



**Consultant on GIS & Thematic Mapping
on Non-income Dimensions of Poverty
in Albania**

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by

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Byron Kotzamanis

INTRODUCTION

This document constitutes the final report of the project relative to the “GIS & thematic mapping on non-income dimensions of poverty in Albania”. This project is in continuity and complementarity with a recent World Bank work on poverty and inequality mapping, carried out in the context of the exploitation of the 2001 Census results and the LSMS 2002 information. This WB on-going analysis is mainly focused on the income dimensions of poverty and inequality at district level as the available LSMS data are –at the moment- improper for an analysis in a more detailed spatial level, as the communal level is. In the previous study, based on the LSMS data, various non-income aspects influencing, directly or indirectly, the poverty level are not examined. This non-income dimension is absolutely essential in order to produce a more detailed spatial profile of poverty and therefore the new project, covering all the prefectures of Albania, has effectively for main object to map the non-analyzed aspects of non-income poverty at the lowest available administrative level possible (district/commune).

This study has been realized on behalf of the World Bank (Development Research Group) by a research team of Laboratory of Social and Demographic Analysis (LDSA) of the University of Thessaly (Volos, Greece):

Byron Kotzamanis, Scientific coordinator
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Michalis Agorastakis, Researcher

It is the main output of a comprehensive collection of data and information concerning the various non-income dimensions of poverty in Albania and the different financial aspect operated at district and/or municipality level. In the framework of this project a broad range of documentary data, material, etc was gathered from various sources: INSTAT, Albanian Ministries and other national organizations and institutions, international organizations (WB, EU, UNEP etc) and from proceedings of relevant conferences.

Background

Albania has carried out, recently, a Population Census as well as an Agricultural Census and INSTAT has already produced a first set of maps, while, in 2002, a LSMS survey was conducted, so that a first important analysis and mapping on poverty and inequality is underway and we will have, in the very recent future, the first results. That work (LSMS) is mainly focused on the income dimensions of poverty and inequality, and various non-economic dimensions, absolutely essential for producing a more detailed spatial profile of poverty, are not examined.

Almost from the first results obtained through the LSMS 2002, *“it appears that the spatial disparities in non-income dimensions of poverty seem to be more pronounced than the strict income dimensions, even if we can consider that these two aspects are strictly correlated. Such disparities are found to be important not only between urban and rural areas but also between the different regions of Albania with a significantly higher degree of poverty in mountain and less favored regions”* (WB, Terms of References).

As it is well known the socio-economic inequality is also related to the quality and the degree of accessibility to basic services (health, education, diversion etc) and fundamental infrastructures (roads, water and electricity networks, common transport, banks etc). In the context of the previous analysis (LSMS) on poverty and inequality, combining the Census and LSMS information, these aspects have not been fully examined. For this reason, an in-depth and complete spatial profile of poverty is necessary, that will exploit every available GIS information as well as every kind of related data produced by national (Ministries, INSTAT etc) or international institutions (USGS, UNEP-GRID, OECD, Eurostat etc). Such an in-depth analysis has to produce a set of thematic maps reflecting the non-income inequality at regional (district) and local level (commune). Combining these “new” maps with the previous poverty maps, produced by the WB, it should be possible to define different spatial categories of poverty and inequality profile.

More precisely, the project aims to:

- Develop a detailed database relative to the various dimensions of poverty (non-income dimensions) at district/municipality level. In some limited cases, data are presented only at prefecture level due to the unavailability of relevant disaggregating data.
- Produce a set of thematic maps concerning financial and non-income dimensions of poverty at the most detailed available administrative level. The project’s coverage includes all the prefectures of Albania.
- Relate and combine the above thematic maps with the existing poverty and inequality maps, produced by the WB, in order to analyze the overlays between the two sets of maps.

It is important to note that these two sets of maps are mostly prepared during the same period and referred to data of year 2001 and 2002, making absolutely relevant the comparison, between these two sets of data and maps and therefore it is efficient to explore and analyze an in-depth spatial relation between income and non-income dimensions of poverty and inequality.

Objective

Considering the final objective of the work, the main products of the project concern:

- A database containing all the available geographic variables at the finest level of spatial desegregation. Data are mainly related to administrative, geographic, social, financial and other non-income variables as education, health etc. The indices of non-income poverty calculated on the basis of the primary data are also included in the database, which is available in Access and Excel format.
- Three sets of thematic maps related to the above-mentioned variables. The first and second sets concern thematic maps at communal and district level, respectively while the third set concerns synthetic indicators of non-income poverty.
- An intermediate report containing the description of all tasks carried out during the first three months of the project as well as a precise plan of what have to be done until the end of the project
- A final report, describing, in details, the methodology, the data collection process, highlighting problems as regards as the availability and quality of information, the selection of relevant variables – indicators and maps, the mapping analysis and finally a proposal for a possible follow-up of the work.

1 DESCRIPTION OF METHODOLOGY

A summary of the adopted methodology, in order to implement the project and produce the requested outputs, is as follows:

1.1 Definition of main thematic aspects of non-income poverty: Preliminary selection of variables (“shopping list”)

During the first phase of the work, a preliminary list of variables was submitted and discussed with the World Bank responsible of the project, Mr Gero Carletto.

Three main criteria have been retained during the selection process: (i) the **data quality** (mainly for the lowest disaggregated level), (ii) the **degree of relevance** of these data and finally (iii) the **degree of accessibility of data** (mainly the ability to obtain data at central level, in Tirana). In this context, a first list of variables proposed and discussed with the World Bank and organized around nine main thematic fields:

1st Thematic field: General demographic information:

As it is well known, 2001 census data at all levels of aggregation are fully available. Apart the fact that the demographic structure of the population and its main characteristics are useful preliminary information in order to investigate the non-income poverty and inequality, these data are also essential in the definition and evaluation of various simple or composite indicators that indirectly - at least - contribute to explain the spatial poverty.

2nd Thematic field: Infrastructure networks and utilities

This data category allows a simple evaluation of the level of basic public infrastructures and utilities (as roads, railways, water, electricity etc).

3rd Thematic field: Public transport

As it is documented, very often, in the international literature, the mobility and accessibility to public and private services as well as to main markets, is a quite significant indicator of non-income poverty and moreover of inequality.

4th Thematic field: Social networks

One of the most important data categories, in the present analysis, is this one, and concerns mainly three sectors: a) Health facilities and services, b) Education facilities and services and c) Social assistance system. For these three sectors, it is also important to consider the public expenditures at district / municipality level.

5th Thematic field: General services and enterprises

A component that has a major influence to the degree of population poverty and inequality is the quality and existence of public and private services such as police stations, post offices, private couriers, bank agencies, and retail / wholesale shops. These parameters (variables) influence, at least indirectly, the local population's conditions of life.

6th Thematic field: Geo-climatic characteristics:

Agriculture is still the most important economic sector in Albania. For this reason, indicators related to soils and soil fertility that have, as it is well known, impact on the agricultural income, are able to illustrate another aspect of poverty. This data category, also, includes data for rainfall as there is an important factor affecting the agricultural production.

7th Thematic field: Agricultural land and activities

This type of data is collected for the same reason as the above-mentioned category. The ownership of agricultural land, the average size of farms and the degree of

irrigation are additional indicators, mainly useful for comparison of poverty level between rural areas.

8th Thematic field: Unemployment

The problem of unemployment is a major question in terms of socio-economic analysis. The unemployment characteristics (level and structure), are used very often to define the spatial disparities, especially between rural and urban areas. Many studies document and demonstrate that the unemployment is highly correlated with the opportunities for local population to find a permanent job and therefore it is quite useful to analyze and define the degree of enterprises and services' implantation.

9th Thematic field: Criminality, delinquency and Juvenal delinquency

It is unfortunately well known that criminality and delinquency are correlated with the level of poverty. In this context, it not only appears useful but it is essential to produce some indicators in order to evaluate the intensity of the above phenomena as a result of the general poverty situation.

Apart from the above-mentioned data, the production of a relevant set of thematic maps requires geo-referenced information and digital map layers as:

- Administrative boundaries (Prefectures, districts, communes/municipalities),
- Lakes / rivers,
- Road network and railways,
- Contours every 200m etc

All the selected variables and their relative sources are presented in the Table 1 of the Annexes organized in thematic categories.

1.2 Data Collection

a) Organization of the data collection (local and Greek team)

As it was written in the ToR, two missions of around 7 days with the participation of two-project team's members have been implemented in order to collect the data related to the designed variables.

The first mission took place at the beginning of the project. The objective of this mission was to define the availability of data. It is well known that poverty-mapping exercise, especially as regards non-income dimensions, cannot assert a priori that one variable is more relevant than another. For this reason, it was necessary, during the first stage, to examine the preconditions inherent the choice of indicators as the data availability, process and cost would cause a considerable delay. The second mission was organized immediately after the submission of interim report in order to conclude the data collection.

As it was not possible to collect all the data during these two short missions, the local team insured a follow-up process, for data collection, across the duration of the project.

b) Missions to Tirana

b.1. First Mission to Tirana

The first mission to Tirana took place 1st to 6 June 2003. The team involved in the mission was composed of Prof. Vassilis Pappas, responsible for the mapping and GIS task and Dr. Marie-Noelle Duquenne, responsible for the definition of the “shopping list” of variables and the calculation of adequate indices of non-income poverty. The mission and meetings have been prepared with the support of the local consultant, Mrs Eva Habili.

The objective of the first mission was:

- to develop the necessary contacts with all the Albanian Institutions, Ministries and other Organizations in Tirana, able to furnish data and information at the lowest possible administrative level, according to the initial “shopping list” of variables agreed by the World Bank.
- to prepare an inventory of available administrative data as well as geo-referenced information for the country (contours, administrative boundaries in all levels, lakes, settlements, road and rail networks, etc) and, at the same time, to undertake a preliminary assessment of the quality of data.
- To collect and handle a first package of administrative data, relative to the initially selected main thematic fields.
- to instruct the local consultant, on a daily basis, in order to take in charge, under the supervision of the consultant, the follow-up process of data collection during the project’s period. The training was focused on the clarification of the different tasks of the project, the outputs to produce (database and thematic maps), the presentation and description of the main thematic fields to be covered, the definition of the required data and variables.

As the data were provided by various administrative sources, the consultant gave full attention to the follow-up task in order to manage, in the most efficiently way, the package of data and to ensure the data verification and update process.

During the first mission, the consultant had various meetings with the staff of INSTAT and the World Bank in Tirana in order to present the main aspects of the project and to discuss the methodology, the issues of collecting country-wide data as well as the follow-up process in order to collect the most of the relevant data for the designed variables during this one-week mission.

Under this framework the two consultants arranged contacts and met staff of the following Ministries and Institutions:

- Ministry of Labor and Social Welfare, especially the Social Insurance Institute (SII)
- Ministry of Education and Science, Department of Statistics and Investment Department
- Ministry of Health, Statistical Department and Directory of Tax
- Ministry of Finance, Budgetary Department
- Ministry of Local Government and Decentralization, Economical-Investment Department

- Ministry of Transport, Programming Statistical and Development Department
- General Directory of Roads (GDR), Traffic Department
- Institute of Transport Studies (ITS)
- Albapost

Concerning the Geo-referenced data, the consultant had meetings with three institutions / private firms:

- Military Geographic Institute of Albania
- Institute of Geography
- GIS Albania

b.2. Second Mission to Tirana

The second mission to Tirana took place 7st to 12 September 2003. The team involved in the mission was composed of Dr. Marie-Noelle Duquenne, responsible for the collection of administrative data, the review of quality and availability of such data as well as the definition and calculation of the selected indices of non-income poverty and Mr Michalis Agorastakis, responsible for the collection of missing geo-referenced information. Once again, the mission and meetings were prepared with the support of the local consultant, Mrs Eva Habili.

The objective of this second mission was:

- to collect additional and supplementary data
- to evaluate and check the quality of already collected administrative and geo-referenced data.
- to look for errors and inaccuracies
- to evaluate the cost of specific data packages as the climatic data, soils data and other geo-referenced data

During the second mission, the consultant had meetings with the following administrations entities:

- INSTAT: the main aspects were the validity and quality of data and also discussed some aspects concerning the quality and accuracy of georeferenced data.
- World Bank Office, its role was crucial in order to have access to some data sets.
- Ministry of Labor and Social Welfare, Social Insurance Institute
- Ministry of Agriculture, Statistical Department
- Ministry of Education and Science, Department of Statistics
- Ministry of Finance
- Ministry of Local Government and Decentralization, Economical-Investment Department
- Ministry of Energy, Directorate of Hydrocarbons
- Ministry of Adjustment of Territory and Tourism, Planning and Investment Department
- Albanian Development Fund
- State Inspectorate of Control of Fuels and Lubricants
- General Directory of Water and Sanitation

- Soil Science Institute
- Hydrometeorological Institute, Department of Meteorology - Climatology

1.3 Assessment of data availability and quality

As already mentioned, the two missions in Tirana were implemented in order to evaluate the real accessibility of data and secondary to collect the relevant information and data at the finest available administrative level. Moreover, one of the main objectives of the second mission in Tirana was effectively to check and validate the collected data, during the first mission and in-between the two missions, through a verification and correction process. Concerning the collected data during the 2nd mission, the verification process was realized through an indirect communication (e-mail, etc) with the responsible persons of the Institutions that provide us with the data.

Due to the encountered difficulties (cost and/or non availability) of collecting some of the variables in the preliminary “shopping list”, two main thematic fields have been excluded from the final analysis, that are

- The geo-climatic characteristics: Department of Meteorology, Hydrometeorological Institute, produces the climatological information for each climatic sub-zone of Albania. This Institute can provide detailed climatological information for each climatic sub-zone of Albania. The country is divided in 4 principle climatic zones and each one of them in 3 sub-zones. Unfortunately the requested cost by the Hydrometeorological Institute in order to provide us with the necessary information – and only for the basic data - was too much for the budget of the present project¹. For the same reason, it was not feasible to collect data related to soils and soil fertility.
- The criminality, delinquency and Juvenal delinquency. Detailed crimes’ statistics are available only at national level². It was not possible, even at prefecture level to obtain any information.

Concerning the geo-referenced information and especially the digital cartographic layers with the contours of 200 meters (in order to produce a DTM and to extract information about the relief) as well as road network and railways, the Military Geographical Institute (MGI) of Albania is the main producer of this type of information. Additionally three other Albanian private consulting firms are also providing detailed geo-referenced information. The required cost, especially in the case of the MGI, was once again excessive and out of the limits our budget. For this reason, we decided to digitalize by ourselves the hard copy illustrating the relief of the country. As this task is out of the main scope of the project with limited contribution, time-consuming and much demanding we gave to it a secondary priority.

After the implementation of the two missions in Tirana, the team proceeded to the overall assessment of data availability and quality. Concerning the first aspect, only the available data at district level were considered as relevant for the purpose of the project. Considering the quality aspect, three main problems were encountered:

¹ More precisely, the requested cost for each one of the twelve sub-zones was \$216 (a total cost of \$2600).

² This really detailed information is directly accessible in the following site: www.mpo.gov.al.

- (a) some data are not digital (computerized), introducing a potential risk of errors during the phase of data collection,
- (b) some Institutes produce statistics according to their own classification system that is not exactly the same as the official administrative division, while
- (c) other institutions provide data only at a very low level, so it was necessary to aggregate the data. A non obvious process due to the differences in the denomination of spatial referential areas that are observed from one source to the other.

1.4 Information and data definitively collected

The primary data have been collected (i) at district level (Rrethi) and (ii) at commune and municipality level (Komuna, Bashkia). Albania is divided in 36 districts and 374 communes. As it appears in the following table, the number of communes and municipalities varies from one district to the other, with a minimum of 3 in the district of Kucove and a maximum of 23 in the district of Elbasan, revealing an important disparity between the districts and the concentration of population in limited districts.

The table 1, shows – among other information - a first classification of the districts on the basis of the relevant importance of the rural population. If we define the “degree of rurality” as the percentage of rural population on the total population, it appears that only five districts (Tirane, Durres, Vlore, Kucove and Shkoder) have a lower degree comparatively to the national average (58%). One third of the districts have a percent higher than 75% and most of these very rural districts are located in the Northeast and East of the country. Overall, there is a clear contrast between the Northeast and South of the country and this situation can be in part justified by the fact that the emigration waves are more intense in the southern districts of Albania than in the North or the Center.

Table 1: Administrative division of Albania

Prefecture	District	Number of:		Total	Population		
		Commune	Municipality		Total	Rural	%
Berat	Berat	10	2	12	127.837	82.265	64,4
	Kucove	2	1	3	35.338	17.300	49,0
	Skrapar	8	2	10	29.845	16.588	55,6
Diber	Diber	14	1	15	85.699	71.682	83,6
	Mat	9	3	12	61.187	47.239	77,2
	Bulqize	6	2	8	42.968	32.981	76,8
Durrës	Durrës	6	4	10	181.662	68.197	37,5
	Krujë	4	2	6	63.517	44.145	69,5
Elbasan	Elbasan	21	2	23	221.635	126.081	56,9
	Gramsh	9	1	10	35.750	25.217	70,5
	Librazhd	9	2	11	72.387	60.837	84,0
	Peqin	5	1	6	32.964	25.697	78,0
Fier	Fier	14	3	17	199.082	122.916	61,7
	Mallakaster	8	1	9	39.529	30.375	76,8
	Lushnje	14	2	16	143.933	105.597	73,4
Gjirokaster	Gjirokaster	11	2	13	54.647	31.781	58,2
	Tepelene	8	2	10	32.404	21.117	65,2
	Permet	7	2	9	25.780	15.920	61,8
Korce	Korce	14	2	16	142.909	83.998	58,8
	Devoll	4	1	5	34.641	27.912	80,6
	Kolonje	6	2	8	17.161	9.671	56,4
	Pogradec	7	1	8	70.471	46.709	66,3
Kukes	Kukes	14	1	15	63.786	47.165	73,9
	Has	3	1	4	19.660	16.445	83,6
	Tropoje	5	3	8	27.947	20.465	73,2
Lezhe	Lezhe	8	2	10	67.734	51.142	75,5
	Kurbin	1	3	4	54.392	30.937	56,9
	Mirdite	3	4	7	37.056	27.816	75,1
Shkoder	Shkoder	16	2	18	185.395	99.597	53,7
	Malesi e Madhe	4	2	6	36.692	32.614	88,9
	Puke	8	2	10	34.386	28.355	82,5
Tirane	Tirane	15	4	19	519.720	167.139	32,2
	Kavaje	8	2	10	78.179	50.030	64,0
Vlore	Vlore	9	4	13	147.128	61.948	42,1
	Sarande	7	2	9	35.089	20.536	58,5
	Delvine	3	1	4	10.765	6.665	61,9
Total		300	74	374	3.069.275	1.775.079	57,8

Source: INSTAT, Statistical yearbook, 1993-2001

Map Administrative structure

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

Map Degree of Rurality

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

The primary information and data that finally collected and organized by broad categories are the following:

/1/ General demographic Information

Data about population by sex, age, education level, marital status, economic situation etc are available at all administrative levels, through the results of the last census of population, dwellings and buildings. This information concerns the year 2001 and are provided by INSTAT. Most of the variables that are in the last census have been introduced in our database (*variables C001 to C021 & C128*). Unfortunately, some other relevant demographic indicators (as for example, expectancy of life at 0, 15, 45 and 65 years) could not be produced.

/2/ Infrastructure

Three categories of variables have been collected:

- The first ones are relative to the number and cost of the social and economic infrastructure projects implemented by the Albanian Development Fund (ADF) at the end of 2001 and are available at village, commune and district levels.

Albanian Development Fund (ADF) was established as an autonomous foundation in 1993 under an agreement signed between Albanian Government and World Bank. During 1999, ADF was fully transformed into an institution specialized for the rehabilitation of social and economic infrastructure of local communities, municipalities and communes. This institution has extended its activity throughout Albania, in more than 200 communes.

ADF provided us with all information for each individual project in electronic format. The variables introduced in our database (*C114 to C121 and C371 to C372*) concern the value of the projects and the number of projects realized by main category of infrastructures that is: (1) road networks, (2) water supply and sewer, (3) irrigation infrastructure, (4) health centers, (5) schools and (6) other projects.

- The second one is relative to the investments projects for water supply system and drainage as it is written in the Investment draft program for 2003. The Ministry of Tourism provides this information at municipality and district levels. (variable *C127*)

- The third category of variables is relative to the number of buildings by year of construction that is buildings constructed before 1945, between 1945 and 1960, between 1961 and 1980, between 1981 and 1990 and finally after 1990 (*variables C073 to C078*). INSTAT provided us with this information at all administrative levels (2001 Census).

/3/ Public transport

In this category belongs the number of intercity bus companies as well as the number of the existing bus lines and in operation (*variables C124 to C126*). The Ministry of Transport provides this information for the year 2003 and this is one of the few detailed information (at communal and district level) that it was possible to collect.

/4/ Social networks

Three categories of data have been collected:

- Regarding the **Health Facilities and Services**, the Ministry of Health provides mainly at district level, detailed information for the number of Health centers, Health posts, private clinics, medical laboratories, hospital beds, nurses and midwives, doctors and general practitioners admissions to hospitals etc. The number of rural pharmacies is the only information available at village level, and it was possible to aggregate it at communal and district levels with no problem (*variables C123 and C373 to C394*). The collected information concerns mainly the years 1999 and 2000.
- Regarding the **Education sector**, the Ministry of Education provides detailed data, only at district level. The data refer mainly to the number of pupils by sex and age, the number of classrooms, the number of schools by number of classes, as well as the number of teachers (men and women) by level of education. Moreover this information is provided for the three main education level of the Albanian system (pre-primary, primary and secondary) and concerns the academic year 2001-2002 (*variables C421 to C570*).
- **Social Insurance** data are provided by the Social Insurance Institute and INSTAT. The Actuarial and Statistical Analyses Department of SII has recently published (2002) a statistical report concerning the period of operation of the new social insurance system 1994-2002. Most of the tables are related to the 12 prefectures. A limited number of tables included in this publication, present data at district level and unfortunately, only for the period 1994-1995. These tables cover the following fields: Income and expenditure of social insurance, number of contributors, urban and rural pensions (*variables C343 to C370*).

/5/ General services and enterprises

Considering this thematic aspect, the following information has been collected:

- Number of commercial banks and agencies at commune and municipality level, provided by the National Bank of Albania (*variables C106 and C107*). Ten commercial banks have agencies in Albania while the 81 agencies are located in only 36 communes and municipalities with a high concentration of agencies in a few numbers of municipalities. 60% of the agencies are located in only 7 municipalities: Tirana (15 agencies), Durrës (8), Vlorë (6) Korçë (5), Shkoder (5), Elbasan (5) and Gjirokaster (4).
- Number of post offices for the year 2001 at village, commune and municipality level, provided by the Albanian Post sh.a. (*variables C122*). During 2001, Albanian Post has performed its postal service, financial service as well as its telephonic service on 542 postal offices from which 104 are city postal and quarter postal offices, 276 are center commune postal office and 162 are postal office of rural areas³.
- Number of petrol and gas stations at district level provided by the State Inspectorate of Control of fuels & Lubricants for the year 2003 (*variables C333 and C334*).

³ Detailed information, concerning the organization of the Post services, is presented on the “Annual Report 2001” published by the Albanian Post sh.a..

- Number of enterprises by NACE classification at district level for the year 2002, provided by INSTAT (Business Register). INSTAT also provided us with data related to the number of enterprises by main economic sector: agriculture, industry, construction, transport, commerce and services by number of employees, (*variables C231 to C332*). Data at communal level are available but it was not possible for INSTAT to produce such detailed data in the required time.

/6/ Agricultural sector

The General Census of Agricultural Holdings has been conducted in 1998 by INSTAT (1-30 June). The final results of the General Census are presented in the final census editions containing 13 volumes, one for data at national level and 12 for each one of the 12 Prefectures of the country. 30 tables are available at district level while 22 tables, with the main characteristics of agricultural holdings, are produced at communal level. This detailed information concern the juridical form and ownership of agricultural holdings and land, the size of agricultural holdings, the way of tilling, the land use, use of irrigation, use of chemic and organic fertilization, tractors and equipment, family working days spent in the holding etc. The most relevant data in terms of poverty approach have been entered in the database (*variables C079 to C101*).

/7/ Employment – Unemployment

Concerning employment and unemployment data, two main sources of information are available:

- Data from the last Census of population (INSTAT, 2001) available at all administrative level. The fields covered by the census concern employed and unemployed persons (looking for a job), status in employment, branch of economic activity, place of work, type of job (permanent, temporary etc), job description by ISCO-88, (*variables C022 to C047 & C129 to C132*).
- Data from the Ministry of Labor and Social Affairs. The Ministry published each year a Statistical Bulletin containing detailed information at district level, about employment by main sector of economic activity and unemployment. The most recent data concern the years 2001 and 2002. Data at communal level are not available. For the purpose of the present project, the Sector of Statistics of the Ministry also produced a set of 7 tables at district level, containing data about unemployed persons by sex, age, head of family and education level (*variables C133 to C230*):
 1. Unemployed workers, total
 2. Unemployed persons receiving pensions
 3. Unemployed persons receiving benefits
 4. Unemployed persons receiving other skims
 5. Unemployed persons receiving social assistance (long term unemployed)
 6. Unemployed persons registered for the first time
 7. Other unemployed

/8/ Finance – lines budget of ministries

In agreement with the World Bank, three categories of data related to lines budget of ministries have been collected. These data provided by the Ministry of Finance concerns:

- The 2001 Health Budget at district level, by category and branch of expenditures with a distinction between planned and spent expenditures (*variables C395 to C420*).
- The 2001 Education budget at district level, by category and branch of expenditures with a distinction between planned and spent expenditures (*variables C571 to C596*).
- The unconditional transfer for local government (municipalities and communes) for the year 2003 (*variables C102 to C105*). For these funds, local governments have full discretion for their use, by economic purpose and by function. The total pool for all local governments units was 4,6 billion lek, financed in a large part from the small business tax.

As regards local budget (revenues from taxes and non taxes), data are available at communal level and provided by the Ministry of Local Governments and Decentralization (*variables C108 to C113*). Unfortunately, data related to all the communes of the prefecture of Fier and some communes of the prefecture of Kukes are missing.

/9/ Dwellings, households' equipment and standards of life

Information on dwellings and households' equipment is a part of the census performed in 2001 by INSTAT. Data relative to (a) the number of households, owners or renting their dwelling and owners or not of agricultural land, (b) sanitary conditions and (c) long-term equipment (TV, Refrigerator, car, etc) are available at all administrative level (*variables C049 to C072*).

The numbers of families and other subscribers of telephone in 2002, at district level were provided by the ALBTelecom. (*variables C335 to C342*) Data at communal level are not available.

Finally, the number of vehicles in circulation and the number of accidents by car with the number of injured or dead persons in 2001 and 2002 were provided by INSTAT (*variables C597 to C606*).

From the above summary presentation, it appears clearly that it was possible to collect a very large range of data and relevant information, especially at district level while the availability at communal level - which is certainly the most appropriate spatial desegregation level – is quite limited. It is necessary to notice that, in some cases, data were not collected at communal level due to the fact that the competent Institute or Ministry was not able to produce on time, the required data.

1.5 Definition of non-income poverty indicators

1.5.1. Selection of indicators

As a result of the above data collection and assessment process, the thematic fields as well as the relevant indicators - at commune and/or district level – that finally selected in order to produce thematic maps and perform the relevant analysis are presented in the following table.

Table 2: Variables selected by thematic field

Thematic fields	Variables	Definition of variables	Administrative level
1. General demographic information	a.1	Population density (inhabitants per square kilometer)	C, D
	a.2	Youngness rate (% of population less than 15 years old)	C, D
	a.3.	Ageing rate (% of population more than 64 years old)	C, D
	a.4	Dependency rate (0-14 and $\geq 65+$ years old) * 100 / 15-64 years old)	C, D
	L8d	Infant mortality (infant mortality rate per 1.000 live births)	D
2. Infrastructure	b.1	ADF projects (Value of ADF projects per person)	C, D
	b.2	Network & Utilities ADF projects (Total number of projects per 10.000 inhabitants)	C, D
	b.3	Water Supply (water supply investments, lek per 10.000 inhabitants, ADF)	D
	b.4	New Buildings (% of buildings constructed after 1990)	C, D
3. Public transport	c.2	Bus lines (Intercity bus lines in operation per 10.000 inhabitants)	C, D
4. Social Network: 4.a. Health sector	L1d	Health Centers (Number of health centers per 10.000 inhabitants)	D
	L2d	Health Posts (Number of health posts per 10.000 inhabitants)	D
	L3d	Hospital Beds (Number of hospital beds per 10.000 inhabitants)	D
	L4d	General Practitioners (Number of general practitioners per 10.000 inhabitants)	D
	d.1	Rural Pharmacies (Number of rural pharmacies per 10.000 inhabitants)	C, D
	L5d	Licensed Pharmacies (Number of licensed pharmacies during 1993-2002 per 100.000 inhabitants)	D
	L6d	Licensed Doctors (Number of licensed doctors during 1993-2002 per 100.000 inhabitants)	D
	L7d	Nurses (number of nurses and midwives per 10.000 inhabitants)	D

(Table 2)

Thematic fields	Variables	Definition of variables	Administrative level
4. Social Network: 4.b. Education sector	a.6	Non elementary education (Percentage of an alphabets and non accomplished elementary education)	C, D
	M1d	Children not in kindergarten (Children not going to kindergarten / “total number of children 3-5 years old” - “Children in kindergartens”)	D
	M2d	Boys not in kindergarten (Boys not going to kindergarten / “total number of boys 3-5 years old” - “Boys in kindergartens”)	D
	M3d	Girls not in kindergarten (Girls not going to kindergarten / “total number of Girls 3-5 years old” - “Girls in kindergartens”)	D
	M4d	Children by Nursemaid (average number of children in kindergarten by nursemaid)	D
	M5d	Nursemaids (Percentage of nursemaids holding a tertiary education degree)	D
	M6d	Children not in Primary education (Percentage of children 6-13 years old not going to primary education / “Children 6-13 years old” - “Children 6-13 years old not going to primary school”)	D
	M7d	Boys not in Primary education (Percentage of boys 6-13 years old not going to primary education / “Boys 6-13 years old” - “Boys 6-13 years old not going to primary school”)	D
	M8d	Girls not in Primary education (Percentage of girls 6-13 years old not going to primary education / “Girls 6-13 years old” - “Girls 6-13 years old not going to primary school”)	D
	M9d	Teenagers in Primary Education (Percentage of young’s 14-17 years old going to primary education)	D
	M10d	Teenage boys in Primary Education (Percentage of young boys 14-17 years old going to primary education)	D
	M11d	Teenage girls in Primary Education (Percentage of young girls 14-17 years old going to primary education)	D
	M12d	Pupils by teacher in Primary Education (Average number of pupils by teacher in primary education)	D
	M13d	Pupils by class in Primary Education (Average number of pupils by class in primary education)	D
M14d	Teachers with Basic Education (Percentage of teachers in primary education holding only a basic education degree)	D	

(Table 2)

Thematic fields	Variables	Definition of variables	Administrative level
4.b. Education sector	M15d	Teenagers not in Secondary Education (Percentage of young's 14-17 years old not going to secondary education)	D
	M16d	Teenage boys not in Secondary Education (Percentage of young boys 14-17 years old not going to secondary education)	D
	M17d	Teenage girls not in Secondary Education (Percentage of young girls 14-17 years old not going to secondary education)	D
	M18d	Pupils by teacher in Secondary Education (Average number of pupils by teacher in secondary education)	D
	M19d	Pupils by class in Secondary Education (Average number of pupils by class in secondary education)	D
	M20d	Secondary Education Teachers with Basic Education (Percent of teachers in secondary education holding only a basic education degree)	D
4. Social Network: 4.c Social Insurance	K1d	Social Income (Social insurance income in lek per capita)	D
	K2d	Social Expenditure (Social insurance expenditure in lek per capita)	D
	K3d	Social Expenditure per pensioner (average ratio of social insurance expenditure per pensioner, in lek per year)	D
5. General services and enterprises	e.1	Post Offices (Number of post offices per 10.000 inhabitants)	C, D
	O1d	Wholesale Enterprises (Number of wholesale enterprises per 10.000 inhabitants)	D
	O2d	Retail Enterprises (Number of retail enterprises per 10.000 inhabitants)	D
	O3d	Enterprises of services (number of enterprises of services per 10.000 inhabitants)	D
	O4d	Enterprises (Total number of enterprises of all kinds per 10.000 inhabitants)	D
6. Agricultural sector and land	f.3	Agricultural holdings (average size of agricultural holdings)	C, D
	f.4	Traditional farms (Percentage of farms tilling the land by hand)	C, D
	f.6	Industrial Crops (Percentage of UAA with industrial crops)	C, D
	f.7	Irrigated land (percentage of irrigated land)	C, D

(Table 2)

Thematic fields	Variables	Definition of variables	Administrative level
7. Employment and Unemployment	g.2	Unemployment rate (Percentage of unemployment from Census data)	C, D
	g.3	New unemployed (Percentage of new unemployed persons from Census data)	C, D
	g.4	Occasional jobs (percentage of employed persons in occasional jobs)	C, D
	P1d	Unemployment rate (Percentage of unemployment from MoL)	D
	P2d	Unemployed Head of family (Percentage of unemployed head of family, MoL)	D
	P3d	Unemployed with tertiary education (percentage of unemployed persons holding tertiary education degree, MoL)	D
	P4d	Unemployed Educated Persons (% of unemployed persons holding tertiary or technical / professional education degree, MoL)	D
8. Finance – budget lines of ministries	h.1	Unconditional Transfers for local Governments (in lek per person)	C, D
	L9d	Planned Budget for Health (planned budget for public health in lek per capita)	D
	L10d	Expenditures for Health (expenditures for public health in lek per capita)	D
	M21d	Planned Budget for Education (planned budget for public education in lek per capita)	D
	M22d	Expenditures for Education (expenditures for public education in lek per capita)	D
9. Dwellings, households' equipment and standards of life	i.1	No Refrigerator (Percentage of households without refrigerator)	C, D
	i.2	No Cooking stove (Percentage of households without cooking stove)	C, D
	i.3	No Car (Percentage of households without car)	C, D
	i.4	No Heating (Percentage of households without heating)	C, D
	J1d	No Telephone (Percentage of households without telephone, calculated on the basis of the Total number of households subscribers)	D
	N1d	Car accidents (Number of car accidents per 1000 cars)	D

1.5.2. Codification of the non-income poverty simple and composite indicators

The methodology used in order to produce thematic indicators and maps is mainly inspired by the classification method developed by J. Bertin (1977)⁴. For each one of the thematic dimensions of non-economic poverty, a “matrix of permutation” has been constructed: the rows correspond to the spatial unit (district or commune) while the columns to the selected variables. Rows as well as columns are independent between them. This property allows the permutation of data in order to classify, through an optical way, the districts or the communes.

Main steps of analysis:

- a). Sixty-nine (69) simple indicators have been calculated covering nine thematic fields.
- b). For each simple indicator, five classes have been systematically defined on the basis of the dispersion (standard deviation) around the average (mean), so that each indicator is defined on a scale from -2 to + 2 where 0 corresponds to the neutral situation around the average.
- c). For each simple indicator, the relative map has been produced
- d). For each thematic field, the “matrix of permutation” is produced and the composite indicator is calculated as the sum of the values assigned to each simple indicator. A color is assigned to each cell of the matrix according to the numeric value contained in the cell, following a graduate color system (from black to white).
- e). The joint permutation of rows and columns, based on the color system and the value of the composite indicator, allows the final classification of the districts (or communes) in quite homogenous groups as regards this indicator.
- f). Finally, the composite indicator is codified, using five classes:
 - 2 = Very negative situation in terms of non-income poverty (Negative --)
 - 1 = Negative situation (Negative -)
 - 0 = Neutral situation around the average (mean \pm one standard deviation)
 - +1 = positive situation (Positive +)
 - +2 = Best situation (lowest degree of non-income poverty) (Positive ++)

1.6 Database design and development

The database contains all the collected data (variables and indices) with spatial reference for the three main administrative divisions: Prefectures, Districts and Communities/Municipalities. Additional contains metadata information about its structure and content.

The development environment is the MS Access 2000. A considerable effort has been made to achieve the maximum available simplicity and flexibility and therefore there is no any kind of relations, or joins, between the different tables. Although, if the user wants to create relations and joins, this is possible through the relevant codes (primary keys).

The database contains fifth-teen (15) tables, organized in two different main files (*.mdb) as follows:

⁴ Jacques Bertin, (1977), “La Graphique et le traitement graphique de l’Information”, Flammarion, Nouvelle Bibliotheque Scientifique, Paris.

AlbaniaNIPoverty-data.mdb

This file contains the detailed thematic variables, and it is organized in nine (9) different tables, as follows:

List of Variables (9 fields, 618 records)

Contains metadata information according to the following fields:

FIELD NAME	DESCRIPTION
Table	The database table in which belongs the relevant variable
ID	Database primary key
Variables short name	As the field name
Variables code	As the field name
Units	As the field name
Reference area	As the field name: C= community, D=district, P=prefecture
Year	The reference year
Notes	As the field name
Source	As the field name

Administrative divisions (11 fields, 374 records)

Contains information about the administrative structure of Albania, the coding system is also used for spatial joins (reference).

FIELD NAME	ALIAS	DESCRIPTION
a/a INSTAT	K0	For coding purposes
Code_N	K1	For coding purposes
Code_T	K2	For coding purposes
ID_Prefecture	K3	For coding purposes
ID_District	K4	For coding purposes
ID_Commune	K5	For coding purposes
PREFECTURE	K6	Name of Prefecture
DISTRICT	K7	Name of District
COMMUNE	K8	Name of Community
MUNICIPALITY	K9	If the Community consists a Municipality or not
#. of villages by commune	K10	Number of settlements within the Community

Var Prefectures (131 fields, 12 records)

Var Districts (137 fields, 36 records)

Var Communes (138 fields, 374 records)

These three tables contain the same variables, for comparison purposes, but for the three different spatial units respectively. The different number of fields is based in the proper selection of coding system. The fields' names are the variables' codes, as are in the table "List of Variables".

Districts_N1 (98 fields, 36 records)

Districts_N2 (161 fields, 36 records)

Districts_N3 (130 fields, 36 records)

Districts_N4 (116 fields, 36 records)

These four tables contain the thematic variables for the District level. There are organized in four different tables for operational and administrative purposes. The first six (6) fields are used to achieve the spatial reference, and they are the same in all four tables. The fields' names are the variables' codes, as are in the table "List of Variables".

(a) AlbaniaNIPoverty-indices.mdb

This file contains the indices as these are described in other paragraphs. The calculation of indices is based on the selected variables, which are in the previous file, and is described in this report.

The file is organized in six (6) different files as follows:

List of thematic indices (7 fields, 83 records)

Contains metadata information according to the following fields:

FIELD NAME	DESCRIPTION
CODE	The index code
CATEGORY	The relevant thematic category of index
LEVEL	The spatial unit of index: C=community, D=district
DESCRIPTION	A detailed – more or less – description of index
NOTES	As the field name
SOURCE	As the field name
MAPPING	It has the value YES if the specific index was used for thematic mapping and analysis purposes, otherwise is NO

Communities (56 fields, 374 records)

Districts (57 fields, 36 records)

These two tables contain the same indices, for comparison purposes, but for the two different spatial units respectively. Each index possess two fields: one, with the name of index code, as it is in the table “List of Indices”, containing the pure value of index, and one with the same name plus the letter “c” (or “d” respectively), containing the relevant data class that the value belongs according to the index classification (as it is described in other paragraphs in this report).

Districts2 (93 fields, 36 records)

The table contains only the indices that have been calculated only for the district level. The fields’ names follow the same rules as previous.

List of composite indicators (2 fields, 15 records)

Contains all a list of composite indicators plus the degree of rurality and the two special indicators for the mapping overlay purposes. The two fields are the CODE for the specific composite indicator and its short DESCRIPTION.

Composite indicators (15 fields, 36 records)

The values of composite indicators, for district level, as these are described in the table “list of composite indicators”. The fields’ names are the indicators’ codes.

Additional, and for documentary purposes, there is one file (lsms1.xls) containing data and figures from the report of Gianni Betti (“Poverty and Inequality mapping of Albania, July 2003”).

1.7 Maps production

Approximately one hundred (100) different maps have been created and organized as follows:

- One map showing the administrative structure of Albania (are including in this report)
- One map showing the degree of rurality of the Albanian districts (are including in this report)
- Two sets of twenty-three (23) thematic maps showing the spatial distribution of selected indicators in the administrative levels of communes and districts respectively.
- One set of forty-six (46) thematic maps showing the spatial distribution of selected indicators (other than the previous) in the administrative level of Districts (annexed).
- One set of ten (10) thematic maps showing the spatial distribution of composite indicators at District level (are including in this report). Each of them is composed on the basis of the available variables relative to each thematic.
- One composite map for the “Non-economic poverty” (are including in this report)
- Two (2) thematic maps based on the results (figures 3 and 4) of the report: *Gianni Betti, Poverty and Inequality mapping of Albania, July 2003* (are including in this report).
- Two (2) maps showing the results of mapping overlay between the two different approaches: Income and non-income poverty (are including in this report).

The creation of maps is based in the relevant variables / indicators as these are described in other paragraphs. The GIS software we used was ArcMap (ESRI), the database software was MS Access 2000, the software for the creation and presentation of charts and tables (within the maps) was Ms Excel 2000 and for the final presentation and printing purposes was Photoshop 5.0. The maps are also available in standard JPEG format.

2 THE SPATIAL NON-INCOME POVERTY AT DISTRICT LEVEL

2.1 The main differences of non-income poverty

This chapter includes a brief interpretation of the developed thematic maps. The analysis is mainly based on the composite indicators of non-income poverty while simple indicators are taking into account in order to explain some specific aspects or notable differences.

Demographic profile

This map serves a critical role in understanding the observed main spatial differences especially in terms of age structure, after the systematic codification and classification of the 36 districts of Albania, as it appears in the following table (table 4).

Table 3
Classification of Districts for Demographic structure

	Youngness rate	Ageing rate	Dependency rate	Population density	Infant mortality	id_demo
KORCE	-2	-2	-2	0	0	-2
DEVOLL	-2	-2	-2	0	1	-2
KOLONJE	-2	-2	-1	-2	2	-2
DELVINE	-2	-2	0	-2	2	-2
GJIROKASTER	-2	-1	-1	-1	1	-2
PERMET	-1	-2	-1	-2	2	-2
SKRAPAR	-1	0	-2	-2	1	-2
POGRADEC	0	0	-1	0	-2	-1
SARANDE	-2	-2	0	-1	2	-1
LEZHE	0	0	0	0	-2	-1
MALESI E MADHE	0	-1	2	-1	-2	-1
TIRANE	-1	0	-2	2	-1	-1
ELBASAN	0	1	-1	1	-2	0
KUCOVE	-1	0	-2	2	0	0
SHKODER	0	-1	0	0	0	0
BERAT	0	1	-1	0	0	0
GRAMSH	1	2	0	-1	-2	0
LUSHNJE	0	0	-1	1	0	0
MIRDITE	0	0	0	-1	1	0
PUKE	1	1	2	-2	-2	0
TEPELENE	0	0	0	-1	1	0
VLORE	0	-1	0	0	1	0
FIER	0	0	-1	2	0	0
MALLAKASTER	0	1	0	0	0	0
MAT	1	0	1	-1	0	0
TROPOJE	1	0	1	-2	1	0
DURRES	0	0	0	2	0	1
KURBIN	0	1	0	1	0	1
LIBRAZHD	1	2	0	0	-1	1
KAVAJE	0	0	1	1	1	1
DIBER	2	2	2	0	-2	2
HAS	2	2	2	-1	-1	2
KRUJE	1	1	0	1	1	2
KUKES	2	2	2	-1	-1	2
BULQIZE	2	2	2	0	-1	2
PEQIN	1	2	0	2	0	2

Map Demographic profile

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

The most negative demographic profile is mainly located in the southeast districts of Albania where the high proportion of aged persons coincide with a low proportion of children under 15 years old. It is effectively possible to observe a group of 7 contiguous districts (Delvine, Gjirokaster, Permet, Shkrapar, Kolonje, Korce and Devoll) with very negative figures. Generally, a low or medium population density also characterizes these districts while most of them were affected by a considerable decrease of population between 1989 and 2001 (migration effects). The eastern districts of Albania (from Librazhd to Has) present the opposite profile with quite high youngness rate and relatively low ageing rate. Such a situation is also observed in most of the small districts around Tirana where the population density is at the same time, among the highest of the country. Finally, the district of Tirana presents a relatively negative profile mainly based to its especially low dependency rate⁵.

Infrastructure level (table 4)

This map represents in a synthetic way, a part of the infrastructure investments realized during the last years as well as the relative importance of new buildings' construction after 1990. The considered investments are those financed by ADF funds and the water supply investments financed by the Ministry of Tourism. ADF has made investments in all of the 36 districts of Albania. More than half of the projects concern roads while around 20% concern water supply.

As regards ADF projects, it appears that, generally the most rural districts – especially in the north of Albania - are the first beneficiaries in terms of number of projects or value per capita. This situation can be considered as perfectly logical if we consider the objective needs of such rural districts. The districts, with the smallest number and value per capita projects, are mainly located in the center and western part of the country.

Considering water supply investments financed by the Ministry of Tourism, the western part of the country seems to beneficiate of the highest amount per capita while at the same time, the “new” buildings, constructed after 1990 in these western districts represent at least 28% of the total number of buildings when the national average is about 18%.

Globally, the coastal districts present the most advantageous situation while the most problematic districts are mainly located in the center and north of the country.

⁵ The dependency rate tells us how many young people (under 15 years) and older people (over 64 years) depend on people of working age.

Table 4
Classification of Districts for Infrastructure

	ADF projects	Water supply investments	Percent of new buildings	id_infrast
KRUJE	-2	-1	1	-2
LUSHNJE	-2	-2	2	-2
BULQIZE	0	-2	-1	-2
DEVOLL	-1	-1	-1	-2
POGRADEC	-1	-1	0	-2
GRAMSH	0	0	-2	-2
TROPOJE	0	-1	-2	-2
HAS	1	-2	-1	-2
MAT	0	-1	-1	-2
BERAT	-2	1	0	-1
ELBASAN	-2	0	1	-1
KUKES	1	0	-2	-1
LIBRAZHD	-1	0	0	-1
MALESI E MADHE	0	-1	0	-1
SKRAPAR	0	0	-1	-1
DELVINE	1	1	-2	0
PUKE	2	0	-2	0
TEPELENE	2	0	-2	0
KOLONJE	1	1	-2	0
DIBER	1	0	-1	0
GJIROKASTER	0	1	-1	0
KORCE	-1	1	0	0
KUCOVE	0	-2	2	0
MALLAKASTER	1	-1	0	0
MIRDITE	1	0	-1	0
PERMET	1	0	-1	0
TIRANE	-2	0	2	0
KAVAJE	0	-2	2	0
KURBIN	-1	1	1	1
SHKODER	-2	2	1	1
VLORE	-1	1	1	1
DURRES	-1	1	2	2
FIER	-2	2	2	2
LEZHE	0	1	2	2
PEQIN	-1	2	1	2
SARANDE	0	2	0	2

Map Infrastructure level

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Social network: health sector

This map illustrates one of the most important dimensions of the non-economic poverty that is the access to the different health services. This composite map has been constructed on the basis of relevant indicators reflecting the level of health services offered to the population as for example health centers, hospitals beds, practitioners or nurses per 10.000 inhabitants etc. The access to health services seems to be particularly problematic in nine districts of Albania. Seven (i.e Bulqize, Devoll, Has, Lushnje, Malesi e Madhe, Mallakster and Peqin) have a high percent of rural population while Kucove and Kurbin are very small districts.

With the exception of Tirana and three northern districts, the most endowed districts are concentrated in the southern part of the country. Districts as Gjirokastrer, Kolonje, Permet, Shkrapar, Tepelene, Sarande and in some degree, Delvine and Vlore are characterized by health indicators that are – for the majority of them - higher than the national average, explaining finally their positive figure (table 5).

Table 5
Classification of Districts for Health sector

	General practitioners	Hospital beds	Nurses and midwives	Licensed doctors	Health posts	Rural pharmacies	Health centers	id_health
MALLAKASTER	-2	-2	-2	-1	-2	-2	0	-11
HAS	-2	-1	-1	-2	-2	-1	-1	-10
KURBIN	-2	-2	-2	-1	-1	0	-2	-10
PEQIN	-2	-2	-2	-2	-2	1	-1	-10
MALESI E MADHE	-2	-2	-1	-2	-2	0	1	-8
DEVOLL	-2	-2	-1	-2	1	0	-1	-7
LUSHNJE	-1	-1	-2	-1	0	-1	-1	-7
BULQIZE	-2	-1	0	0	-2	-1	0	-6
KUCOVE	0	-2	-2	-2	0	0	0	-6
DURRES	0	0	-1	1	0	-2	-2	-4
FIER	0	-1	-2	1	-1	0	-1	-4
KRUJE	0	-1	-1	-1	1	0	-2	-4
KAVAJE	0	-1	-1	0	0	0	-1	-3
LIBRAZHD	-1	-1	0	-2	1	0	0	-3
MAT	0	0	0	0	0	-2	-1	-3
BERAT	0	0	0	0	0	0	-1	-1
DIBER	-1	1	1	-1	-1	0	0	-1
ELBASAN	0	2	-1	0	-1	1	-2	-1
KUKES	0	1	1	-2	-2	1	0	-1
LEZHE	0	0	0	-2	0	1	1	0
GRAMSH	0	0	1	-1	2	-1	0	1
KORCE	1	1	0	1	0	-1	-1	1
MIRDITE	0	0	1	-1	0	-1	2	1
PUKE	-1	0	2	0	-2	1	2	2
SHKODER	0	1	0	-1	1	0	1	2
TIRANE	2	2	0	2	-1	-2	-1	2
VLORE	1	2	0	0	0	0	-1	2
DELVINE	-1	0	1	0	2	1	0	3
POGRADEC	1	0	0	0	1	1	1	4
GJIROKASTER	2	0	0	2	0	0	1	5
TEPELENE	2	0	2	0	0	0	1	5
SARANDE	2	1	0	2	-2	1	2	6
TROPOJE	1	1	2	2	1	-2	1	6
PERMET	2	2	2	-2	-1	2	2	7
KOLONJE	1	2	2	-2	2	2	2	9
SKRAPAR	2	1	2	1	2	0	1	9

Map Health sector

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Social network: Education sector

This map represents, with the previous one, a serious aspect of non-economic poverty and illustrates:

- the accessibility to the education system as, for example, the percentage of children not in Primary education, the percentage of teenagers not in secondary education etc., as well as
- its functioning conditions reflected by indicators as number of pupils by class or by teacher, percentage of teachers holding only a basic education.

Table 6
Classification of Districts for Education sector

	Teenagers not in 2ary education	Non elementary education	Children not in kindergarden	Children not in Primary education	Teenagers in Primary education	Nursemaids education level	Teachers with basic degree in P.E.	Pupils / teacher in S.E.	Pupils / class in S.E.	Teachers with basic degree in S.E.	Pupils / teacher in P.E.	Children / nursemaid	Pupils / class in P.E.	id_Educ
DIBER	-2	-1	-2	-2	-2	-1	-2	-1	-1	-2	0	0	0	-2
BULQIZE	-2	0	-2	-1	0	-2	-2	-2	-2	0	-1	1	0	-2
BERAT	-2	-2	0	-2	-2	0	0	0	0	0	0	0	0	-2
ELBASAN	-2	-1	0	-2	-2	1	1	0	-2	0	-1	-1	1	-2
KUKES	-1	0	0	1	0	-2	-1	-1	0	-1	-1	-2	0	-2
KAVAJE	-1	0	0	1	0	0	0	-1	0	-1	-2	-2	0	-1
KRUJE	-2	0	-2	1	0	-1	0	-1	-1	2	-2	0	0	-1
PEQIN	-2	-2	-1	1	0	-2	-1	-1	0	2	-1	-1	2	-1
FIER	-1	0	-1	-1	-1	0	0	0	-1	0	-1	0	1	-1
HAS	-1	1	0	1	2	-2	-2	1	0	-2	0	-2	-1	-1
KURBIN	0	1	0	1	0	0	0	-2	-1	1	-2	-2	-1	-1
LEZHE	0	0	0	0	0	-2	0	0	-1	0	-2	0	0	-1
LUSHNJE	1	-1	0	0	0	0	0	-2	-2	0	-1	-1	1	-1
DURRES	0	0	-1	2	0	1	1	0	-2	0	-2	0	-1	0
KUCOVE	1	0	0	0	-1	-1	0	-1	0	-1	-1	0	2	0
TIRANE	2	1	-1	1	-1	0	1	-1	-2	1	-2	0	-1	0
GRAMSH	0	1	1	0	0	-1	-2	0	2	-2	1	1	-2	0
MAT	0	-1	-1	1	1	-1	-1	0	0	0	0	0	1	0
MIRDITE	0	-2	0	0	0	-2	-1	0	0	2	2	0	0	0
PUKE	0	-2	0	0	0	-1	-2	2	1	0	2	1	-2	0
MALLAKASTER	-1	2	-1	0	1	0	-1	-2	-1	2	0	0	1	0
SKRAPAR	1	1	1	-2	1	-2	-2	1	1	0	2	1	-2	0
MALESI E MADHE	-1	2	-1	2	0	0	0	1	0	0	0	0	0	1
PERMET	2	-2	-2	-1	0	-1	1	0	1	2	2	0	-2	1
DEVOLL	1	0	2	0	1	2	2	0	-1	-1	0	-1	0	1
LIBRAZHD	0	1	0	2	2	-1	0	0	2	-2	0	0	2	1
POGRADEC	2	-2	2	0	0	0	0	2	1	1	0	-2	2	1
SHKODER	0	2	-2	0	0	2	2	2	0	1	-1	0	0	1
TROPOJE	-1	0	-2	2	0	-1	0	2	2	0	1	2	1	1
VLORE	1	0	0	0	0	1	1	1	0	0	0	1	1	1
DELVINE	1	0	2	2	2	-2	2	0	1	0	2	1	-2	2
KOLONJE	2	-1	2	-1	1	0	1	1	0	2	2	2	-2	2
KORCE	1	0	2	0	0	2	2	2	0	0	0	0	0	2
TEPELENE	1	0	1	0	2	2	0	2	1	-2	2	1	0	2
SARANDE	1	1	1	-2	2	1	1	1	2	2	1	0	0	2
GJIROKASTER	2	-2	0	-2	2	2	2	2	2	1	2	2	2	2

13 districts mainly located in the Northeast and in the western part of Albania present a negative figure. Five of these districts (Diber, Bulqize, Berat, Elbasan and Kukës) are characterized by a very negative figure, mainly due to the relatively low percentages of children and teenagers going to school. For the other eight districts, the problems concern more particularly the second group of indicators that reflecting the functioning conditions.

Map Education sector

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

At the opposite, 14 districts present a positive figure, from which 11 are located in the southeast and south of Albania, as a limited number of simple indicators are negative.

Social network: Social insurance system (table 7)

The fundamental principle of the functioning of the Social Insurance System is the generation's solidarity where the active generation contributes for the passive generation. In this context, three indicators are examined: the social insurance income per capita, the social insurance expenditure per capita and the rate of expenditures per pensioner.

Table 7
Classification of Districts for Social insurance system

	Social insurance income p.c.	Social insurance expenditure p.c.	Social expenditure p. pensioner	id_sii
LIBRAZH	-2	-2	-2	-2
MALESI E MADHE	-2	-2	-2	-2
PEQIN	-2	-2	-2	-2
DEVOLL	-2	-1	-2	-2
LUSHNJE	-2	-2	0	-2
MALLAKASTER	0	-2	-2	-2
DIBER	-2	-1	0	-2
KAVAJE	-1	-1	-1	-2
GRAMSH	0	-1	-1	-1
LEZHE	-1	-1	0	-1
BULQIZE	1	-1	-1	-1
KUKES	-1	0	0	-1
PERMET	0	0	-1	-1
POGRADEC	-1	0	0	-1
BERAT	-1	0	1	0
ELBASAN	0	-1	1	0
HAS	-1	0	1	0
KRUJE	0	-1	1	0
KURBIN	-1	0	1	0
MAT	1	0	-1	0
PUKE	0	0	0	0
KORCE	0	1	0	1
SKRAPAR	1	0	0	1
VLORE	0	0	1	1
GJIROKASTER	1	1	0	1
MIRDITE	1	1	0	1
SHKODER	0	1	1	1
TEPELENE	1	1	0	1
DURRES	2	0	1	2
FIER	1	0	2	2
KOLONJE	2	1	0	2
SARANDE	0	2	1	2
TROPOJE	1	2	0	2
DELVINE	2	2	0	2
KUCOVE	2	0	2	2
TIRANE	2	0	2	2

Map Social Insurance system

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

The composite indicator of social insurance variables appears very negative in the case of eight districts that are, at the same time, districts with the highest degree of rurality. In a more general approach, it is possible to observe the following:

- All the eastern districts, from Pogradec to Kukes, present a negative profile.
- In the northern part of the country, there is an important disparity of situation from one district to the other
- On the contrary, the situation is more homogeneous in the south. Once again, the southern districts of Albania present a positive or very positive figure, with the exception of the district of Permet.

General services and enterprises

This map illustrates the degree of implantation of services and enterprises (especially wholesale and retail enterprises) by district. Tirana and Durres from one part and the southern districts are still the regions characterized by the most positive figure (**table 8**).

Table 8
Classification of Districts for general services and enterprises

	Retail enterprises	Total enterprises	Enterprises of services	Wholesale enterprises	Post offices	id_services
BULQIZE	-2	-2	-2	0	-2	-2
DIBER	-2	-2	-1	-2	0	-2
HAS	-2	-2	-2	-2	1	-2
LUSHNJE	-1	-1	-1	-2	0	-2
SHKODER	-1	-2	-2	0	0	-2
GRAMSH	-2	-1	0	-2	1	-2
LIBRAZHD	-2	-1	0	0	-1	-2
MALESI E MADHE	-2	-1	-1	1	0	-1
MAT	-1	0	0	-1	-1	-1
KRUJE	0	0	0	-1	-1	-1
PEQIN	-1	0	0	-1	0	-1
PUKE	0	0	0	-2	1	0
ELBASAN	0	0	0	0	-1	0
KAVAJE	-1	0	0	0	0	0
KORCE	0	0	-1	1	-1	0
KUKES	-1	0	0	-1	1	0
KURBIN	0	0	0	-1	0	0
LEZHE	0	0	0	0	-1	0
MIRDITE	0	0	0	-1	0	0
BERAT	0	0	0	0	0	0
FIER	0	0	0	1	-1	0
MALLAKASTER	0	0	0	0	0	0
POGRADEC	0	0	0	0	0	0
VLORE	0	0	-1	1	1	0
KUCOVE	1	1	1	0	-1	1
SKRAPAR	0	1	1	-1	1	1
TEPELENE	0	0	0	1	1	1
TROPOJE	0	0	-1	1	2	1
DEVOLL	1	1	1	0	0	1
DURRES	1	2	2	1	-2	2
TIRANE	2	2	2	2	-2	2
KOLONJE	1	2	2	-1	1	2
GJIROKASTER	1	1	0	2	2	2
PERMET	1	2	1	0	2	2
DELVINE	2	2	0	1	2	2
SARANDE	1	2	1	1	2	2

Map Services

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

At the opposite, there is a whole region with relatively low level of enterprises' implantation with four eastern contiguous districts (Gramsh, Librazhd, Bulquize and Diber).

It is also possible to observe that the relative proximity to the district of Tirana, in combination with high degree of rurality, seems to have negative impact on the implantation of enterprises. Effectively, these two characteristics (rurality and proximity to Tirana) concern four districts with negative indicators, in terms of implantation of enterprises, which are Kruje, Mat, Peqin and Lushnje. Once again the northern region presents a diversity of situation.

Agricultural sector and land

The agricultural sector remains the most important economic sector of Albania, especially in terms of employment: around 50% of the employed population is still working in agriculture. As been notified by INSTAT, "the high percentage of employed in agriculture shows that the Albanian society remains mainly a rural one despite the large internal migration movements towards the cities such as Tirana and Durres"⁶.

Table 9
Classification of Districts for agricultural sector

	Percent of irrigated MUU	Average size of agr. holding (in Ha)	Percent of farms filling the land by land	id_agric
MALESIE MADHE	-2	-1	-1	-2
MAT	1	-2	-2	-2
MIRDITE	2	-2	-2	-2
TEPELENE	-2	0	0	-2
BERAT	-2	0	1	-1
DURRES	-2	0	1	-1
LEZHE	-2	0	1	-1
VLORE	-2	1	0	-1
GJIROKASTER	-1	1	-1	-1
HAS	1	-1	-1	-1
KRUJE	-1	0	0	-1
SKRAPAR	-1	0	0	-1
KUKES	1	-2	0	-1
PUKE	2	-2	-1	-1
LIBRAZHD	2	-1	-2	-1
SARANDE	0	1	-2	-1
POGRADEC	0	-1	0	-1
SHKODER	0	-1	0	-1
TIRANE	0	0	-1	-1
DELVINE	0	2	-2	0
BULQIZE	2	-2	0	0
DIBER	2	-2	0	0
TROPOJE	2	-2	0	0
GRAMSH	-1	0	1	0
PERMET	-1	1	0	0
ELBASAN	0	0	0	0
KURBIN	0	0	0	0
KUCOVE	-1	0	2	1
MALLAKASTER	-2	2	1	1
PEQIN	0	0	1	1
KOLONJE	0	2	0	2
KORCE	0	1	1	2
FIER	-1	2	2	2
DEVOLL	0	2	2	2
KAVAJE	0	2	2	2
LUSHNJE	0	2	2	2

⁶ INSTAT, (2002), "The population of Albania in 2001: main results of the population and housing census".

Map Agricultural sector

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

The map relative to the agricultural sector illustrates some important characteristics influencing directly the efficiency of this activity: average size of agricultural holdings, degree of irrigation and way of tilling the land. This map shows some clear regional differences:

Most of the districts, in the North of the country, present a negative figure, based, mainly, to the very small size of the agricultural holdings. This is especially true in the case of the districts of Has, Puke, Mirdite and Mat.

Another type of negative figure can be observed, mainly, in the Southwest of the country, in the districts of Vlore, Sarande, Gjirokaster and Tepelene as well as Berat and Shkrapar. In this case, the predominant problem concerns the low percentage of irrigated land, especially in the case of Berat, Tepelene and Vlore (less than 10%).

At the opposite, two small regions present a positive figure: (a) the southeast region of Korçe, Devoll and Kolonje and (b) the western region from Mallakaster to Kavaje. All these districts are characterized by an average size of farm, clearly higher than the national average, while at the same time, the percentage of farms still tilling the land by hand is largely lower than the national average.

Unemployment level and structure

This map reflects not only the intensity of unemployment by district but also to take into account some structural aspects as unemployed head of family, new unemployed, unemployment among people with higher education and extension of occasional jobs, as an indicator of precarious conditions of work.

There is a clear contrast between the northern districts of Albania and the rest of the country. The first region that has a dominant rural character presents a negative figure, except the districts of Malesi e Madhe and Shkoder.

It is quite difficult to find a single explanation for the relatively positive figure observed in the other districts, the only exceptions being Bulqize, Kavaje, Kucove and Vlore. Nevertheless, taking into account the indicators relative to general services and enterprises as analyzed before, it is feasible to suggest that in the southern districts as well as in Tirana and Durres, the population can find more easily a job or at least has more opportunities to find some job. In the eight districts of Mallakaster, Tepelene, Delvine, Sarande, Gjirokaster, Permet, Skrapar and Kolonje, the global decline of population between 1989 and 2001 (Instat, 2002) was particularly important while at the same time, the ratio of non active population (young and elderly persons) is increasing.

Table 10
Classification of Districts for unemployment level and structure

	New unemployed	Unemployment rate	Head of family unemployed	Unemployed educated persons	Occasional jobs	id_unemployment
TROPOJE	-2	-2	-2	-2	0	-2
PUKE	-2	-2	-2	0	-1	-2
MIRDITE	-1	-1	-2	0	-1	-2
KURBIN	0	-2	0	-1	-1	-2
KUCOVE	0	-2	0	-2	1	-2
LEZHE	0	0	0	-2	-1	-2
KAVAJE	-2	-1	1	0	0	-1
BULQIZE	-2	0	0	1	0	-1
HAS	-2	0	0	2	-1	-1
KUKES	0	-1	2	0	-2	-1
VLORE	1	0	-1	0	-1	-1
DIBER	-2	1	1	2	-2	0
DURRES	1	0	-1	0	0	0
FIER	0	0	0	-1	1	0
MALESI E MADHE	1	0	-2	2	-1	0
POGRADEC	2	0	-2	1	-1	0
SHKODER	2	-2	0	0	0	0
GRAMSH	0	0	0	-1	2	1
SKRAPAR	0	0	-1	0	2	1
BERAT	0	0	1	0	1	1
ELBASAN	0	0	0	1	1	1
KOLONJE	1	1	0	-2	2	1
KRUJE	-1	0	2	1	0	1
MAT	0	0	1	1	0	1
PEQIN	1	0	1	-2	2	1
TEPELENE	0	0	0	2	0	1
TIRANE	1	1	1	-1	0	1
KORCE	0	1	0	1	1	1
DELVINE	2	2	-1	1	0	2
DEVOLL	-2	2	1	2	1	2
GJIROKASTER	2	1	2	-1	0	2
LIBRAZHD	-1	2	2	0	1	2
MALLAKASTER	0	2	0	1	1	2
LUSHNJE	2	1	1	-1	2	2
PERMET	2	2	0	-1	2	2
SARANDE	1	2	1	2	-1	2

Map Unemployment level and structure

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

Finance – lines budget of ministries

Financial data from Ministries' budget lines are also an important aspect for the analysis of non-economic poverty as the improvement of infrastructures and social network is mainly dependent of the expenditures and investments planned by the government. This map hardly illustrates the situation during the year, as it is a static approach and therefore cannot give the real impact of public investment in the different districts.

Table 11
Classification of Districts for Finance and Ministries' budget lines

	Expenditures for health	Planned budget for health	Planned budget for education	Local budget	Expenditures for education	Unconditional transfer	Id-Finance
FIER	-1	-1	-2	-2	-2	-2	-2
LUSHNJE	-2	-1	-2	-2	-1	-1	-2
DEVOLL	-2	-2	-1	0	-1	-1	-2
MALLAKASTER	-2	-2	0	-2	0	-1	-2
PEQIN	-2	-2	-1	-1	-1	0	-2
DURRES	-2	0	-2	2	-2	-2	-2
KAVAJE	-1	-1	-1	0	-1	-2	-2
KURBIN	-2	-1	-1	-1	-1	0	-2
MALESI E MADHE	-2	-2	0	-2	0	0	-2
BERAT	0	0	-1	0	-1	-2	-1
BULQIZE	-1	-1	-1	0	-1	0	-1
KUCOVE	-1	-1	-1	1	-1	-1	-1
DIBER	0	0	-1	-1	-1	0	-1
KRUJE	0	-1	-1	0	-1	0	-1
LEZHE	0	0	-1	0	-1	-1	-1
LIBRAZHD	-1	-1	0	0	0	-1	-1
ELBASAN	0	0	-1	1	-1	-1	0
HAS	-1	0	0	-1	0	1	0
POGRADEC	0	0	0	1	0	-2	0
SHKODER	0	0	0	-1	0	0	0
KORCE	0	0	0	1	0	-1	0
MAT	0	0	0	-1	0	1	0
VLORE	0	0	0	2	0	-1	0
KUKES	0	2	0	-1	0	1	0
MIRDITE	1	0	1	-1	1	1	1
SARANDE	1	0	0	2	0	0	1
GRAMSH	1	0	1	0	1	1	1
TROPOJE	2	1	1	-2	1	2	1
GJIROKASTER	0	0	2	2	2	0	2
PERMET	2	1	0	1	0	2	2
PUKE	2	2	1	-1	1	2	2
TEPELENE	2	1	1	0	1	2	2
TIRANE	1	2	2	2	2	-2	2
DELVINE	0	0	2	2	2	2	2
SKRAPAR	2	2	1	0	1	2	2
KOLONJE	2	2	2	1	2	2	2

Map Public Expenditures

Εργαστήριο Δημογραφικών & Κοινωνικών Αναλύσεων

Considering the public expenditures per capita, it appears that most of the western districts of Albania (districts from Mallakster, in the south, to Lezhe, in the North of the country) present for the year 2001, a negative or even a very negative profile. It is interesting to note that these districts are generally, characterized by the highest population density (see relative map). A negative situation is also observed in the case of two very rural districts (Devoll and Malesi and Madhe) and three contiguous districts (Librazhd, Bulqize and Diber) in the eastern part of the country.

At the opposite, the most favored zone is once again the southern region of Albania with seven districts having a positive profile for the year 2001. As it appears in the above table, generally all the simple indicators of planned and spent expenditures in these seven districts are conjointly positive. Such a situation is also the case of Tirana and of three contiguous districts in the North (Mirdite, Puke and Tropoje). With the exception of Tirana, it appears that regions with high population density are relatively disfavored.

Dwellings, households' equipment and standards of life

Households' equipment and standards of life are an important aspect for the assessment of the socio-economic poverty. These are in fact, indicators of the well being of the population (quality of life). This map illustrates major differences between (a) the north and northeastern districts of the country with negative indicators and (b) the southern districts colored by a higher level of quality of life. Districts with high degree of urbanization, as Tirana and Durres are, logically included in the second group.

Table 12
Classification of Districts for households' equipment and standards of life

	No refrigerator	No cooking stove	No car	No telephone	id_equipment
LIBRAZHD	-2	-2	-2	-1	-2
PUKE	-2	-2	-2	-2	-2
HAS	-2	-2	-1	-2	-2
BULQIZE	-2	-2	-1	-2	-2
MAT	-1	-1	-2	-1	-2
MIRDITE	-1	-2	-1	-1	-2
KUKES	-2	-2	-1	0	-1
DIBER	-2	-1	-1	-1	-1
PEQIN	-1	-1	0	0	-1
MALESIE MADHE	-1	-1	0	-2	-1
GRAMSH	0	-1	-2	0	-1
BERAT	0	0	-1	0	-1
LUSHNJE	0	1	0	-1	-1
TROPOJE	0	0	-1	-1	-1
KURBIN	0	0	0	0	0
POGRADEC	0	-1	0	0	0
ELBASAN	0	0	0	0	0
LEZHE	0	0	0	-1	0
SKRAPAR	1	0	-1	0	0
SHKODER	0	0	0	0	0
KOLONJE	1	-1	-1	0	0
KRUJE	0	0	1	0	0
MALLAKASTER	1	0	0	-1	0
DEVOLL	1	-1	1	-1	0
KUCOVE	1	1	0	2	1
KAVAJE	0	1	1	1	1
KORCE	0	0	0	1	1
FIER	1	2	1	0	1
PERMET	1	1	0	1	1
DURRES	1	2	2	0	1
SARANDE	2	2	2	2	2
TEPELENE	2	1	1	1	2
TIRANE	2	2	2	2	2
VLORE	2	2	2	0	2
DELVINE	2	2	2	2	2
GJIROKASTER	2	2	2	2	2

Map Households Equipment

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2.2 The synthetic degree of non-income poverty

The non-income poverty indicator (id-p) is a multidimensional poverty index and a synthesis of the ten, examined in previous chapters, thematic indicators (id-1 to id-10). The districts have been classified into four main groups, illustrating four degree of non-income poverty (Table 13). The group with the lowest index (id-p = 1) presents the highest level of non-income poverty while the group with the highest index (id-p = 4) can be considered as the most favored group.

The classification shows a relatively important regional contrast in terms of non-economic poverty between:

- the southern region of Albania where the majority of districts presents a positive profile and,
- the center and eastern part of the country where most of the districts have a negative or very negative level of non-income poverty.

Table 13
Definition of non-economic poverty

Districts	Demography	Infrastructure	Social Insurance System	Health sector	Education Sector	General services	Agricultural sector	Unemployment	Households' equipment	Finance - Lines ministries budget	Non economic poverty indicator	Percent of poor persons	Consumption per capita
	id_1	id_2	id_5	id_3	id_4	id_6	id_7	id_8	id_10	id_9			
BULQIZE	2	-2	-1	-2	-2	-2	0	-1	-2	-1	1	1	1
DIBER	2	0	-2	0	-2	-2	0	0	-1	-1	1	1	1
GRAMSH	0	-2	-1	0	0	-2	0	1	-1	1	1	1	1
HAS	2	-2	0	-2	-1	-2	-1	-1	-2	0	1	1	1
KUKES	2	-1	-1	0	-2	0	-1	-1	-1	0	1	1	1
LIBRAZH	1	-1	-2	-1	1	-2	-1	2	-2	-1	1	1	1
LUSHNJE	0	-2	-2	-2	-1	-2	2	2	-1	-2	1	2	2
MALESI E MADHE	-1	-1	-2	-2	1	-1	-2	0	-1	-2	1	2	2
MAT	0	-2	0	-1	0	-1	-2	1	-2	0	1	1	1
MIRDITE	0	0	1	0	0	0	-2	-2	-2	1	1	1	1
BERAT	0	-1	0	0	-2	0	-1	1	-1	-1	2	2	2
DEVOLL	-2	-2	-2	-2	1	1	2	2	0	-2	2	2	2
ELBASAN	0	-1	0	0	-2	0	0	1	0	0	2	2	2
KAVAJE	1	0	-2	-1	-1	0	2	-1	1	-2	2	2	2
KRUJE	2	-2	0	-1	-1	-1	-1	1	0	-1	2	2	1
KURBIN	1	1	0	-2	-1	0	0	-2	0	-2	2	1	1
LEZHE	-1	2	-1	0	-1	0	-1	-2	0	-1	2	1	2
MALLAKASTER	0	0	-2	-2	0	0	1	2	0	-2	2	2	1
PEQIN	2	2	-2	-2	-1	-1	1	1	-1	-2	2	1	1
POGRADEC	-1	-2	-1	1	1	0	-1	0	0	0	2	2	2
PUKE	0	0	0	1	0	0	-1	-2	-2	2	2	1	1
KUCOVE	0	0	2	-2	0	1	1	-2	1	-1	3	3	2
SKRAPAR	-2	-1	1	2	0	1	-1	1	0	2	3	3	2
SHKODER	0	1	1	1	1	-2	-1	0	0	0	3	2	2
TROPOJE	0	-2	2	2	1	1	0	-2	-1	1	3	2	1
VLORE	0	1	1	1	1	0	-1	-1	2	0	3	4	4
DELVINE	-2	0	2	1	2	2	0	2	2	2	4	4	4
DURRES	1	2	2	-1	0	2	-1	0	1	-2	4	3	4
FIER	0	2	2	-1	-1	0	2	0	1	-2	4	2	2
GIROKASTER	-2	0	1	2	2	2	-1	2	2	2	4	4	4
KOLONJE	-2	0	2	2	2	2	2	1	0	2	4	4	3
KORCE	-2	0	1	0	2	0	2	1	1	0	4	2	2
PERMET	-2	0	-1	2	1	2	0	2	1	2	4	4	3
SARANDE	-1	2	2	2	2	2	-1	2	2	1	4	4	4
TEPELENE	0	0	1	2	2	1	-2	1	2	2	4	3	3
TIRANE	-1	0	2	1	0	2	-1	1	2	2	4	3	3

As it has been anticipated, the two districts with the highest rate of urban population and degree of attractiveness for internal migrants (Tirana and Durres) are included in the most favored group.

The northern part of Albania shows a relatively contrasted situation: some districts as Malesi e Madhe and Has present a very negative profile while the districts of Shkoder and Tropoje seem to be in a most favored position.

Finally, the results obtained from the above analysis confirm that:

- the non-income poverty at district level is highly correlated with the degree of rurality (correlation coefficient equal to 0,711 and significant at the 0,01 level). It seems that the existence of a relatively important urban center within a district does not conduct systematically to a positive situation for the total district. This is precisely the case of districts of Elbasan (3rd urban center of Albania) and Berat (9th urban district).
- Districts characterized by a diversified economy, such as Sarande or Korce⁷, are at the same time, districts with low level of non-income poverty.
- Regions mainly mountainous as the eastern districts of Albania (Kukes, Diber, Bulqize, Librazid) or districts as Gramsh and Malesi e Madhe present the highest degree of non-income poverty. In the cases of Shkoder and Tropoje, their mountainous characteristic does not seem to be a determinant factor in terms of non-economic poverty. This is may happen due to the fact that most of the villages and communes in these two districts are mainly concentrated around their administrative center. Especially in the case of Shkoder, the majority of them is located not only around the community of Shkoder (4th urban center of Albania) but also in the plain areas.

Table 14
Correlation coefficient, significant level 0,01 and 0,1

The correlation between the degree of rurality (id_rur) and the composite non-income poverty indicator (id_p)

	ID_RUR	ID_P
ID_RUR Pearson Correlation	1	-,721**
Sig. (2-tailed)	,	,000
N	36	36
ID_P Pearson Correlation	-,721**	1
Sig. (2-tailed)	,000	,
N	36	36

** Correlation is significant at the 0.01 level

	ID_RUR	ID_P	
Kendall's tau_b	ID_RUR Correlation Coefficient	1,000	-,569**
	Sig. (2-tailed)	,	,000
	N	36	36
ID_P	ID_P Correlation Coefficient	-,569**	1,000
	Sig. (2-tailed)	,000	,
	N	36	36
Spearman's rho	ID_RUR Correlation Coefficient	1,000	-,739**
	Sig. (2-tailed)	,	,000
	N	36	36
ID_P	ID_P Correlation Coefficient	-,739**	1,000
	Sig. (2-tailed)	,000	,
	N	36	36

** Correlation is significant at the .01 level (2-tailed).

⁷ See: National Strategy for Socio-economic development: Medium-term program of the Albanian Government, "Growth and poverty Reduction Strategy", (GPRS 2002-2004), Council of Ministers.

Map Non-economic poverty

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3 THE COMMUNAL LEVEL

The main intent of the research team was to find data in the finest possible level (communal level) but this was not feasible, within the specific time limits of the project, as the central services of Ministries and other Administrative organizations, at Tirana, mainly have data at district level.

Although the collection (acquisition) of an extensive data range, in order to take into account the main components (thematic fields) influencing directly or indirectly the non-income poverty, appears to be sufficient at district level, we believe – and the relevant bibliographic documents – that the more spatial resolution you achieve is better for mapping any spatial variable and especially the kind of variable we need for our research. But, in spite of our efforts it was not possible to gather data, at a finest level of spatial desegregation as the communal level is, directly from central services at Tirana and we gather only a limited number of variables (see annex).

Due to this fact, it was not possible to elaborate a common approach and analysis for these two different levels of spatial desegregation and the lack of data at communal level does not allow us to evaluate composite indicators comparable (and / or compatible) with the ones at district level, but only to map selected variables. But, even this limited mapping analysis raises the necessity of a detailed spatial analysis as the regional level (districts) quite often obscures the spatial differences and dispersion.

From the following set of maps, in this chapter, (“Buildings”, “Unemployment rate”, “Irrigate land” and “No heating”), in both spatial levels, we can notice, among others, the following:

- The spatial dispersion is limited in district level than in communal level,
- The internal extreme values, within a district, are flattened than in communal level, and only an average value is mapped on the district level,
- The administrative center of a district, in the most of the cases, has a significant role that is not mapping clearly in the district level as in the communal one,

To conclude, the obtained degree of poverty, at district level, is something else than an average value, which, in the most cases, imposed by the degree of poverty of the administrative center of the district, and to define this we have to perform an analysis in communal level, but this approach is not feasible due to data limitations.

An expansion of the current analysis, at communal level, is more than a necessity but this requires a specific and demanding data-collection process (see chapter 5) in order to calculate more detailed composite indices.

Map Buildings, to be printed

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Map Buildings, to be printed

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Map Unemployment rate, to be printed

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Map Unemployment rate, to be printed

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Map Irrigated land, to be printed

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Map Irrigated land, to be printed

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Map No heating, to be printed

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Map No heating, to be printed

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4 THE OVERLAY BETWEEN INCOME AND NON-INCOME POVERTY

In this chapter, the composite indicator of non-economic poverty is compared to the two indicators of economic poverty of the LSMS survey⁸. The indicator of non-economic poverty is a composite indicator, calculated on the basis of the ten (10) selected thematic indices (see chapter 2.2). The two indicators calculated in the context of the LSMS are: a) the *Head Count Ratio per district* (Ratio of the number of poor persons to the total population), and b) the *Per Capita Consumption by District* (in lek per month). For each one of these three indicators, four classes have been defined, reflecting four different levels of poverty.

As an overall approach the analysis of the three maps (Head count ratio, Consumption per capita and Non-economic poverty) confirms the clear contrast between:

- The eastern districts of Albania (Has, Kukes Diber, Bulqize, Librazhda) and some districts as Mat, Mirdite (Centre-north) and Gramsh as these districts present systematically the highest degree of poverty (the three examined indicators are conjointly very negative), and
- The southern districts (Vlore, Sarande, Delvine, Gjirokaster, and in a lower degree Permet and Kolonje) as well as the two more urban districts of Tirana and Durres. These districts present systematically the lowest degree of economic and non-economic poverty.

Due to the codification of the three indicators in four classes (“++”, “+”, “-“, “--“), it is possible to compare directly the two dimensions of poverty and in this sense, to evaluate directly the degree of overlaying of the two analyses.

A] Overlay between Non-economic poverty and Percentage of poor persons.

The results of the analysis are presented in the following table 15. The numbers in each cell correspond to the codes of the districts (see map of administrative structure). Through this table, seven different levels of “overlays” can be defined:

Situation A: Perfect matching between economic and non-economic poverty. This situation is observed in 22 districts (see relevant map): five (5) districts have in both cases very positive (++) indicators, two (2) others have positive (+) indicators while seven (7) have negative (-) indicators and finally eight (8) have very negative (--) indicators. This last group corresponds to the districts with the highest degree of poverty.

Situation B++/+: Partial matching in the sense that the non-economic indicator is very positive (++) while the economic indicator is only positive (-). The economic poverty is more intense in three (3) districts (Durres, Tepelene, Tirane).

⁸ See report of Gianni Betti: “Poverty and Inequality mapping of Albania, July 2003

Situation B+/++: Partial matching with the positive (+) non-economic indicator and the very positive (++) economic indicator. The non-economic poverty is more accentuated in one district (Vlore).

Situation C-/-: Partial matching with the negative (-) non-economic indicator and the very negative (--) economic indicator. The economic poverty is really more intense than the non-economic. This situation is observed in four (4) districts (Kurbin, Lezhe, Peqin, Puke).

Table 15
Overlay between non-economic poverty and percentage of poor persons

		Economic poverty (LSMS)				Total Number of districts
		++	+	-	--	
Non-economic poverty	++	3, 10, 13, 27, 30	6, 33, 34	8, 14		10
	+		36, 16, 31	32, 35		5
	-			1, 4, 7, 12, 15, 23, 28	18, 19, 26, 29	11
	--			21, 22	2, 5, 9, 11, 17, 20, 24, 25	10
Total Number of districts		6	5	13	12	36

Situation C-/-: Partial matching with the very negative (--) non-economic indicator and the negative (-) economic indicator. The non-economic poverty is really more intense than the economic one in two (2) districts: Lushnje, Malesi e Madhe.

Situation D+/-: Relative opposition between the two indicators. The economic poverty does not correspond to the non-economic poverty in two districts: Shkoder and Tropoje.

Situation D++/-: Intense opposition between the two indicators. The negative (-) indicator of economic poverty is absolutely not confirmed in terms of the indicator of non-economic poverty. This situation is observed in two cases: Fier and Korce.

Considering the composite indicator of non-economic poverty and the percentage of poor persons, the non-correspondence between these two approaches appears in 4 of the 36 districts while the perfect matching correspond to 60% of the districts of Albania.

B] Overlay between Non-economic poverty and Consumption per capita

The results of this second comparative analysis are presented in the following table 16. In this case, eight different situations are observed:

Situation A: Perfect matching between economic and non-economic poverty. This situation is observed in 18 districts (see relevant map): 4 districts have in both cases very positive (++) indicators while 6 have negative (-) indicators and finally 8 districts have very negative (--) indicators of economic and non-economic poverty. This last group corresponds to the districts with the highest degree of poverty and is exactly the same as in the previous comparative analysis where the non-economic poverty was compared with the percentage of poor persons.

Situation B++/+: Partial matching in the sense that the non-economic indicator is very positive (++) while the economic indicator is only positive (-). The economic poverty is more intense in 4 districts (Kolonje, Permet and as in the previous analysis: Tepelene and Tirane).

Situation B+/++: Partial matching with the positive (+) non-economic indicator and the very positive (++) economic indicator. The non-economic poverty is once again more accentuated in the district of Vlore.

Situation C-/--: Partial matching with the negative (-) non-economic indicator and the very negative (--) economic indicator. The economic poverty is really more intense than the non-economic. This situation is observed in 5 districts (Kruje, Mallakaster and as in the previous analysis: Kurbin, Lezhe, Peqin, Puke).

Table 16

Overlay between non-economic poverty and consumption per capita

		Economic poverty (LSMS)				Total Number of districts
		++	+	-	--	
Non-economic poverty	++	3, 6, 10, 30	13, 27, 33, 34	8, 14		10
	+	36		16, 31, 32	35	5
	-			1, 4, 7, 12, 19, 28	15, 18, 23, 26, 29	11
	--			21, 22	2, 5, 9, 11, 17, 20, 24, 25	10
Total Number of districts		5	4	13	14	36

Note: The districts numbers in bold correspond to districts that remain in the same group as in the previous table.

Situation C--/-: Partial matching with the very negative (--) non-economic indicator and the negative (-) economic indicator. The non-economic poverty is really more intense than the economic poverty, again in the two districts of Lushnje and Malesi e Madhe.

Situation D+/-: Relative opposition between the two indicators. The economic poverty does not correspond to the non-economic poverty in three districts: Kucove, Shrapar and Shkoder.

Situation D++/-: Intense opposition between the two indicators. The negative (-) economic poverty is absolutely not confirmed in terms of non-economic poverty. This situation is once again observed in the two districts of Fier and Korce.

Situation D+/-: A new case of intense opposition between the two indicators. The high economic poverty (--) is absolutely not confirmed in terms of non-economic poverty in the district of Tropoje.

As regards the comparison between the consumption per capita and the composite indicator of non-economic poverty, the non-correspondence is observed in 6 of the 36 districts while the perfect matching correspond only to 50% of the districts of Albania against the 60% in the analysis of table 15.

As an overall, the case matching, from mapping overlay between the two approaches, is more intense when the economic poverty is defined through the percentage of poor persons. The general result of the above analysis is that the differences between economic and non-economic poverty are more intense when the economic poverty is calculated on the basis of the consumption per capita. Examining the two final maps of overlay, it is possible to observe that the differences are mainly located in the south of the country: districts as Kucove, Kolonje, Mallakaster, Skrapar and Permet present a perfect matching when the non-economic poverty is compared with the percentage of poor persons that is not the case when the economic poverty is defined in terms of consumption per capita.

Map Head count ratio, to be printed

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Map Consumption per capita, to be printed

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Map Non-Economic Poverty / consumption per capita, to be printed

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Map Non-Economic Poverty / % of poor persons, to be printed

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5 INSTEAD OF CONCLUSION

5.1 The limits of current analysis

- This survey based on data for non-income poverty mainly related to one year and therefore gives the opportunity to evaluate the situation at the specific time period. Although this approach offers an important ground for policy-makers, it is rather insufficient. It seems necessary, for countries in transition that faced important changes and challenges, to collect and analyze the information on a more regular basis in order to have the real opportunity to assess the different levels of poverty at regional and local level.
- Although the collection (acquisition) of an extensive data range, in order to take into account the main components (thematic fields) influencing directly or indirectly the non-income poverty, appears to be sufficient at district level, it is not possible to gather data, at a finest level of spatial desegregation as the communal level is, directly from central services at Tirana. As we shall notice from the relevant database (see annex), the variables at communal level are quite limited comparatively to the variables at district level. Due to this fact, it was not possible to elaborate a common approach and analysis for these two different levels of spatial desegregation. Finally, the lack of data at communal level does not allow us to evaluate composite indicators comparable (and / or compatible) with the ones at district level.
- The analysis results have clearly shown that an analysis of simple indicators, at regional level (districts), quite often obscures the real spatial differences that are due to the internal dispersion of the indices (standard deviation) between communes and villages. The obtained degree of poverty, at district level, is something else than an average level, which, in the most cases, imposed by the degree of poverty of the administrative center of the district.

Taking into account the above remarks, it appears that an efficient spatial analysis of non-economic poverty has to be elaborated at least at communal level. This involves a different process of data collection. Most of the necessary information is not directly available at central services of Ministries or central administrative organizations and has to be collected directly in each local government (districts).

5.2 The expansion of analysis

Considering the results of the overlay analysis between the LSMS survey and our non-income poverty approach, some differences have been defined at district level. In twelve cases, we observed a simple difference of poverty degree between the two approaches while in six cases it was possible to detect a more important difference, in the sense of a two-degree difference (see chapter 4).

For this reason, we suggest that the World Bank has to examine the feasibility to organize, in parallel with the implementation of the LSMS, a non-income poverty

survey (NIPS) or, at least, to introduce more systematically, in the LSMS survey, the non-income aspects.

The NIPS should be organized on the basis of a **community questionnaire**, including well-defined questions and tables covering the main thematic fields examined in the present project. Such a process will allow, from the beginning of the work, to homogenize the data entry process for all the examined thematic fields. This was not feasible in our project as the data were collected from different sources, each one having its own way to produce the requested information. Even if the integration of multiple databases, from different sources, is a frequent method in poverty mapping, it is strongly suggested to proceed to an alternative approach, based on a single source (the questionnaire), including a large range of explanatory variables in order to proceed to a multivariate analysis of the determinants of economic and non-economic poverty at different spatial levels.

It is well known that such a tool (questionnaire fulfilled by each commune) makes easier not only the data collection, especially in countries as Albania, where the number of communities is quite limited (374) and also the design of the database as well as the data entry is rather simple and efficient. Additionally, it has to comprise the ability for automatically production of simple and composite indicators for non-economic poverty, conjointly at desegregated and aggregated spatial level.

Finally, taking into account the limitations of collected data, the used techniques, in the present project, in order to produce non-economic poverty maps, were based on the calculation of simple indicators in a such way that the 36 districts of Albania were ranked and stratified in five groups corresponding to five different level of poverty. This technique allowed us to use a simple classification method, based on the Bertin methodology. It is necessary to underline that no weighting schemes were employed. The advantage of the simplicity does not mask the fact that some other efficient methods, introducing weighting schemes, could be alternatively used, but not within the specific time limits of the project. **The use of alternative methods with different weighting schemes** in order to produce composite indicators of non-economic poverty is an interesting exercise, mainly for two reasons:

- It will be possible to evaluate more efficiently the suitability of the most relevant variables, as it is well known that there is not any *a priori* methodology to demonstrate better or not indicators. Only a comparative analysis based on alternative methods can offer the necessary elements for this assessment.
- It will be also possible to evaluate in a more efficient way, the small-area (communities) estimation of the composite indicators and their spatial variability, in order to achieve a systematically examination of the statistical error and possible bias, as they are essential aspects in poverty mapping.

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ANNEXES

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THEMATIC MAPS

There are 92 thematic maps as in the following list according to the table 2
(the eight maps with an asterisk are within the body text):

POPULATION - District level

- Population Density
- Youngness Rate
- Ageing Rate
- Dependency Rate
- Infant Mortality

INFRASTRUCTURE - District level

- ADF Projects
- Network and Utilities Projects
- Water Supply
- New buildings

PUBLIC TRANSPORT - District level

- Bus lines

HEALTH - District level

- Health centers
- Health posts
- Hospital Beds
- General Practitioners
- Rural Pharmacies
- Pharmacies
- Doctors
- Nurses

EDUCATION - District level

- Non Elementary Education
- Children not in Kindergarten
- Boys not in Kindergarten
- Girls not in Kindergarten
- Children by Nursemaid
- Nursemaids
- Children not in Primary Education
- Boys not in Primary Education
- Girls not in Primary Education
- Teenagers in Primary Education
- Teenage Boys in Primary Education
- Teenage Girls in Primary Education
- Pupils by Teacher in Primary Education
- Pupils by class in Primary Education
- Teachers with Basic Education
- Teenagers not in secondary education
- Teenage boys not in secondary education
- Teenage girls in Secondary education

Pupils by teacher in Secondary Education
Pupils by class in Secondary Education
Secondary Education Teachers with basic education

SOCIAL INSURANCE - District level

Social Income
Social Expenditure
Social Expenditure per Pensioner

SERVICES & ENTERPRISES - District level

Post Offices
Wholesale Enterprises
Retail Enterprises
Enterprises of Services
Enterprises

AGRICULTURE - District level

Agricultural holdings
Traditional Farms
Industrial Crops
Irrigated Land

EMPLOYMENT, UNEMPLOYMENT - District level

Unemployment Rate (Census 2001)
New Unemployed
Occasional Jobs
Unemployment (Ministry of Labor, 2002)
Unemployment, Head of family
Unemployment, Tertiary Education
Unemployed Educated Persons

FINANCE - District level

Unconditional Transfers
Planned Budget for Health
Expenditures for Health
Planned Budget for Education
Expenditures for Education

QUALITY OF LIFE - District level

No Refrigerator
No cooking stove
No car
No heating
No telephone
Car accidents

POPULATION - Communal level

Population Density
Youngness Rate
Ageing Rate
Dependency Rate

INFRASTRUCTURE - Communal level

ADF Projects

	Network and Utilities Projects
*	New Buildings
PUBLIC TRANSPORT - Communal level	
	Bus lines
HEALTH - Communal level	
	Rural Pharmacies
EDUCATION - Communal level	
	Non Elementary Education
SERVICES & ENTERPRISES- Communal level	
	Post Offices
AGRICULTURE – Communal level	
	Agricultural holdings
	Traditional farms
	Industrial Crops
*	Irrigated Land
EMPLOYMENT, UNEMPLOYMENT - Communal level	
*	Unemployment Rate (Census 2001)
	New Unemployed
	Occasional Jobs
FINANCE - Communal level	
	Local Budget
QUALITY OF LIFE - Communal level	
	No Refrigerator
	No cooking stove
	No car
*	No heating