ideas did not always produce the necessary or expected results. According to the same source (Nardone et al., 2010), these facts created a notion around Leader initiative and eventually rendered it a median for further rural development policies adopted even within national policies in EU member countries (Farrel and Thirion, 2005 in Nardone et al., 2010).

During the 1990's, Leader has been implemented in local communities of various countries by giving them opportunity to manage the economic aid provided to them. Each country had different goals in terms of rural development and improvement of life terms of their local inhabitants (two of the main objectives of the programme itself). There was inevitably an adaptation of these goals, and the importance of the Leader programme has become object of research for lot of researchers in countries that were both member and non-member of the EU (Saraceno, 1999). This trend also passed on the next Leader incarnations.

In Ireland, environment has been the most significant factor for the implementation of Leader. For that reason, the funding has been routed mainly to remote areas of the country, with a purpose to create the fundamental and essential infrastructure, by protecting the environment at the same time utilising environmentally friendly materials (Pepper, 1998). In France, the programme's aim was to support the troubled enterprises by providing them financial aid. The funding also intended to preserve natural inheritance and for the achievement of rural development in general (Ray, 1998). In Scotland, the Leader community initiative tried to enhance the cultural environment of the local areas, by enabling the participation of local inhabitants. This way, by the targeted funding the programme outcome was the development of remote areas and their local communities (ibid). In Germany, according to Bruckmeier (2000), the programme's goal was to enhance the development opportunities of local communities. There was political interest on the opportunities created by the programme that in their turn did actually lead in a new idea of regional development in terms of rural rather than urban logic. The main efforts of the German fork of the Leader initiative was put on the marketing of products of these areas (mainly agricultural), in tourism and finally, in activities that are supposedly relevant to swift economic growth.

Whales, was one of the areas that were supposed to benefit from Leader Plus, as indicated by the Welsh European Funding Office (2002). The purpose of the programme in this country was to support and encourage rural development by encouraging the participation of enterprises and by supporting their chances of development as well. The outcome of these efforts was the increase in job numbers and the prosperity of local inhabitants (ibid). Farmers also benefited by the adaptation of the program, as they enhanced their abilities and knowledge on promoting their products. In England, Leader Plus originated funding, helped in the relief rural areas that have suffered from the aphthous fever[1] as stated by the Department for Environment Food and Rural Affairs (2002). This plague has caused financial damage to local farmers and lead to a decrease in tourist flows, affecting hotels and tourist related enterprises. In Netherlands, the programme focused on the aid of the socio-economic condition of rural areas. It also focused on the improvement of the quality standards of local inhabitants. Local Action Groups tried to improve natural and cultural resources by strategically targeted funding. The result was the rise in recreation and therefore tourism (EU, 2006).

Summing up the above, since 1991, the European funded community initiative programme Leader and its consequent programmes (including the subject of this text, Leader Plus), has been successful in promoting local rural development in each participating country, through the offered funding. Moreover, the main and common goal of each of the participating countries was to promote the adoption sustainable development practices and strategies in rural areas, by the utilisation of economic and cultural resources (High and Nemes, 2007).

In 2004, the new member states took advantage of a similar programme funded by European Agricultural Guidance and Guarantee Fund (EAGGF – G) as well; and primarily by its guarantees. The main objective of this programme was to provide the necessary dexterities and experience to the rural areas, in order for them to develop a holistic approach for the local development and to materialise holistic agricultural development strategies in local level through local co – operation schemas. In this

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[1] An acute, highly contagious, viral infection of cloven-hooved animals (cattle, deer, sheep, goats, pigs, etc) characterized initially by vesicular lesions and subsequently by erosions of the epithelium of the mouth, nares, muzzle, feet, teats, udder, and rumen pillars. Very rarely lesions of foot-and-mouth disease occur in man (and have to be differentiated from hand, foot-and-mouth disease).

context six of these new members (namely, Poland, Latvia, Lithuania, Hungary, Estonia and Check Republic) took advantage of this programme. On the other hand, the Republic of Cyprus, took advantage of another measure that provided technical assistance for the development of dexterities. Slovenia and Slovakia in their behalf, did not took advantage of any type of measures or programmes for rural development, due to the fact that their national programmes had already took into account such acts. Finally, Malta was the only new member of the EU that neither took advantage of any EU funded programmes, nor had adopted a national programme of such content. After having presented all these facts, it becomes clear that in Europe, rural development in the last decade or so has been a major issue and concern.

4.2 The Application of Leader Plus in Greece

According to the Managing Authority of Leader Plus in Greece (2004), in our country, the programme is divided into two general developmental goals as presented below:

- A holistic approach for high quality, sustainable development of the rural areas through pilot projects.

- The provision of aid and support to the effort of lifting of the isolation of certain areas that is spread in all areas of economic and social life.

In order to achieve these goals, in a highly diversified environment such as the Greek rural one, that is also totally different to that of the rest of the Europe, a certain set of secondary goals needed to be set. These secondary goals include the promotion of the use of new technologies both in the field of application and information ones, the improvement of quality of life in rural areas, the exploitation of agricultural products through the facilitation of access by cooperation acts and finally the exploitation of sites of natural and cultural beauty and interest (and especially the sites characterised as Natura2000 protected sites).

Leader Plus, as previously stated, is a European Community initiative programme. As such, the funding of the including LAG projects is divided into three separate sources. Of the total amount of funding, of around 368 million Euros, 68 million came from the Greek ministry of Agriculture, and 186 million came from the community funding,

summing to a total of 255 million Euros. The rest of the funding is private contribution (estimated at around 25% of the combined community – national budget or around 122 million Euros) (ibid).

The application area of the project in Greece expanded throughout the whole Greek territories, however focusing on certain areas that included highly mountainous and removing islands. For the selectable areas the main characteristics included the following:

a. To be mountainous or geographically close to hard to reach mountainous areas.

b. To be facing structural problems.

c. To be indicating development potential.

d. To be able to contribute to the total development perspectives by indicating entrepreneurial and investment attraction points.

It must be stated, though, that Leader Plus differs from other community initiative programmes, which are part of the third programming period in the way it approaches its subject of application, the subject itself, the methodology of planning for the application of its goals, as well as the ways of implementation (ibid). Some of these differences include the pilot application of sustainable strategies rather developmental interventions, small investments rather than structural development investments, decentralising approach of projects rather than centralised observation and finally, systematic and permanent networking of empowered local population rather than administrative networking pushing local authorities' and stakeholders' unions decisions for application (ibid).

As stated above, the application of Leader Plus involved a variety of small locally supported and materialised projects that were being planned and realised by the Local Action Groups. These groups are anonymous developmental companies that consist of local stakeholders including both organisations of public and private sector origin. Such organisations are professional associations, chambers of production or science, cooperative unions and unions of agricultural cooperation, scientific institution focusing on environmental research. The public sector was represented mainly by local

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governments of both first and second degree (i.e. prefectural institutions as well as municipality ones).

The second measure of application of Leader Plus in Greece (which appears to be the main set of interactions in relation to the main goals of the programme) involved the training of potential investors into contemporary forms of organisation and production, modern forms of service provision, also training in traditional professions in order to be revived and finally training of Media executives in matters of presentation and promotion of local rural development. Other sub – goals of the second measure include the training of women and young persons in entrepreneurial action, training of tourist guides in matters of natural heritage and the environment, and finally the training of all the participants into matters and specific aspects of the rural development (Kalampaka-Pyli Centre of Development, 2011).

In Greece, in addition to the strictly agricultural goals, Leader Plus has been utilised to create and develop tourist infrastructures as well, as part of the promotion of natural and cultural sites or events. This promotion was set to lead into the raise of tourist flows; that in their turn could lead into the development of alternative activities, both in financial and cultural terms. Agrotourism, one of the forms of alternative tourism, according to the Managing Authority of Leader Plus (2004), demands among others high quality of provided services for the hospitality of visitors, diversification of the provided product or service, synchronous promotion of the agricultural production that could lead to an increased awareness on behalf of the visitors. In this context, as part of the funding, the creation of new or the improvement of existing tourist infrastructures has been a major subject of the programme's application projects. Such infrastructure included the creation of pedagogical farms, that tourists could visit and spend the night in, the creation of new guesthouses, motels or hotels of small size, the restoration of traditional buildings or buildings of significant importance (historically or culturally) and their transformation into hospitality facilities (is guesthouses or hotels) and finally camps mainly for children or youngsters (Kalampaka-Pyli Centre of Development, 2011).

Finally, the third measure, included the development of all the businesses involved in the manufacture and services sector that had something to do with rural areas or products. In this measure, actions included the promotion of local businesses into

exhibitions, the creation of centres for business orientation, local pacts for quality standards, the exploitation of renewable energy sources and finally the development of systems for teleworking and telesales. In conjunction to this measure, the fourth and the fifth measure aided in the creation of enterprises related to the packing and promotion of biological products and/or products of local identity (such as Products Of Protected Origin), participation in exhibitions, clustering and hutching of new entrepreneurial actions and finally creation of energy plants (ibid).

5. The Research

5.1 The Research Identity

This dissertation aims to analyse certain data regarding the post effects of the application of the community initiative program "Leader Plus" to the local economies and the life of inhabitants. This approach is referred to as ex post analysis. In short, an ex post analysis involves six basic stages. This approach has been utilised for the evaluation of Leader II (European Committee, 2011). The first two stages involve the collection of data and categorisation of Local Action Groups characteristics and application of projects' results. The next stage involves the evaluation of regional and national programmes, while the next, fourth stage involved the evaluation of the local action groups (LAGs), through certain questionnaires.

The following, fifth stage assessed the participation of some of the LAGs through focus groups. The next and final stage (i.e. the sixth) involved the geographical evaluation and the summarising of the main findings of the evaluation process in a publishable format. For the purposes of this dissertation, some of these characteristics of ex post analysis apply and therefore will be utilised for the evaluation of Leader Plus related data.

Evaluation of Leader Plus is not a novel idea. The Managing Authority of the programme (2004) has conducted its own evaluation of its outcome. The purpose of this evaluation was the assessment of the efficiency of the programme on a national level in Greece. For this purpose, a Special Management Service has been set up at the level of the Ministry of Rural Development and Food (formerly known as Agriculture Development).

This Special Management Service was one of the first in the Greek public sector to be accredited with a certification by the Greek Organisation for Standardisation, as more precisely the EN ISO 9001:2000 format.

This Monitoring Committee is composed by representatives of:

i.   Involving ministries.

ii.   Management authorities of other Operational Programmes.

iii. Local/prefectural authority organisations.

iv.   Local action groups.

v.   Various economic and social partners.

vi.   Non – Governmental Organizations (NGOs) and representatives of the European Commission.

The evaluation had a plan to be completed by December 31st of 2008 and was supposed to ensure the proper use of the funds, the level of completion of the including projects and that the compliance with legislation is accomplished.

Building in these facts, it is considered to be necessary for this programme to be further evaluated with new research tools, in a new view. In this chapter the author presents the reader with the research hypothesis, the analysis of the sample and finally the techniques used to analyse the collected data.

5.2 The Research Hypothesis

This purpose of this paper as stated in the introduction is to assess the effectiveness of the CPI "Leader Plus". Having said that and in order to fully investigate the subject the author formed the following research hypotheses:

H1. The CPI Leader Plus achieved in all the areas that has been implemented all of its goals.

H2. The CPI Leader Plus managed to fulfil the main objectives of the European Common Agricultural Policy.

H3. After the end of the CPI Leader Plus the effects of its implementation justify the effort and the money spent.

These three hypotheses in order to be investigated certain research questions need to be formed. In this process we ended up with the following questions that seem to be more appropriate in relation to the subject of this text:

RQ1. What are the main objectives of the CPI Leader Plus?

RQ2. Where these objectives met after the application of the projects?

RQ3. Are there any differences in the post application effects among the various areas (i.e. regions or municipalities)?

RQ4. What were the economic, sociologic and other effects of the application of the CPI Leader Plus and how they relate to the programme's objectives?

The first research question has been analysed and answered in the first chapter of this thesis. It is good to remind the main points here though:

1. Increase in the competitiveness of rural areas.

2. Increase in the facilitation of natural, human and financial resources to the benefit of the previous aim.

3. Increase in the collaboration between the various stakeholders in favour of the inhabitant's life quality.

These main objectives of the Leader Plus Initiative as well as others are being analysed in this thesis and therefore the second research question helped the author better achieve the pre – set goal of assessing the effects of Leader Plus. However, as there were many projects run in unison and simultaneously (and therefore creating a rather segmented environment for the evaluation process), a comparison between these projects is considered a necessity, thus leading to the third research question. But how these differences can be measured and with what criteria. The fourth research question settles these criteria for evaluation of the post implementation effects of Leader Plus by introducing the economic, sociologic as the main evaluation criteria along with others that will be further discussed in the appropriate chapter.

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5.3 The Sample

As previously stated, the main goal of this thesis is to evaluate the effects of the application of the CPI Leader Plus. In order to achieve this goal the author obtained all the available application and results data from the programme's Managing Authority, which was more than helpful by providing all the related information and data. This sample has then been divided into categories and subcategories and encoded in order to be more suitable for the chosen statistical methods. The next step was the analysis of the data, a process which is described in the next section.

GRAPH 1 - Leader Plus Intervention Regions in Greece

6. The evaluation method

6.1 Basic Statistic Analysis

The first part of the research begins with basic statistic analysis, which provides useful information about our research, and uses variable attributes to provide descriptive information about data and control how data are treated in analysis. Our data consists of 44 regions, which are divided according to the action, the municipalities and the projects as indicates Table 2.

TABLE 2 - Data Identity

Variables	Count
Regions	44
Municipalities	346
Projects	1488
Actions	24

As we have mentioned before, the lack of heavy industry production in Greece, among with other factors, created huge inequalities in economic and social terms. In order to analyze the extent of these inequalities, we implement Cluster and Factor Analysis techniques to produce certain sets of data. Data analysis using clustering is only the second part of the research process and the Factor Analysis is in the third part.

The statistical tools we used in order to implement the analysis are EXCEL and SPSS 16.

A primary goal of statistics is to collapse data into easily understandable and comparable summaries. We use basic statistics such as mean, standard deviation, minimum and maximum, sum and percentiles for our data.

Also we should mention that firstly we analyze our data which is categorized by region and secondly by action.

TABLE 3 - Financial Details per Region

	Mean	St. Dev	Sum	Sum %	Minimum	Maximum
Ftiotida	68.312,69 €	62.498,45 €	546.501,54 €	0,22%	10.000,00 €	196.000,00 €
Thesprotia	201.992,93 €	214.798,38 €	1.009.964,66 €	0,41%	14.600,00 €	440.000,00 €
Korinthia	83.681,36 €	111.258,69 €	1.422.583,13 €	0,58%	489,83 €	390.600,00 €
Argolida	250.425,64 €	164.347,88 €	1.752.979,50 €	0,72%	19.950,00 €	439.832,00 €
Zakinthos	163.886,40 €	131.864,15 €	3.113.841,55 €	1,27%	3.650,00 €	440.000,00 €
Arta	155.291,23 €	135.127,61 €	3.261.115,75 €	1,33%	13.949,44 €	398.934,00 €
Preveza	185.063,62 €	117.323,87 €	3.331.145,09 €	1,36%	17.000,00 €	436.330,08 €
Dodekanisa	140.511,80 €	104.044,67 €	3.372.283,19 €	1,38%	5.000,00 €	385.000,00 €
Kuklades	218.838,47 €	167.315,47 €	3.501.415,56 €	1,43%	8.365,00 €	484.311,91 €
Magnisia	176.029,44 €	173.743,78 €	3.872.647,70 €	1,58%	10.000,00 €	653.966,22 €
Fokida	263.028,55 €	139.963,32 €	3.945.428,25 €	1,61%	67.340,60 €	590.000,00 €
Kefalinia	213.078,69 €	140.854,19 €	4.261.573,75 €	1,74%	6.800,00 €	494.783,62 €
Kerkura	240.718,97 €	167.778,18 €	4.332.941,38 €	1,77%	1.350,00 €	440.000,00 €
Xania	121.631,21 €	82.603,09 €	4.500.354,85 €	1,84%	4.900,00 €	333.257,39 €
Lakonia	107.334,79 €	117.826,26 €	4.508.060,98 €	1,84%	4.500,00 €	465.377,08 €
Evritania	226.179,43 €	154.013,75 €	4.523.588,59 €	1,85%	8.500,00 €	455.819,90 €
Axaia	134.803,51 €	125.065,88 €	4.583.319,30 €	1,87%	2.000,00 €	399.887,27 €
Imathia	194.049,57 €	136.351,82 €	4.851.239,14 €	1,98%	3.000,00 €	424.000,00 €
Viotia	145.823,98 €	135.078,67 €	4.958.015,39 €	2,03%	4.500,00 €	425.447,94 €
Ioannina	150.618,51 €	143.252,41 €	4.970.410,76 €	2,03%	10.809,24 €	440.000,00 €
Kastoria	248.477,70 €	149.544,99 €	5.218.031,70 €	2,13%	4.500,00 €	440.000,00 €
Pellas	161.255,20 €	110.848,24 €	5.321.421,56 €	2,18%	8.718,64 €	402.421,08 €
Ilia	202.632,72 €	202.987,20 €	5.471.083,42 €	2,24%	7.500,00 €	852.147,35 €
Xalkidiki	156.602,18 €	130.402,93 €	5.481.076,40 €	2,24%	9.333,00 €	412.702,10 €
Rodopi	238.707,59 €	131.955,90 €	5.490.274,50 €	2,24%	7.500,00 €	429.123,87 €
Evros	157.903,88 €	150.048,88 €	5.684.539,77 €	2,32%	1.600,00 €	430.000,00 €
Lasithi	133.173,02 €	124.663,22 €	5.992.785,99 €	2,45%	5.000,00 €	427.889,81 €
Xanthi	143.362,86 €	66.989,30 €	6.021.240,30 €	2,46%	45.000,00 €	275.934,16 €
Karditsa	171.470,15 €	155.241,96 €	6.172.925,48 €	2,52%	3.300,00 €	586.000,00 €
Florina	218.464,72 €	144.990,72 €	6.335.476,81 €	2,59%	49.872,66 €	492.261,94 €
Larisa	139.179,90 €	130.559,00 €	6.402.275,31 €	2,62%	5.220,00 €	420.237,98 €
Aitoloakarnania	202.354,46 €	194.089,33 €	6.475.342,73 €	2,65%	4.000,00 €	598.391,92 €
Pieria	162.031,33 €	164.294,54 €	6.481.253,38 €	2,65%	1.050,00 €	430.297,00 €
Kavala	148.477,37 €	131.708,53 €	6.978.436,36 €	2,85%	5.000,00 €	439.035,87 €
Rethimno	117.780,19 €	101.961,09 €	7.184.591,75 €	2,94%	6.500,00 €	401.315,12 €
Kilkis	119.108,63 €	131.178,32 €	7.622.952,51 €	3,12%	5.000,00 €	412.467,40 €
Drama	303.701,47 €	168.601,21 €	7.896.238,18 €	3,23%	20.037,20 €	622.399,80 €
Serres	138.835,79 €	143.988,52 €	7.913.640,14 €	3,24%	997,00 €	551.207,00 €
Arkadia	127.529,73 €	130.525,68 €	8.034.372,83 €	3,28%	3.000,00 €	473.118,28 €
Lesvos	138.853,13 €	137.508,46 €	8.886.600,48 €	3,63%	814,36 €	553.089,21 €
Trikala	172.529,56 €	153.246,73 €	9.489.125,71 €	3,88%	6.700,00 €	440.000,00 €
Thessaloniki	271.882,40 €	121.939,10 €	9.515.884,03 €	3,89%	75.400,00 €	440.000,00 €
Kozani	176.927,33 €	163.041,03 €	9.907.930,51 €	4,05%	1.383,00 €	630.000,00 €
Hrakleio	168.977,45 €	124.614,02 €	14.025.128,44 €	5,73%	11.900,00 €	520.000,00 €
Total	164.065,75 €	142.740,73 €	244.622.038,35 €	100,00%	489,83 €	852.147,35 €

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Table 3 presents quantitative descriptions per Region. The mean or average, describe the central tendency. The lowest mean is of the region Ftiotida with 68.312,69 € and the highest one is of the region Drama with 303.701,47 €. The general tendency of all the regions, the average budget over all regions, is 164.065,75 €.

The Standard Deviation is a description of how tightly the observed data points are clustered around the mean. The region of Ftiotida has the lowest Standard Deviation 62.498,45 € and the highest one belongs to the region of Thesprotia 214.798,38 €. The smaller the standard deviation is, the more statistically representative the average is. In our case we can say that there is a significant distance between the standard deviation and the average of most regions. Graph 2 indicates that 4 regions are dispersed in a great distance from the Average. These regions are the region of Ftiotida (68.312,69 €), Ilia (202.987,20 €), Thesprotia (214.798,38 €) and Xanthi (66.989,30 €). Moreover, only 6 of 44 regions are close to the average. These regions are the most statistically representative ones in our research, and they are the regions of Kozani with 163.041,03 €, of Pieria with 164.294,54 €, of Argolida with 164.347,88 €, of Kuklades with 167.315,47 €, of Kerkura with 167.778,18 € and the region of Drama with 168.601,21 €. The rest regions do have a several distance from the average as we can see in Graph 2 below.

GRAPH 2 - St. Deviation and Average per Region
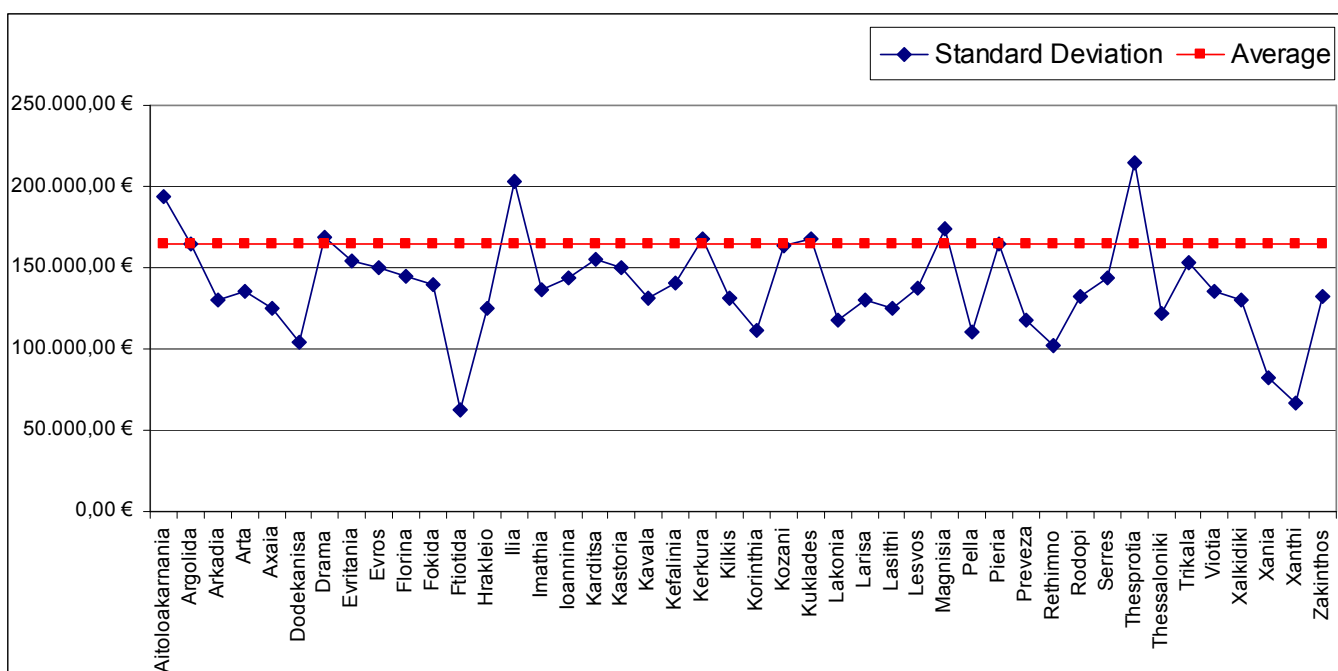
As Table 3 shows, the sum of the general budget is 244.622.038,35 €. From Graph 3 below, which reflects the budget of each region, and from Table 3, we can see that the region of Hrakleio has absorbed the greatest budget 5,73% of the general one, while the second greatest budget is absorbed by the region of Kozani 4,05% of the general budget. On the other hand, the lowest budget is absorbed by the region of Ftiotida 0,22% and the region of Thesprotia has absorbed the 0,41% of the budget.

GRAPH 3 - Budget per Region
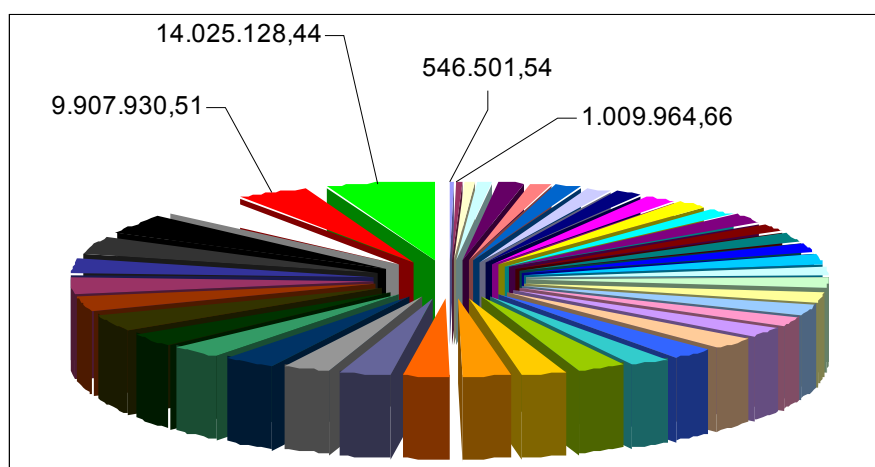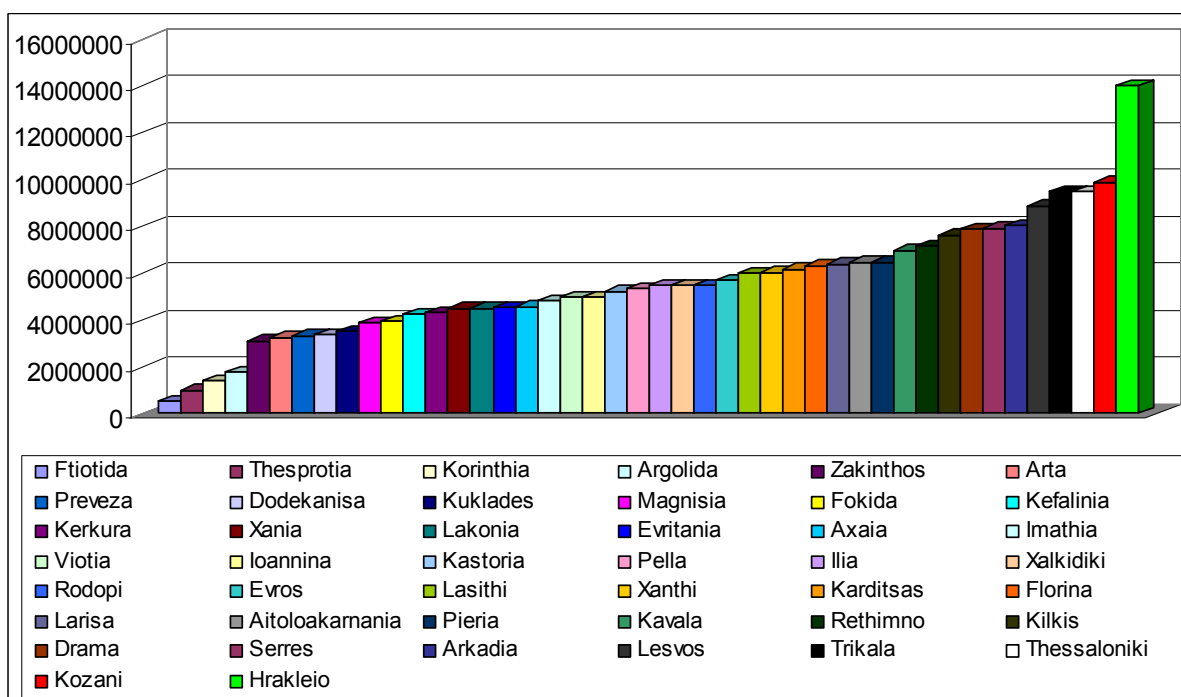
Because it is easier to understand this numbers as percentages, the Graph 4, below shows, in ascending order, the distribution of the budget per region. This type of calculation is performed by divided the budget of the corresponding region over total budget. Line graph Sum% shows increase in the budget over regions. Budget increases more gradually for the regions of Lesvos, Trikala, Thessaloniki, Kozani and Hrakleio compared with other regions. Cumulative distribution (Cum%) is obtained by adding all the previous proportions of the regions at a time. It generally shows which regions have the greatest impact on budget. That is, the increase of budget reflects all the regions between the ranges among the region of Evros and the region of Hrakleio.

GRAPH 4 - Distribution of Budget per Region
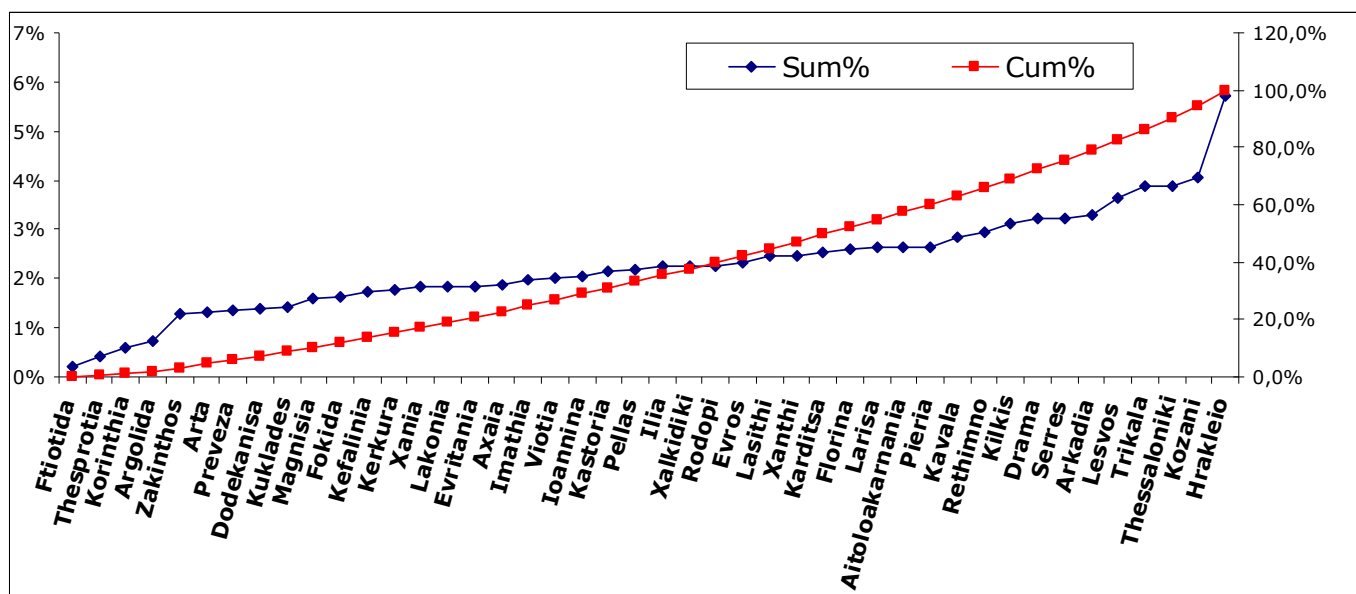
Continuing with the analyzation of data which is categorized by action, we should explain that the actions of CPI Leader Plus are coded for convenience of the evaluation process. The type of each action is shown in Table 4, below.

TABLE 4 - Types of Actions per Code

TYPE OF ACTION	CODE
Creation and improvement of infrastructures of an 'overnight stay' for the completion of capacity of the region.	1.2.1.1
Creation and improvement of infrastructures of focus for the completion of capacity of the region.	1.2.1.2
Growth of agri-tourism (visiting ranches with forecast of infrastructure of overnight stay).	1.2.1.3
Growth alternative and special forms of rural tourism (religious, therapeutical, mountainous, educational, camping etc).	1.2.1.4
Local centres of organization, information and promotion of rural tourism.	1.2.1.5
Enterprises of benefit of services for the service of rural tourism (traditional cafes, centres of creative employment of visitors, etc).	1.2.1.6
Improvements of enterprises of rural tourism for adaptation in the needs of certification or networking (clusters).	1.2.1.7
Craft-based units (cottage industry, craftsmanship, production of types of traditional art, etc).	1.2.2.1
Enterprising exploitation of local natural resources.	1.2.2.2
Enterprises of standardization of products of plant production.	1.2.2.3
Enterprises of transformation of standardization of products of animal production.	1.2.2.4
Enterprises of exploitation aromatic and pharmaceutical plants in original applications.	1.2.2.5
Enterprises of production of foodstuffs afterwards the first transformation.	1.2.2.6
Exploitation of traditional techniques and spaces (patitiria cellars, visiting wine industry).	1.2.2.7
Growth of preys.	1.2.2.8
Enterprises of exploitation soft and renewable sources of energy except primary production.	1.2.2.9
Improvement of enterprises mainly to the direction of protection of environment.	1.2.2.10
Enterprises of benefit of services for the support of social economy and state approval.	1.2.2.11
Improvement of enterprises for adaptation in the needs of certification or networking (clusters).	1.2.2.12
Installation of systems of guarantee of quality (ISO and HACCP).	1.2.3.1
Networking similar or additional enterprises (Clusters).	1.2.3.2
Growth of electronic services of information for the Media (website).	1.2.3.3
Growth of systems of teleworking, teleshopping and electronic trade.	1.2.3.4
Growth of system Growth, certification and control of qualitative signals (biological products etc).	1.2.3.5

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TABLE 5 - Budget per Action

Action	Mean	St. Dev	Sum	Sum %
1.2.1.1	**316.515,23 €**	**121.307,17 €**	**64.569.106,88 €**	**26,4%**
1.2.1.2	136.319,73 €	99.766,24 €	23.992.271,91 €	9,8%
1.2.1.3	387.970,56 €	88.021,41 €	13.966.939,98 €	5,7%
1.2.1.4	168.287,29 €	129.028,50 €	11.611.822,93 €	4,7%
1.2.1.5	70.551,89 €	40.372,35 €	1.058.278,42 €	0,4%
1.2.1.6	104.891,95 €	90.143,17 €	6.398.408,86 €	2,6%
1.2.1.7	99.063,24 €	103.822,52 €	6.141.920,93 €	2,5%
1.2.2.1	**160.868,12 €**	**106.914,80 €**	**27.669.316,45 €**	**11,3%**
1.2.2.2	225.463,32 €	139.360,16 €	2.254.633,17 €	0,9%
1.2.2.3	**256.288,30 €**	**136.850,97 €**	**29.216.866,55 €**	**11,9%**
1.2.2.4	221.897,61 €	138.212,81 €	15.532.832,48 €	6,3%
1.2.2.5	132.652,32 €	75.543,43 €	928.566,22 €	0,4%
1.2.2.6	172.965,85 €	123.903,73 €	18.507.345,42 €	7,6%
1.2.2.7	100.808,83 €	90.881,97 €	3.427.500,36 €	1,4%
1.2.2.8	228.834,52 €	112.144,00 €	5.034.359,36 €	2,1%
1.2.2.9	307.795,70 €	112.144,00 €	307.795,70 €	0,1%
1.2.2.10	190.921,33 €	137.426,56 €	572.764,00 €	0,2%
1.2.2.11	127.881,81 €	128.410,54 €	4.347.981,48 €	1,8%
1.2.2.12	128.186,52 €	85.432,46 €	3.076.476,36 €	1,3%
1.2.3.1	10.341,18 €	6.809,53 €	1.985.505,70 €	0,8%
1.2.3.2	75.795,41 €	38.861,48 €	3.334.998,03 €	1,4%
1.2.3.3	11.036,43 €	11.338,03 €	187.619,27 €	0,1%
1.2.3.4	40.502,37 €	21.678,39 €	405.023,70 €	0,2%
1.2.3.5	13.386,31 €	19.334,66 €	93.704,19 €	0,0%
Total	**164.065,75 €**	142.740,73 €	**244.622.038,35 €**	**100,0%**

Table 5 presents descriptive statistics of the absorbed budget per action of the CPI Leader Plus. The first column shows the average budget per action. The last column (Sum %) indicates the percentage of the budget of an action in terms of the total budget.

More specifically, action 1.2.1.1 (creation and improvement of infrastructures of an 'overnight stay' for the completion of capacity of the region) has the greatest budget (26,4%), compared to the other actions. According to the data, a significant budget recorded by action 1.2.2.3 (enterprises of standardization of products of plant production) with 11,9%, and action 1.2.2.1 (Craft-based units (cottage industry, craftsmanship, production of types of traditional art, etc) with 11,3%. The above three actions are reflecting almost the half of the overall budget 49.6%.

Actions in the group 1.2.1 (1.2.1.1, 1.2.1.2, 1.2.1.3, 1.2.1.4, 1.2.1.5, 1.2.1.6, 1.2.1.7) reflect 52,2% of the total budget, while actions in the group 1.2.2 (1.2.2.1, 1.2.2.2, 1.2.2.3, 1.2.2.4, 1.2.2.5, 1.2.2.6, 1.2.2.7, 1.2.2.8, 1.2.2.9, 1.2.2.10, 1.2.2.11, 1.2.2.12) reflect the 45,3%. Finally under budget investment, actions which belong to the group 1.2.3 (1.2.3.1, 1.2.3.2, 1.2.3.3, 1.2.3.4, 1.2.3.5) reflect only the 2,5% of the total budget.

While the numerical values obtained in the previous Table 5, provide useful information concerning our data, some aspects are better explored virtually. The following Gaph 5 allows inspecting the mean budgets across all actions. The bold split line represents the average of the means of all actions. The actions presented above the bold split line, are reflecting average budget more than the total average budget. More specifically 41,7%, 10 out of 24, of actions are above the split line.

GRAPH 5 - Average Budget per Action
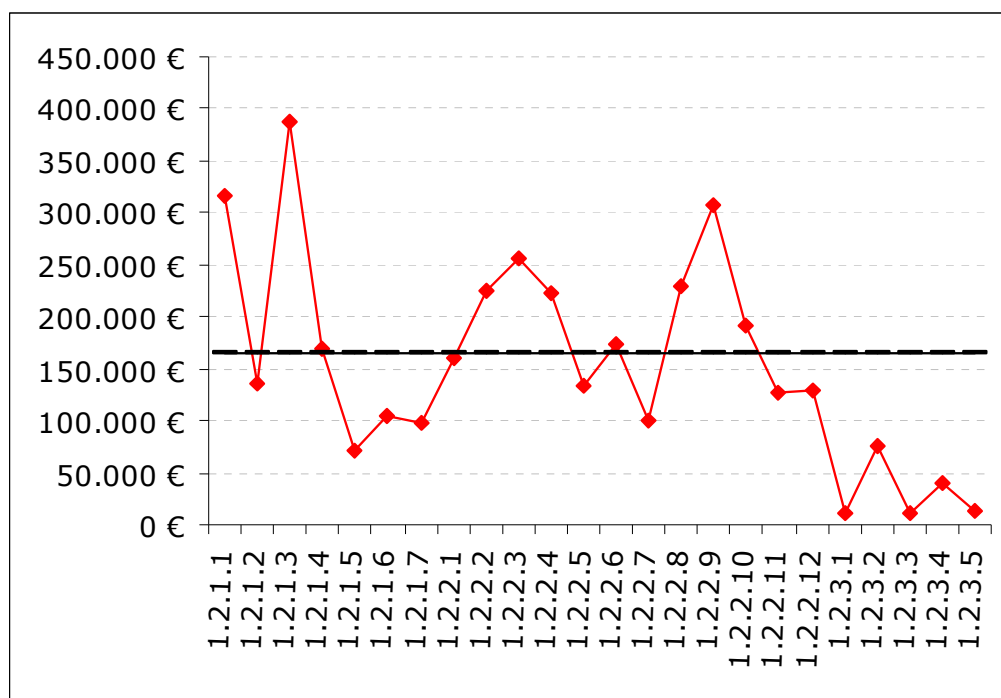
Our action could also be examined by a different way of view. Making groups according to the type of each action, we can classify the actions to 4 fields as shown in Table 6. Now we can analyze the budget of each field among the regions.

TABLE 6 - Fields of Actions according to the type of each one

Type of Action	Code	Fields
Creation and improvement of infrastructures of an 'overnight stay' for the completion of capacity of the region.	1.2.1.1	Agro - tourism
Creation and improvement of infrastructures of focus for the completion of capacity of the region.	1.2.1.2	Agro - tourism
Growth of agri-tourism (visiting ranches with forecast of infrastructure of overnight stay).	1.2.1.3	Agro - tourism
Growth alternative and special forms of rural tourism (religious, therapeutical, mountainous, educational, camping etc).	1.2.1.4	Agro - tourism
Local centres of organization, information and promotion of rural tourism.	1.2.1.5	Agro - tourism
Enterprises of benefit of services for the service of rural tourism (traditional cafes, centres of creative employment of visitors, etc).	1.2.1.6	Agro - tourism
Improvements of enterprises of rural tourism for adaptation in the needs of certification or networking (clusters).	1.2.1.7	Agro - tourism
Craft-based units (cottage industry, craftsmanship, production of types of traditional art, etc).	1.2.2.1	Secondary Sector
Enterprising exploitation of local natural resources.	1.2.2.2	Tertiary Sector
Enterprises of standardization of products of plant production.	1.2.2.3	Tertiary Sector
Enterprises of transformation of standardization of products of animal production.	1.2.2.4	Tertiary Sector
Enterprises of exploitation aromatic and pharmaceutical plants in original applications.	1.2.2.5	Primary Sector
Enterprises of production of foodstuffs afterwards the first transformation.	1.2.2.6	Secondary Sector
Exploitation of traditional techniques and spaces (patitiria cellars, visiting wine industry).	1.2.2.7	Agro - tourism
Growth of preys.	1.2.2.8	Secondary Sector
Enterprises of exploitation soft and renewable sources of energy except primary production.	1.2.2.9	Secondary Sector
Improvement of enterprises mainly to the direction of protection of environment.	1.2.2.10	Agro - tourism
Enterprises of benefit of services for the support of social economy and state approval.	1.2.2.11	Primary Sector
Improvement of enterprises for adaptation in the needs of certification or networking (clusters).	1.2.2.12	Secondary Sector
Installation of systems of guarantee of quality (ISO and HACCP).	1.2.3.1	Tertiary Sector
Networking similar or additional enterprises (Clusters).	1.2.3.2	Tertiary Sector
Growth of electronic services of information for the Media (website).	1.2.3.3	Tertiary Sector
Growth of systems of teleworking, teleshopping and electronic trade.	1.2.3.4	Tertiary Sector
Growth of system Growth, certification and control of qualitative signals (biological products etc).	1.2.3.5	Tertiary Sector

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TABLE 7 - Budget per Region for Agrotourism

Region	Sum	Sum %
Argolida	**345.330,28 €**	**0,26%**
Ftiotida	**436.085,00 €**	**0,33%**
Korinthia	611.776,02 €	0,46%
Thesprotia	869.980,00 €	0,66%
Kastoria	1.223.863,68 €	0,93%
Kilkis	1.258.538,99 €	0,96%
Xalkidiki	1.635.682,78 €	1,24%
Dodekanisa	1.672.943,71 €	1,27%
Fokida	1.683.929,94 €	1,28%
Viotia	1.730.499,56 €	1,31%
Arta	1.747.431,49 €	1,33%
Kozani	1.878.912,50 €	1,43%
Lakonia	2.281.375,30 €	1,73%
Lasithi	2.362.883,99 €	1,79%
Preveza	2.393.572,15 €	1,82%
Drama	2.415.114,61 €	1,83%
Imathia	2.429.913,22 €	1,84%
Zakinthos	2.443.071,89 €	1,85%
Ilia	2.561.352,56 €	1,94%
Kerkura	2.669.151,69 €	2,03%
Kuklades	2.721.204,81 €	2,07%
Ioannina	2.776.176,82 €	2,11%
Florina	2.841.936,24 €	2,16%
Xania	2.850.220,54 €	2,16%
Kefalinia	2.914.002,73 €	2,21%
Magnisia	3.231.728,14 €	2,45%
Xanthi	3.276.212,29 €	2,49%
Axaia	3.321.034,67 €	2,52%
Evros	3.371.295,85 €	2,56%
Pellas	3.561.055,43 €	2,70%
Larisa	3.567.964,71 €	2,71%
Evritania	3.738.703,55 €	2,84%
Rodopi	3.817.371,27 €	2,90%
Kavala	3.956.522,60 €	3,00%
Aitoloakarnania	4.045.118,25 €	3,07%
Pieria	4.046.186,12 €	3,07%
Serres	4.128.482,27 €	3,13%
Karditsa	4.599.655,98 €	3,49%
Rethimno	4.829.691,73 €	3,67%
Trikala	5.305.585,46 €	4,03%
Arkadia	5.366.519,65 €	4,07%
Thessaloniki	**5.777.281,59 €**	**4,39%**
Lesvos	**5.926.850,15 €**	**4,50%**
Hrakleio	**7.116.804,06 €**	**5,40%**
Total	**131.739.014,27 €**	**100,00%**

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GRAPH 6 - Budget per Region for Agrotourism
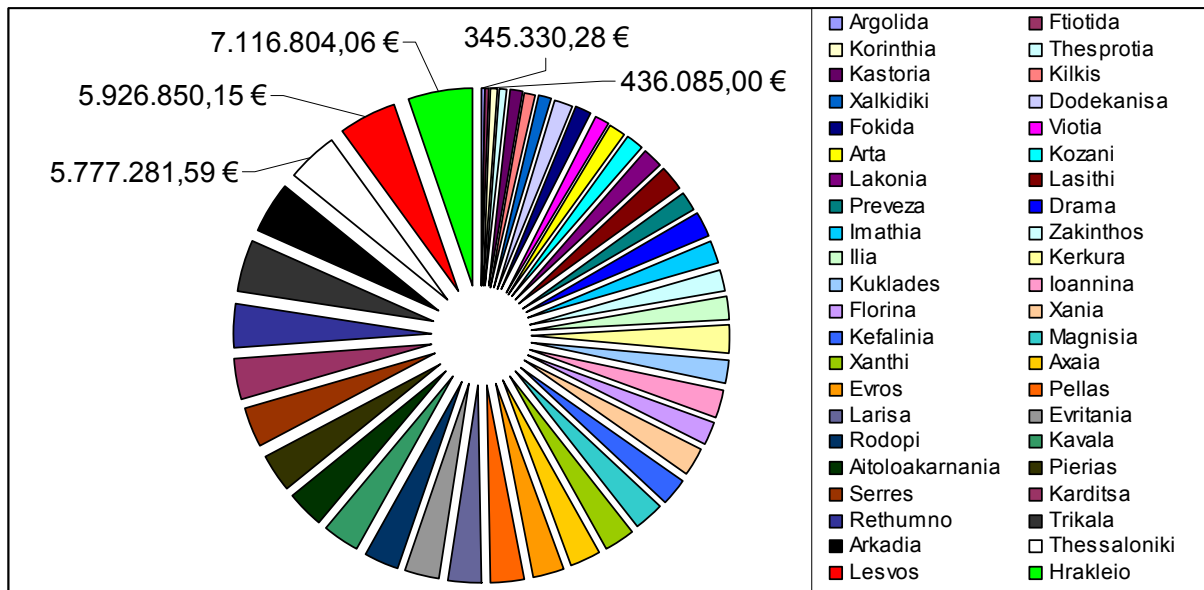
As we can see in Table 7, for the field of Agro – tourism the total budget is 131.739.014,27 € and the average of all regions that invested in this field is 2.994.068,51 €. The regions with the highest budget are the region of Hrakleio with 7.116.804,06 €, of Lesvos with 5.926.850,15 € and the region of Thessaloniki with 5.777.281,59 €. As a percentage of the total budget these three regions have the 14,29%. On the other hand, the regions that have invested less in this field are the regions of Argolida with 345.330,28 € and the region of Fokida with 436.085,00 €. Graph 6 clearly reflects this.

As a percentage of the total budget (244.622.038,35 €), Agro – tourism represents the **53,85%** of it, a great percentage that indicates, that this field is the most important of Leader Plus, as more than the half amount of the total budget was invested to improve and reinforce the Agro – tourism in Greece.

TABLE 8 - Budget per Region for the Primary Sector

Region	Sum	Sum %
Larisa	**40.000,00 €**	**0,79%**
Kuklades	**84.729,74 €**	**1,67%**
Karditsa	104.500,00 €	2,06%
Kilkis	185.492,00 €	3,66%
Aitoloakarnania	215.298,10 €	4,25%
Arkadia	218.234,57 €	4,31%
Hrakleio	221.822,16 €	4,38%
Lasithi	300.000,00 €	5,93%
Lesvos	365.943,23 €	7,23%
Kefalinia	402.337,42 €	7,95%
Ilia	464.746,18 €	9,18%
Rethimno	494.686,01 €	9,77%
Drama	**622.399,80 €**	**12,30%**
Xanthi	**683.006,92 €**	**13,49%**
Xalkidiki	**873.351,57 €**	**17,26%**
Total	**5.276.547,70 €**	**100,00%**

GRAPH 7 – Budget per Region for the Primary Sector

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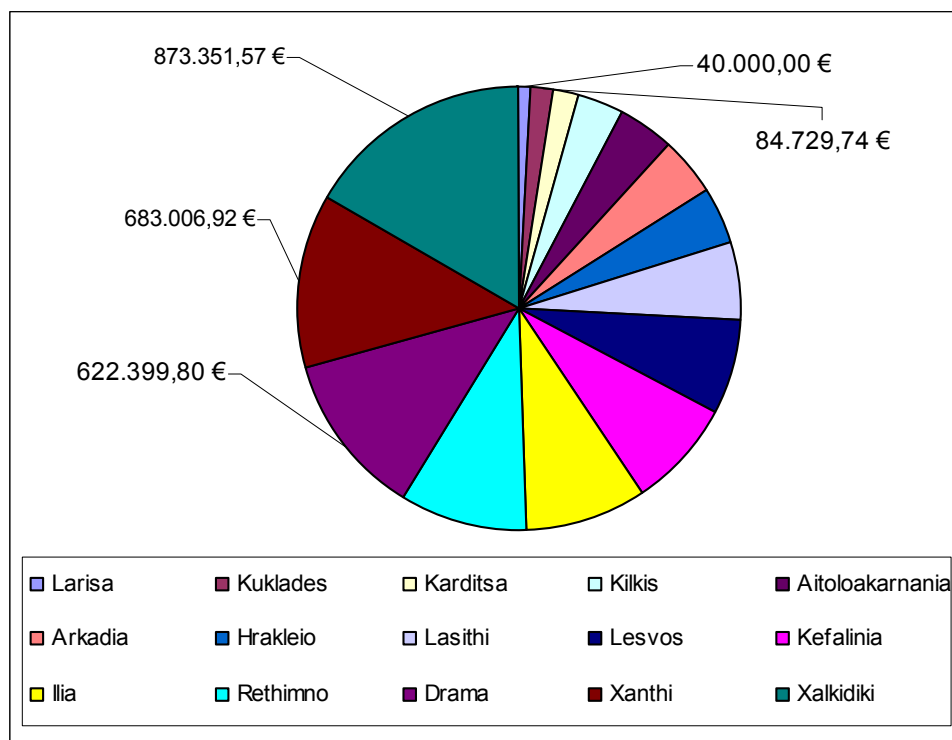
As we can see in Table 8, for the Primary Sector the total budget is 5.276.547,70 € and the average of all regions that invested in this field is 351.769,85 €. The regions with the highest budget are the region of Xalkidiki with 873.351,57 €, of Xanthi with 683.006,92 € and the region of Drama with 622.399,80 €. As a percentage of the total budget these three regions have the 43,05%, a great percentage of the total budget.

On the other hand, the regions that have invested less in this field are the region of Larisa with 40.000,00 € and the region of Kuklades with 84.729,74 €. Graph 7 clearly reflects this.

As a percentage of the total budget (244.622.038,35 €), Primary Sector represents the **2,16%** of it**,** a very small percentage of the budget.

TABLE 9 - Budget per Region for the Secondary Sector

Regions	Sum	Sum %
Ftiotida	**30.600,00 €**	**0,06%**
Zakinthos	**120.808,48 €**	**0,22%**
Magnisia	139.002,51 €	0,25%
Kuklades	180.055,77 €	0,33%
Argolida	189.075,00 €	0,35%
Preveza	259.529,33 €	0,48%
Xalkidiki	340.195,60 €	0,62%
Aitoloakarnania	543.872,12 €	1,00%
Pieria	612.747,81 €	1,12%
Kefalinia	623.162,38 €	1,14%
Evritania	654.198,37 €	1,20%
Imathia	694.539,15 €	1,27%
Lakonia	721.184,17 €	1,32%
Axaia	765.730,69 €	1,40%
Karditsa	779.254,00 €	1,43%
Florina	842.168,57 €	1,54%
Kavala	910.366,13 €	1,67%
Xania	986.126,85 €	1,81%
Evros	994.254,33 €	1,82%
Rodopi	1.133.542,49 €	2,08%
Ilia	1.137.524,92 €	2,08%
Rethimno	1.140.296,28 €	2,09%
Dodekanisa	1.140.516,25 €	2,09%
Fokida	1.261.811,75 €	2,31%
Pellas	1.282.218,36 €	2,35%
Kerkura	1.325.439,91 €	2,43%
Lesvos	1.379.338,17 €	2,53%

Viotia	1.385.432,85 €	2,54%
Ioannina	1.526.947,19 €	2,80%
Arkadia	1.543.425,62 €	2,83%
Xanthi	1.584.021,09 €	2,90%
Larisa	2.183.717,76 €	4,00%
Serres	2.237.934,81 €	4,10%
Drama	2.274.722,55 €	4,17%
Thessaloniki	2.350.794,80 €	4,31%
Lasithi	2.359.988,91 €	4,32%
Kozani	2.453.078,15 €	4,49%
Trikala	2.842.263,33 €	5,21%
Kastoria	**3.150.183,53 €**	**5,77%**
Hrakleio	**4.198.762,51 €**	**7,69%**
Kilkis	**4.316.460,80 €**	**7,91%**
Total	**54.595.293,29 €**	**100,00%**

GRAPH 8 - Budget per Region for the Secondary Sector
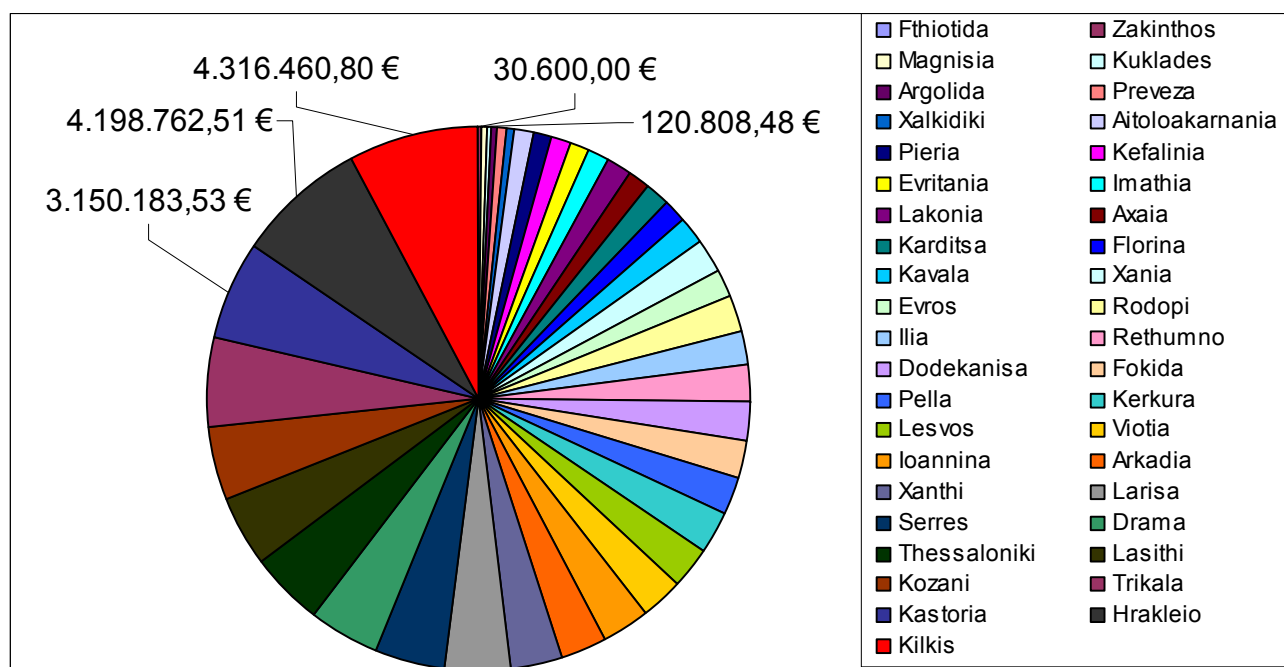
As we can see in Table 9, for the Secondary Sector the total budget is 54.595.293,29 € and the average of all regions that invested in this field is 1.331.592,52 €. The regions with the highest budget are the region of Kilkis with 4.316.460,80 €, of Hrakleio with 4.198.762,51 € and the region of Kastoria with 3.150.183,53 €. As a percentage of the total budget these three regions have the 21,37%.

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On the other hand, the regions that have invested less in this field are the regions of Ftiotida with 30.600,00 € and the region of Zakinthos with 120.808,48 €. Graph 8 clearly reflects this.

As a percentage of the total budget (244.622.038,35 €), Secondary Sector represents the **22,32%** of it.

TABLE 10 - Budget per Region for the Tertiary Sector

Regions	Sum	Sum %
Ftiotida	**79.816,54 €**	**0,15%**
Evritania	**130.686,67 €**	**0,25%**
Thesprotia	139.984,66 €	0,26%
Kefalinia	322.071,22 €	0,61%
Kerkura	338.349,78 €	0,64%
Xanthi	478.000,00 €	0,90%
Pellas	478.147,77 €	0,90%
Axaia	496.553,94 €	0,94%
Magnisia	501.917,05 €	0,95%
Kuklades	515.425,24 €	0,97%
Rodopi	539.360,74 €	1,02%
Zakinthos	549.961,18 €	1,04%
Dodekanisa	558.823,23 €	1,05%
Larisa	610.592,84 €	1,15%
Xania	664.007,46 €	1,25%
Ioannina	667.286,75 €	1,26%
Preveza	678.043,61 €	1,28%
Karditsa	689.515,50 €	1,30%
Rethimno	719.917,73 €	1,36%
Korinthia	810.807,11 €	1,53%
Kastoria	843.984,49 €	1,59%
Arkadia	906.192,99 €	1,71%
Lasithi	969.913,09 €	1,83%
Fokida	999.686,56 €	1,89%
Lesvos	1.214.468,93 €	2,29%
Argolida	1.218.574,22 €	2,30%
Ilia	1.307.459,76 €	2,47%
Evros	1.318.989,59 €	2,49%
Trikala	1.341.276,92 €	2,53%
Thessaloniki	1.387.807,64 €	2,62%
Lakonia	1.505.501,51 €	2,84%
Arta	1.513.684,26 €	2,86%
Aitoloakarnania	1.671.054,26 €	3,15%
Imathia	1.726.786,77 €	3,26%

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Pieria	1.822.319,45 €	3,44%
Viotia	1.842.082,98 €	3,47%
Kilkis	1.862.460,72 €	3,51%
Xalkidiki	2.059.082,45 €	3,88%
Kavala	2.111.547,63 €	3,98%
Serres	2.119.987,06 €	4,00%
Hrakleio	2.487.739,71 €	4,69%
Drama	**2.584.001,22 €**	**4,87%**
Florina	**2.651.372,00 €**	**5,00%**
Kozani	**5.575.939,86 €**	**10,52%**
Total	**53.011.183,09 €**	**100,00%**

GRAPH 9 - Budget per Region for the Tertiary Sector
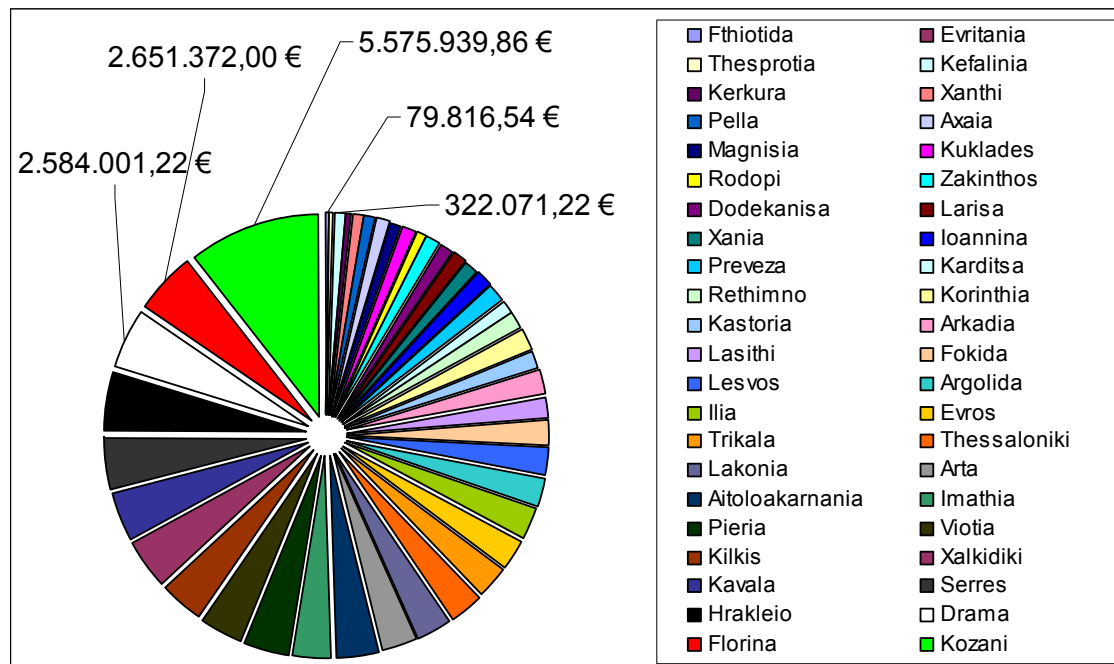
As we can see in Table 10, for the Tertiary Sector the total budget is 53.011.183,09 € and the average of all regions that invested in this field is 1204799,616 €. The regions with the highest budget are the region of Drama with 2.584.001,22 €, of Florina with 2.651.372,00 € and the region of Kozani with 5.575.939,86 €. As a percentage of the total budget these three regions have the 20,39 %.

On the other hand, the regions that have invested less in this field are the regions of Ftiotida with 79.816,54 € and the region of Evritania with 130.686,67 € Graph 8 clearly reflects this.

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As a percentage of the total budget (244.622.038,35 €), Tertiary Sector represents the **21,67%** of it.

In conclusion, Table 11 and Graph 10 reflect the total distribution of Leader Plus per field of actions.

TABLE 11 – Total Budget per Field of Actions

Field	Total Budget	Percentage
Agro - tourism	131.739.014,27 €	53,85%
Primary Sector	5.276.547,70 €	2,16%
Secondary Sector	54.595.293,29 €	22,32%
Tertiary Sector	53.011.183,09 €	21,67%
Total	**244.622.038,35 €**	**100,00%**

GRAPH 10 - Total Budget per Field of Actions
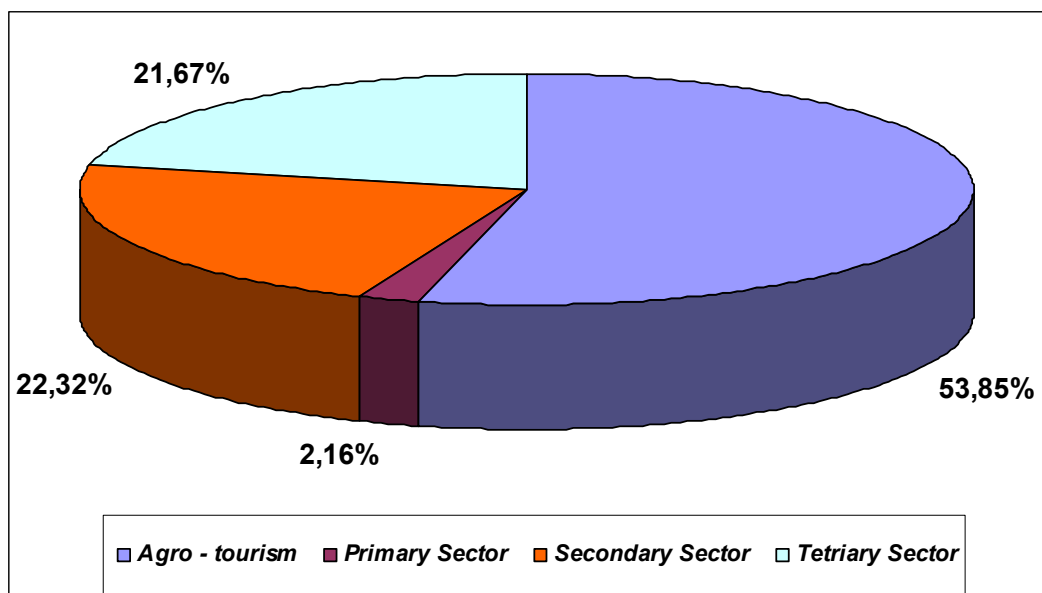
Obviously, Agro – tourism has the greatest budget that means that Leader Plus has contributed a lot to this field in Greece. Tertiary Sector and Secondary Sector have approximately the same budget. Both of them have 43,99**%,** ten percent lower than Agro – tourism itself. As for the Primary Sector, it has the lowest budget of all.

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6.2 Cluster Analysis

In the second part of the research process we continue with data analysis using clustering. Cluster analysis aim to uncover groups of observations from initially unclassified data. Our aim is to decrease regional and action inequalities by determining the best grouping of budgets. The clustering method uses distances between objects when forming the clusters.

The most straightforward way of computing distances is to compute Euclidean distances and the clustering algorithm we use is the Ward's method. Cluster membership is assessed by calculating the total sum of squared deviations from the mean of a cluster. The criterion for fusion is that it should produce the smallest possible increase in the error sum of squares.

One of the biggest problems is identifying the optimum number of clusters. As the fusion process continues, increasingly dissimilar clusters must be fused. The initial step is determining how many groups exist. Taking into account that budget inequalities are due to the regions, a clustering model is implemented in order to determine the best grouping of regions.

Firstly, we analyze according to our regions, secondly, according to municipalities and finally, according to the actions.

The results start with an agglomeration schedule, Table 12, which provides a solution for every possible number of clusters from 1 to 44, the number of our regions. The column to focus on, is the central one which has the heading 'coefficients'. Reading from the bottom upwards, it shows that for one cluster we have an agglomeration coefficient of 86, for two clusters 58,528; for three clusters 37,196; etc.

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TABLE 12 - Agglomeration Schedule per Region, Cluster Analysis

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	19	20	,003	0	0	20
2	36	37	,017	0	0	23
3	3	4	,033	0	0	18
4	6	8	,062	0	0	18
5	40	43	,092	0	0	19
6	15	18	,124	0	0	20
7	39	42	,157	0	0	17
8	41	44	,192	0	0	19
9	12	14	,228	0	0	30
10	34	38	,278	0	0	26
11	7	10	,329	0	0	25
12	16	17	,382	0	0	22
13	29	30	,435	0	0	28
14	11	13	,503	0	0	30
15	5	9	,574	0	0	24
16	1	2	,655	0	0	24
17	35	39	,777	0	7	29
18	3	6	,900	3	4	25
19	40	41	1,028	5	8	23
20	15	19	1,181	6	1	32
21	27	28	1,370	0	0	31
22	16	21	1,564	12	0	32
23	36	40	1,836	2	19	35
24	1	5	2,117	16	15	34
25	3	7	2,400	18	11	34
26	32	34	2,692	0	10	38
27	22	23	3,008	0	0	33
28	29	31	3,410	13	0	37
29	33	35	3,815	0	17	35
30	11	12	4,258	14	9	36
31	26	27	4,748	0	21	37
32	15	16	6,058	20	22	40
33	22	24	7,720	27	0	41
34	1	3	9,509	24	25	36
35	33	36	11,318	29	23	38
36	1	11	13,530	34	30	41
37	26	29	15,753	31	28	39
38	32	33	19,908	26	35	40
39	25	26	24,899	0	37	42
40	15	32	29,932	32	38	43
41	1	22	37,196	36	33	42
42	1	25	58,528	41	39	43
43	1	15	86,000	42	40	0

If we rewrite the coefficients from Table 12, as in Table 13 it is easier to see the changes in the coefficients as the number of clusters increases. The final column, headed 'Change', enables us to determine the **optimum number** of clusters. In this case a clear demarcation point seems to be at number of four (4) clusters, as succeeding clustering adds very much less to distinguishing between cases.

TABLE 13 - The demarcation Point for the number of Clusters per Region

Number of clusters	Agglomeration last step	Coefficients this step	Change
2	86	58,528	27,472
3	58,528	37,196	21,332
4	**37,196**	**29,932**	**7,264**
5	29,932	24,899	5,033
6	24,899	19,908	4,991
7	19,908	15,753	4,155
8	15,753	13,53	2,223
9	13,53	11,318	2,212
10	11,318	9,509	1,809
11	9,509	7,72	1,789

Now we can return to the hierarchical cluster analysis and place cases into four clusters and the results are shown in the Graph 11 below. Also, Dendrogram 1 is used to represent the results of the cluster analysis. Regions with high similarity are adjacent. Lines indicate the degree of similarity or dissimilarity between regions.

DENDROGRAM 1 – Four Clusters per Region

```
* * * * H I E R A R C H I C A L   C L U S T E R   A N A L Y S I S * * * * *

Dendrogram using Ward Method

                    Rescaled Distance Cluster Combine

    C A S E     0         5        10        15        20        25
  Label    Num  +---------+---------+---------+---------+---------+

  Case 21    21  -+
  Case 22    22  -+-+
  Case 17    17  -+ |
  Case 20    20  -+ +-----+
  Case 18    18  -+ |     |
  Case 19    19  -+-+     |
  Case 23    23  -+       |
  Case 3      3  -+       +------------------------------------+
  Case 7      7  -+-----+ |                                    |
  Case 1      1  -+     | | |                                  |
  Case 5      5  -+     | | |                                  |
  Case 6      6  -+-+   +-+                                    |
  Case 9      9  -+ |   |                                      |
  Case 12    12  -+ |   |                                      |
  Case 10    10  -+ +---+                                      |
  Case 13    13  -+ |                                          |
  Case 8      8  -+ |                                          |
  Case 11    11  -+ |                                          |
  Case 4      4  -+-+                                          |
  Case 2      2  -+                                            |
  Case 36    36  -+                                            |
  Case 38    38  -+---+                                        |
  Case 39    39  -+   +---+                                    |
  Case 24    24  -+   |   |                                    |
  Case 30    30  -+---+   +--------------------------+         |
  Case 16    16  -+       |                          |         |
  Case 14    14  ---------+                          |         |
  Case 15    15  -+-+                                +---------+
  Case 25    25  -+ +--------+                       |
  Case 40    40  ---+        |                       |
  Case 42    42  -+          |                       |
  Case 44    44  -+---+      +-----------------------+
  Case 41    41  -+   |      |
  Case 43    43  -+   |      |
  Case 31    31  -+   +-------+
  Case 35    35  -+-+ |
  Case 26    26  -+ | |
  Case 27    27  -+ +-+
  Case 33    33  -+ |
  Case 37    37  -+-+
  Case 28    28  -+
  Case 29    29  -+
  Case 32    32  -+
  Case 34    34  -+
```

GRAPH 11 - Cluster Analysis per Region, Clusters
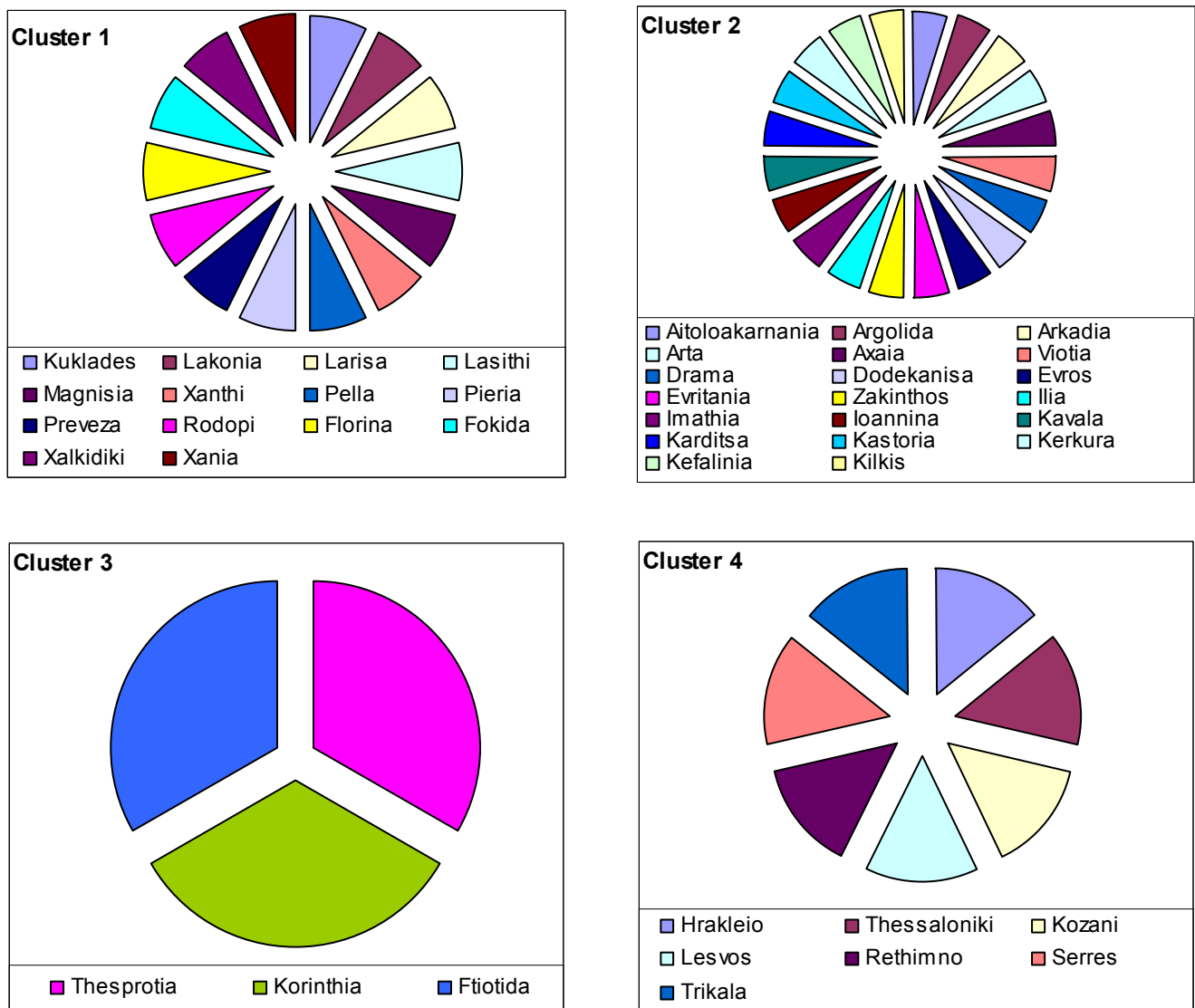
We repeat our hierarchical cluster analysis to determine the best grouping of budgets, but this time with regard to the municipalities. Table A, in the Annex, shows the Agglomeration Schedule per Municipality. We rewrite the coefficients from Table A, as in Table 14, in order to make it is easier to identify the changes in the coefficients. Table 14 indicates again, that the optimum number of clusters is four.

TABLE 14 - The demarcation Point for the number of Clusters per Municipality

Number of clusters	Agglomeration last step	Coefficients this step	Change
2	692	472,526	219,474
3	472,526	303,268	169,258
4	**303,268**	**213,28**	**89,988**
5	213,28	163,052	50,228
6	163,052	125,978	37,074
7	125,978	107,656	18,322
8	107,656	96,244	11,412
9	96,244	85,79	10,454

The Dendrogram 3 – Four Clusters per Municipality is in the Annex and it represents the results of the cluster analysis. Municipalities with high similarity are adjacent. Lines indicate the degree of similarity or dissimilarity between municipalities.

The resulting segments of cluster solution among the budget of municipalities are shown in Tables 15, 16, 17 and 18.

TABLE 15 - Municipalities of Cluster One (1)

Municipalities, Regions							
Agrinio, Aitoloakarnania	Bitina, Arkadia	Elatia, Zakinthos	Ksirobouni, Arta	Farres, Axaia	Argostoli, Kefallinia	Dikaio, Dodekanisa	Feres, Evros
Amfiloxia, Aitoloakarnania	Gortina, Arkadia	Zakinthia, Zakinthos	Kommeno, Arta	Olenia, Axaia	Asterousies, Hrakleio	Kalimnies, Dodekanisa	Dominitsa, Evritania
Antirrio, Aitoloakarnania	Dimitsani, Arkadia	Lagana, Zakinthos	Aigeira, Axaia	Araxobi, Viotia	Galazio, Hrakleio	Leipses, Dodekanisa	Potamia, Evritania
Apodotia, Aitoloakarnania	Korithos, Arkadia	Alikes, Zakinthos	Aigio, Axaia	Distomo, Viotia	Episkopi, Hrakleio	Leros, Dodekanisa	Perdika, Thesprotia
Mesologgi, Aitoloakarnania	Kunouria, Arkadia	Andritsaini, Ilia	Akrata, Axaia	Thespes, Viotia	Thisbi, Viotia	Nisiros, Dodekanisa	Saint Georgios, Thessaloniki
Makrinia, Aitoloakarnania	Lebidiou, Arkadia	Ancient Olimpia, Ilia	Diakopto, Axaia	Apollonia, Thessaloniki	Koronia, Viotia	Patmo Dodekanisa	Naousa, Imathia
Madeona, Aitoloakarnania	Leonidio, Arkadia	Skillounta, Ilia	Kalabrita, Axaia	Basilikes, Thessaloniki	Lebadia, Viotia	Petaloudes, Dodekanisa	Arxanes, Hrakleio
Nafpaktos, Aitoloakarnania	Mantineia, Arkadia	Foloi, Ilia	Klitoria, Axaia	Bertisko, Thessaloniki	Antikira, Viotia	Agathonisio, Dodekanisa	Perdika, Thesprotia
Platanos, Aitoloakarnania	Skiritida, Arkadia	Oleni, Ilia	Messatida, Axaia	Laxana, Thessaloniki	Kiriakio, Viotia	Aleksandroypoli, Evros	Saint Georgios, Thessaloniki
Stratos, Aitoloakarnania	Tegea, Arkadia	Falanthos, Arkadia	Mabri, Axaia	Migdonia, Thessaloniki	Doksato, Drama	Orfea, Region of Evros	Kastellio, Hrakleio
Xalkeia, Aitoloakarnania	Trikolonoi, Arkadia	Athamania, Arta	Patres, Axaia	Metsobo, Ioanninon	Drama, Drama	Samothrakis, Evros	Xersonisos, Hrakleio
Koutsopodi, Argolida	Alikes, Zakinthos	Ambaki, Arta	Rio, Axaia	Filippes, Kavala	Nikiforo, Drama	Souflio, Evros	

| Lurkeia, Argolida | Arkadies, Zakinthos | Blaxerna, Arta | Simpolitia, Axaia | Makedones, Kastoria | Astipalaia, Dodekanisa | Trainaoupoli, Evros | |
| Axladokampou, Argolida | Artemisia, Zakinthos | Kompoti, Arta | Tritaia, Axaia | Mesopotamia, Kastoria | Afanto, Dodekanisa | Tixero, Evros | |

TABLE 16 - Municipalities of Cluster Two (2)

Municipalities, Regions
Prosotsani, Drama
Karpenisi, Evritania
Nick Kazantzaki, Hrakleio
Konitsa, Ioannina
Thasos, Kavala
Nevropolis Agrafon, Karditsa
Agia Triada, Kastoria
Servion, Kozani
Elassona, Larissa
Mitilinis, Lesvos
Aridaia, Pellas
East Olympos, Pierias
Aithikon, Trikala
Amintaio, Florina

TABLE 17 - Municipalities of Cluster Three (3)

Municipalities, Regions				
Zaxaros, Ilia	Soxou, Thessaloniki	Agioi Anarguroi, Kastoria	Evrimenon, Larisa	Amorgos, Kuklades
Pinias, Ilia	Mastoroxoria, Ioannina	Argos Orestiko, Kastoria	Kato Olumpos, Larisa	Thira, Kuklades
Dovra, Imathia	Pamvotida, Ioannina	Kastoria, Kastoria	Poludamanda, Larisa	Mukonos, Kuklades
Makedonidos, Imathia	Pasaronos, Ioannina	Agios Georgios, Kerkura	Farsala, Larisa	Sifnos, Kuklades
Arkaloxori, Hrakleio	Perama, Ioannina	Axilleio, Kerkura	Portaria, Magnisia	Asopos, Lakonia
Gouvon, Hrakleio	Aetomilitsis, Ioannina	Thinalio, Kerkura	Skiathos, Magnisia	Voion, Lakonia
Zarou, Hrakleio	Vovousis, Ioannina	Melitiaion, Kerkura	Filipiada Preveza	Elos, Lakonia
Kofina, Hrakleio	Distratou, Ioannina	Palaiokastrito, Kerkura	Kouriton, Rethimno	Zrakas, Lakonia
Krousona, Hrakleio	Kalariton, Ioannina	Paxon, Kerkura	Evropos, Kilkis	Therapnon, Lakonia
Mallion, Hrakleio	Sirakou, Ioannina	Parelion, Kerkura	Krousos, Kilkis	Krokes, Lakonia
Moiron, Hrakleio	Fourkas, Ioannina	Faiakon, Kerkura	Mourion, Kilkis	Skala, Lakonia
Rouva, Hrakleio	Mikis, Xanthi	Ereikousis, Kerkura	Pikrolimni, Kilkis	Spartiaton, Lakonia
Tulisou, Hrakleio	Exaplatanou, Pella	Eleiou o Pronon, Kefalinia	Polukastro, Kilkis	Faridos, Lakonia
Tumpakiou, Hrakleio	Katerini, Pieria	Erisou, Kefalinia	Agia Paraskeui, Kozani	Oropediou, Lasithiou
Sivota, Thesprotia	Preveza, Preveza	Leivathous, Kefalinia	Askiou, Kozani	Vraxasiou, Lasithiou
Arethousas, Thessaloniki	Eleutheroupoli, Kavala	Palikis, Kefalinia	Velventou, Kozani	Eresou - Antisis, Lesvos
Egnatia, Thessaloniki	Kavala, Kavala	Samis, Kefalinia	Elimias, Kozani	Kallonis, Lesvos
Kallindion, Thessaloniki	Orfano, Kavala	Omalon, Kefalinia	Mourikiou, Kozani	Muthimnas, Lesvos
Koronias, Thessaloniki	Xrusoupoli, Kavala	Axioupoli, Kilkis	Livaderou, Kozani	Agria, Magnisia
Lagkada, Thessaloniki	Ithomis, Karditsa	Goumenisa, Kilkis	Pentalofo, Kozani	Artemidas, Magnisia
Maditou, Thessaloniki	Itamou, Karditsa	Elafonisos, Lakonia	Evrostini, Korinthos	Neas Ionias, Magnisia
Rentinas, Thessaloniki	Mitropoli, Karditsa	Antixasion, Larisa	Sikuonion, Korinthos	

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TABLE 18 - Municipalities of Cluster Four (4)

Municipalities, Regions				
Plasters, Karditsa	Plomario, Lesvos	Desfini, Fokida	Foinika, Rethimno	Malakasa, Trikala
Galliko, Kilkis	Alonisos, Magnisia	Tolofonos, Fokida	Aigirou, Rodopi	Pialion, Trikala
Kilkis Kilkis	Mileon, Magnisia	Anthemounta, Xalkidiki	Arianoi, Rodopi	Aspropotamos, Trikala
Vermiou, Kozani	Mouresi, Magnisia	Arnaia, Xalkidiki	Komotini, Rodopi	Domokos, Ftiotida
Ellispontos, Kozani	Skopelos, Magnisia	Zervoxorion, Xalkidiki	Maronia, Rodopi	Ypatis, Ftiotida
Kozani, Kozani	Avdira, Xanthi	Panagia, Xalkidiki	Louros, Preveza	Pauliani, Ftiotida
Stiatista, Kozani	Vistonidos, Xanthi	Poluguro, Xalkidiki	Parga, Preveza	Aetos, Florina
Nemea, Korinthos	Xanthi, Xanthi	Stageiron - Akathiou, Xalkidiki	Fanariou, Preveza	Sapon, Rodopi
Kea, Kuklades	Stavroupoli, Xanthi	Triglias, Xalkidiki	Anogeion, Rethimno	Alistratis, Serres
Milos, Kuklades	Topeiro, Xanthi	Vamos, Xania	Hrakleia, Serres	Amfipoli, Serres
Tinos, Kuklades	Vegoritida, Pellas	Voukolion, Xania	Kerkinis, Serres	Axinos, Serres
Moaloi, Lakonia	Edessa, Pellas	Georgiopoleos, Xania	Nea Zixnis, Serres	Visaltias, Serres
Monemvasia, Lakonia	Menidos, Pellas	Inaxorio, Xania	Nigritis, Serres	Emanouil Pappa, Serres
Melivia, Larissa	Kolindrou, Pieria	Keramion, Xania	Rodolivous,Serres	Arkadiou, Rethimno
Nessono Larissa	Korinou, Pieria	Kolumpario, Xania	Serres, Serres	Geropotamos, Rethimno
Agiou Nikolaou, Lasithiou	Petra, Pieria	Krionerida, Xania	Sidirokastro, Serres	Kouloukona, Rethimno
Ierapetra, Lasithiou	Kato Klina, Florina	Mousouron, Xania	Skotousis, Serres	Lampis, Rethimno
Neapoli, Lasithiou	Melitis, Florina	Platania, Xania	Agkistrou, Serres	Lappaion, Rethimno
Sirtias, Lasithiou	Perasma, Florina	Fre, Xania	Vrontous, Serres	Pieria, Pieria
Atsikis, Lesvos	Filotas, Florina	Gavdou, Xania	Oreinis, Kavala	Zlogou, Preveza
Moudroy, Lesvos	Florina, Florina	Nikoforos Fokas, Rethimno	Vasiliki, Trikala	
Myrina Lesvos	Amfisas, Fokida	Rethimno, Rethimno	Klinovou, Trikala	
New Koutali, Lesvos	Galaxidi,Fokida	Survito, Rethimno	Koziaka, Trikala	

At this point, insisting on the common characteristics of each cluster, we should say that social, economical, geographical and geomorphical factors of each region played a significant role in absorbing the budget of Leader Plus program. For sure, each cluster have identical regions which mostly have the same indicators, such as GDP, quality of life, etc.

Concluding, for the clusters of our regions, a comparison of budget characteristics among regions in Table 19 below, reveals that excess budget was the characteristic in cluster with the budget of 2103.535.231,28 €. Average budget in cluster 2 is 52.131,68% greater than average budget in cluster 3. Also, cluster 3 has only the 1,22% of the total budget.

TABLE 19 – Cluster per Region percentage of the Total Budget

	Budget	Sum%	Average	Number of Regions
Cluster 3	2.979.049,33 €	**1,22%**	993.016,44 €	3
Cluster 4	**66.922.901,06 €**	**27,36%**	**9.560.414,44 €**	**7**
Cluster 1	71.184.856,68 €	**29,10%**	5.084.632,62 €	14
Cluster 2	**103.535.231,28 €**	**42,32%**	**5.176.761,56 €**	**20**
Total	244.622.038,35 €	100,00%		44

As is evident in Table 19 and Graph 12 below, cluster 2 account for 20 regions, compare to cluster 3 which account only for 3 regions. Also, cluster 4 has 7 regions and cluster 1 has 14 regions.

GRAPH 12 - Average Budget per Region per Cluster
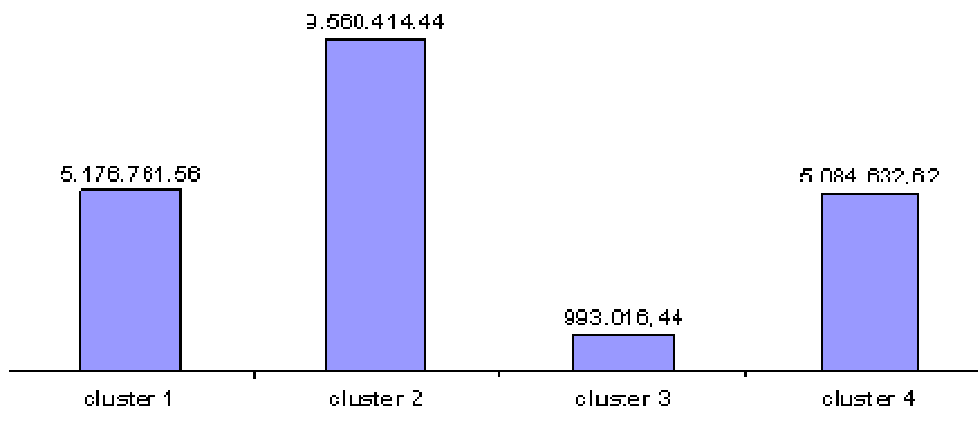
There is no clear difference in average budget between cluster 1 and cluster 4. Nevertheless, there is a significant divergence in the number of regions between cluster 1 and cluster 4. Cluster 4 has the half number of regions compared to cluster 1. We can assume that there is a great unevenness in the number of regions per Cluster. Identical are the conclusions for the clusters of our municipalities.

Finally, data are grouped according to the budget per action. The resulting segments of clustering according to Table 19, are written in Table 20. The best grouping of budget with regard to the actions are three and are presented in Table 21, below.

TABLE 20 - Agglomeration Schedule per Action, Cluster Analysis

Agglomeration Schedule						
Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	22	23	,010	0	0	7
2	6	7	,020	0	0	13
3	16	17	,030	0	0	14
4	19	20	,043	0	0	8
5	14	15	,059	0	0	14
6	3	4	,082	0	0	15
7	22	24	,112	1	0	16
8	19	21	,144	4	0	11
9	8	10	,190	0	0	18
10	11	13	,250	0	0	18
11	18	19	,319	0	8	16
12	9	12	,413	0	0	17
13	5	6	,527	0	2	17
14	14	16	,674	5	3	19
15	2	3	1,092	0	6	20
16	18	22	1,582	11	7	19
17	5	9	2,116	13	12	21
18	8	11	2,902	9	10	20
19	14	18	4,444	14	16	23
20	2	8	6,680	15	18	21
21	2	5	10,481	20	17	22
22	1	2	22,617	0	21	23
23	1	14	46,000	22	19	0

TABLE 21 - The demarcation Point for the number of Clusters per Action

Number of clusters	Agglomeration last step	Coefficients this step	Change
2	46	22.617	23,383
3	22,617	10,481	12,136
4	10,481	6,68	3,801
5	6,68	4,444	2,236
6	4,444	2,902	1,542

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TABLE 22 - Actions of Clusters

Clusters	Actions
Cluster 1	1.2.1.1
Cluster 2	1.2.1.2, 1.2.1.3, 1.2.1.4, 1.2.1.5, 1.2.1.6, 1.2.1.7, 1.2.2.1, 1.2.2.2, 1.2.2.3, 1.2.2.4, 1.2.2.5, 1.2.2.6
Cluster 3	1.2.2.7, 1.2.2.8, 1.2.2.9, 1.2.2.10, 1.2.2.11, 1.2.2.12, 1.2.3.1, 1.2.3.2, 1.2.3.3, 1.2.3.4, 1.2.3.5

Also, Dendrogram 3 is used to represent the results of the cluster analysis. Actions with high similarity are adjacent. Lines indicate the degree of similarity or dissimilarity between actions.

DENDROGRAM 2 – Four Clusters per Region
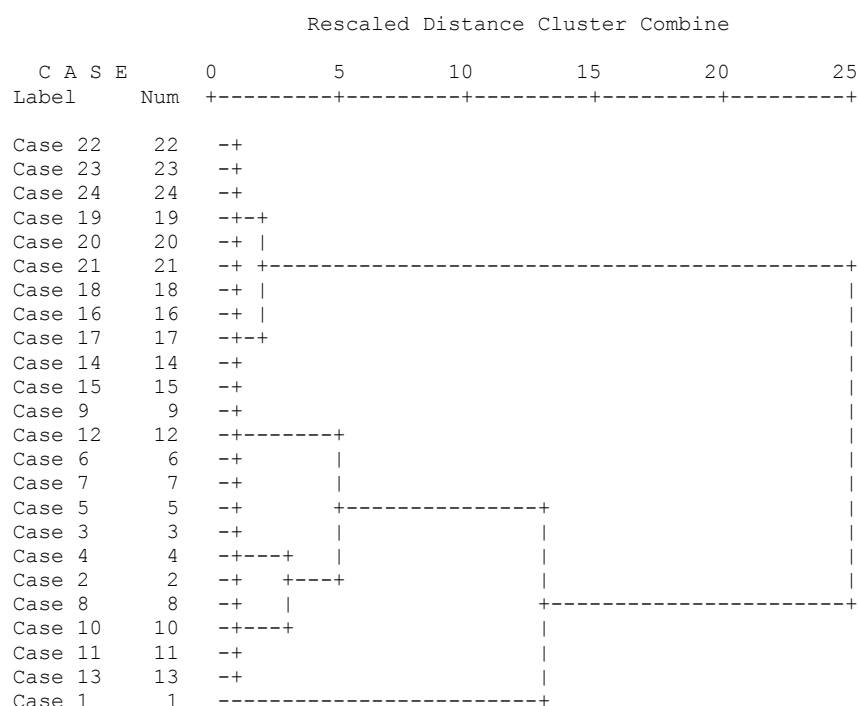
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* * * * H I E R A R C H I C A L   C L U S T E R   A N A L Y S I S * * * * *

 Dendrogram using Ward Method

                     Rescaled Distance Cluster Combine

   C A S E        0         5        10        15        20        25
  Label     Num   +---------+---------+---------+---------+---------+

 Case 22     22   -+
 Case 23     23   -+
 Case 24     24   -+
 Case 19     19   -+-+
 Case 20     20   -+ |
 Case 21     21   -+ +--------------------------------------------+
 Case 18     18   -+ |                                            |
 Case 16     16   -+ |                                            |
 Case 17     17   -+-+                                            |
 Case 14     14   -+                                              |
 Case 15     15   -+                                              |
 Case 9       9   -+                                              |
 Case 12     12   -+-------+                                      |
 Case 6       6   -+       |                                      |
 Case 7       7   -+       |                                      |
 Case 5       5   -+       +--------------+                       |
 Case 3       3   -+       |              |                       |
 Case 4       4   -+---+   |              |                       |
 Case 2       2   -+   +---+              |                       |
 Case 8       8   -+   |         +---------------------+          |
 Case 10     10   -+---+         |                     |
 Case 11     11   -+             |                     |
 Case 13     13   -+             |                     |
 Case 1       1   -----------------------+             +
```

The distribution of actions per cluster illustrates several interesting points, which in turn induces higher investment and a better use of the budget. This is because action 1.2.1.1 is dominated by the greatest budget amount compared with other actions. Due to the fact that cluster 1 represent the budget of only one action, budget among actions create a type of asymmetric information. The abnormal fluctuations of budget per action are presented in the following Table 23. As seen the average budget follow a downward movement.

TABLE 23 - Cluster per Action percentage of the Total Budget

	Budget	Sum%	Average	Number of Regions
Cluster 1	64.569.106,88 €	26,40%	64.569.106,88 €	1
Cluster 2	157.279.203,32 €	64,29%	13.106.600,28 €	12
Cluster 3	22.773.728,15 €	9,31%	2.070.338,92 €	11
Total	244.622.038,35 €	100,00%		24

As shown, the region and action is a stabilized factor for the budget. As a result, the distribution of budget has a low value and property rights are not well – protected. Also, Graph 13 indicated the inequalities in the distribution of the budget regarding the actions of Leader Plus.

GRAPH 13 – Average Budget per Action per Cluster
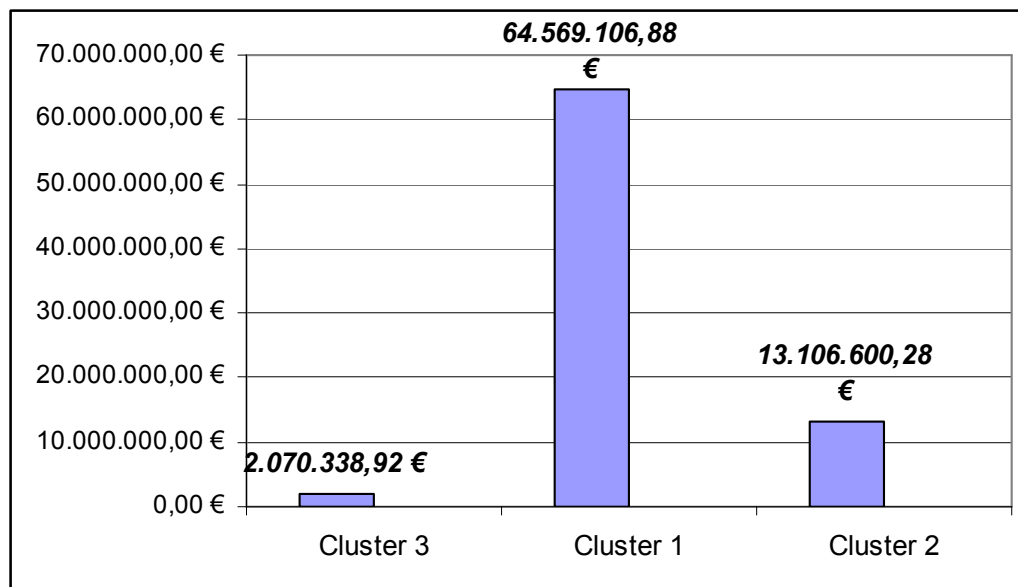
6.3 Factor Analysis

The next approach described is different from the techniques presented above and it is designed to summarizing and uncovering any patterns in our set of data, essentially by reducing the complexity of the data. The method of our analysis is Factor Analysis.

Factor Analysis is concerned with whether the covariances or correlations between a set of observed variables can be explained in terms of a smaller number of unobservable constructs known either as **latent variables** or **common factors**. Explanation here means that the correlation between each pair of measured variables arises because of their mutual association with the common factors. Consequently, the partial correlations between any pair of observed variables, given the values of the common factors, should be approximately zero.

The main aim of our analysis will be to identify patterns between regions, municipalities, actions and budgets.

We start by generating a correlation matrix as presented below. The correlation matrix of the data shows that correlations are substantial, except for actions, suggesting that some simplification of the data using a Principal Component Analysis will be possible. In SPSS principal component analysis is classed as a form of factor analysis and the resulting boxes are shown below in Table 24.

TABLE 24 - Correlations, Factor Analysis

		Regions	Municipalities	Project	Budget	Actions
Regions	**Pearson Correlation**	1	,974**	,997**	-,052*	,003
	Sig.(2-tailed		,000	,000	,043	,911
Municipalities	**Pearson Correlation**	,974**	1	,970**	-,045	-,025
	Sig.(2-tailed	,000		,000	,081	,327
Projects	**Pearson Correlation**	,997**	,970**	1	-,053	,001
	Sig.(2-tailed	,000	,000		,043	,968
Budget	**Pearson Correlation**	-,052*	-,045	-,053*	1	-,461**
	Sig.(2-tailed	,043	,081	,043		,000
Actions	**Pearson Correlation**	,003	-,025	,001	-,461**	1
	Sig.(2-tailed	,911	,327	,968	,000	
N		1491	1491	1491	1491	1491

**Correlation is significant at the 0.01 level, * Correlation is significant at the 0.05 level

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The coefficients in the Table 25, Component Matrix, specify the linear function of the observed variables that define each component. The coefficients are scaled so that when the Principal Component Analysis is based on the correlation matrix, they give the correlations between the observed variables and the principal components.

TABLE 25 - Component Matrix [a], Factor Analysis

	Component				
	1	**2**	**3**	**4**	**5**
Regions	,997	,017	,020	-,067	-,040
Municipalities	,987	,038	-,002	,155	,003
Projects	,995	,018	,018	-,087	,037
Budget	-,078	,851	,519	,001	7,88E-005
Actions	,007	-,856	,517	,005	,000

Extraction Method: Principal Component Analysis, a: 5 components extracted.

TABLE 26 - Total Variance Explained, Factor Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	**%of Variance**	**Cumulative%**	**Total**	**% of Variance**	**Cumulative%**
1	2,964	59,288	59,288	2,964	59,288	59,288
2	1,460	29,196	88,483	1,460	29,196	88,483
3	,537	10,738	99,222	,537	10,738	99,222
4	,036	,720	99,941	,036	,720	99,941
5	,003	,059	100,000	,003	,059	100,000

Extraction Method: Principal Component Analysis.

The Table 26, Total Variance Explained, shows how much of the total variance of the observed variables is explained by each of the principal components.

The first principal component (scaled eigenvector), by definition the one that explains the largest part of the total variance, has a variance (eigenvalue) of 2,964, which amounts to 60% of the total variance. The second principal component has a variance of about 1,5 and accounts for a further 29% of the variance and so on. The "Cumulative%" column of the table tells us how much of the total variance can be accounted for by the

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first k components together. For example, the first two principal components account for 88% of the total variance.

GRAPH 14 - Scree Plot, Factor Analysis
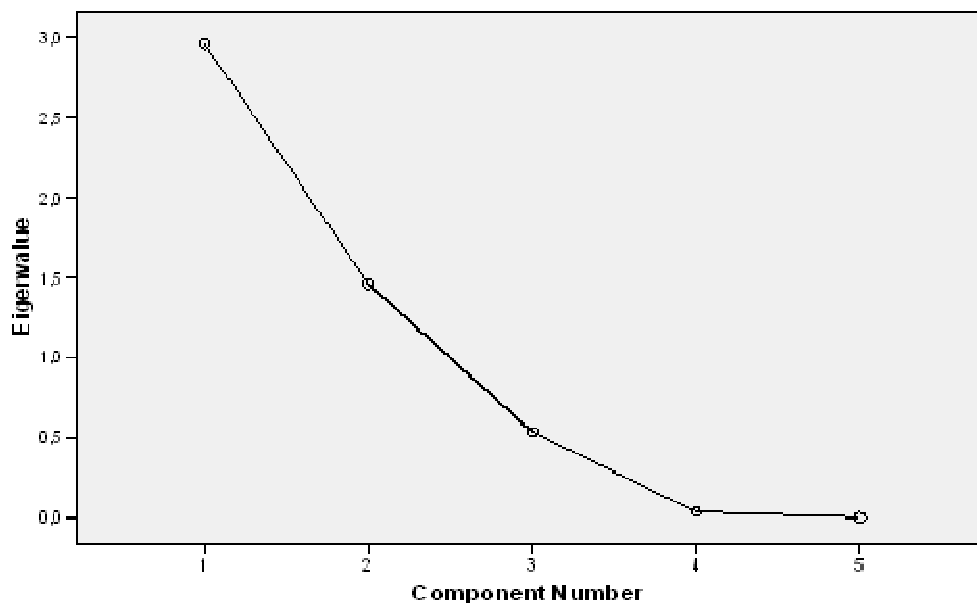
The Scree Plot in Graph 13, demonstrates this distribution of variance among the components graphically. For each principal component, the corresponding eigenvalue is plotted on the *y*-axis. By definition the variance of each component is less than the preceding one, but what we are interested in is the "shape" of the decrease. If the curve shows an "elbow" at a given value on the *x*-axis, this is often taken as indicating that higher order principal components contribute a decreasing amount of additional variance and so might not be needed. Here, appears to be a marked decrease in downward slope after the second principal component implying that we can summarize our five variables by the first two principal components.

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Conclusions

Concluding the thesis, the author would like to briefly summarise what has been presented in this text. As indicated in the first part of the thesis, the main goal was to critically assess the effects and the aftermath of the application of the Leader Plus in the regions of Greece. To better achieve that, the author has presented the basic facts of agriculture policy in Europe, where a holistic approach on this matter created a generally accepted strategy for the whole of Europe. This strategy, during the 1970's took the form of Mediterranean Integrated Programs, with a general purpose to counter the inequalities in terms of economic growth as well as in sociological terms. The years that followed the application of the Mediterranean Integrated Programs the inequalities remained at high levels. Moreover, the changes that occurred in the synthesis and the characteristics of the rural areas, created the need for adaptation of the European Agricultural strategy. The answer to these was the creation and implementation of a new form of community initiative programme called Leader. During the first period, Leader created infrastructures, networks and promoted collaboration between participants with an aim to promote and market the products of the rural areas. This first incarnation of Leader; according to the Managing Authority (as presented in the text), managed to achieve its goals and purpose. The second implementation of Leader (i.e. Leader II), utilised the outcome of the first one as a stepping stone, and built on top of it new networks of larger scale. Moreover, Leader II has been characterised by bigger projects, than those of the first one. They were bigger, both in terms of size and in terms of budget. The purpose of this incarnation has been the synchronisation to the then running conditions. Another aspect of the application of Leader II has been the magnification of the total projects and the increase of the total areas that benefited from it. Once again, the evaluation of Leader II has been positive. During the last implementation of Leader (i.e. Leader Plus), the changes that occurred in the conditions have been adopted by the project leaders. Leader Plus focused on the human factor and mainly the training of young people, women and other disadvantaged sociological groups in enabling them to create their own business in agricultural theme (production, product transformation, packaging, promotion, advertisement).

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In this context, this thesis comes into the picture by practically trying to critically assess; and evaluate the implementation of Leader Plus and its outcome. To achieve that, the author has set three research questions that would be answered by the analysis of the sample data. In short, this research tries to identify the main objectives of the CPI Leader Plus and whether or not these objectives have been met. Additionally, in order to assess whether the identified inequalities have been countered after the application of the Leader Plus funded projects by also measuring the economic, sociologic as well as other kinds of effects of the programme and how these relate to the programme's objectives. The research used Principal Components Analysis, Cluster Analysis and finally Factor Analysis to categorise the collected data and this way, answer the above questions.

The practical analysis of this thesis indicated that there are many imbalances between the regions in Greece regarding the ability of absorbing the approved budget. In general, some regions have absorbed the majority of the total budget of Leader Plus program, especially regions of Hrakleio and Kozani have the 9,78% of the budget while there were regions like the region of Ftiotida that had only the 0,22%.

As for the actions of Leader Plus program, the important conclusions are that there were also imbalances. Agro – tourism has the leading role in the program, fact that indicates the Greece focus on this field. More than the have budget was invested in actions that improved Agro – tourism. As for the Primary Sector, it played the imperceptible role , having the lowest budget of all. Tertiary Sector and Secondary Sector had approximately the same budget. Both of them have 43,99**%,** approximately ten percent lower than Agro – tourism itself.

In order to identify the inequalities after the application of Leader Plus, a cluster analysis had been used. Clustering uncover that budget among regions, resulting in an ineffective or weak enforcement of regulation of budget per region.

Specifically, an excess budget was the characteristic in cluster 2 with the 42,32% of the total budget. The average budget in cluster 2 is 52.131,68% greater than average budget in cluster 3. Also, cluster 3 has only the 1,22% of the total budget. We conclude that there were a great unevenness in the percentage of the budget and the number of regions per Cluster. The distribution of actions per cluster illustrates several interesting points, which in turn induces higher investment and a better use of the budget. It is obvious

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that the distribution of budget had a low value and property rights are not well – protected. We conclude that the regional inequalities in Greece, do affect the ability of absorbing of the total budget of Leader Plus, making uneven the distribution of it. Finally, the unevenness in the number of regions per group (cluster), the economic, sociologic as well as other kinds of effects of the programme caused a heavy burden on budget and budget default inevitable.

In summary, Leader Plus, although expanded rapidly, it was poorly managed in terms of liquidity transformation. Regions suffered from capital inadequacy that could not preserve budget stability.

Leader Plus may not have implemented all of the set targets, and there are still a lot of inequalities among Greek regions. But for sure, it do have helped people living in the chosen areas to improve their lives. Also, during the crises we are living today, most of the invested actions do have contributed in the survival of these people living making milder the crisis effects.

Final Discussion and Further research proposition

Closing this text, it must be noted that the research findings indicate that the application of the Leader Plus Community Initiative Programme did not have the expected results and effects in Greece. It could be relatively safe to state that Leader Plus did not have the maximum effect on both sociologic and economic terms in the areas that have been applied. However, there are some limitations in this research.

First of all, there was no cross – evaluate with other countries' relevant programmes. Another limitation of this thesis' approach is that it did not take into account the previous incarnations of the programme in their effect. Having said that, there is place for further research that will investigate and compare the results of previous Leader programmes with Leader Plus, both in Greece and abroad. By doing so, the researchers will be able to capitalise on previous findings to maximise their analytical potential and dynamic.

Another approach would be to use other analysis methods such as documentary study (Hudeckova and Lostak, 2012) in order to critically assess the participators' involvement level as well as to compare the Leader Plus with the previous instalments of the programme.

Annex

TABLE A - Agglomeration Schedule per Municipality, Cluster Analysis

	Agglomeration Schedule					
Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	69	70	,000	0	0	165
2	170	171	,000	0	0	24
3	300	301	,000	0	0	25
4	178	179	,000	0	0	219
5	125	126	,000	0	0	125
6	5	6	,000	0	0	19
7	60	61	,000	0	0	117
8	185	186	,001	0	0	239
9	205	206	,001	0	0	132
10	316	317	,001	0	0	215
11	218	219	,001	0	0	145
12	221	222	,001	0	0	62
13	143	144	,001	0	0	60
14	130	132	,001	0	0	226
15	84	86	,002	0	0	177
16	213	215	,002	0	0	47
17	250	252	,002	0	0	98
18	31	32	,002	0	0	36
19	5	7	,003	6	0	54
20	141	142	,003	0	0	81
21	65	66	,003	0	0	85
22	127	128	,004	0	0	125
23	106	107	,004	0	0	52
24	168	170	,005	0	2	95
25	298	300	,005	0	3	92
26	115	118	,006	0	0	172
27	283	286	,006	0	0	158
28	166	169	,007	0	0	106
29	111	114	,007	0	0	46
30	89	90	,008	0	0	120
31	204	207	,008	0	0	130
32	48	49	,009	0	0	196
33	175	177	,010	0	0	115
34	308	311	,010	0	0	137

35	44	46	,011	0	0	140
36	31	34	,012	18	0	61
37	341	345	,013	0	0	51
38	26	30	,014	0	0	243
39	229	233	,014	0	0	195
40	344	346	,015	0	0	141
41	336	338	,016	0	0	103
42	120	124	,017	0	0	263
43	40	42	,018	0	0	56
44	52	54	,019	0	0	234
45	20	24	,020	0	0	229
46	111	112	,021	29	0	133
47	210	213	,022	0	16	87
48	302	303	,023	0	0	144
49	255	257	,024	0	0	247
50	17	19	,025	0	0	135
51	341	343	,027	37	0	118
52	104	106	,028	0	23	162
53	321	323	,029	0	0	119
54	2	5	,030	0	19	127
55	290	292	,032	0	0	100
56	40	45	,033	43	0	140
57	28	33	,034	0	0	220
58	195	200	,036	0	0	206
59	149	154	,037	0	0	83
60	139	143	,038	0	13	81
61	31	36	,040	36	0	220
62	220	221	,041	0	12	112
63	198	203	,043	0	0	130
64	295	299	,044	0	0	202
65	181	184	,046	0	0	153
66	71	74	,047	0	0	138
67	190	192	,049	0	0	168
68	230	234	,050	0	0	262
69	335	340	,052	0	0	141
70	133	135	,054	0	0	86
71	280	284	,056	0	0	260
72	322	324	,057	0	0	116
73	325	331	,059	0	0	188
74	208	214	,061	0	0	155
75	245	251	,063	0	0	187

76	304	310	,065	0	0	233
77	329	332	,067	0	0	302
78	167	173	,068	0	0	95
79	249	253	,070	0	0	139
80	151	152	,072	0	0	214
81	139	141	,074	60	20	150
82	285	287	,077	0	0	128
83	148	149	,079	0	59	173
84	188	189	,081	0	0	99
85	65	67	,084	21	0	257
86	133	140	,086	70	0	134
87	210	211	,088	47	0	170
88	10	11	,091	0	0	243
89	337	342	,093	0	0	274
90	274	281	,096	0	0	97
91	267	269	,098	0	0	142
92	294	298	,101	0	25	144
93	271	273	,104	0	0	160
94	109	116	,106	0	0	151
95	167	168	,109	78	24	169
96	14	15	,112	0	0	121
97	274	276	,115	90	0	203
98	250	256	,118	17	0	213
99	182	188	,120	0	84	206
100	290	297	,123	55	0	204
101	313	319	,127	0	0	154
102	238	239	,130	0	0	187
103	333	336	,133	0	41	163
104	103	110	,136	0	0	172
105	260	265	,139	0	0	283
106	165	166	,142	0	28	129
107	138	146	,146	0	0	150
108	93	101	,149	0	0	230
109	79	85	,152	0	0	240
110	39	47	,156	0	0	207
111	282	289	,160	0	0	232
112	220	228	,163	62	0	145
113	263	266	,167	0	0	203
114	72	73	,171	0	0	194
115	175	176	,175	33	0	171
116	315	322	,180	0	72	156

117	55	60	,184	0	7	237
118	339	341	,188	0	51	276
119	321	327	,193	53	0	249
120	89	96	,197	30	0	136
121	14	22	,202	96	0	192
122	87	92	,207	0	0	212
123	270	277	,212	0	0	200
124	225	235	,217	0	0	195
125	125	127	,222	5	22	273
126	158	160	,227	0	0	193
127	1	2	,233	0	54	278
128	285	293	,239	82	0	225
129	159	165	,245	0	106	190
130	198	204	,251	63	31	199
131	264	272	,257	0	0	200
132	201	205	,263	0	9	176
133	105	111	,269	0	46	205
134	133	137	,276	86	0	226
135	9	17	,282	0	50	281
136	89	99	,289	120	0	285
137	308	314	,295	34	0	233
138	68	71	,302	0	66	159
139	249	259	,308	79	0	247
140	40	44	,315	56	35	179
141	335	344	,322	69	40	305
142	258	267	,329	0	91	252
143	3	8	,336	0	0	180
144	294	302	,343	92	48	202
145	218	220	,350	11	112	265
146	58	64	,357	0	0	217
147	243	248	,364	0	0	235
148	23	25	,371	0	0	183
149	35	41	,379	0	0	234
150	138	139	,386	107	81	208
151	109	122	,394	94	0	231
152	237	247	,402	0	0	213
153	181	187	,411	65	0	171
154	305	313	,420	0	101	266
155	202	208	,428	0	74	218
156	315	330	,437	116	0	215
157	131	136	,446	0	0	236

158	283	296	,455	27	0	225
159	68	80	,464	138	0	240
160	262	271	,473	0	93	175
161	108	121	,483	0	0	264
162	104	117	,493	52	0	230
163	333	347	,503	103	0	249
164	88	102	,513	0	0	181
165	69	81	,523	1	0	258
166	318	328	,534	0	0	228
167	43	50	,545	0	0	237
168	190	199	,557	67	0	199
169	163	167	,568	0	95	219
170	210	224	,579	87	0	265
171	175	181	,591	115	153	239
172	103	115	,602	104	26	273
173	145	148	,614	0	83	208
174	76	91	,626	0	0	253
175	261	262	,638	0	160	260
176	201	216	,651	132	0	286
177	75	84	,663	0	15	222
178	254	268	,676	0	0	297
179	40	51	,689	140	0	242
180	3	13	,702	143	0	245
181	88	94	,716	164	0	272
182	232	240	,730	0	0	290
183	23	38	,744	148	0	284
184	82	97	,758	0	0	251
185	150	161	,772	0	0	224
186	227	236	,787	0	0	209
187	238	245	,803	102	75	280
188	325	326	,818	73	0	267
189	306	307	,833	0	0	274
190	153	159	,849	0	129	279
191	275	291	,864	0	0	288
192	4	14	,880	0	121	229
193	158	174	,896	126	0	277
194	57	72	,912	0	114	253
195	225	229	,929	124	39	268
196	48	63	,946	32	0	255
197	21	37	,964	0	0	241
198	223	242	,982	0	0	283

199	190	198	1,001	168	130	282
200	264	270	1,020	131	123	232
201	191	209	1,040	0	0	244
202	294	295	1,059	144	64	287
203	263	274	1,079	113	97	296
204	279	290	1,098	0	100	301
205	95	105	1,118	0	133	231
206	182	195	1,138	99	58	282
207	27	39	1,158	0	110	246
208	138	145	1,178	150	173	277
209	227	246	1,198	186	0	286
210	226	231	1,219	0	0	248
211	183	197	1,240	0	0	269
212	83	87	1,261	0	122	257
213	237	250	1,282	152	98	280
214	151	164	1,304	80	0	256
215	315	316	1,325	156	10	266
216	12	16	1,348	0	0	250
217	58	62	1,370	146	0	255
218	202	212	1,394	155	0	268
219	163	178	1,418	169	4	256
220	28	31	1,442	57	61	242
221	77	98	1,468	0	0	264
222	75	100	1,495	177	0	251
223	134	157	1,521	0	0	300
224	150	172	1,550	185	0	254
225	283	285	1,579	158	128	291
226	130	133	1,610	14	134	303
227	156	180	1,640	0	0	269
228	312	318	1,672	0	166	276
229	4	20	1,704	192	45	278
230	93	104	1,737	108	162	263
231	95	109	1,770	205	151	285
232	264	282	1,803	200	111	291
233	304	308	1,837	76	137	238
234	35	52	1,871	149	44	246
235	243	244	1,906	147	0	252
236	119	131	1,943	0	157	270
237	43	55	1,981	167	117	258
238	288	304	2,020	0	233	288
239	175	185	2,064	171	8	279

240	68	79	2,109	159	109	304
241	18	21	2,155	0	197	312
242	28	40	2,204	220	179	281
243	10	26	2,253	88	38	245
244	191	194	2,304	201	0	310
245	3	10	2,356	180	243	284
246	27	35	2,411	207	234	304
247	249	255	2,467	139	49	262
248	217	226	2,523	0	210	275
249	321	333	2,579	119	163	292
250	12	29	2,637	216	0	295
251	75	82	2,696	222	184	298
252	243	258	2,756	235	142	306
253	57	76	2,818	194	174	298
254	150	162	2,880	224	0	293
255	48	58	2,944	196	217	311
256	151	163	3,014	214	219	315
257	65	83	3,085	85	212	289
258	43	69	3,157	237	165	289
259	241	278	3,229	0	0	314
260	261	280	3,301	175	71	321
261	53	56	3,376	0	0	295
262	230	249	3,451	68	247	290
263	93	120	3,527	230	42	325
264	77	108	3,607	221	161	309
265	210	218	3,688	170	145	299
266	305	315	3,770	154	215	287
267	325	334	3,851	188	0	301
268	202	225	3,944	218	195	313
269	156	183	4,037	227	211	320
270	119	123	4,131	236	0	293
271	113	155	4,230	0	0	308
272	88	129	4,330	181	0	309
273	103	125	4,431	172	125	307
274	306	337	4,539	189	89	292
275	193	217	4,648	0	248	297
276	312	339	4,759	228	118	316
277	138	158	4,879	208	193	326
278	1	4	4,999	127	229	329
279	153	175	5,126	190	239	315
280	237	238	5,266	213	187	296

281	9	28	5,407	135	242	319
282	182	190	5,550	206	199	299
283	223	260	5,696	198	105	322
284	3	23	5,848	245	183	312
285	89	95	6,006	136	231	303
286	201	227	6,169	176	209	310
287	294	305	6,337	202	266	305
288	275	288	6,510	191	238	302
289	43	65	6,703	258	257	319
290	230	232	6,915	262	182	318
291	264	283	7,130	232	225	306
292	306	321	7,351	274	249	316
293	119	150	7,582	270	254	328
294	309	320	7,816	0	0	322
295	12	53	8,063	250	261	327
296	237	263	8,326	280	203	330
297	193	254	8,591	275	178	314
298	57	75	8,882	253	251	325
299	182	210	9,205	282	265	313
300	78	134	9,533	0	223	324
301	279	325	9,885	204	267	323
302	275	329	10,237	288	77	323
303	89	130	10,590	285	226	307
304	27	68	10,964	246	240	311
305	294	335	11,357	287	141	333
306	243	264	11,761	252	291	321
307	89	103	12,169	303	273	326
308	113	196	12,588	271	0	324
309	77	88	13,011	264	272	327
310	191	201	13,467	244	286	318
311	27	48	14,027	304	255	329
312	3	18	14,612	284	241	331
313	182	202	15,243	299	268	330
314	193	241	15,876	297	259	320
315	151	153	16,539	256	279	334
316	306	312	17,300	292	276	332
317	59	147	18,097	0	0	340
318	191	230	18,986	310	290	335
319	9	43	19,907	281	289	338
320	156	193	20,868	269	314	337
321	243	261	21,940	306	260	332

322	223	309	23,102	283	294	336
323	275	279	24,436	302	301	335
324	78	113	25,788	300	308	336
325	57	93	27,230	298	263	328
326	89	138	28,826	307	277	334
327	12	77	30,467	295	309	339
328	57	119	32,200	325	293	339
329	1	27	34,213	278	311	331
330	182	237	36,322	313	296	341
331	1	3	39,602	329	312	338
332	243	306	43,084	321	316	333
333	243	294	48,106	332	305	343
334	89	151	53,536	326	315	341
335	191	275	60,659	318	323	337
336	78	223	68,000	324	322	340
337	156	191	76,666	320	335	343
338	1	9	85,790	331	319	342
339	12	57	96,244	327	328	342
340	59	78	107,656	317	336	345
341	89	182	125,978	334	330	344
342	1	12	163,052	338	339	345
343	156	243	213,280	337	333	344
344	89	156	303,268	341	343	346
345	1	59	472,526	342	340	346
346	1	89	692,000	345	344	0

DENDROGRAM 3 – Four Clusters per Municipalities

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* * * * H I E R A R C H I C A L   C L U S T E R   A N A L Y S I S * * * * *

 Dendrogram using Ward Method

                        Rescaled Distance Cluster Combine

    C A S E      0        5       10       15       20       25
    Label   Num  +---------+---------+---------+---------+---------+

  Case 69    69  -+
  Case 70    70  -+
  Case 81    81  -+
  Case 60    60  -+
  Case 61    61  -+
  Case 55    55  -+
  Case 43    43  -+
  Case 50    50  -+
  Case 65    65  -+
  Case 66    66  -+
  Case 67    67  -+
  Case 87    87  -+
  Case 92    92  -+-+
  Case 83    83  -+ |
  Case 17    17  -+ |
  Case 19    19  -+ |
  Case 9      9  -+ |
  Case 44    44  -+ |
  Case 46    46  -+ |
  Case 40    40  -+ |
  Case 42    42  -+ |
  Case 45    45  -+ |
  Case 51    51  -+ |
  Case 28    28  -+ |
  Case 33    33  -+ |
  Case 31    31  -+ |
  Case 32    32  -+ |
  Case 34    34  -+ +-----+
  Case 36    36  -+ |     |
  Case 21    21  -+ |     |
  Case 37    37  -+ |     |
  Case 18    18  -+ |     |
  Case 23    23  -+ |     |
  Case 25    25  -+ |     |
  Case 38    38  -+ |     |
  Case 3      3  -+ |     |
  Case 8      8  -+ |     |
  Case 13    13  -+ |     |
  Case 26    26  -+ |     |
  Case 30    30  -+ |     |
  Case 10    10  -+ |     |
  Case 11    11  -+ |     |
  Case 5      5  -+-+     |
  Case 6      6  -+       |
  Case 7      7  -+       |
  Case 2      2  -+       |
  Case 1      1  -+       |
  Case 20    20  -+       |
  Case 24    24  -+       |
  Case 14    14  -+       |
  Case 15    15  -+       |
  Case 22    22  -+       |
  Case 4      4  -+       |
  Case 48    48  -+       |
  Case 49    49  -+       |
  Case 63    63  -+       |
  Case 58    58  -+       +----------------------------+
  Case 64    64  -+       |                            |
  Case 62    62  -+       |                            |
  Case 79    79  -+       |                            |
  Case 85    85  -+       |                            |
  Case 71    71  -+       |                            |
```

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Case 74      74   -+          |                      |
Case 68      68   -+          |                      |
Case 80      80   -+          |                      |
Case 39      39   -+          |                      |
Case 47      47   -+          |                      |
Case 27      27   -+          |                      |
Case 52      52   -+          |                      |
Case 54      54   -+          |                      |
Case 35      35   -+          |                      |
Case 41      41   -+          |                      |
Case 12      12   -+          |                      |
Case 16      16   -+          |                      |
Case 29      29   -+          |                      |
Case 53      53   -+          |                      |
Case 56      56   -+          |                      |
Case 108    108   -+-+        |                      |
Case 121    121   -+ |        |                      |
Case 77      77   -+ |        |                      |
Case 98      98   -+ |        |                      |
Case 88      88   -+ |        |                      |
Case 102    102   -+ |        |                      |
Case 94      94   -+ |        |                      |
Case 129    129   -+ |        |                      |
Case 150    150   -+ +-----+                         +---------+
Case 161    161   -+ |                            |          |
Case 172    172   -+ |                            |          |
Case 162    162   -+ |                            |          |
Case 131    131   -+ |                            |          |
Case 136    136   -+ |                            |          |
Case 119    119   -+ |                            |          |
Case 123    123   -+ |                            |          |
Case 120    120   -+ |                            |          |
Case 124    124   -+-+                            |          |
Case 93      93   -+                              |          |
Case 101    101   -+                              |          |
Case 106    106   -+                              |          |
Case 107    107   -+                              |          |
Case 104    104   -+                              |          |
Case 117    117   -+                              |          |
Case 82      82   -+                              |          |
Case 97      97   -+                              |          |
Case 84      84   -+                              |          |
Case 86      86   -+                              |          |
Case 75      75   -+                              |          |
Case 100    100   -+                              |          |
Case 76      76   -+                              |          |
Case 91      91   -+                              |          |
Case 72      72   -+                              |          |
Case 73      73   -+                              |          |
Case 57      57   -+                              |          |
Case 59      59   -+-+                            |          |
Case 147    147   -+ |                            |          |
Case 260    260   -+ |                            |          |
Case 265    265   -+ +--------------------------------+          |
Case 223    223   -+ |                                         |
Case 242    242   -+ |                                         |
Case 309    309   -+ |                                         |
Case 320    320   -+-+                                         |
Case 134    134   -+                                           |
Case 157    157   -+                                           |
Case 78      78   -+                                           |
Case 113    113   -+                                           |
Case 155    155   -+                                           |
Case 196    196   -+                                           |
Case 274    274   -+                                           |
Case 281    281   -+                                           |
Case 276    276   -+                                           |
Case 263    263   -+                                           |
Case 266    266   -+                                           |
Case 245    245   -+                                           |
Case 251    251   -+                                           |
Case 238    238   -+                                           |
Case 239    239   -+                                           |
Case 250    250   -+                                           |
Case 252    252   -+                                           |
Case 256    256   -+                                           |
Case 237    237   -+                                           |
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Case 247  247   -+                                           |
Case 229  229   -+---+                                       |
Case 233  233   -+   |                                       |
Case 225  225   -+   |                                       |
Case 235  235   -+   |                                       |
Case 208  208   -+   |                                       |
Case 214  214   -+   |                                       |
Case 202  202   -+   |                                       |
Case 212  212   -+   |                                       |
Case 218  218   -+   |                                       |
Case 219  219   -+   |                                       |
Case 221  221   -+   |                                       |
Case 222  222   -+   |                                       |
Case 220  220   -+   |                                       |
Case 228  228   -+   |                                       |
Case 213  213   -+   |                                       |
Case 215  215   -+   |                                       |
Case 210  210   -+   |                                       |
Case 211  211   -+   |                                       |
Case 224  224   -+   |                                       |
Case 204  204   -+   |                                       |
Case 207  207   -+   |                                       |
Case 198  198   -+   |                                       |
Case 203  203   -+   |                                       |
Case 190  190   -+   |                                       |
Case 192  192   -+   |                                       |
Case 199  199   -+   |                                       |
Case 195  195   -+   |                                       |
Case 200  200   -+   +--------------+                        |
Case 188  188   -+   |              |                        |
Case 189  189   -+   |              |                        |
Case 182  182   -+   |              |                        |
Case 151  151   -+   |              |                        |
Case 152  152   -+   |              |                        |
Case 164  164   -+   |              |                        |
Case 178  178   -+   |              |                        |
Case 179  179   -+   |              |                        |
Case 170  170   -+   |              |                        |
Case 171  171   -+   |              |                        |
Case 168  168   -+   |              |                        |
Case 167  167   -+   |              |                        |
Case 173  173   -+   |              |                        |
Case 163  163   -+   |              |                        |
Case 166  166   -+   |              |                        |
Case 169  169   -+   |              |                        |
Case 165  165   -+   |              |                        |
Case 159  159   -+   |              |                        |
Case 153  153   -+   |              |                        |
Case 185  185   -+   |              |                        |
Case 186  186   -+   |              |                        |
Case 175  175   -+   |              |                        |
Case 177  177   -+   |              |                        |
Case 176  176   -+   |              |                        |
Case 181  181   -+   |              |                        |
Case 184  184   -+   |              |                        |
Case 187  187   -+---+              |                        |
Case 158  158   -+                  |                        |
Case 160  160   -+                  |                        |
Case 174  174   -+                  |                        |
Case 141  141   -+                  |                        |
Case 142  142   -+                  |                        |
Case 143  143   -+                  |                        |
Case 144  144   -+                  |                        |
Case 139  139   -+                  |                        |
Case 138  138   -+                  |                        |
Case 146  146   -+                  |                        |
Case 149  149   -+                  |                        |
Case 154  154   -+                  |                        |
Case 148  148   -+                  |                        |
Case 145  145   -+                  |                        |
Case 125  125   -+                  |                        |
Case 126  126   -+                  |                        |
Case 127  127   -+                  |                        |
Case 128  128   -+                  |                        |
Case 115  115   -+                  |                        |
Case 118  118   -+                  |                        |
Case 103  103   -+                  |                        |
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Case 110   110   -+                          |                          |
Case 130   130   -+                          |                          |
Case 132   132   -+                          |                          |
Case 133   133   -+                          |                          |
Case 135   135   -+                          |                          |
Case 140   140   -+                          |                          |
Case 137   137   -+                          |                          |
Case  89    89   -+                          |                          |
Case  90    90   -+                          |                          |
Case  96    96   -+              +---------------------------+
Case  99    99   -+              |
Case 109   109   -+              |
Case 116   116   -+              |
Case 122   122   -+              |
Case 111   111   -+              |
Case 114   114   -+              |
Case 112   112   -+              |
Case 105   105   -+              |
Case  95    95   -+              |
Case 344   344   -+              |
Case 346   346   -+              |
Case 335   335   -+              |
Case 340   340   -+              |
Case 295   295   -+              |
Case 299   299   -+              |
Case 302   302   -+              |
Case 303   303   -+              |
Case 300   300   -+              |
Case 301   301   -+              |
Case 298   298   -+              |
Case 294   294   -+              |
Case 313   313   -+              |
Case 319   319   -+              |
Case 305   305   -+              |
Case 316   316   -+              |
Case 317   317   -+              |
Case 322   322   -+              |
Case 324   324   -+              |
Case 315   315   -+              |
Case 330   330   -+              |
Case 341   341   -+---------+    |
Case 345   345   -+         |    |
Case 343   343   -+         |    |
Case 339   339   -+         |    |
Case 318   318   -+         |    |
Case 328   328   -+         |    |
Case 312   312   -+         |    |
Case 321   321   -+         |    |
Case 323   323   -+         |    |
Case 327   327   -+         |    |
Case 336   336   -+         |    |
Case 338   338   -+         |    |
Case 333   333   -+         |    |
Case 347   347   -+         |    |
Case 337   337   -+         |    |
Case 342   342   -+         |    |
Case 306   306   -+         |    |
Case 307   307   -+         |    |
Case 280   280   -+         |    |
Case 284   284   -+         |    |
Case 271   271   -+         |    |
Case 273   273   -+         |    |
Case 262   262   -+         |    |
Case 261   261   -+         |    |
Case 267   267   -+         |    |
Case 269   269   -+         |    |
Case 258   258   -+         |    |
Case 243   243   -+         |    |
Case 248   248   -+       +---------+
Case 244   244   -+       |
Case 285   285   -+       |
Case 287   287   -+       |
Case 293   293   -+       |
Case 283   283   -+       |
Case 286   286   -+       |
Case 296   296   -+       |
Case 282   282   -+       |
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Case 289  289  -+           |
Case 270  270  -+           |
Case 277  277  -+           |
Case 264  264  -+           |
Case 272  272  -+           |
Case 183  183  -+           |
Case 197  197  -+           |
Case 156  156  -+           |
Case 180  180  -+           |
Case 241  241  -+           |
Case 278  278  -+           |
Case 254  254  -+           |
Case 268  268  -+           |
Case 226  226  -+           |
Case 231  231  -+           |
Case 217  217  -+           |
Case 193  193  -+           |
Case 232  232  -+           |
Case 240  240  -+           |
Case 230  230  -+           |
Case 234  234  -+---------+
Case 255  255  -+
Case 257  257  -+
Case 249  249  -+
Case 253  253  -+
Case 259  259  -+
Case 191  191  -+
Case 209  209  -+
Case 194  194  -+
Case 205  205  -+
Case 206  206  -+
Case 201  201  -+
Case 216  216  -+
Case 227  227  -+
Case 236  236  -+
Case 246  246  -+
Case 290  290  -+
Case 292  292  -+
Case 297  297  -+
Case 279  279  -+
Case 325  325  -+
Case 331  331  -+
Case 326  326  -+
Case 334  334  -+
Case 329  329  -+
Case 332  332  -+
Case 275  275  -+
Case 291  291  -+
Case 304  304  -+
Case 310  310  -+
Case 308  308  -+
Case 311  311  -+
Case 314  314  -+
Case 288  288  -+
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