



LOCAL ENVIRONMENTAL ACTION PLAN OF THE MUNICIPALITY OF ILINDEN



2006 - 2012



Dear Madam/Sir,

The Local Environmental Action Plan (LEAP) for the Municipality of Ilinden as a strategic document is first of such type in the Municipality. It identifies the environmental problems, defines the objectives and tasks for their elimination, thus creating possibilities for leading a policy for environment protection and promotion at the territory of the Municipality of Ilinden. The LEAP shall contribute towards improvement and sustainable development of the region, and improvement of the living and health conditions of the population in all the community areas.

The environment protection in the EU policy is becoming more and more important. Nevertheless, the real state of environment both in the Municipality of Ilinden and the region, as opposed to certain improvements, indicates disturbing trends in all the environmental areas: quality of air, water and soil, use of resources, waste and traffic.

The Local Environmental Action Plan (LEAP) for the Municipality of Ilinden gives an answer to some of the key questions:

- What can we do to protect ourselves against and to eliminate the pollution?*
- Is it a good idea to expose the future generations to the consequences of the pollution?*
- Why don't we try to find a solution for the problems?*

My strives, actions and clear determination are aimed towards the environment protection, quality of health and quality of living for the citizens.

The Municipality of Ilinden is a responsible partner in the realization of different agreements and joint cooperation, contributing thereof consciously towards finding mechanisms for integrating the environment protection and the local economic and social development as main integration parts of the Local Agenda 21.

According to the existing legislation, more and more attention should be paid to other measures and activities bringing about to increasing of the environmental sensibility in the area of informing, education and application of the general principles on prevention against pollution in practice.

I would hereby like to thank the Swedish International Association for Cooperation and Development (Sida) and the Regional Environmental Centre for Central and Eastern Europe (REC) - Country Office Macedonia, for their financial and technical support.

I would also like to thank all the team members for their contribution in the preparation of this important strategic document.

With regards,

Zika Stojanovski
Mayor of the Municipality of Ilinden

In accordance with Article 36 of the Law on Local Self-government ("Official Gazette of the Republic of Macedonia No. 5/2002) and Article 20 of the Statute of the Municipality of Ilinden ("Official Herald" No. 02/05), the Council of the Municipality of Ilinden, on the session held on 27.12.2005, made the following:

D E C I S I O N
on adoption of the Local Environmental Action Plan
of the Municipality of Ilinden

Article 1

The Local Environmental Action Plan prepared by the Local Committee for Local Environmental Action Plan preparation is hereby adopted.

Article 2

The Local Environmental Action Plan shall be an integral part of this Decision.

Article 3

This Decision shall enter into force on the eighth day of its adoption and publishing into the Official Herald of the Municipality of Ilinden.

Arch. no 07-1102/9
from 27.12. 2005

Council of the Municipality of Ilinden
President
Steve Avramovski



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LIST OF ABBREVIATIONS USED IN THE TEXT

LEAP - Local Environmental Action Plan

NEAP - National Environmental Action Plan

NGO - Non-Government Organizations

REC - Regional Environmental Center for Central and Eastern Europe

Sida - Swedish International Development Agency

DPSIR methodology - Driving Force; Pressure; State; Implementation; Reaction.

LC - Local Committee (for LEAP preparation)

SWOT analysis - Strengths; Weaknesses; Opportunities; Threats

BDP - Bruto Domestic Product

GUP - General Urban Plan

UDIP - Urban Documentation Inhabited Place

i.p. - Inhabited Place

PCE "Ilinden" - Public Communal Enterprise Ilinden

PEAS "Macedonia" - Public Enterprise for Airport Service "Macedonia"

SMART - Simple/specific; Measurable; Applicable; Realistic; Time-bound

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PREFACE

Objectives of the process of LEAP preparation

The Law on Environment defines the rights and responsibilities of the Republic of Macedonia, the municipalities, the City of Skopje and the municipalities in the City of Skopje, as well as the rights and responsibilities of the legal and physical entities, in the provision of conditions for environment protection and promotion, for achieving the right of the citizens to a healthy environment. The Law on Local Self-government from 2002, defines the responsibilities of the municipalities, the public participation in the decision making, organization and work of the municipality bodies, mechanisms of cooperation between the municipalities and the RM Government, etc. According to the municipal responsibilities, the Law transfers the responsibility for the environment and nature protection (measures for protection and prevention against water, air and soil pollution, nature protection, protection against noise and non-ionizing radiation to a local level. The Law specifies that the municipalities shall be responsible for the environment, communal services and spatial planning.

The **Municipal Council** adopts the Local Environmental Action Plan (LEAP) on the basis of its specific conditions and needs, in accordance with the National Environmental Action Plan (NEAP) and the methodology established on a national level.

This plan document refers to a period of six years, during which it is a subject of constant updating, in accordance with the conditions and circumstances occurred. It is renewed after the deadline for its implementation.

According to the Law on Environment (Official Gazette of RM no. 53 from 2005), the Municipal Board shall establish a body managed by the Mayor to follow the implementation of the Local Environmental Action Plan, and inform the Ministry of Environment and Physical Planning of it once a year, thus proposing amendments of the Local Environmental Action Plan.

The public participation in the preparation and submission of the Local Environmental Action Plans is one of the basic pre-conditions for adopting a realistic and comprehensive document that establishes the priorities to be accepted by the citizens as well. The Local Environmental Action Plan (LEAP) is implemented by the Mayor and the municipality, together with the other legal and physical entities specified in the Plan. The LEAP, based on the assessment of the environment pollution in certain area, contains middle-term and long-term measures for environment and human health protection, which are of interest and under the responsibility of the municipality:

- protection against air pollution and improvement of the air quality;
- provision of quality drinking water and protection of water against pollution;
- wastewater treatment;
- waste management;
- protection against pollution and vibrations generated from the business and other activities;
- urban development and spatial planning;
- development of the local public transport and traffic in the region;
- increasing the energy efficiency;
- development of eco-cultural tourism and its impact on the environment;
- protection of the biological diversity;
- management and use of the natural resources;
- public awareness raising and development of the environment protection and promotion education;
- consequences of the economic development on the environment, and
- subjects responsible for implementation of the specific elements from the plan.

The preparation of the Local Environmental Action Plan (LEAP) is a first step towards the environment protection through the promotion of the sustainable development. Since the local finances are limited, the local authorities need to be rational with their use, and try to apply low-budget and efficient strategies for resolving the environmental problems. Thus, active inclusion of the citizens in the decision making process and free access to information should be enabled.

LEAP is a strategic document that identifies the environmental problems, creates the objectives and tasks for their elimination and creates new possibilities for leading the policy on environment protection and promotion in the Municipality, in a direction of providing promotion and sustainable development of the Municipality, promotion of the state of environment, and improvement of the living conditions and human health.

Main objectives of the preparation of LEAP for the Municipality of Ilinden:

- Defining, assessment and presentation of the environmental problems, on the basis of the risk on the human health, eco-systems and the quality of life in general;
- Developing strategies and activities for reducing the environmental risks;
- Raising the public awareness and responsibility for environment protection and increasing the public support for environmental investments.

The LEAP preparation has enabled the following results (as long-term benefits):

- Established structure for cooperation between the stakeholders on a local level in the Municipality;
- Public informed on the existing environmental problems in the Municipality;
- Raised public awareness on the environmental issues in the Municipality;
- Successfully developed strategies for resolving the environmental problems;
- Created conditions and local capacities for future investments for resolving the environmental problems in the municipality.

The LEAP preparation is of great significance for all the sectors of the Community:

- the local self-government
- the local businesses
- the local non-governmental organizations (NGOs)

The local self-government representatives have, in order to reach a consensus on the priority environmental issues, cooperated with the citizens. The public participation assisted in the identification of the priorities and actions that shall be acceptable for the whole Community.

For the local business people, the LEAP preparation and implementation often leads to new economic development initiatives that may lead to new employments and more income.

The LEAP preparation and implementation shall enable the non-government organizations (NGOs) to establish partnerships with the local authorities and the business subjects.

I. BACKGROUND AND PROJECT PHASES (EXECUTIVE SUMMARY)

I-1. Background of the project

According to the Law on Environment (Official Gazette of RM no. 53 from 2005), the Municipality is the *bearer of the process of LEAP preparation and implementation*, by establishing partnership with all the interested parties.

The process of LEAP preparation for the Municipality of Ilinden started in 2004 by *submitting and initiative* for LEAP preparation for the Municipality of Ilinden by the Mayor, and its adoption by the Municipal Board, followed by signing an Agreement for awarding financial support from the Swedish International Development and Cooperation Agency (SIDA) through the Regional Environmental Centre for Central and Eastern Europe - Country Office in Macedonia (REC).

I-2. Phases of LEAP preparation

During the LEAP preparation, the Municipality covered the planning process comprised of seven phases:

1. Establishing organizational structure for LEAP preparation;
2. Preparing plan for inclusion of the public;
3. State of environment assessment in the Municipality of Ilinden;
4. Defining the environmental problems and defining the priorities;
5. Defining the objectives and tasks;
6. Establishing mechanisms for LEAP implementation;
7. Establishing operative mechanisms for monitoring and assessment of the implementation and revision of LEAP.

I-3. Organizational structure for LEAP preparation

The process of the LEAP preparation for the Municipality of Ilinden started after the adoption of the initiative by the Municipal Board. The first phase that started was: Establishing organizational structure for LEAP preparation for the Municipality of Ilinden, to be comprised of:

- Local coordinator
- Local committee with 30 members
- Working groups for five topic areas

I-4. Methodology for the Plan preparation

After establishing organizational structure for LEAP preparation, a procedure started for **data collection**, which are to be used as base for preparation of the **state of the environment assessment** at the territory of the Municipality of Ilinden. Five working groups were established for the following topic areas: water, air, waste, soil and land use, and nature. Each working group had a task to make contacts and provide data from relevant institutions, economy subjects, offices, departments, etc. Some of the data were provided through official communication, personal contacts, and field monitoring.

The collected data used to fill in the working sheets and tables were processed and analysed with application of **DPSIR methodology** (Driving Force, Pressure, State, Implementation, Reaction). **Draft Report** on the State of the Environment in the Municipality of Ilinden was prepared based on the processing, expert analysis and arrangement of the collected data/material. These activities were followed by preparation

BACKGROUND AND PROJECT PHASES (EXECUTIVE SUMMARY)

of **State of the Environment Assessment for the Municipality of Ilinden**, identifying the key problems.

After the adoption of the **State of the Environment Assessment** by the Local Committee for LEAP preparation for the Municipality of Ilinden, Poll list was prepared in order to include the public in the defining of the priority problems.

The Poll included 1.550 people (10% of the total number of inhabitants in the Municipality) from all the inhabited places of different age, sex, education and occupation categories. The Local Committee members processed the results of the Poll and made **Rank List of environmental problems at the territory of the Municipality of Ilinden**. According to the Rank List, LC made prioritization on the basis of the following criteria: impact on the human health, environment and air quality, distribution, intensity, public opinion, level of control, plan, legal and other regulatory responsibilities. **A List of Priorities** was prepared after, setting the top 13 defined problems as priority ones to be resolved in a 6 year period. The List was published on the information boards in the i.p. and in the media.

Paralelly with the problem prioritization, **SWOT analysis** was prepared for the Municipality for the areas: infrastructure, social welfare, demography, local self-government and local economy.

Defining the objectives and tasks for resolving each of the priority problems was the first phase of the Plan for LEAP implementation, by applying the SMART principle.

The second phase is selection and defining of concrete **actions for priority resolving**, with responsible institutions, implementation period, planned budget and possible sources of financing, whereas the actions need to be cost effective, technically applicable, efficient, flexible, acceptable and time-bound.

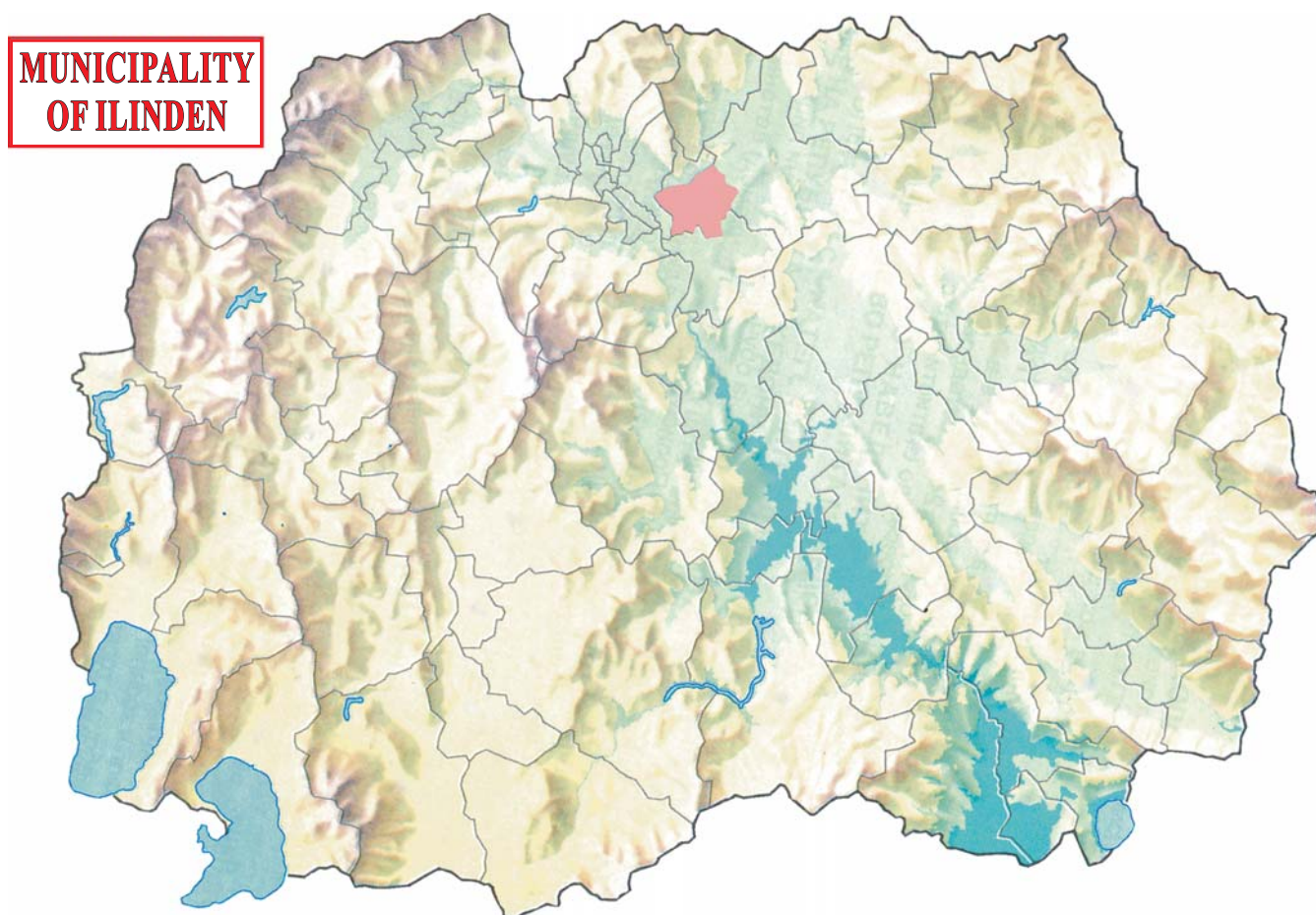
After this, **Draft version** of the **LEAP document** was prepared to be used as basis for organizing a **public discussion**. Copies of the Draft version were submitted to all the Local Communities of the Municipality, business subjects, primary schols, responsible ministries, REC, consultants, experts and other interested legal and physical entities, in order for them to review the Draft LEAP and give their opinions, proposals and comments.

The LC reviewed the results of the public discussion, thus accepted and included some of the opinions, proposals and comments in the Plan, which lead to the final phase of LEAP preparation: **Draft version** submitted to the Municipal Council for review and adoption, and approval for printing.

II. NATURAL - GEOGRAPHIC AND SOCIAL - ECONOMIC CHARACTERISTICS OF THE MUNICIPALITY OF ILINDEN

II-1. Description of the Municipality

The Municipality of Ilinden is established as a separate local self-government unit in 1996. The territory covered by the Municipality of Ilinden was previously part of the Skopje Municipality Gazi Baba

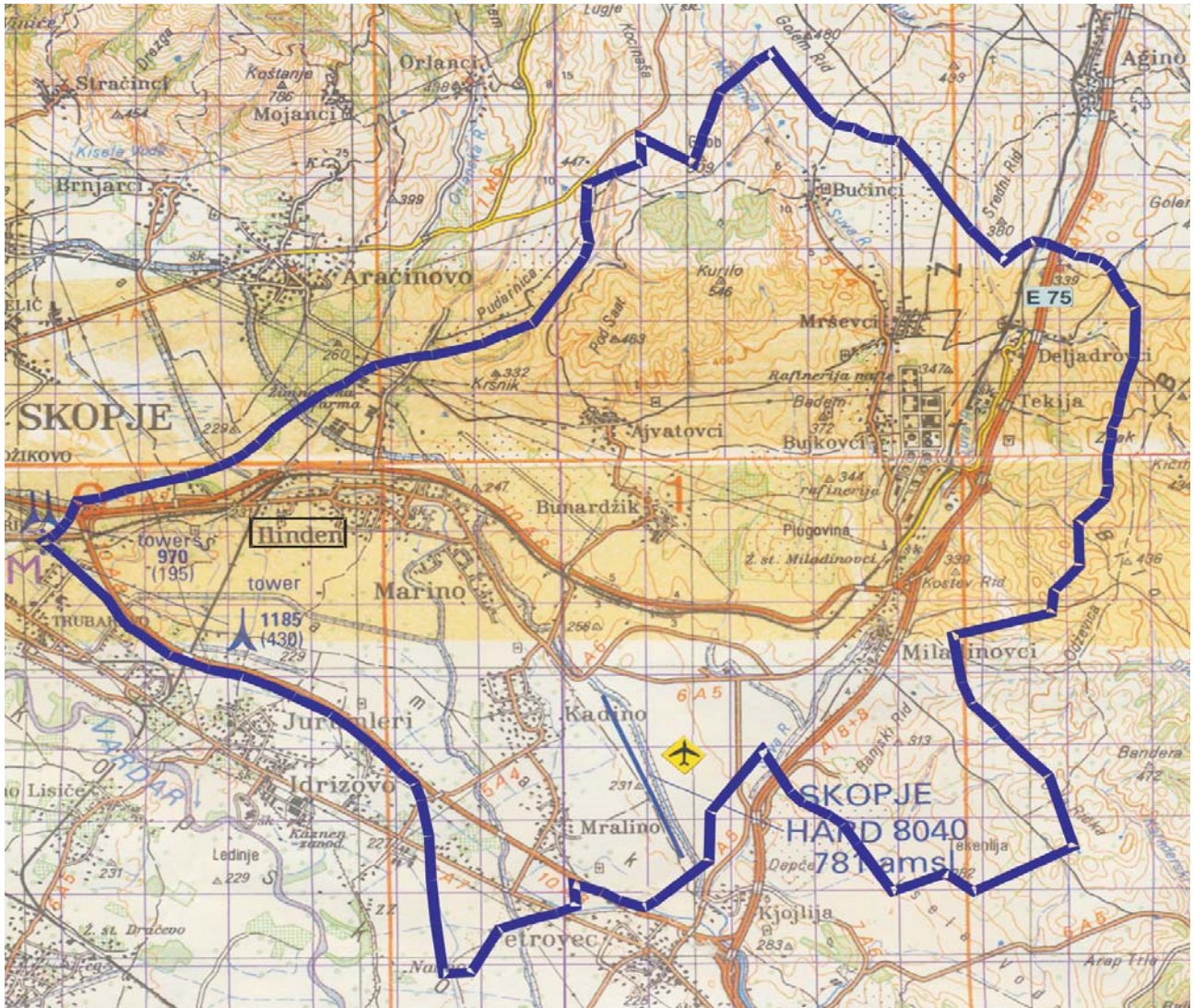


Picture 1. Republic of Macedonia - Territorial organization/division in Municipalities

II-1. 1. Geographic characteristics

The Municipality of Ilinden is located near Skopje, 10-15 km from the city centre, covering the east part of Skopje Valley, at the bordering area between Skopje-Kumanovo-Veles. The Municipality headquarters is located in the i.p. Ilinden, ex Belimbegovo.

It borders with the Municipality of Gazi Baba on the West, the Municipality of Aracinovo on the North-west, Kumanovo on North-Northeast, and the Municipality of Petrovec on East and South.



Picture 2. Territory of the Municipality of Ilinden

The road connections are good, since the international highroads **M-1**, **M-3** and **M-4** pass through the Municipality: Corridor 8 (E-65) EAST-WEST and Corridor 10 (E-75) NORTH-SOUTH; the railroad line Belgrade-Skopje-Athens and the international airport "Skopje".

The Municipality covers a total area of 106,7 km², 1.240 ha of which is construction land, 9.430 ha agricultural land: 6.980 ha (74%) arable land, 2.400 ha (25%) pastures and meadows, and 50 ha forests. Thereof, the Municipality has affordable conditions for agricultural development (farming, gardening and stock breeding).

No.	Inhabited place	Height above sea level (meters)	Number of inhabitants	Number of house holds	Area (km ²)	Construction land (ha)	Number of constructed objects	Agricultural structure (ha)			
								Total agricultural area	Arable land (fields, grapes/wines)	Pastures	Forests
1	Ilinden	230	4.931	1.307	14,5	400	1.330	1.050	920	130	/
2	Marino	229	3.533	1.000	3,2	120	1.178	200	170	30	/
3	Kadino	228	2.090	552	9,6	130	657	830	770	60	/
4	Mralino	227	821	216	9,2	120	329	800	600	200	/
5	Bunardzik	290	352	97	4,9	90	228	400	380	18	2
6	Ajvatovci	320	232	63	9,1	50	179	860	500	340	20
7	Miladinovci	270	1.276	345	16,1	150	478	1.460	750	690	20
8	Bujkovci	300	946	244	8,4	60	226	780	520	259	1
9	Mrsevci	330	651	192	7,9	60	260	730	620	107	3
10	Bucinci	370	226	68	6,8	15	90	665	450	213	2
11	Tekija	290	304	76	8,5	20	112	830	650	179	1
12	Deljadrovci	295	532	138	8,5	25	185	825	650	174	1
Total:			15.894	4.298	106,7	1.240	5.252	9.430	6.980	2.400	50

Table 1. Description of the Municipality of Ilinden

II-1. 2. Relief and geological content

The Municipality of Ilinden is located at height between 230 and 550 m above the sea level. It has mostly ravine morphology (80% of the area), and 20% are hilly parts on the north and east.

Geologically, the soil is mostly deluvial, sandy, easy-starinable, pervious, warm and well aerated, with low percentage of inert humidity. Litologically, it is comprised of thin layers of sandy and ashy thick and non-permissable clays

II-1. 3 Climate

The climate is sub-tropical, with characteristic hot and dry summers, and humid and sometimes sharp winters. The average annual temperature is 12,5°C. The absolut maximum temperature is 41,5°C, the absolute minimum - minus 25,6°C. In the summer months, the average maximum is 30,9°C (35,8°C at day time). The minimal temperatures registered in January are the average of 0,2°C to minus 3,4°C.

There are about 500 mm falls per year (mostly rainfalls, and about 25 days of snowfalls), with average air humidity of 70%. About 63 days are foggy, and the average annual insolation is 2.102 sunny hours.

The winds blow from all directions, with almost similar average velocity of 6 to 8 m/s. The maximum velocity of the north-east directed wind is 23 m/s.

II-1. 4. Hydrography

Except for the basin of Suva Reka, there are no natural water flows in the Municipality. The surface and high underground water drainage channels (two main and several smaller ones) that are used for irrigation of the agricultural land, are with total length of about 60 km.

There is a smaller artificial accumulation at Suva Reka near i.p. Bucinci (2 ha, 3 to 4 meters deep) used for collection of rainwater from the Skopska Crna Gora and protection against floods, and irrigation of agricultural land. During the long-term dry periods, the accumulation dries off.



Picture 3. Drainage channel in i.p. Ilinden

II-1. 5. Bio-geographic characteristics

Due to the relatively small area the Municipality of Ilinden is covering, the flora and fauna eco-system is not very diverse. There are representatives of the mammals, birds, reptilian, and some plant species (mostly grass and pastures), while the natural vegetation is fragmently present (individual trees and shrubs).



Picture 4. Natural vegetation near the i.p. Tekija

The human factor has a negative impact of such conditions. The uncontrolled and merciless cutting of fire wood and the economic development contributed for the forest fund reduction.

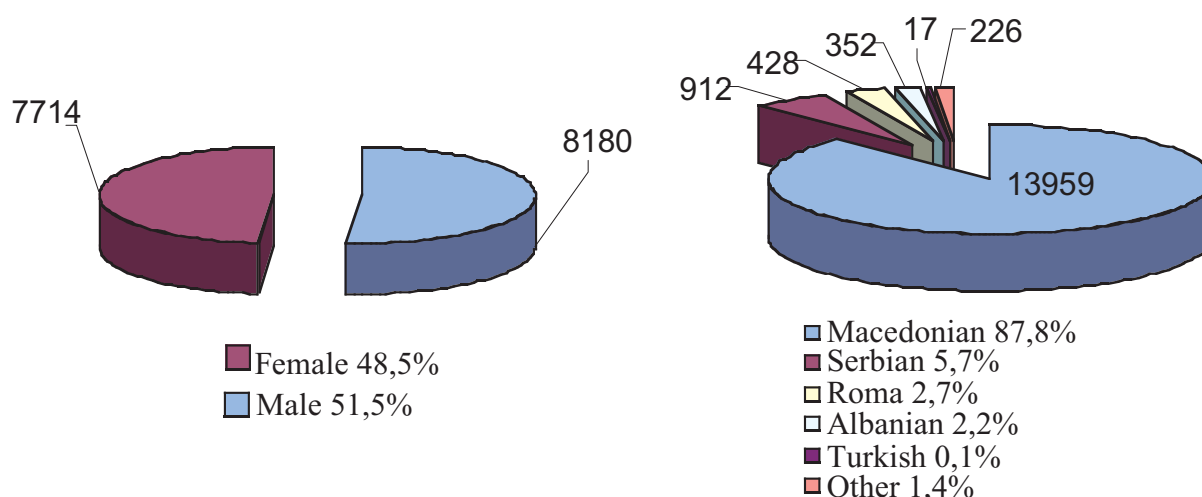
Lately there has been an evident antropogenisation at the territory of the Municipality, especially with the forestation with some forest species, which shall contribute to decreasing of the negative environmental impact.

II-1. 6. Demographic characteristics

There are 12 inhabited places in the Municipality: Ilinden, Marino, Kadino, Mralino, Ajvatovci, Bunardzik, Miladinovci, Bujkovci, Mrsevci, Bucinci, Tekija and Deljadrovci. According to the 2002 Census, the total number of inhabitants is 15.894, living in 4.298 households (average of 3,7 members per household. The population density is 150 inhabitants/km2.

According to the nationality, the population is mostly Macedonian orthodox - 13.959 inhabitants (87,82%); Serbian - 912 (5,73%); Roma - 428 (2.69%); Albanian - 352 (2.01%); Turkish - 17 (0.10%) and other 226 (1,41%). There area 8.180 male (51%), and 7.714 female (49%) inhabitants.

Ethnic and sex structure of the population in the Municipality of Ilinden



According to the education, 95,7% of the population at the age over 10 years is literate.

The education structure of the population at the age of over 15 years is as follows:

- No education - 655
- ncomplete primary school education - 1771
- Primary school education - 3774
- Secondary school education - 6157
- Higher education - 120
- University education - 174
- Doctorate - 2

There are 12.639 workable efficient citizens at the age of over 15 years, 6.486 of which are active and 6.153 inactive. The unemployment rate is 34,6%, the employment rate - 37,7%. Most of the citizens are employed in the construction industry (over 50%), the industry (35%), non-economy activities (5%), agriculture (5%), etc.

The bruto domestic gross (BDG) per inhabitant is 11.964 SAD \$.

The average natural growth of population in the last five years is 1% per year.

II-1. 7. Economy characteristics

Due to its geographic position and good infrastructure: electricity, watersupplying system, telephone network, local and regional roads, railroad, airport, closeness to the Capital City, the Municipality of Ilinden has good basis for industrial and economic development. According to the 2002 Census, 682 business subjects were registered in the Municipality, 240 of which are active. The Refinery "OKTA", Airport "Skopje", Free economy zone "Bunardzik", Meat industry "Nikas", Warehouse "Makpetrol"; Poultry farm "Belimbegovo", Hotel "Belvi", Auto House "OPEL" etc. are some of them.



Picture 5. Industrial zone in i.p. Ilinden

II-1. 8. Infrastructure

- The inhabited places in the Municipality of Ilinden are 100% connected to the electrical network, but the electricity quality and quantity are not satisfying the needs.
- All the inhabited places have telephone network, with two automatic operators responding to the needs.
- 8 i.p. are connected to the water supplying system: 5 to the regional; 2 to the Refinery OKTA; 1 to the local water supplying system. The other 4 i.p. shall be connected to the existing system, thus 90% of the Municipality shall be covered by water supplying system.
- The Municipality has about 60 km of drainage and irrigation channels (2 main with length of 20 km, and other smaller channels).
- There are only 2 km sewerage network for rainwater intake and drainage.

• Road infrastructure - 200 km

- Categorian streets - 67 km
- Macadam - 8 km
- Earth roads - 125 km

From total length of road infrastructure, 75 km are asphalt.

2. The international highway E-75 (with length of 30 km) passes on the territory of the Municipality, presenting a main crossroad for the directions Skopje-Kumanovo, Skopje-Veles and Kumanovo-Veles.

3. The railroad line Belgrade-Skopje-Athens passes on the territory of the Municipality, with length of 18 km and two railroad stations.

4. The Airport "Skopje" is located on the territory of the Municipality



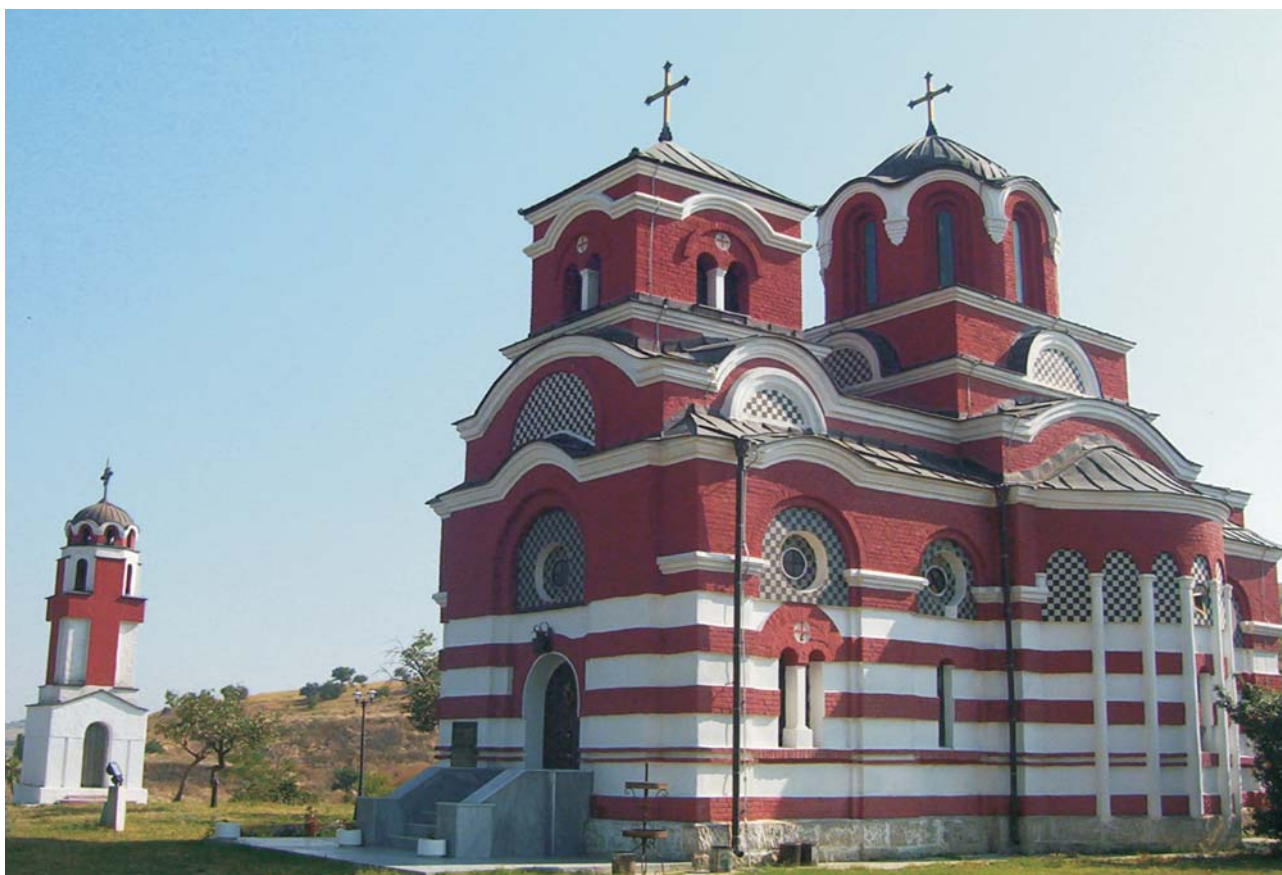
Picture 6. *International highroad E-75*

II-1. 9. Education and health

- **Primary school education:** 3 primary schools (1-8 grade) and 5 regional schools (1-4 grade), with about 1.900 pupils.
- **Primary health protection:**
3 state owned health stations and 6 private general practice ambulances;
2 state owned and 2 private dental ordinations;
1 state owned and 1 private laboratory.
- **Veterinary protection:** 3 private veterinary stations.

II-1. 10. Quality of life

- **Cultural-historical heritage:** 5 non-functional Culture Clubs; and 12 churches and monasteries. The monastery Sv. Gjorgjija (1921), near the i.p. Deljadrovci, with a complex of 5 churches, is the most imosant one.
- **Sport and recreation:** there are 9 football clubs, 8 football pitches and 9 playgrounds for other sports; and a Scouts Force that is functioning well.
There is no organized excursion-recreational area on the territory of the Municipality; the citiszens use two locations that are most proper for that purpose.
- The **Urban development** for i.p. is defined by plan documents: General Urban Plan (GUP), (covering Ilinden, Marino and part of Kadino); Urban Documentation on Inhabited Place (UDIP) (covering Kadino, Mralino, Bunardzik, Ajvatovci, Miladinovci and Mrsevci); and Decision on the Manner of Construction (covering Tekija, Deljadrovci and Bucinci). Only i.p. Bujkovci has no urban documentation.



Picture 7. Church Sv. Djordjija - i.p. Deljadrovci



Picture 8. Youth football school

III. DETAILED DESCRIPTION OF THE PLAN

III-1. REPORT FROM THE ENVIRONMENTAL IMPACT ASSESSMENT AT THE TERRITORY OF THE MUNICIPALITY OF ILINDEN

III-1.1. WATER AND WATER QUALITY

A: Water supply

Regional water supplying system and local systems have been constructed or are still under construction for the needs of the population in the Municipality Ilinden. Individual wells and pump are used as well. The existing water supplying systems shall, due to the intensive urban and economic development, population growth and use of drinking water for industrial and agricultural purposes, probably reach the maximum capacity in a short period of time.

The only watersupplying resource in the Municipality are the underground waters, which are, due to the high level and overall situation at the territory of the Municipality, exposed to pollution and reduction of the quality and usability .

Currently, only part of the regional water supplying system have been completed, providing drinking water for 12.859 inhabitants in 6 i.p.: Ilinden, Marino, Kadino, Mralino, Bunardzik and Ajvatovci. According to the Project on regional water supplying system, Mrsevci, Bucinci and some i.p. from the Municipality of Petrovec shall be connected to the system that is managed by PCE Ilinden.



Picture 9. Water reservoir in i.p. Bunardzik

The system uses water from 2 wells in i.p. Jurumleri (Municipality of Gazi Baba), with capacity of 30 l/sec. Two more wells are under construction. The water is pressured with pumps to the joint reservoirs located in Bunardzik (2 reservoirs, capacity of 500 m³) and Ajvatovci (1 reservoir, capacity of 500 m³). The protection zone around the water reservoirs is not fenced, organized and protected, thus require undertaking of legal measures for overcoming the situation.

The Refinery "OKTA" uses local water supplying system (5 wells located in the vicinity of i.p. Jurumleri). Bujkovci, Miladinovci and the auto-base of "Mlaz" - Bogdanci are connected to this system, and Tekija i Deljadrovci are to be connected as well. Since June 2004, the responsibility for the OKTA water supplying system/system Miladinovci-Bujkovci (provides 1.710.000 m³ water/year), belongs to PCE Ilinden. Mrsevci uses local water supplying system (provides 90.000 m³ water/year), while the water supplying issue for Bucinci is still unresolved.

Most of the the distribution water supplying network in the inhabited places is completed (the Mralino network is under construction), and meets the needs of the population and industry.

There is local system for the former poultry farm "Belimbegovo", which is nowadays used by the coww farm and other objects within DZS "Ilinden".

The airport "Skopje" has its own local water supplying system.

The regional water supplying system provides water for 12.859 inhabitants, while the local systems and wells - for 3.035 inhabitants.

The total water consumption in the regional system for 2004 is about 650.000 m³/year. The distribution losses are about 160.000 m³/year (over 25%). The industry uses about 1.200.000 m³ water/year. The total water consumption in the Municipality is over 2.700.000 m³ water/year, thus the wastewater quantity is expected to be at least 1.800.000 m³/year.

B: Wastewater

On the territory of the Municipality of Ilinden there is no sewerage system for fecal and rainwater intake and drainage, and the wastewater problem of the households and business object is resolved individually.

The household wastewater is discharged in individual septic pit-holes in their own backyards, and from there on the land surface or the channels without prior treatment, directly polluting the underground waters. Most of the complaints in the Municipality reffer to the problems with the fecal sewerage network.



Picture 10. State of the drainage channels

The stock breeding generates significant ammount of wastewater.

The rainwaters go to the drainage channels, or, in case of more intensive rains, stay on the land surface, flooding large part of the Municipality area.

There are a number of capacities located on the territory of the Municipality that discharge wastewater in the drainage channels. Since there is no organized wastewater intake and no record on its quantity and contents, generation of at least 830.000 m³ industrial and 1.000.000 m³ household wastewater per year can be expected.

All the above is a serious source of environmental pollution, causing different contagious diseases. The suspicious quality of drinking water from the local water supplying systems and individual wells is a results of the conditions and potential cause for diseases of the population and the cattle.

The condition on the terrain makes obvious that the former discharge and irrigation system has been transformed into a wastewater collector system. The current situation induces urgent need of construction of sewerage network, with wastewater treatment plant and discharge of the treated wastewater in the drainage channel, as only recipient, which is planned in the Urban Plans.

The control over the industrial and household wastewater, supported by public awareness raising and control and strict enforcement of the penalty policy regarding the waste disposal, would partialy improve the situation. The next phase would be construction of a sewerage system according to the Urban plans..

There is a need of organizing the fecal and rain wastewater intake and drainage on a regional level. Therefore, an Agreement has been made between the Municipalities of Ilinden, Gazi Baba, Petrovec and Aracinovo for finding a permanent solution for the wastewater problem by finding possibilities for construction of regional separation sewerage system in these municipalities.

C: Protection against floods

As a result of the location and geomorphological characteristics of the area, the underground water level in the Municipality of Ilinden is closely related to the river Vardar water, following its regime, whereas the heavy rains flood areas from the Municipality, especially thye i.p. Ilinden, Marino, Kadino, Mralino and Miladinovci.



Picture 11. Flooded areas (2003 and 2006 y.) in i.p. Ilinden

There is a regional drainage system at the territory of the Municipality of Ilinden, taking part of the underground and rain water from the Municipalites of Aracinovo, Gazi Baba, Ilinden and Petrovec. The pump station located in Taor discharge these waters in the river Vardar.

The main channels maintenance is a responsibility of PE "Vodostopanstvo-Vardar" - Skopje, but it is not in a position to provide quality maintenance of the channels.

More than 70% of the channels are not functional due to the coverage with vegetation, communal and solid waste, additional loading with rain and wastewater, pollution with fecal wastewater, hazardous substances from the business subjects, etc. The trenches are completely covered, the outlets compeltely closed. Only the main channels are functioning with reduced flow.

Due to this situation, there are large ammounts of rain and surface water in the lower parts, disabling the flow, which actually starts off the flooding of part od the land, settlements and industrial objects in the ravine part of the Municipality.

The only river in the Municipality of Ilinden is Suva Reka. At sections, the river bed is not defined, resulting in frequent water outflow during heavy rains.

Since the drainage channels, including Suva Reka, are the only route of all waters to the main recipient, the river Vardar, it leads to stagnant waters on the surface, danger of flooding and marshing, additional underground water level raising and pollution, and additional environmental pollution.

The problem of non-functioning of the drainage system for the Skopje Valley has been addressed on inter-municipal level more than once. The best solution for the Municipalities covered by the system is regular cleaning and maintenance of the existing channel network and objects of the system, as well as completion of the construction of additional drainage channels

D: Water Quality

The drinking water quality of the regional and local water supplying system is regularly controlled (twice a month). Testing and control is carried out to the individual wells and pumps in the households as well (at least once a year).

1.01.2001-31.12.2002					
Measuring point	Number of samples	Physical-chemical		Bacteriological	
		Proper	Improper	Proper	Improper
Ajvatovci	7	5	2	4	3
Ilinden	67	65	2	61	6
Bujkovci	4	4	/	4	/
Bunardzik	8	8	/	6	2
Deljadrovci	8	8	/	5	3
Kadino	5	5	/	5	/
Marino	10	10	/	10	/
Miladinovci	9	8	1	8	1
Mralino	14	13	1	13	1
Mrsevci	28	28	/	26	2
Tekija	4	1	3	3	1
1.01.2003-31.12.2004					
Measuring point	Number of samples	Physical-chemical		Bacteriological	
		Proper	Improper	Proper	Improper
Ilinden	65	64	1	64	1
Kadino	5	5	/	5	/
Marino	5	4	1	4	1
Miladinovci	27	27	/	27	/
Mralino	5	4	1	5	/
Mrsevci	28	23	5	23	5
Tekija	12	9	3	4	8
1.01.2005-18.04.2005					
Ilinden	8	8	/	8	/
Mrsevci	10	6	4	9	1

Table 2. Drinking water safety according to the measuring of the P.H.O. Health Protection Institute - Skopje

The Table above shows that the pressure on the underground waters in the Municipality is alarming, and activities stated in the Conclusions should be undertaken.

EXISTING LEGISLATION

- Law on Waters (Official Gazette of RM no. 4/1998, with ammendments in Official Gazette of RM no. 42/2005)
- Law on Health Potection (Official Gazette of RM no.25/2000)
- Regulation on the Manner of Defining and Maintaining Protected Zones around the Drinking Water Springs/Wells
- Regulation on the Drinking Water Quality and Sanitary Safety
- Decree on Classification of Waters
- Decree on Categorisation of Water Flows and Lakes, Accumulations and Underground Waters
- Regulation on the Manner of Taking Samples and Methods of Labaratory Analysis of the Drinking Water

SUMMARY

Key problems regarding the quality of the environment:

- In the segment *water and quality of waters*

- Uncompleted sewerage network (households)
- Uncompleted sewerage network (industry)
- Uncompleted sewerage network (rain water)
- No functioning of the drainage channels
- Flooding of part of the objects and areas in the Municipality
- Insuficient quantity of drinking water
- Unprotected and undefined protected zones of the water springs/wells for the regional water supplying system, and the water reservoirs
- Uncompleted (and over-dimensioned) drinking water network
- Losses in the water supplying system
- Improper quality of water in the regional and local water supplying systems
- Irrational use of water, especially the water of highest quality for business and other purposes
- Incomplete monitoring of the surface, underground and wastewater quality and quantity

Priority activities for overcoming the key problems:

- In the segment *water and quality of waters*

- Construction of sewerage network
- Construction of communal and industrial wastewater treatment plants
- Completing the construction, cleaning and setting the drainage channels
- Defining, fencing and setting the protected zones of the drinking water springs/wells, and the water supplying system reservoirs
- Provision of additional sources of quality drinking water and proper protection of the springs/wells
- Completing the construction of the water distribution system for the inhabited places and reduction of the losses
- Rationalisation of the water consumption
- Construction of rain water sewerage network
- Introduction of monitoring monitoring of the surface and underground quality and quantity, monitoring of untreated and treated communal and industrial wastewater
- Raising the level od health protection regarding the quality of water
- Defining measures and regulations for the wastewater, educating and introducing them to the population and the business subjects, and strict application of the penalty provisions

III-1.2. WASTE MANAGEMENT

The present communal waste management in the Municipality of Ilinden is not on the required level. Only activities for communal waste collection, transport and disposal take place in the Municipality, while there are no activities for waste reduction and avoiding of the waste generation (primary selection) by the citizens and (secondary selection) by the Public Communal Enterprise.

Type of waste	Quantity (t/year)	Collection (t/year)	Transport (t/year)	Elimination (t/year)
Communal	3.055	3.000	3.000	3.000
Other non-hazardous waste	1.833	1.800	1.800	1.700
Industrial non-hazardous waste	500	500		
Inert waste	1.151	1.150	1.150	1.150
Hazardous waste				
Waste oil	20			
PCB/PCT				
Used batteries and accumulators	20	5	5	5
Medical waste	1	1	1	1
Electrical devices waste	25	5	5	5
Used vehicles	15	5	5	5
TOTAL	6.620	6.466	5.966	5.866

Table 3. Type and quantity of waste

The frequency of waste collection depends on the available mechanization (once a week from the households and some commercial-business objects; according to needs from the industrial objects). The collection system includes 4.400 households, 45 industrial and 160 commercial-business objects, and 10 health institutions.

The table above gives a review of the information by PCE "Ilinden" for the total amount of generated communal, industrial and other non-hazardous and inert waste, 90% of which is collected, transported and disposed at the "Drisla" landfill.

PCE "Ilinden" owns a re-loading station with capacity of 8,5 tons/day and 4-5 commercial vehicles of 60% utilization.



Picture 12. Landfill near i.p. Bujkovci and dump site near i.p. Miladinovci

The uncollected waste is disposed at public areas and locations not aimed for the purpose, thus creating illegal landfills/dump sites, which is a big problem. There are about 10-20 collectors of waste from such locations.

There is project documentation only for the Miladinovci landfill (near the road to "OKTA"), and activities should be undertaken to implement the adopted project for using this location as legal temporary landfill for inert and solid communal waste.

About 31% of the costs for waste management cover the waste collection from benefiteres, 13% the waste collection from the streets, 27% the transport, 29% the disposal at sanitary landfill.

The Municipality generates 18t of waste per day (47% communal, 23% other non-hazardous, 9% industrial non-hazardous, 21% inert waste).

Location	Type of waste	Area (m ²)
Jurija	Inert, communal and other non-hazardous waste	500
Trebesi	-//-	500
Dupka	-//-	1000
Miladinovci	-//-	1500
Pine wood Mrsevci	-//-	2000
Channel (bridge) near the Poultry farm	-//-	500
Railroad (Marino)	-//-	2000
Drma	-//-	1000
Ajvatovci	-//-	500
Deljadrovci	-//-	1000
Bujkovci (near economy/stopanstvo)	-//-	500
Church Kadino	-//-	500
Bujkovci-Miladinovci near the road to OKTA	-//-	2000
Along the road Miladinovci-Tekija	-//-	500
Drainage channels	-//-	2000

Table 4. *Illegal landfills and dump sites at the territory of the Municipality of Ilinden*

There is no local network for non-hazardous waste monitoring and management.

Out of the total quantity of waste (6.620t/year), about 3000 t/year are generated by the households and commercial-business objects, and about 30.000 t/year by the farming (feces and animal waste)o.

The vetereniranian waste disposed directly to the drainage channels and the environment is a special problem, presenting a danger of causing diseases.

The waste generation and treatment have negative environmental impact, especially on the quality of air, land, water, living world, human health and quality of life in general.

The waste disposal at illegal landfills/dump sites and the uncontrolled solid waste disposal in the drainage channels causes series of negative effects.

The improper waste management reduces the quality of life in the Municipality.

SUMMARY

Key problems regarding the quality of the environment:

- Uncontrolled waste disposal, especially in the drainage/irrigation channels system;
- Creation of illegal landfills/dump sites;
- Improper hazardous waste management;
- Non-separation of the waste;
- Large waste impact on the environment, especially the surface and underground waters and the human health;
- High waste transport and disposal costs.

Priority activities for overcoming the key problems:

- Increasing the number of waste collection and separation containers;
- Strict prohibition and penalty policy for uncontrolled waste disposal;
- Clearing the illegal landfills and re-cultivation of the land;
- Reduction of the waste transport and disposal costs;
- Reduction of the amount of generated waste;
- Special treatment of the hazardous waste, especially the oils;
- Continuous monitoring of the surface and underground waters.

III-1.3. AIR QUALITY

For air quality management, continuous monitoring of the concentration of pollutants in certain areas and assessment of the level of air pollution is required, and their comparison to the norms and limit values on air quality defined by law.

National air monitoring network is established in accordance with the **Law on Ambient Air Quality**, to provide constant ambient air quality monitoring as part of the environmental monitoring. According to the above, the Municipalities establish local air monitoring networks.



Picture 13. Emission of gasses from the Refinery OKTA

The air pollution is seasonal, related to the meteorological conditions and increased emission of harmful matters. Higher concentration of pollutants occur in the winter period (November-February), during the heating season, while in the non-heating season these values are far below the legal limits.

The meteorological-climate potential of air pollution defines the general character and intensity of atmospheric diffusion and dispersion of pollutants in certain environment/area, which are dependent on the concentration of pollutants in the air.

The basic objectives for establishing a monitoring system are:

- To define the level of air pollution and assess whether it meets the environmental standards;
- To undertake proper measures in alarming situations;
- To meet the requirements of the EU Directives;

DETAILED DESCRIPTION OF THE PLAN

The Refinery “OKTA“, companies with tinsmith trades and individual revettings are the polluters at the territory of the Municipality of Ilinden.

There is no measuring of the air quality at the territory of the Municipality of Ilinden, except for the internal stations in the vicinity of the Refinery “OKTA”. According to the data obtained from this measuring station, the concentrations of SO₂ and smoke are far below the maximum allowed concentration defined by norms.

Nevertheless, the reactions of the citizens living near OKTA show that there is presence of sulphure and oil odour and obscurrence, which is a result of the smoke coming from the OKTA chimney. During longer stay in the surroundings, eye and throat irritation and caughing can occur.

According to the realization of the local pediatartitian D-r Mitko Matenicarski, increase of the number of respiratory diseases and allergies have been evident in the past two years, especially in the children living near the Refinery.

This has induced the population to organize peaceful demonstrations and blockage of the Refinery entrance, in order to prevent the further pollution...

The table below shows only some of the objects and companies identified as potential air polluters in the Municipality of Ilinden:

Subjects	Polluting substances			
	SO ₂ [t/year]	CO [t/ year]	NO _x [t/ year]	Dust [t/ year]
OKTA	1840	96	293	
NIKAS	1.66	0.51	0.42	0.08
Hotel BELVI	0.9	0.02	0.2	0.23
Ambulance - Ilinden	0.8	0.6	0.35	0.615
PS R.Krle Mralino	0.33	0.24	0.16	0.15
PS R.Krle Kadino	0.11	0.046	0.09	0.05
PS R.Krle Bunardzik	0.13	0.23	0.15	

Table 5. Review of subjects and polluting substances

The data above do not show the complete quantity of polluters in the air in the Municipality, since not all objects, nor the pollution from the traffic and heating in the homes in the winter period are identified. Thereof, defining a measuring point/setting a monitoring station for the air pollution in the Municipality is required.

Impact from the traffic on the air quality

Skopje Valley (260m h.a.s.l.) has environmentally unaffordable climate characteristics. The temperature inversions in the Skopje Valley occur during the whole year, but the unaffordable manifestations are emphasized in the winter period.

The average air temperature is 12.5°C. In the winter period, there are frequent foggy days (about 63 per year). The winds blow from all directions. Such climate characteristics of the Skopje Valley, concentration of industrial capacities and population brings about to disturbtion of the prescribed standards on ambient air quality.

Emission of polluting substances from the traffic

A group of pollutants are emitted in the ambient air through the exhaust gasses system of the transport means: CO, VOC, NO₂, SPM, SO₂, lead compounds, and CO₂.

In the Republic of Macedonia the ambient air pollution from the traffic is mostly present in the bigger settlements. The Municipality of Ilinden may be polluted by the part of the highroad (30 km) and local roads with length of 202 km that pass on its territory.

Type of vehicle	Number of registered vehicles	Age of the vehicle	Passed km/day
Passenger vehicles	4 319	15 years	45 000 km/day
Busses	104	18 years	15.600 km/day (on local roads)
Load vehicles	116	30 years	
Motorcycles	/	/	
Special and pulling vehicles	73	over 8 years	10 km/day
Tractors and working vehicles	63	20 years	
Airplanes			

Table 6. Types and age of vehicles

The table shows that the vehicles at the territory of the Municipality of Ilinden are very old.

Public transport	Number of passengers	Passed km/year	Number of public transport vehicles
JSP-Skopje	800/day	54.750	80 starts 20 vehicles
Private transporters	800/day	54.750	24 starts 3 vehicles

Table 7. Public transport

The table above shows information on the bus lines and number of public transport vehicles, which, together with the other vehicles (passenger cars, freight vehicles) gives an image of the pollution from the traffic in the Municipality of Ilinden.

EMISSION OF CO ₂ AND NO _x FROM THE HIGHWAY TRAFFIC				
Number of vehicles per year	CO ₂ standard (g/km)	Amount of CO ₂	NO _x standard	Amount of NO _x
3.800.000	200/vehicle	26.600 t/year		7.700 t/year

Table 8. Emission of harmful gasses from the highway traffic

Impact from the Airport "Skopje"

The environmental impact assessment from the Airport "Skopje" (Elaborate) states the following:

- The air pollution from the airport is treated as complex problem including: exhaust gasses from plane engines, gas emission from the heating system, exhaust gasses from vehicles on the platform and the passenger vehicles;
- According to the Elaborate, the airport fulfills all the RM and ICAO (International Civil Aviation Organization) standards and legislation;
- The concentration of gas emission from the heating system does not exceed the legal norms;
- Since the frequency of flights is below the European average values, the noise is not considered as specific problem.

EXISTING LEGISLATION***"Law on Ambient Air Quality"****Official Gazette of RM no. 67/04***OBLIGATIONS FROM CONVENTIONS,
TREATIES, PROTOCOLS AND AGREEMENTS*****"Convention on Transboundary Air Pollution at Distances"*****SUMMARY****Key problems** regarding the quality of the environment:

- No Register and Cadastre of Polluters in the Municipality;
- No air quality monitoring station;
- No noise monitoring station;
- Impact from the traffic on the air quality;
- No proper register/record of diseases caused by the air pollution.

Priority activities for overcoming the key problems:

- Preparation of Register and Cadastre of Polluters in the Municipality;
- Setting an air quality monitoring station;
- Setting a noise monitoring station;
- Traffic impact assesment on the air quality;
- Protection of the population against the highway noise;
- Establishing quality medical data base of diseases caused by the air pollution;
- Development and updating of the legislation and required administrative and legal instruments for overcoming the air pollution in the inhabited places by adopting emission and imission normatives harmonized with the WHO and EU normatives, and recommendations and measures for their gradual implementation;
- Adoption of best available technologies and reconstruction of the existing ones from the aspect of limitation and reduction of the harmful substances emissions in the atmosphere;
- Introduction of strict control of the emissions through internal monitoring and supervision by authorized institutions;
- Urgent starting of the gasification system as substitution of the other energents (apart from the electrical power);
- Revision of the existing sanitary-protection objects - potential ambient air polluters; preparation of elaborates on sanitary-protected zones for industrial, business and trade objects/facilities; proposing measures for limitation and reduction of the harmful substances emissions in the atmosphere;
- Intensifying the cooperation between the government institutions and scientific-expert organisations with the environmental and other NGOs, and the media for obtaining relevant information on the air pollution (use of unleaded petrol and vehicles with cathalyst); active public participation.

III-1.4. SOIL AND LAND USE

The territory of the Municipality of Ilinden covers an area of 106,7 km², out of which 9.430 ha agricultural land. The arable land covers 6.980 ha (farming 4.500, gardening 1.000, fruit grows 500), pastures 2.400 ha and forests 50 ha. About 5-10 ha of the land is succumb to erosion. 3.000 ha of the land are state-owned, 6.430 ha are in private ownership.



Picture 14. Arable land in i.p. Ilinden

The table below gives a Review of the area in the Municipality of Ilinden regarding the land use.

No.	Inhabited place	Height above sea level (m)	Area (km ²)	Agricultural structure of the area (ha)			
				Total agricultural area	Arable land (fields, grapevines)	Pastures	Forests
1	Ilinden	230	14.5	1050	920	130	/
2	Marino	230	3.2	200	170	30	/
3	Kadino	225	9.6	830	770	60	/
4	Mralino	230	9.2	800	600	200	/
5	Bunardzik	270	4.9	400	380	18	2
6	Ajvatovci	320	9.1	860	500	340	20
7	Miladinovci	265	16.1	1460	750	690	20
8	Bujkovci	300	8.4	780	520	259	1
9	Mrsevci	330	7.9	730	620	107	3
10	Bucinci	370	6.8	665	450	213	2
11	Tekija	300	8.5	830	650	179	1
12	Deljadrovci	300	8.5	825	650	174	1
Total:			106.7	9430	6980	2400	50

Table 9. Review of the area in the Municipality of Ilinden regarding the land use

There is area of 1.000 m² for waste management capacities, 150 ha planned industrial area according to the Urban Plan, but only 10 ha are really used. The planned development of the road infrastructure is at 30 ha. There are presently two railroad stations - 0.06 ha and an airport - 2.5 ha; 30 km highroad, 40 km asphalted and 20 km uneasphalted local roads; tourist localities - 3 ha, religious objects - 15-20.000 m².

According to the data collected in 2004, about 350 kg/ha fertilizers were used at the arable areas (total of 2.443 t), 8,4 t herbicides and 5,6 t insecticides (at area of 6.980 ha), showing excessive use of fertilizers and pesticides in the Municipality. This results in intensive eutrophication of the drainage channels and biodiversity reduction. The saturation with harmful matters in the underground waters and soil in the region is exceeding the limits of the accumulation ability, having negative impact on the environment in longer terms. Thereof, the agriculture is a primary antropogenous activity with intensive environmental impact in the Municipality that needs priority resolving.

SUMMARY

Key problems regarding the quality of the environment:

- Intensive agriculture;
- Excessive use of fertilizers and pesticides;
- Intensive underground water and soil pollution;
- Destruction of the natural habitats and landscape;
- Reduction of the biological diversity;
- Long-term accumulation of harmful substances in the soil and potential source of pollution.

Priority activities for overcoming the key problems:

- Preparation of Plans for sustainable management of the land;
- Urgent reduction of the use of fertilizers and pesticides;
- Promotion of the natural habitats protection by paying the farmers for not cultivating the land;
- Implementation of sustainable agricultural practices;
- Implementation of agricultural eco-products.

III-1.5. NATURE

There is an area of 50 ha under forests in the Municipality of Ilinden (0.046% of the total area of the Municipality), 10 ha out of which are in private ownership, 40 ha are state-owned.



Picture 15. Pine wood in i.p. Mrsevci

Typical example of the nature disturbance in the Municipality of Ilinden is the uncontrolled wood cutting and forest destruction in the past from both fires and stock grazing. The forest fund is now 4-5 fold reduced, with only 50 ha under forests (0,04 % of the total area, or 106,7 km²).

Besides the obvious need for intensive forestation of large areas in the Municipality, the policy is present of planting non-native tree species, which completely change the natural characteristics of the region and stop the revitalisation of the native populations.

More than 2/3 of the territory of the Municipality of Ilinden is located in the ravine part of the Skopje Valley, previously intensively cultivated by the agriculture company "Skopsko Pole", divided nowadays in many different-sized parcels, with rare examples of non-cultivated fields and some vegetation around the drainage/irrigation channels (about 30 ha). The image of this part of the Municipality is complete antropogenisation of the natural space intersected with numerous facilities (airport, highway, railroad, industrial and residential objects) and small presence of natural vegetation.

The numerous channels and their surrounding are the possible centres of natural biodiversity in the Municipality. Unfortunately, due to their bad condition, the flora and fauna in them is limited to only few most resistant species, so there is no natural diverse of species. Urgent cleaning of the channel system is required, so that it can present a bio-corridor in the antropogenised environment and a place for the natural populations of the living organisms.

Since there is no continuous environmental monitoring, intensive pollution of the antropogenous activities (agricultural activities, air pollution, ommunal waste matters, hunting and other economic activities) takes place, imposing measures for reduction of the negative impacts. After that, the natural habitats, flora and fauna in the Municipality need to be revitalized in accordance with the adopted national legislation and the international agreements and conventions. Otherwise, the Municipality of Ilinden may become a typical antropogenous environment with high level of pollution of all the media, and no biological diversity.

EXISTING LEGISLATION

"Law on Nature Protection"

Official Gazette of RM no. 67/04

OBLIGATIONS FROM CONVENTIONS, TREATIES, PROTOCOLS AND AGREEMENTS

"Convention on Biological Diversity Protection" - Rio De Janeiro 1992;

"Convention on the European Wildlife and Natural Habitats Conservation" - Bern 1979

SUMMARY

Key problems regarding the quality of the environment:

- No List of the flora and fauna species in the Municipality;
- No continuous monitoring of the natural habitats and intensity of pollution;
- No proper forestation plan;
- No proper agriculture plan;
- No management of the drainage/irrigation channels system;
- Intensive pollution with waste (solid, communal, industrial waste) and illegal landfills.

Priority activities for overcoming the key problems:

- Preparation of List of the flora and fauna species in the Municipality;
- Establishing continuous monitoring of the biological diversity and intensity of pollution;
- Preparation of scientifically based forestation plan;
- Preparation of sustainable agriculture plan (especially with regard to the use of chemical protection devices, fertilizers and physical occupation of the natural habitats);
- Establishing proper control and management of the drainage/irrigation channels;
- Integration of the biological diversity protection in the sustainable development plans of the Municipality;
- Integration of the nature protection in the soil planning and management system (EIA studies);
- Pollution control, since the species and ecosystems protection depends directly on the pollution reduction in all the environmental media.

IV. DEFINED PRIORITIES

Based on the state of the environment assessment carried out for the territory of the Municipality of Ilinden and identification of the key problems, the questionnaire and the poll on the public opinion, a list was prepared on the environmental problems. The Local Committee made an evaluation and ranking/prioritisation of problems by applying certain criteria, upon which the Final List of priority problems at the territory of the Municipality of Ilinden was adopted:

1. No sewerage system for the wastewater, fecal and rain wastewater control and treatment
2. Pollution and reduced strait of the drainage channels (covered with waste and vegetation)
3. No organized landfill
4. Air pollution from OKTA, the mobile and other stationary polluters
5. No air quality monitoring system (pollution and noise)
6. No organized recreational - excursion centre
7. No waste selection (primary selection) and waste recycling
8. Waste disposal at public areas and creation of dump sites
9. No Plan for Nature Protection, Conservation and Maintenance
10. Agriculatural land that is usurped with illegal objects/facilities
11. No Register and Cadastre of Polluters with data on the industrial and business subjects and their impact on the environment and human health
12. Excessive use of artificial fertilizers and chemical protection devices in the agriculture
13. No NGO and citizens' associations to control the state of the environment and the environmental awareness raising

V. PLAN FOR LEAP IMPLEMENTATION

The Local committee has, on the basis of the set tasks: state of the environment assessment at the territory of the Municipality of Ilinden, identification of the problems, and defining the priority problems, joined all the established and planned elements in the Plan for LEAP Implementation for the Municipality of Ilinden, which is the action and dynamic part of the Plan presenting the overall work and activity of the Local Committee.

The Plan for LEAP Implementation is comprised of the following elements:

- Objectives
- Tasks
- Actions
- Responsible institution
- Implementation period
- Planned budget
- Possible sources of financing

Priority 1: No sewerage system for the wastewater, sewerage and rain wastewater intake and treatment

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
System for the sewerage and rain wastewater intake, treatment and transfer to the recipient	- Study on the sewerage system(s) for wastewater intake at the territory of the Municipality of Ilinden;	- Preparation of a Study on the sewerage system(s) for wastewater and Investment-technical documentation on the construction of wastewater intake and treatment plants at the territory of the Municipality of Ilinden	Municipality	2006	20 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	- Investment-technical documentation on the construction of wastewater treatment plants;					
	- Main projects for wastewater intake at the territory of the Municipality of Ilinden;	- Preparation of main projects for the sewerage system(s) for wastewater intake at the territory of the Municipality of Ilinden (according to the priority areas from the Study on sewerage system(s))	Municipality	2007	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	- Sewerage system(s) for wastewater intake and transfer to the recipient;	- Construction of Sewerage system(s) and Treatment plants for wastewater intake and transfer to the recipient;	Municipality	2007-2012	Over 500 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources Loans, citizen's contribution, etc.
	- Wastewater treatment plants;					

Priority 2: Pollution and reduced strait of the drainage channels (covered with waste and vegetation)

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Strait and irrigation water from the drainage channels	- Clean channels for de-watering (from vegetation and waste) and provided strait and possibility for rain water and high underground water intake;	- Finding a model for further maintenance of the channels	Municipality Local communities PCE	2006-2007		
		- Cleaning the main channels for de-watering from vegetation and waste;	PCE	2006-2007	100 000-500 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
Protection against floods and land moorishing		- Educating the population on the channels maintenance	NGO	2006-2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Foreign donors
		- Initiative for international cooperation	Municipality	2006		
		- Cleaning, restoration and reconstruction of the smaller channels and trenches;	PCE	2007-2008	100 000-500 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Construction of new channels and trenches where necessary	PCE	2008-2010	100 000-500 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 3: No organized landfill

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Landfill for the communal and inert solid waste	Constructed temporary disposal site for the communal waste by waste selection and recycling	- Preparation of Environment Impact Assessment Study and Project for the disposal site for communal and inert solid waste	Municipality of Ilinden	Study has been prepared		
		- Preparation of a Project for Wastewater treatment plant	Municipality of Ilinden	2006	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Setting the terrain	Municipality of Ilinden	2006 - 2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Fencing the area	Municipality of Ilinden	2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Construction of disposal site for communal and inert solid waste	Municipality of Ilinden	2006-2010	100 000-500 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 4: Air pollution from OKTA, the mobile and other stationary polluters

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Reduced air pollution from OKTA	Harmful gasses emission to be kept in the allowed limits	<ul style="list-style-type: none"> - Construction of facility for treatment of the harmful gasses from OKTA 	OKTA Municipality MoEPP	2006-2007	Over 500 000 €	- OKTA
Reduced air pollution from the mobile and other stationary polluters	Harmful gasses emission to be kept in the allowed limits	<ul style="list-style-type: none"> - Forestation and planting of the bare areas 	Municipality	2006-2012	10 000-50 000 €	<ul style="list-style-type: none"> - Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		<ul style="list-style-type: none"> - Preparation of a map with zones of ambient air pollution 	Municipality	2006-2008	10 000-50 000 €	<ul style="list-style-type: none"> - Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		<ul style="list-style-type: none"> - Proposal measures for improving the air quality, by applying the Laws, the “polluter pays“ principle, prohibitions and penalties 	Municipality	2006-2007		
		<ul style="list-style-type: none"> - Preparation of a Programme for air pollution reduction and ambient air quality improvement 	Municipality	2006-2007	Up to 10 000 €	<ul style="list-style-type: none"> - Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		<ul style="list-style-type: none"> - Campaign for public awareness raising: Reduction of the air pollution and use of alternative heating systems 	Municipality NVO	2006-2007	Up to 10 000 €	<ul style="list-style-type: none"> - Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 5: No air quality monitoring system (pollution and noise)

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Monitoring of the level of air pollution	- Periodic measuring and monitoring of the level of air pollution at the territory of the Municipality	- Measuring and monitoring of the level of air pollution at the territory of the Municipality	Municipality	2006-2012	Up to 10 000€	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
Monitoring of the level of noise	- Periodic measuring and monitoring of the level of noise at the territory of the Municipality	- Measuring and monitoring of the level of noise at the territory of the Municipality	Municipality	2006-2012	Up to 10 000€	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 6: No organized recreational - excursion centre

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Setting of a recreational - excursion centre		- Selection of location	Municipality	2006		
		- Finding a model for further maintenance and management of the recreational - excursion centre	Municipality	2006-2007		
	Setting an area for recreational - excursion centre	- Preparation of a project	Municipality	2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Construction of recreational - excursion centre	Municipality	2007-2012	50 000-100 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 7: No waste selection (primary selection) and waste recycling

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Waste selection (primary selection)	Study on Waste selection	- Preparation of a Study on Waste selection	Municipality	2006	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	Public awareness raising	Public awareness raising campaign on the waste selection (composting)	Municipality NGO	2006-2012	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	Education	- Training, lectures, presentations, etc. for different target groups (farmers, students, housewives) - Training for the local self-government educators on the waste selection	Municipality	2006-2012	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	Equipping	- Provision of equipment for waste selection	Municipality	2006-2012	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	Study on Waste recycling	- Finding a model for the recycling management	Municipality	2006-2010	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
Waste recycling	Study on Waste recycling	- Preparation of a Study on Waste recycling	Municipality	2007-2008	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	Public awareness raising	- Public awareness raising campaign for waste recycling	Municipality NGO	2006-2012	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	Equipping	- Provision of equipment for waste recycling	Municipality	2007-2010	50 000-100 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 8: Waste disposal at public areas and creation of dump sites

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Reduced waste disposal at public areas and creation of illegal landfills and dump sites	To prevent the waste disposal at public areas and creation of illegal landfills and dump sites	- Public awareness raising campaign	Municipality NGO PCE	2007-2010	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Enforcement of the penalty provisions against the unconscious citizens	Municipality; Communal Inspector; Environmental Inspector	Continuous		
		- Cleaning of the illegal landfills and dump sites and revitalization (re-cultivation) of the terrain	Municipality PCE	2006-2010	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Setting information boards	Municipality	2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 9: No Plan for Nature Protection, Conservation and Maintenance

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Nature protection, conservation and maintenance	Plan for Nature protection, conservation and maintenance	- Preparation of a Plan for Nature protection, conservation and maintenance	Municipality	2007-2008	10 000-50 000€	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Staff training for nature protection (inspection service)	Municipality	2007	Up to 10 000€	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Implementation of the Plan for Nature protection, conservation and maintenance	Municipality Environmental Inspector	2008-2012		
		- Public awareness raising campaign on nature protection (training, seminars, tribunals, workshops, public discussions)	Municipality, NGO	2007	Up to 10 000€	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 10: Usurpation of the agricultural land with illegal objects/facilities

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Stop the usurpation of the agricultural land with illegal objects/facilities	- Complete urbanisation of the settlements	- Keeping record of all the constructed objects and their inclusion in the urban plans	Municipality Urbanism Department	2006	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	- Defining construction, agricultural, forest and other areas/regions	- Strict control and penalty provisions/measures for the offenders	Municipality; Finances Department and Tax Department	2006-20011	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
	- Preparation of urban plans	- Preparation of GUP and DUP for all the settlements	Municipality, Urbanism Department	2006-2011	500 € / Ha. (Over 500 000€)	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Economic - stimulative measures, benefit of issuing the construction permits	Municipality, Urbanism Department	2006-2011		

Priority 11: No Register and Cadastre of Polluters with data on the industrial and business subjects and their impact on the environment and human health

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Established Register and Cadastre of Polluters	- Keeping records (inventory) of all the legal and physical entities - polluters at the territory of the Municipality	- Establishing an Environmental Department (Office) in the Municipality	Municipality	2006		
		- Preparation of Register and Cadastre of Polluters for the territory of the Municipality	Municipality	2007-2009	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Updating of the records	Municipality	2007-2011	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Issuing B Integrated and EIA Permits	Municipality	2007		

Priority 12: Excessive use of artificial fertilizers and chemical protection devices in the agriculture

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Reduced use of artificial fertilizers and chemical protection devices	- Education of farmers on the reduced use of artificial fertilizers and increased use of organic fertilizers and other alternative devices	- Enforcement, lectures, trainings, seminars, counseling, etc. regarding the use of artificial fertilizers and chemical protection devices in the agriculture	Municipality NGO	2006-2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Campaign on the use of organic fertilizers	Municipality NGO	2006-2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Introduction of composting: Training Equipping	Municipality NGO	2007-2011	10 000-50 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Introduction of benefits for using organic natural fertilizers	Municipality	2006-2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Control of the use of artificial fertilizers	Municipality	2007-2008	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Testing the level of soil pollution (monitoring)	Municipality	2007-2011	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

Priority 13: No NGO and citizens' associations to control the state of the environment and the environmental awareness raising

Objectives	Tasks	Actions	Responsible institution	Implementation period	Planned budget	Possible sources of financing
Establish NGOs for environment protection	- Starting an initiative	- Informing the citizens on the possibilities and benefits from the NGO establishment	Municipality, Public Relations Department	2006	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Programme on financial support of the NGOs, citizens' associations, citizens' initiatives at the territory of the Municipality	Municipality	2006-2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources
		- Establishing a Centre (office) for NGO functioning	Municipality	2006-2007	Up to 10 000 €	- Budget of the Municipality of Ilinden - Subsidies - Donations - Other sources

