



BOOK OF PROCEEDINGS

INTERNATIONAL CONFERENCE 13th - 14th October 2023

ISSUES OF HOUSING, PLANNING, AND RESILIENT DEVELOPMENT OF THE TERRITORY

Towards Euro-Mediterranean Perspectives

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Issues of Housing, Planning, and Resilient Development of the Territory Towards Euro-Mediterranean Perspectives

Conference Theme and Rationale

Albania, along with other Western Balkan countries, has undergone significant economic, social, and political changes in recent years. As a result, housing, planning, and the resilient management of territorial development have emerged as critical issues. This is because these regions face significant challenges in providing affordable housing, addressing the impact of urbanization on the environment, fostering evidence-based decision-making on the territory, and bringing forth the commitments towards climate neutrality.

The organizers use the term “multi-modality” to define complex situations (in matters of territorial planning, management, architecture, housing, public space, technology, etc.) that have historically encompassed Western Balkans and Mediterranean cities in a logic of coexistence and value co-creation. A combination of knowledge and heritage that throughout time and history have given life to civilization in this region of Europe. The active involvement of Albania in the existing network of the Mediterranean Basin and the EU, through a joint action plan with UN / UNECE, and the Albanian and regional authorities, including reputable scientific bodies such as the Academy of Sciences of Albania, makes this conference even more intriguing to explore fascinating areas of research. The conclusions, to be considered as a stage for open innovation, will include recommendations for further scientific and applied research, projects, and events.

The geographical focus of the conference covers three dimensions: i) Albania; ii) the Western Balkans; iii) Euro-Mediterranean countries. POLIS University aims to focus on the above-mentioned research areas that are of common interest to both Western Balkans and Mediterranean cities, including, but not limited to: housing policies, urban history and architecture typology, innovation and digitalization in urbanism, energy efficiency, resilience and environmental sustainability, governance and smart technologies for city management, education and gender aspects in urban planning research.

In this regard the main aim of this international conference is to bring together scholars, policy-makers, and practitioners to examine the pressing issues of housing, planning, and land development in these regions, in a context of transition fatigue, climate challenges and post-pandemic realities.

Issues of Housing, Planning, and Resilient Development of the Territory Towards Euro-Mediterranean Perspectives

Conference Aim

The main aim of this international conference is to bring together researchers, policy makers and practitioners to examine the urgent issues of housing, planning and land development in these regions, in a context of transition, climate challenges and post-pandemic realities.

Objective

- Consolidation of the cooperation network between Albanian and non-Albanian researchers, lecturers, managers, with the aim of participating in joint research projects at the regional and international level;
- Support of local authorities with contemporary data, on the state of housing issues, planning and sustainable urban and environmental management, as well as representatives of public and private institutions operating in this field.

The conference is organized by POLIS University (U_POLIS) in cooperation with the Academy of Science of Albania, and supported by other local and international partners.

In the framework of resilience, the main conference theme is devoted to Issues of Housing, Planning, and Resilient Development of the Territory from a Euro-Mediterranean Perspective, including Albania, Western Balkans and the Mediterranean Basin. This event aims to bring together academics, policymakers, researchers, experts, practitioners, and stakeholders from diverse backgrounds to discuss and address critical challenges related to housing, urban planning, and the development of resilient territories.

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Table of Content

HOUSING

- Affordable Housing in Albania: Challenges and Effective Strategies. Case study Tirana, Albania. Eneida MUHAMUÇI 8
- Dealing with the future of the emergent settlements in the absence of full property recognition. The case of Kashar and Astiri in Tirana, Albania. Dr. Artan KACANI 15
- Aspects of legal-civil legislation on the impact of housing and the real estate market in Albania and the countries of the Western Balkans. Prof.Ass.PhD. Saimir SHATKU, Grejdi JANI, Antonela MERSINI, 33
- Problems of Sustainable and Strategic Environmental Planning of the Industrial (Non-Residential) Sector in Albania. Kleant SEMEMA, Neritan SHKODRANI 41

MANAGEMENT, TECHNOLOGY,SUSTAINABILITY

- Management roots back to the city walls. History, present, and future. Prof. Ass. Xhimi HYSA, Dr. Shefqet SUPARAKU 67
- Economic and social rights enjoyment in Albania: Literature Review and Conceptual Framework. Dr. Emi HOXHOLLI, Prof. Dr. Donika KËRÇINI 74

PLANNING & ARCHITECTURE

- 'Decustering' decision-makings on cultural heritage Tirana's historic centre during urban development. Dr. Doriana MUSAJ 87
- Exploring the dialectic between permanence and change. The case of Epidamn Bulevard in Durrës Iden BUKA, Marsela Plyku DEMAJ, Dr. L Lazar KUMARAKU, 103
- Exploring the balance between common and private spaces. A case study from Tirana. Hera MARJANAKU, Marsela Plyku DEMAJ, Dr. L Lazar KUMARAKU 116
- The Architecture of Hospitals. Learning From the Past. Franklind JESKU 126
- Concept of heritage Materialization and Modernity Interaction between modernity. Kristiana MECO 137
- Contructive elements of planned capitals; "Tirana Spine" and Ankara Atatürk Boulevard. Assist. Prof. Dr Zeki Kamil Ülkenli, Attila Gürsel 144
- The peripheral areas, a new classification for Tirana. Ema MEÇOLLARI 173
- Unveiling the Post-Digital Paradigm Cultural Implications in a Post-Human Design Ecology. DR. Valerio PERNA 184
- A GIS-based analysis of the urban green space accessibility of Tirana, Albania. Case Study: Administrative Area No.6 MSc. Leonora HAXHIU, Francesca KORANCE, 196

Innovative Soft Planning Tools and the Concept of Positive Energy Districts. Experience from Slovakia. Milan HUSAR, Matej JASSO, Sila Ceren VARIS HUSAR, Vladimir ONDREJICKA	204
The challenges of applying Big Data in the urban planning practices for the developing countries. Case study in Albania. Dhurata SHEHU, Dr. Lucca LEZZERINI,	211
A Preliminary Investigation into a Variable Section Beam Using Algorithm-Aided Design as a way to Facilitate the Structural Design Process. Drafting Automation. Albi ALLIAJ, Flogerta KROSI,	219
Human Agency, Knowledge and Space in Bratislava Socio-spatial analysis of innovation in a capital city. Sila Ceren VARIS HUSAR, Milan HUSAR, Vladimir ONDREJICKA,	226
Examining the Use of VR Technologies to Improve Architectural Visualization and Immersive Design Experiences Virtual Reality for Architectural Visualization. Andia VLLAMASI, Anxhela ASIMI	234
Issues of the Territorial-Administrative Reform in Albania. A comparative analysis on the progress of reform with other formerly-centralized economies: Estonia and Moldova. Prof. Dr. Besnik ALIAJ, Dr. Ledio ALLKJA,	242
Planning for disaster risk management: the perspective of Greece and Albania on envisioning resilient futures. Varsami (Ersi) ZAFEIRIOU, Prof. Dr. Besnik ALIAJ, Prof. Dr. Pantoleon SKAYANNIS,	262
The influence of climate change on drought occurrences and the measures taken to alleviate drought in Albania. Sherif LUSHAJ, Anira GJONI, Enkelejda KUCAJ,	278
The Smart Tourist Spanish Destination Program. Critical Success Factors. Carmen DE-PABLOS-HEREDERO, Miguel BLANCO-CALLEJO, Rey Juan Carlos	289
Evaluating Ecosystem Services Through Cross-cutting Methods Case Study: Kune-Vain Lagoon, Assessment of Carbon Storage and Sequestration Ecosystem Service Rea MUKA,	299
Disaster Risk Reduction within Complex Urban Systems. The importance and challenges of holistic approaches Endri DURO	311
Air Quality Status of Tirana. Temporal effects of COVID-19 restrictions on the decrease of urban air pollution. Rodion GJOKA	319

PROBLEMS OF SUSTAINABLE AND STRATEGIC ENVIRONMENTAL PLANNING OF THE INDUSTRIAL (NON-RESIDENTIAL) SECTOR IN ALBANIA

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Abstract

The territory of the Republic of Albania, in the lack of strategies, plans, programs and projects, as well as a result of the lack of coordination and cooperation between public authorities covering the field of economic sector planning, having no interaction between existing projects, new projects and planned ones, faces today the problem of increasing pollution and environmental threats and this development is not sustainable and is not strategic.

As a result of the increasing number of polluting operators in the environment from the industrial (non-residential) sector from 2014 to 2022, the pressures on the components of the environment have been increased significantly, mainly concentrated in the north-eastern region of the territory. The main threat that comes from the industrial sector is direct discharges into the environment from separate sources in the air and from industrial discharges into water.

The lack of environmental planning of the territory has made it possible that in the municipalities of the Tirana county, the highest concentration of the industrial sector is in the UB_Urban land use system, in the category A. Residential, mainly near the main road axes and near surface water sources.

Keywords:

industrial sector, threat, pollution, discharge, environment, planning, sustainable, strategic

Introduction

Protecting the environment in its entirety and ensuring the conditions for the sustainable development of the country, is a legal requirement of the Constitution of the Republic of Albania [], of the special law on environmental protection [] and the special law on territorial planning and development [].

Sustainable economic, environmental and social development is promoted by public authorities through drafting, approval, revision, change, modification and implementation of normative acts, strategies, plans, programs and projects. The use of natural resources in such a way as to meet current needs and preserve the environment, without compromising the possibility of future generations to meet their needs, remains among the main policy challenges in the field of environmental protection.

During drafting and approval of territorial planning documents, public authorities, among other things, should be based on the principle of the integrated approach “preventing and/or reducing the risk to the environment, in its entirety”, taking into account, in particular, the vulnerability of the environment, the relationship between the balance and values of the natural landscape, the relationship between renewable and non-renewable natural resources, cultural heritage and material assets, the entirety of their mutual interactions, as well as interaction between existing and planned projects.

The components of the environment (air, water, soil, nature, climate change) are protected from pollution, both individually and in combination, taking into account the interactions between them.

To achieve the protection of the components of the environment, we are based on: 1- environmental protection in the planning process; 2- pollution prevention and control; 3- monitoring the state of the environment; 4- environmental information; 5- environmental responsibility; 6- instruments and tools of environmental protection policy and 7- state bodies for the environment.

In order to have a sustainable and strategic development, it is necessary to have an integrated approach from an early stage, planning stage followed by other stages of prevention, control, etc.

Among the sectors with the highest impact on the environment, threatening it, is the industrial (non-residential) sector. Pollution caused to the environment by economic operators as a result of activities, installations or technical units of installations is direct or indirect, both during the construction phase and during the operation phase.

Sustainable and strategic environmental planning of plans, programs and projects aimed at the development of productive activities, is achieved if a common denominator is found between Economy - Environment and Society.

In the last 3 (three) decades, ever-increasing demand for products from different sectors of the economy in Albania, has been followed by increased pollution and environmental threats, this as a consequence of the planning that the territory has been through, highlighting the environmental problems as a result of the interaction between existing projects, new projects and planned ones.

Protecting the environment from pollution and damage is a national priority and is mandatory for every resident of the Republic of Albania, for all state bodies, as well as for physical and legal persons, local and foreign, who carry out their activity in the territory of the Republic of Albania.

Any physical or legal person, according to the legal provisions in force for the development and planning of the territory, has the right to develop the territory of a certain environment. The development of the territory is carried out at the national and local level, which is the process of changing the territory through new constructions or changing existing constructions, divided into areas and structural units of the territory. The process of changing the territory allows different economic operators to carry out their productive activity in these areas and/or structural units.

The purpose of this study is to identify the problems that the industrial sector (non-residential) has shown in Albania, as a result of planning in the field of environmental protection.

This planning must be sustainable and strategic, based on the integrated approach in the design of strategies, national and local plans, programs and environmental projects that will be approved, revised or modified in the future in the Republic of Albania.

The objectives of this study are:

- To analyze the progress of the industrial sector in the territory of Albania
- To analyze polluting activities in the environment according to industrial sectors
- To analyze the separate sources of air emissions from the industrial sector
- To analyze the industrial sector in the region of Tirana and its compatibility with general plans and detailed local plans
- To analyze the environmental problems of the industrial sector, referring to the environmental planning that has been submitted to the territory

The methodology used and the results achieved by this material in the field of Strategic Environmental Planning and Assessment research are based on the qualitative and quantitative analysis method.

Material and Methods

The methodology used for the preparation of this study and the results achieved are based on contemporary methods, qualitative and quantitative analysis.

The qualitative method used creates the opportunity for the collected and processed information to be reflected in the material in a systematic way and sorted according to the importance of the application, providing the reader with accurate, rich, accessible and easily understandable information, with well-defined references. While the quantitative method used creates the opportunity for the collected and processed information to be presented in the material in the form of statistics.

To achieve the objectives of the study, several steps were followed, as follows:

Collection of Information

For the collection of information, the polluting economic operators were first identified according to the licensed industrial sector [] through the National Business Center [] for the entire terri-

tory of the Republic of Albania. The period analyzed is from 01.01.2014 to 31.12.2022. For each polluting economic operator, the data are summarized in the Excel program. The industrial sector, the polluting activity, the location of the activity, the source of the discharge into the air have been determined from the QKB data. Then the geospatial data (coordinates according to the Albanian coordinate system 1986 / Gauss-Kruger Zone 4) which are included in the act of approving environmental permits type A and B have been verified through the National Geoportal "ASIG" through which the county and municipality have been determined for each activity of the polluting operators. Also, from the verification of the acts of approval of type A and B environmental permits of the county of Tirana for each activity of the polluting operators, the technical data such as: total area (m²) and building area (m²) have been determined. The obtained geospatial data have also been verified through the geodetic e-planning platform, from which have been obtained the data of the Detailed Local Plans in which these operators have built and perform their polluting activity, generating the information: structural unit; system and land use category 1.

Data Analysis

For the processing and analysis of the data, a model has been built in the Excel program in which all the collected information has been entered. The data processing is realised by verifying each polluting operator in the environment that is the holder of an environmental permit of type A or B through the official website qkb.gov.al, searching the national register of licenses and permits issued through the QKB by month and year of approval, and then, for each operator, the relevant data is entered in the excel database.

Then the geospatial data were obtained and verified through the National Geoportal "ASIG" [] and the geodetic platform "GIS" []. The analysis of the data obtained for the period 2014 - 2022 is realised through the filter options enabled by the Excel program.

Based on the data obtained and referring to the legislation in force, the problems of the industrial sector in Albania have been identified, from environmental planning.

CASE STUDY: RESULTS AND DISCUSSIONS

First Case: The Industrial Sector in the Territory of Albania

Through published data in the National Registry of Licenses, Authorizations and Permits powered by the National Business Center, economic operators have been identified, which as a result of their production activity, induce direct or indirect pollution in the environment. Referring to the limit production capacity, these economic operators are holders of an environmental permit of type A or B, for the operation of the whole or part of the installation.

At the national level for the period 2014 - 2020, it results that a total of 1512 economic operators have been licensed for various industrial sectors, from which 75 operators have been provided with type A environmental permit and 1437 operators have been provided with type B environmental permit.

From the data presented in the chart below (Fig. 1) it is noticed that the industrial sector in the territory of Albania keeps growing, increasing in this way the number of polluting operators in the environment.

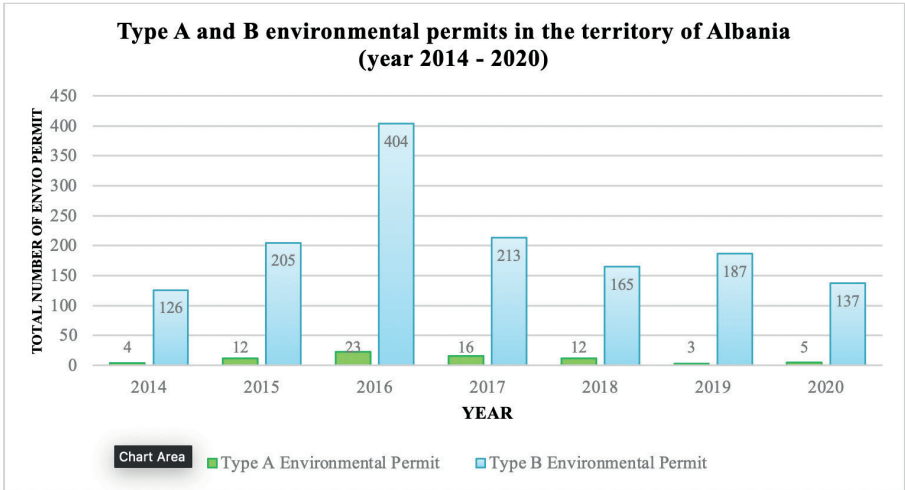


Figure 1: Type A and B Environmental Permits In the Territory of Albania (Year 2014 – 2020)

Based on the data of economic operators throughout the territory, for the same time period in the chart below (Fig. 2) shows the distribution of industrial sectors according to the counties, from which it results that the highest number of polluting operators of type B is the county of Tirana with 291, followed by Durres county with 197, while the lowest number is held by the Gjirokastra county with 37 type B permits. Regarding polluting operators holding a type A permit, Elbasan county has the highest number with 17 permits, followed by Fier county with 15 and Durres county with 14 type A permits, while the lowest number is held by Diber, Gjirokaster and Kukes county with 1 permit each.

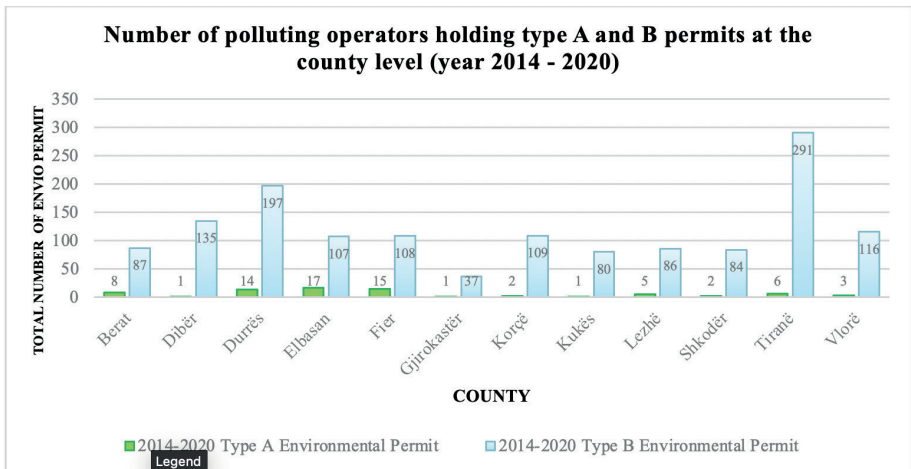


Figure 2: The number of polluting operators holding type A and B permits at the county level for the period 2014-2020

The legislation on environmental permits gives the right to the economic operator who is the holder of an environmental permit type A and B, operate several polluting activities (industry) in the same location, so we have operators who operate 2, 3, 4 or 5 polluting activities in the same location.

From analyzing the data of the chart below (Fig.3 and Fig.4) it results that for the period 2014 - 2020 at the national level, we have 60 operators operating with 1 polluting activity of type A and 15 polluting activities integrated in type A permits (6 operators with 2 polluting activities each, 4 operators with 3 polluting activities each, 4 operators with 4 polluting activities and 1 operator with 5 polluting activities), as well as 1187 operators operating with 1 polluting activity of type B and 250 polluting activities integrated in type B permits (190 operators with 2 polluting activities each, 42 operators with 3 polluting activities each, 14 operators with 4 polluting activities and 4 operators with 5 polluting activities each).

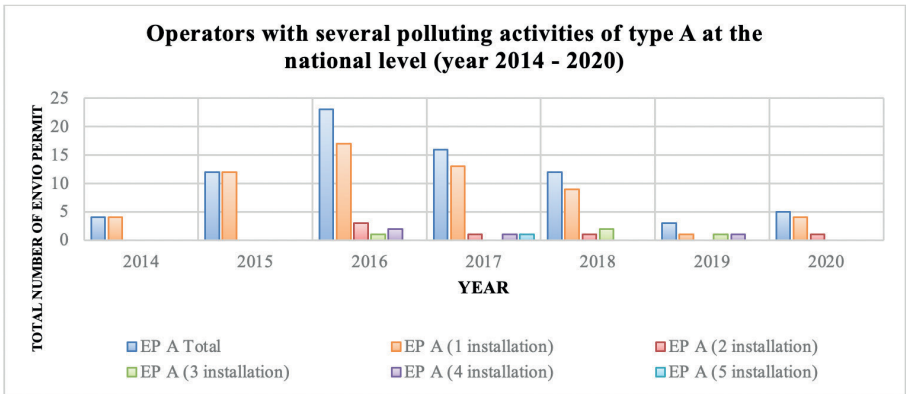


Figure 3: The number of operators with several polluting activities of type A at the national level for the period 2014 - 2020

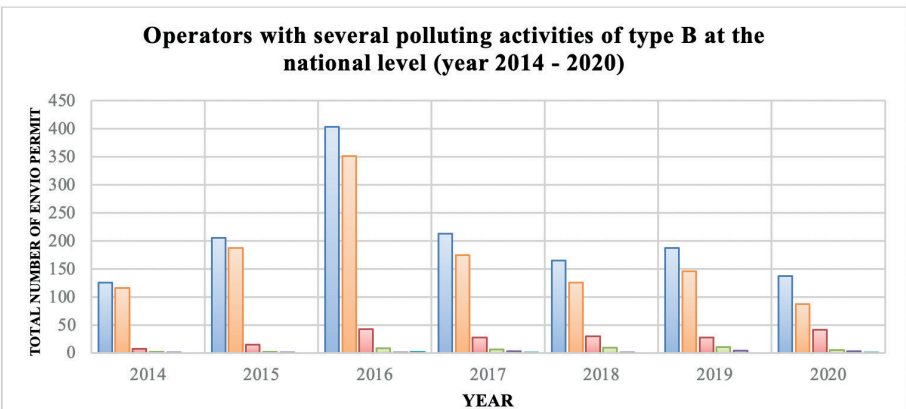


Figure 4: The number of operators with several polluting activities of type B at the national level for the period 2014 - 2020

While in the charts below (Fig.5 and Fig.6) is given the number of operators with several polluting activities of type A and B at the county level for the period 2014-2020, where it results that the highest number for polluting activities of type A is held by Elbasan county with 7 operators who have several activities and for the activities of type B pollutants is held by Tirana county with 69 operators who have several activities.

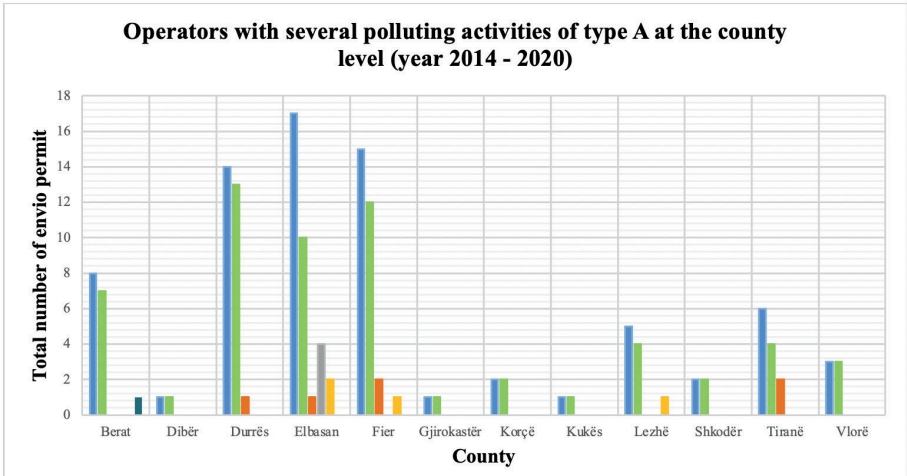


Figure 5: The number of operators with several type A polluting activities at the county level for the period 2014 - 2020

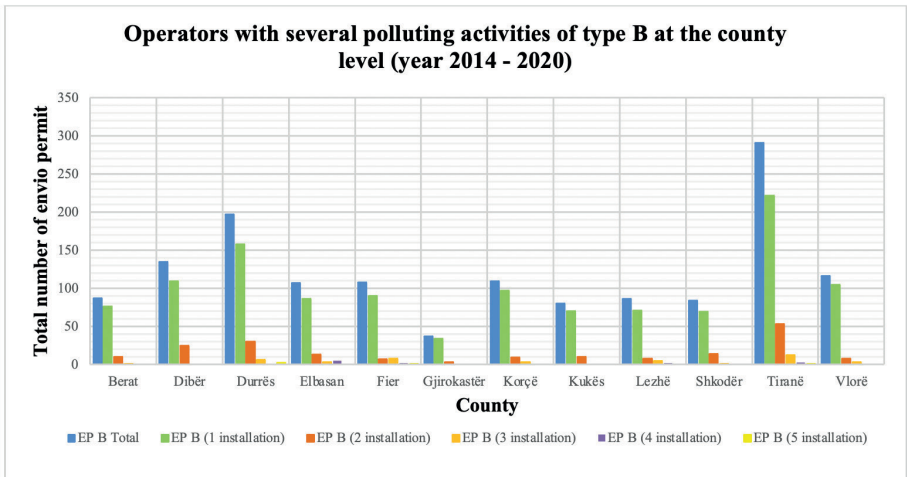


Figure 6: The number of operators with several polluting activities type B at the county level for the period 2014 - 2020

Analyzing the data of the charts (Fig.7 and Fig.8) it results that the highest number of polluting activities (industrial sector) of type A is for 1 – the energy industry issued in 2016, which coincides with 10 polluting operators, while the highest number of B-type polluting activities is for 3 – the mining industry issued in 2016, which coincides with 203 polluting operators.

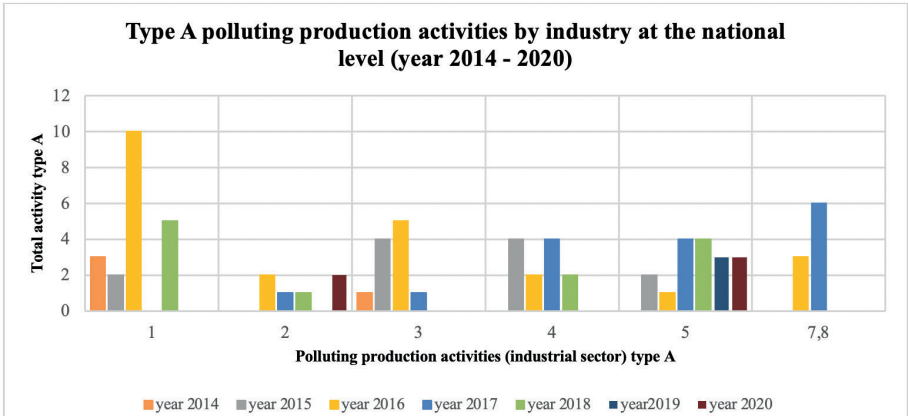


Figure 7: Type A polluting production activities by industry at the national level for the period 2014 - 2020

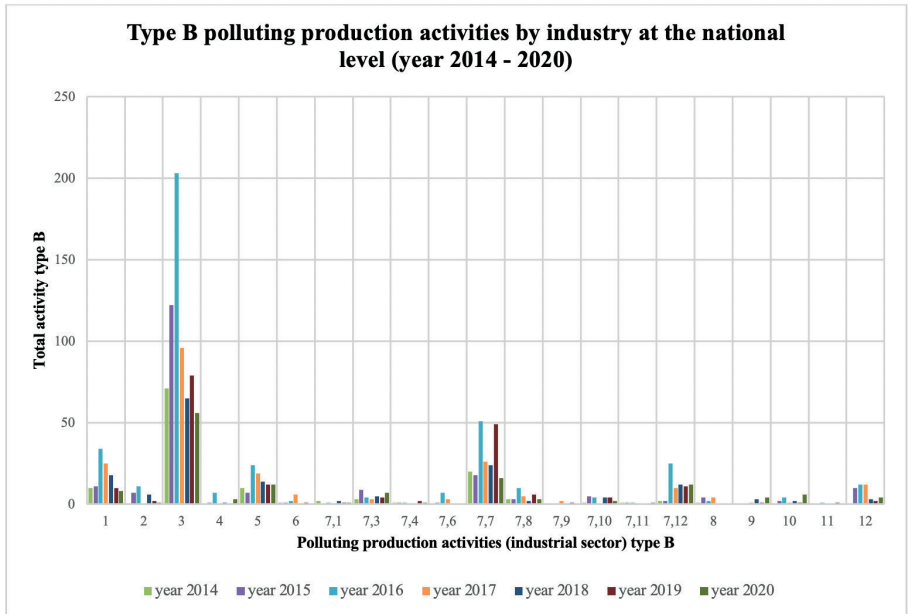


Figure 8: Type B polluting production activities by industry at the national level for the period 2014 - 2020

While in the chart below (Fig. 9) it is clearly shown that the highest number of type A polluting activities is held by Fier county with 1 - the energy industry where 8 operators are licensed, followed by Berat county with 1 - the energy industry where there are licensed 6 operators.

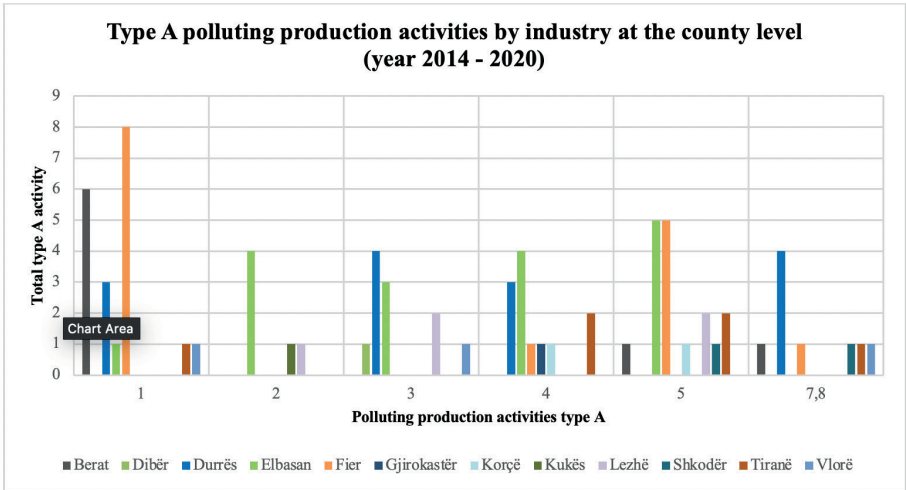


Figure 9: Type A polluting production activities by industry at the county level for the period 2014-2020

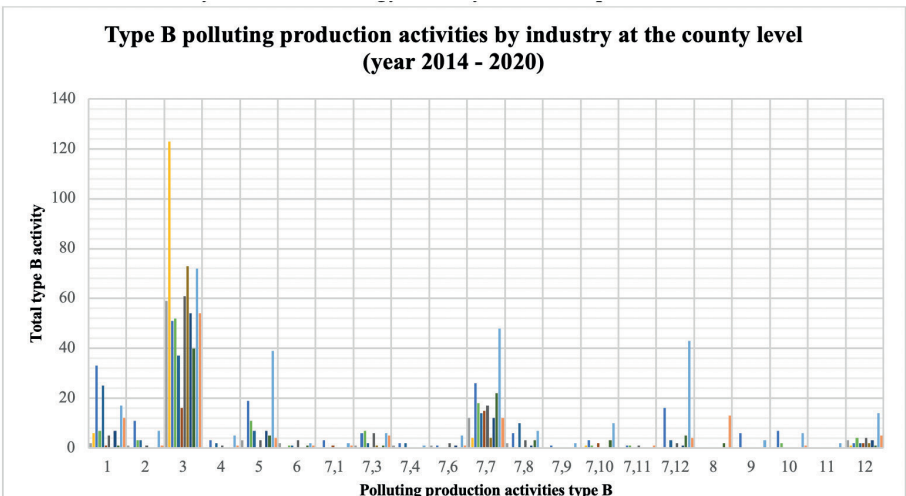


Figure 10: Type B polluting production activities by industry at the county level for the period 2014-2020

Regarding polluting activities of type B, they are shown in the chart below (Fig.10) where the highest number is held by Diber county with 3 - the mining industry where 123 operators are licensed, followed by Kukes county with 73 licensed operators and Tirana county with 72 licensed operators. Then, the highest number of B-type polluting activities is held by Tirana county with 7.7 with the food and beverage production industry where 48 operators are licensed and the Durës county with 1 - the energy industry where 33 operators are licensed.

The industrial sector of the energy industry, which also holds the highest number of type A activities at the national level, is divided into sub-sectors as shown in the chart below (Fig. 11), where the highest number of specific activities (industrial sub-sector) is oil and natural gas extraction with 8 licensed operators, followed by oil and natural gas exploration with 7 licensed operators. For type A activities at the national level, the energy industry sector is followed by the industrial sector of mining industry, which is divided into sub-sectors as in the chart (Fig. 12) where the highest number for each specific activity (industrial sub-sector) is 4 operators for the production of bricks and tiles, 4 operators for the smelting of mineral substances and 4 operators for the production of cement clinker.

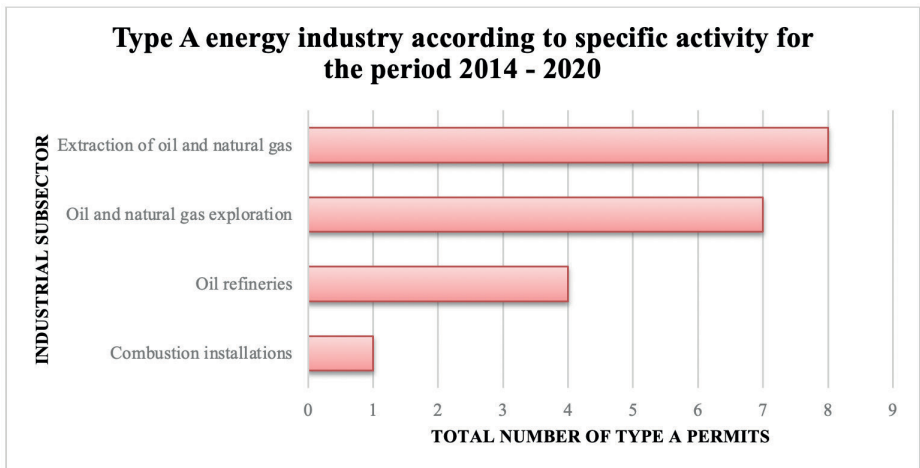


Figure 11: Type A Energy Industry according to specific activity for the period 2014-2020

According to type B activities at the national level the highest number is held by the industrial sector of the mining industry divided into sub-sectors as in the chart below (Fig. 13). The chart shows that the specific activity (industrial sub-sector) of mining (surface quarrying) has 318 licensed operators, followed by the activity of large-scale cement mixing (concrete plants) with 166 licensed operators, followed by the activity for the production and fractionation of minerals with 159 licensed operators and from the activity of underground mining with 125 licensed operators.

IDENTIFIED PROBLEMS

From this study of the industrial sector in the territory of Albania, we can identify some of the problems arising from planning:

- The lack of sustainable and strategic planning has led from year to year to an increase in the num-

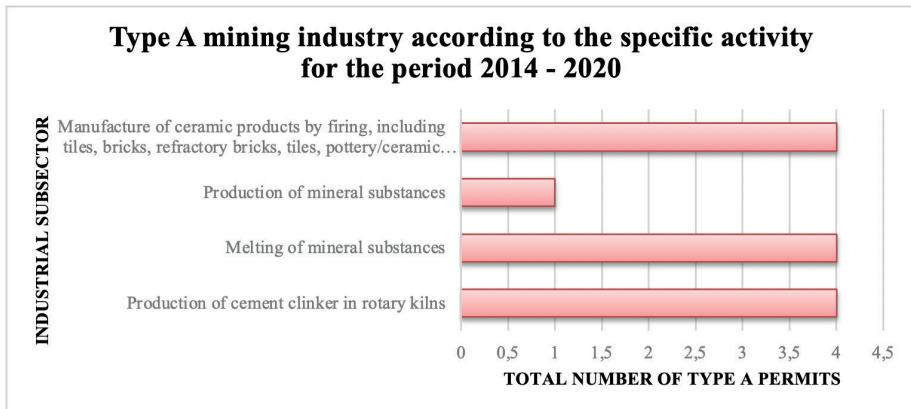


Figure 12: Type A mining industry according to specific activity for the period 2014-2020

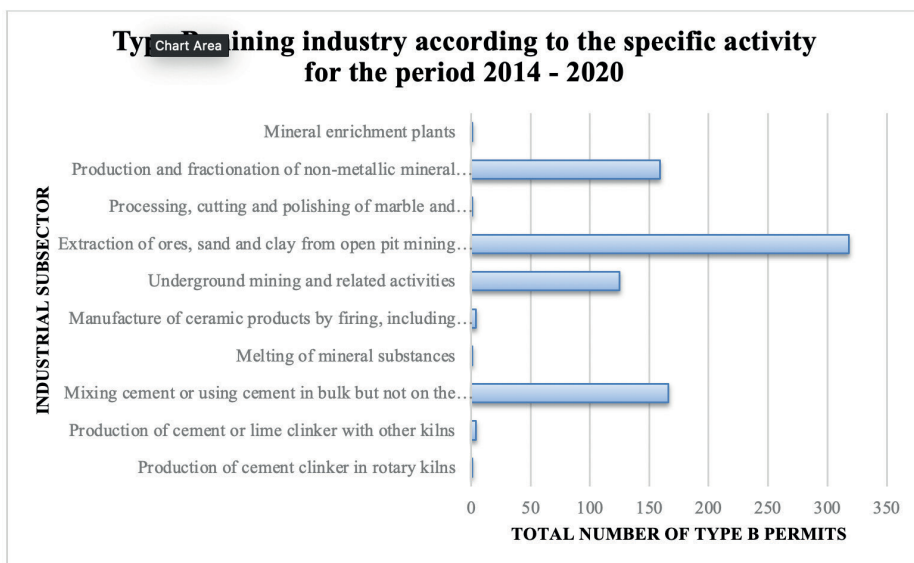


Figure 13: Type B mining industry according to specific activity for the period 2014-2020

ber of polluting activities in the environment (industrial sectors), threatening the environment of the territory of Albania.

-The lack of sustainable and strategic planning in the field of environmental protection, as well as interpretable legal spaces, have allowed economic operators to carry out several polluting activities (different industrial sectors) for the same location.

-For several years in a row, the territory of Albania has been in the absence of general plans and detailed local plans, which has given the opportunity to different industrial sectors to build and operate as they wish, having no interaction with existing projects.

-As a result of frequent changes in policies, strategies, national and local plans in the field of the environment, but not only, it results that at the national level, the industrial sectors of type A and B with an impact on the environment are concentrated in the center and in the north- east of the territory of Albania, mainly in the county of Tirana, Durres, Elbasan, Fier and Dibra, increasing the pressure on the components of the environment in these counties.

-The development of the territory of Albania mainly for residential and non-residential buildings has made the industrial sectors and sub-sectors (specific activities) of type A and B with high risk in the environment, at the national level be the mining industry and the energy industry, mainly in the utilization of natural resources (metallic and non-metallic minerals, oil) and their processing or storage, leaving few or no other economic sectors developed, as a result of the lack of planning from an early stage, developing the territory in a non-sustainable and non-strategic way.

-As a result of the lack of planning from an early stage and the promotion of sustainable and strategic environmental policies by public authorities, the lack of interaction between existing projects, new projects and planned ones, it has led to a non-uniform distribution of industrial sectors at the national level and centralized only in a few counties.

-The lack of Strategic Environmental Assessment of plans and programs and/or their non-realization in parallel with the planning of industrial sectors, has resulted in the pollution of environmental components being concentrated only in some districts.

-Also the legislation in force for the protection of the environment, mainly for the strategic environmental assessment, in the absence of by-laws, its implementation began in 2015 and this only in some sectors of the economy, as a result of the lack of demand from the public authorities and in some cases skipping this process on their part.

SECOND CASE: THE INDUSTRIAL SECTOR IN THE COUNTY OF TIRANA AND ITS COMPABILITY WITH GENERAL PLANS AND DETAILED LOCAL PLANS

Based on the development of the territory, the county of Tirana ranks among the counties with the highest number of polluting activities in the environment, increasing day by day the pressures on the components of the environment. For the identification of the industrial sector in the county of Tirana and its compatibility with the general plan and detailed local plans, were analyzed the polluting economic activities of type A and B issued through the QKB for the period 2014 - 2020 in the county of Tirana. The geospatial data contained in the type A and B environmental permits have been verified through the National Geoportal "ASIG" and the geodetic platform "GIS".

From the processing of data for the period 2014 - 2020 in the county of Tirana, 6 polluting activities of type A and 291 polluting activities of type B have been identified, out of a total of 75 operators equipped with type A environmental permits and 1437 operators equipped with environmental permits of type B throughout the territory of Albania. The following figure (Fig. 14) shows the environmental permits of type A and B issued through the QKB for the period 2014 - 2020 in the county of Tirana.

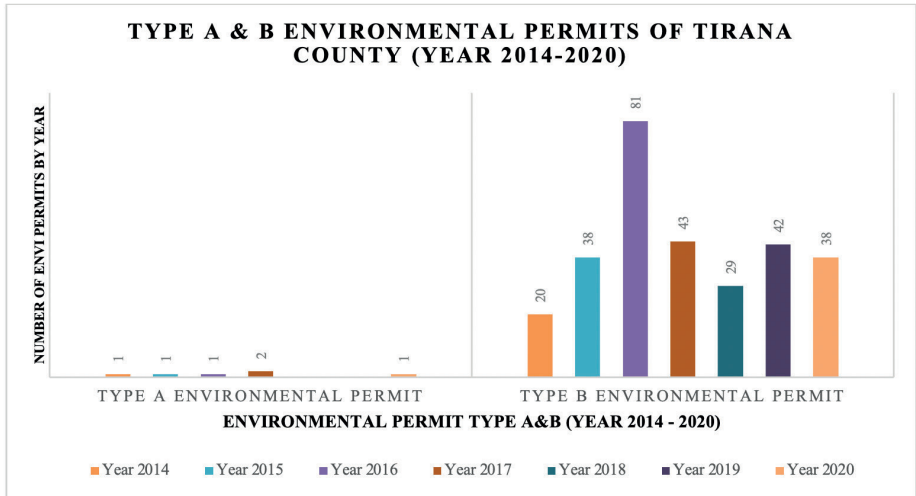


Figure 14: Type A and B environmental permits of Tirana district (Year 2014-2020)

For the same period, is made the distribution of polluting activities by year for each municipality of Tirana county, as in the chart below (Fig. 15) from which it results that the municipality of Tirana has the highest number of polluting economic operators, with 193 polluting economic operators, followed by Vora municipality with 47 polluting economic operators, while the lowest number is held by Rrogozhina municipality with 8 polluting economic operators.

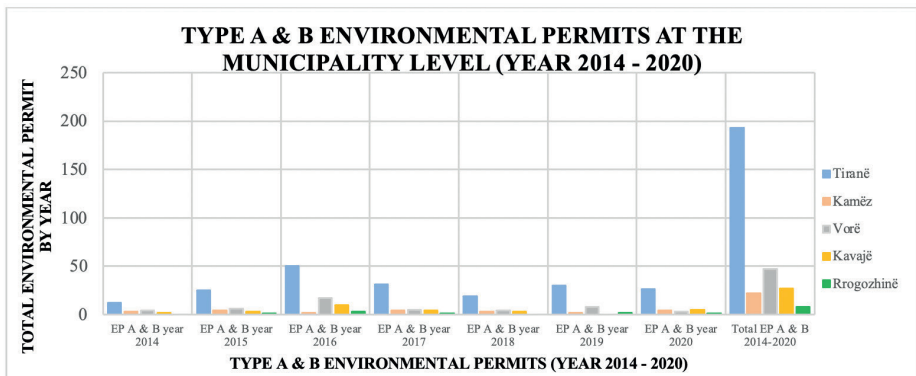


Figure 15: Type A and B environmental permits at the municipality level (Year 2014 - 2020)

While the chart below (Fig. 16) shows the distribution of polluting economic operators for each administrative unit of the respective municipalities of the county of Tirana. From the analysis of the data, the highest number of polluting economic operators is held by Kashar administrative unit with 61 operators, followed by Tirana administrative unit with 59 operators, Vaqarr administrative unit with 31 operators, while the smallest number is held by Ndroq, Zall Bastar, Synej and Lekaj administrative unit with 1 operator each.

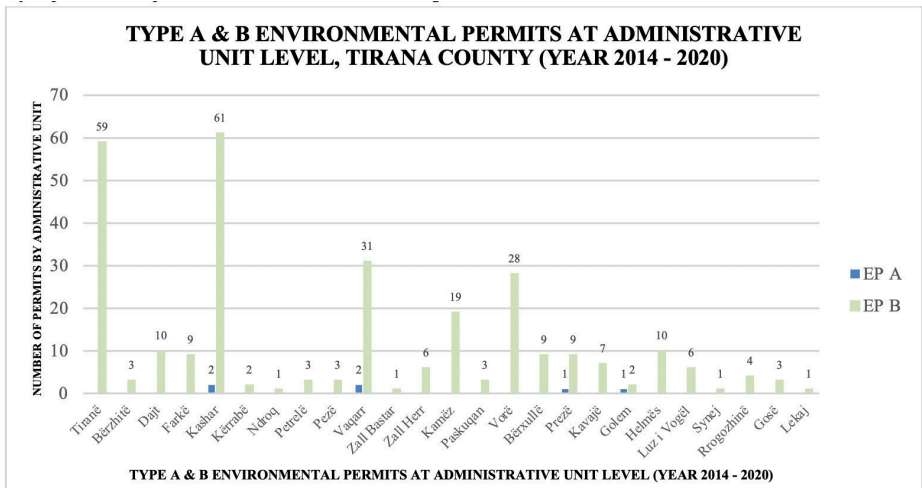


Figure 16: Type A and B environmental permits at the administrative unit level, Tirana county (Year 2014 - 2020)

Each of these polluting economic operators licensed through the QKB for the period 2014 - 2020, occupies a certain area of land and in some cases also building area. The chart below (Fig.17 and Fig.18) show the surfaces (total and buildings) used by the polluting economic operators at the municipality level and at the administrative unit level, for the county of Tirana. The data show that the municipality of Tirana occupies the largest total area used per operator, with 3.62 km2 of total area, followed by the municipality of Kavajë with 0.72 km2 of total area, while the largest area of the building used per operator is occupied by the municipality of Tirana with 0.3 km2, owned by the municipality of Vora with 0.07 km2.

While among the administrative units of the county of Tirana, the largest total area used per operator is occupied by Kashar administrative unit with 1.01 km2, followed by Helmes administrative unit with 0.62 km2, and Dajt administrative unit with 0.49 km2. Regarding the largest area of the building used per operator, it is occupied by Kashar administrative unit with 0.19 km2, followed by the Tirana administrative unit with 0.083 km2.

Referring to the General Local Plans (PPP) and Detailed Local Plans (PDV) approved by the municipalities of Tirana county, polluting economic operators of type A and B for the period 2014 - 2020 have been developed in 5 (five) land use systems .

In the charts below (Fig.19 dhe Fig.20) is shown the system of land used by the polluting economic operators for each municipality and administrative unit of Tirana county. In Tirana municipality, out of 193 polluting economic operators in total, 144 of them develop in the UB_Urban system, 25 in the B_Agricultural system, 15 in the N_Natural system, 5 in the U_Aquatic system and 4 in the IN_Infrastructural system. In Vora municipality, out of 47 polluting economic operators in total, 38 of them develop in the UB_Urban system, 6 in the B_Agricultural system, 2 in the N_Natural system and 1 in the IN_Infrastructural system. While in Kamez municipality, out of 22 polluting economic operators in total, 20 of them are developed in the UB_Urban system and 2 in the B_Agricultural system.

Regarding administrative units, the system of the land used by the polluting economic operators

AREA (TOTAL AND BUILDING) USED BY POLLUTING ECONOMIC OPERATORS AT THE MUNICIPAL LEVEL, TIRANA COUNTY (YEAR 2014 - 2020)

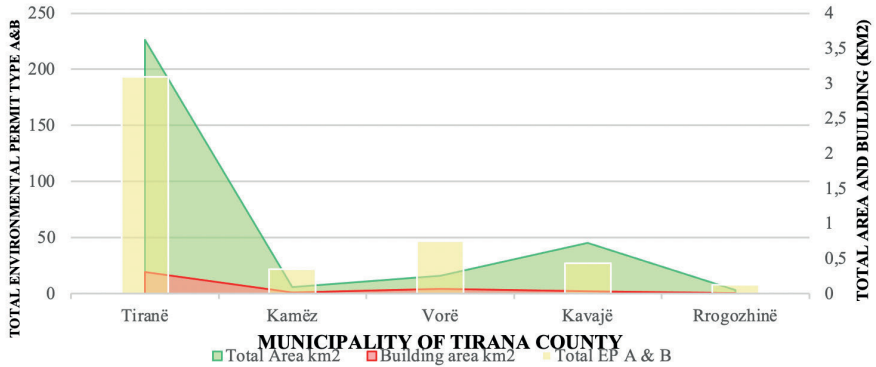


Figure 17: Area used by polluting economic operators at the municipality level, Tirana county (Year 2014 - 2020)

AREA (TOTAL AND BUILDING) USED BY POLLUTING ECONOMIC OPERATORS AT THE ADMINISTRATIVE UNIT LEVEL, TIRANA COUNTY (YEAR 2014-2020)

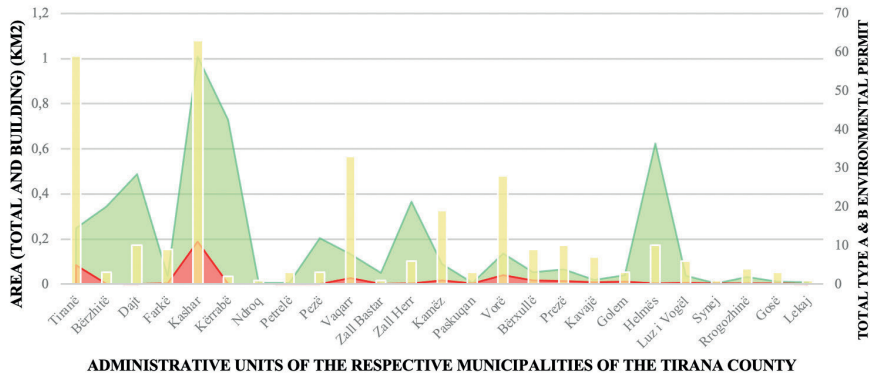


Figure 18: Area used by polluting economic operators at the administrative unit level, Tirana county (Year 2014 - 2020)

is mainly UB_Urban, headed by Kashar, Tirana and Vora administrative unit. industries and 1 permit with 5 industries. Regarding the municipalities, the highest number of polluting economic operators is in Tirana municipality with 189 type B permits and 4 type A permits, followed by Vora municipality with 46 type B permits and 1 type A permit, Kavaja municipality with 26 type B permits and 1 type A permit, Kamez municipality with 22 type B permits and Rrogozhina municipality with 8 type B permits.

At the county level, the highest number of polluting industries is held by the mining industry, with 71 polluting industries in total, followed by the polluting industry of the use of solvents with 55 polluting industries in total, the polluting industry of food and beverage production with 51 polluting industries in total and from the polluting industry of waste management with 44 polluting industries in total.

In the municipality of Tirana, the highest number of polluting industries is the industry of solvent use with 44 polluting industries, the mining industry with 34 polluting industries, the food and beverage production industry with 37 polluting industries and the waste management industry with 26 polluting industries. In Kamez municipality, the highest number of polluting industries is the mining industry with 5 polluting industries and the waste management industry with 5 polluting industries. In Vora municipality, the highest number of polluting industries is the mining industry with 14 polluting industries and the waste management industry with 10 polluting industries. In the municipality of Kavaja, the highest number of polluting industries is the mining industry with 15 polluting industries, while in the municipality of Rrogozhina, the highest number of polluting industries is the mining industry with 3 polluting industries.

From the processing and analysis of the data is enabled the construction of the chart (Fig. 22) in which is reflected the performance of type A and B polluting economic operators according to industry, referred to the land use system - PDV for the period 2014 - 2020. The analyzed data show that the highest number of economic operators and polluting industries is concentrated in the UB_Urban and B_Agricultural land use system, as well as the rest in the IN_Infrastructure,

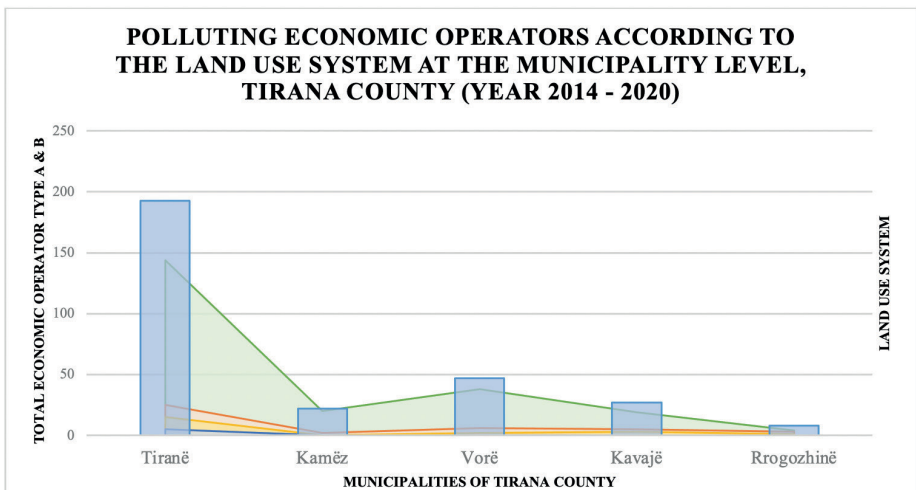


Figure 19: Polluting economic operators according to the land use system at the municipality level, Tirana county (Year 2014 - 2020)

POLLUTING ECONOMIC OPERATORS ACCORDING TO THE LAND USE SYSTEM AT THE UNIT ADMINISTRATIVE LEVEL, TIRANA COUNTY (YEAR 2014 - 2020)

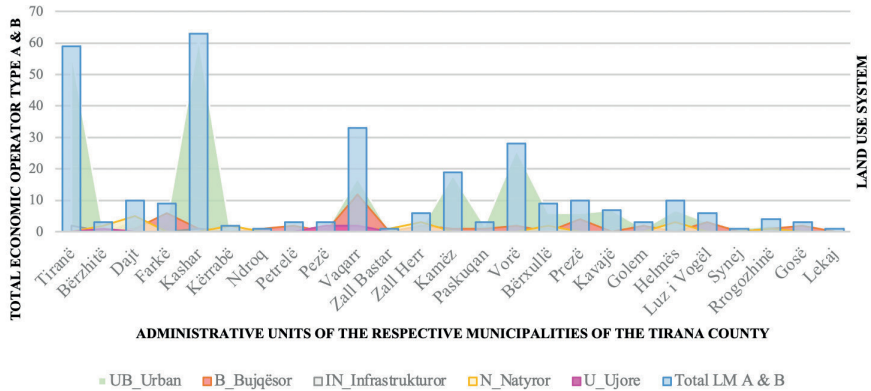


Figure 20: Polluting economic operators according to the land use system at the administrative unit level, Tirana county (Year 2014 - 2020)

PERFORMANCE OF TYPE A & B ECONOMIC OPERATORS ACCORDING TO POLLUTING INDUSTRY AT COUNTY AND MUNICIPALITY LEVEL (YEAR 2014 - 2020)

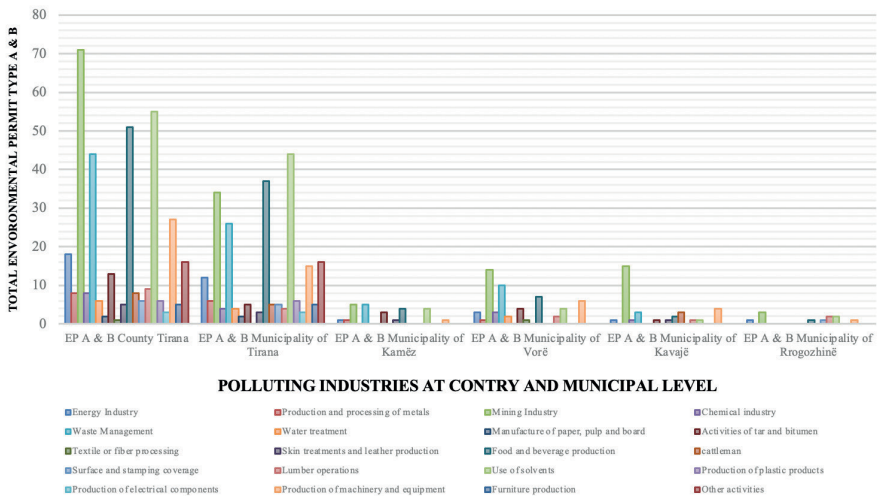


Figure 21: Performance of type A and B economic operators according to polluting industry at county and municipality level (Year 2014 - 2020)

N_Natural and U_Aquatic land use system. The data show a high number of economic operators and polluting industries in category A_Residential, of the land use system UB_Urban. Referring to the respective Structural Units of PDV for each municipality of the county of Tirana, the non-uniform distribution and mixed destination of the UB_Urban land use system, in which there are categories A. Residential, S. Services, IE. Industry and Economics, B. Agriculture, AR. Social and Recreational Activities, etc, inducing economic operators to find terrain to carry out their polluting activities, where most of them are concentrated in the structural units located near the main road axes.

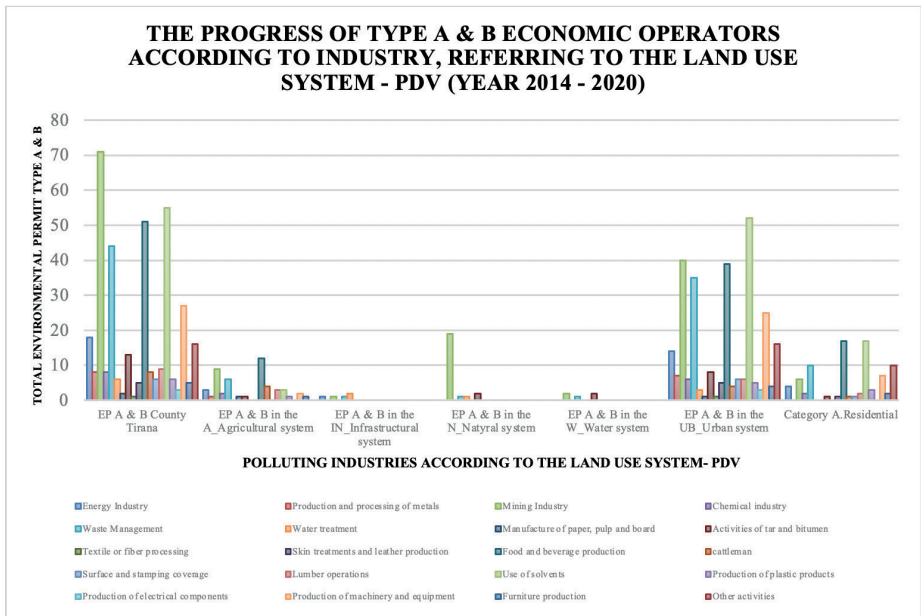


Figure 22: Performance of type A and B economic operators according to industry, referring to the land use system - PDV (Year 2014 - 2020)

From the processed data, we manage to digitize the polluting economic operators and the corresponding industrial sectors of type A and B issued through the QKB for the period 2014 - 2020 at the county and municipality level, according to land use systems, according to hydrography and road infrastructure. In the following figures (Fig. 23, Fig. 24 and Fig. 25) through the use of geo-spatial data provided by the National Register of Territorial Planning and the National Register of Licenses, Authorizations and Permits issued through the QKB, it is made possible the digitization of economic operators and relevant industries with an impact on the environment, as follows.

Dixhitalizimi i Industrisë në nivel Qarku dhe Bashkie (viti 2014-2020)

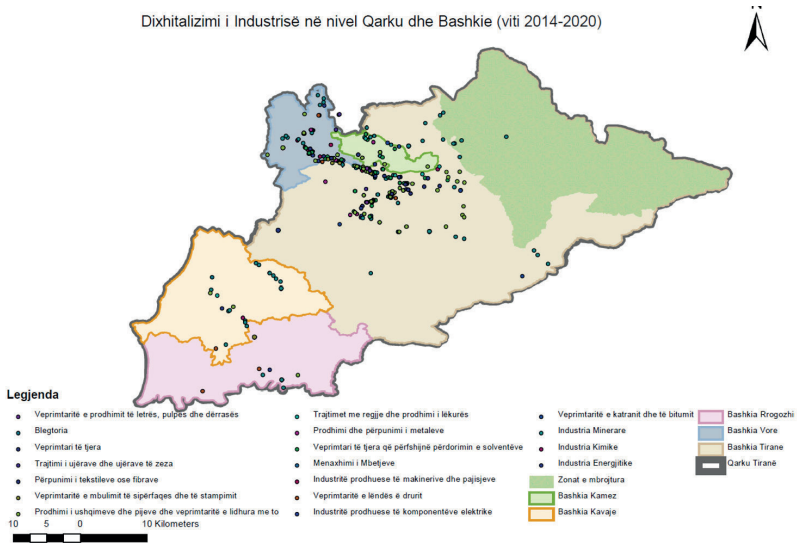


Figure 23: Digitization of industry at the county and municipality level (Year 2014 - 2020)

Dixhitalizimi i industrise sipas sistemeve te perdorimit te tokes (viti 2014-2020)

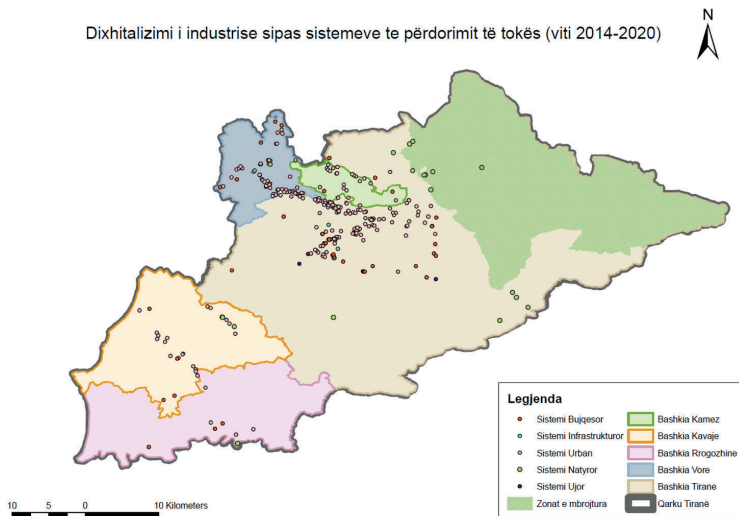


Figure 24: Digitization of industry according to land use systems (Year 2014 – 2020)

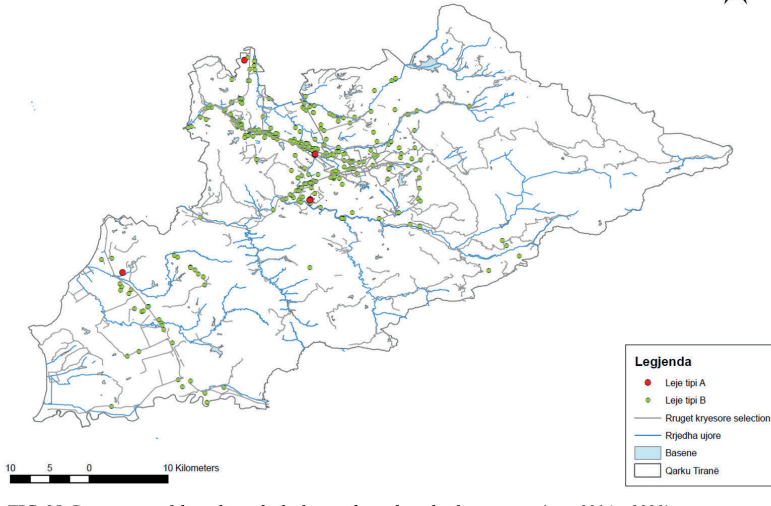


Figure 25: Digitization of the industry by hydrography and road infrastructure (year 2014 – 2020)

IDENTIFIED PROBLEMS

From this study of the industrial sector in the territory of Albania, we can identify some of the problems arising from planning:

-The lack of sustainable and strategic planning has resulted in a concentration of polluting activities in the county of Tirana, mainly in the municipalities of Tirana, Vora and Kamëz.

-The lack of an information system, public authorities have planned the territory from an urban and environmental point of view, without relying on the concentration of industrial sectors in a certain territory, which has caused polluting activities to be concentrated in the Administrative Units of Kashar, Tirana, Vaqarr, Vorë and Kamëz, where there is also the highest number of resident population.

-This problem is followed by the high number of the total area and the surface of the building in these administrative units, which is entirely placed in function of the industrial (non-residential) sectors.

-The compatibility of environmental planning with territorial planning points out another problem which is related to land use systems, from which it results that the highest number of polluting economic activities takes place in the UB_Urban system and in the B_Agricultural system.

-The high concentration of the industrial sector in the land use system UB_Urban and B_Agricultural, is followed by the high number of polluting activities in the category A. Residential, so the industrial sector develops almost entirely in residential areas.

-The lack of environmental and urban planning of the territory, it is noticed that the industrial (non-residential) sectors are focused on the mining industry, the food production industry, the solvent use industry and the waste management industry, concentrating the most in the municipality of Tirana, Vora and Kamëz.

-Referring to the Structural Units of the corresponding PDV for each municipality of the county of Tirana, the non-uniform distribution and mixed destination of the land use system UB_Urban, in which there are categories A. Residential, S. Services, IE. Industry and Economy, B. Agriculture, AR. Social and Recreational Activities, etc., making economic operators find terrain to carry out their polluting activities, where most of them are concentrated in the structural units located near the main road axes.

-From the digitalization of the industrial sector through the GIS system, we evidence that polluting economic activities are concentrated in structural units located near the main road axes, as well as a significant number of them in close proximity to surface water sources, which is consistent with urban areas for residential purposes.

-The lack of an information system, part of which should be a GIS geodetic platform, has resulted in environmental planning not being sustainable and strategic, thereby threatening the components of the environment in the main municipalities of the county of Tirana.

-National plans and local plans approved by public authorities have focused mostly on the development of the territory from the urban side for residential purposes, not giving due importance to the industrial sector.

-The problem that continues to be present is the lack of coordination and the will for cooperation between public authorities that cover the field of planning for all economic sectors that develop in the territory of Albania.

THIRD CASE: SEPARATE SOURCES OF AIR DISCHARGES IN THE TERRITORY OF ALBANIA []

Through the published data in the National Register of Licenses, Authorizations and Permits made possible by the National Business Center, for the period 2014 - 2022, have been identified economic operators of type A and B who, as a result of their productive activity (industrial sector) discharge in the air from the separate sources of stationary technical units.

The geospatial data of each polluting economic operator has been verified through the National Geoportal "ASIG" from where are determined the county and municipality.

In total, for the period 2014 - 2022 at the national level, 2656 licensed economic operators for various industrial sectors were analyzed, of which 87 operators are equipped with type A environmental permits and 2569 operators are equipped with type B environmental permits. The following chart (Fig. 26) shows the environmental permits of type A and B in the territory of Albania for each of the years 2014 - 2022.

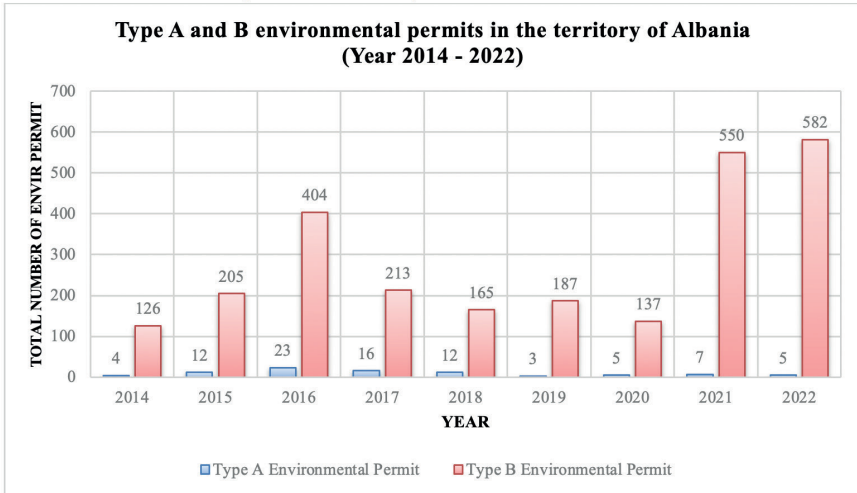


Figure 26: Type A and B environmental permits in the territory of Albania (Year 2014-2022)

From the analysis of data of the industrial sectors for the period 2014-2022, it results that we have 200 separate sources of air emissions of type A and B installations, where Tirana and Durrës county have the highest number of separate sources with 37 sources each, followed by Elbasan county with 31 sources and Fier county with 24 sources. While the lowest number of separate sources of emissions in the air is kept by the Kukës county with 2 sources, followed by the Gjirokastër county with 4 sources.

From the analysis of the separate sources presented in the following figure (Fig. 27) it results that the central region of the territory of Albania has the highest number of air emissions.

While the chart below (Fig. 28) shows the distribution of separate sources of air emissions from type A and B installations, for each respective municipality of the territory of Albania. From the data analysis, the municipality of Elbasan has the highest number of separate sources of air emissions with 26 sources, followed by the municipality of Tirana with 20 sources, the municipality of Shijak with 14 sources and the municipality of Durrës with 13 sources.

The chart (Fig. 29) shows the separate sources of air emissions at the county level that are the result of polluting economic activities (industrial sub-sectors) for smelting and metal production (31 sources), cement production (5 sources), factories of bricks and tiles (10 sources), smelting and production of mineral substances (6 sources), asphalt-concrete production (70 sources), pellet production (14 sources), waste incineration (10 sources), etc., concentrated on many in county of Tirana, Durrës, Elbasan and Fier.

IDENTIFIED PROBLEMS

From this study of the industrial sector in the territory of Albania, we can identify some of the problems arising from planning:

- The lack of sustainable and strategic planning has led from year to year to an increase in the num-

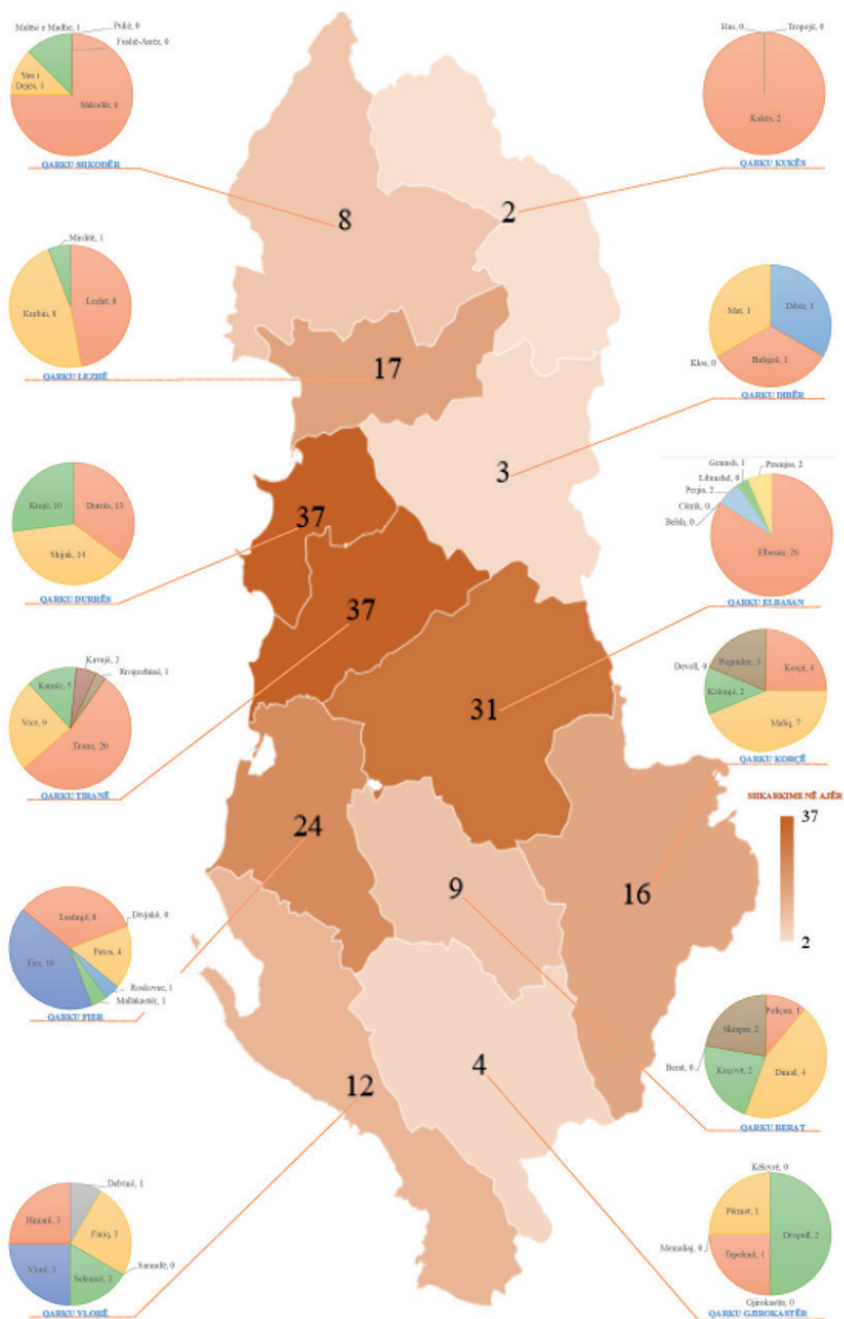
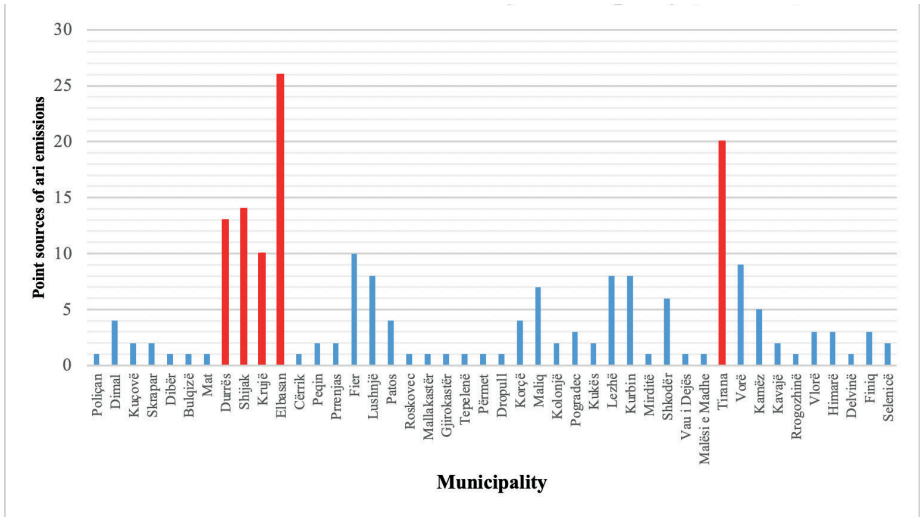


Figure 27: Separate sources of air emissions according to counties and municipalities



28: Separated sources of air emissions by municipalities

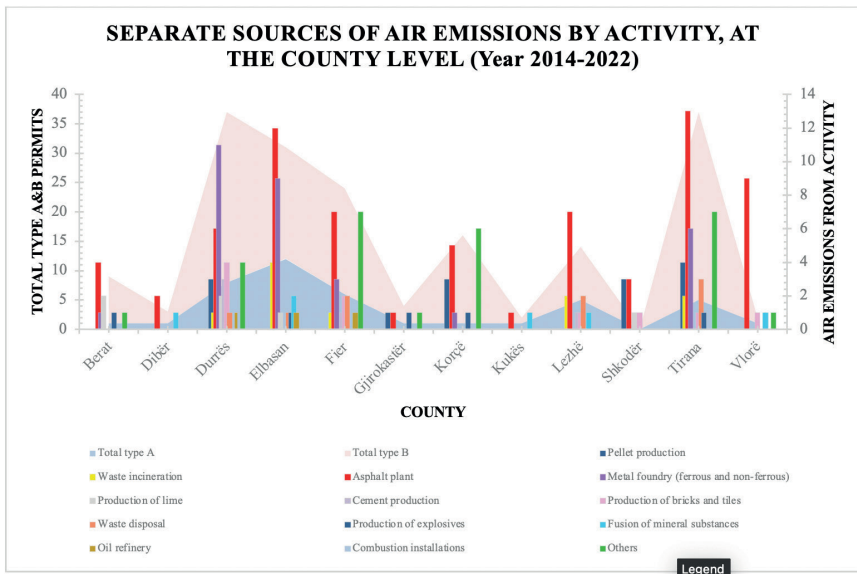


Figure 29: Separate sources of air emissions from the industrial sector, at the county level

ber of separate sources of air emissions from polluting activities in the environment (industrial sectors), threatening the environment of the central region of the territory of Albania.

- The lack of an integrated environmental management system on the part of public authorities, this system which would manage the entire mechanism of environmental protection, highlights a major problem in terms of air quality in the county of Tirana, Durrës, Elbasan and Fier, where is concentrated the highest number of industrial sectors that discharge into the air from separate sources.

- The system of integrated environmental management should be built as soon as possible, part of which is the system of environmental information and monitoring of the state of the environment, this system should be accessible by all public authorities and the public should have access to it.

- Monitoring of the state of the environment by public authorities and economic operators of polluting activities in the environment is not continuous, which means that the reported results are not reliable.

- The lack of an integrated network for monitoring the state of the environment where the quality of the environment, including air quality, is a cause and effect of the development of the territory in a non-sustainable and non-strategic manner.

- Environmental policies, strategies, plans, programs and projects cannot be drafted, revised or modified aiming at the protection of the environment in its entirety and the sustainable development of the country, if there is no information on the components of the environment.

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