

**REPUBLIC OF MACEDONIA**  
**Ministry of defence**  
**Sector for civil protection**

**R E P O R T**  
**On the level of readiness and prevention from accidents**

**Skopje, January 2001**

# C O N T E N T

1. Introduction
2. General characteristics of the territory of Republic of Macedonia
  - 2.1. Relief
    - 2.1.1. Western Macedonia
    - 2.1.2. The region following the flow of the river Vardar (Povardarie)
    - 2.1.3. Eastern Macedonia
  - 2.2. Hydrographical net
  - 2.3. Climatic conditions
  - 2.4. Communal infrastructure
  - 2.5. Infrastructure in the traffic area
  - 2.6. The environment and its protection
3. Evaluation of the imperilment
  - 3.1. Seismic activity and evaluation of the imperilment from it
  - 3.2. Imperilment from floods
  - 3.3. Imperilment from the destruction of high flood-gates
  - 3.4. Imperilment from high snowy drifts
  - 3.5. Imperilment from crumbling and sliding of the earth
  - 3.6. Imperilment from fires and explosions
  - 3.7. Imperilment from the break of epidemics of contagious diseases
  - 3.8. Imperilment from contagious diseases among the animals
  - 3.9. Imperilment from vegetable diseases and pests
  - 3.10. Imperilment from accidents with poisonous and dangerous substances
4. National politics, plans and projects
5. Governmental structures (for dealing with accidents)
6. Non-governmental organizations
7. Material and human resources
8. International and national organizations which offer help
9. Connections outside the borders of the country
10. Conclusion

## **1. Introduction**

If we consider the elementary accidents and the other accidents of a higher degree which happened on the territory of the Republic of Macedonia in the past, we may conclude that they were caused by natural forces. But in the last period, because of the intense economic development, and in the last years, because of the expanding of the activities in the field of the economy, the situation in this area was not followed with the application of appropriate measures of protection.

Bearing this fact in mind, there arises the need for understanding the situation and the problems in the field of materialization of the protection of the population and the material goods in crisis situations (according to article no.125 from the Constitution of the Republic of Macedonia which says that a crisis situation is when great natural disasters or epidemics happen) and this is to be done, above all, in the field of preventive measures of protection, as well as the degree of readiness of the organized forces of civil protection and the other authorities and organizations, whose main activity is in the function of protection and rescuing.

## **2. General characteristics**

### **1. Geographical view on the territory of the Republic of Macedonia**

The Republic of Macedonia is situated in the southern part of the Balkan Peninsula and its territory spreads over 25, 713 m<sup>2</sup>.

2.1. **Relief** – In greater part of the country there is a mountain relief and the mountain ranges mostly are in the north-western part. The mountains in Macedonia are divided among themselves with spacious valleys and river basins. The geological evolution was followed with tectonic motions which were the cause why some of the terrains are intensively elevated and why some of them are relatively lower. The mountains take up 43.7% or 11,044 km<sup>2</sup>, the hills 38.63% or 9,769 km<sup>2</sup>, while the fields and the valleys take up 19.7% or 4,900 km<sup>2</sup>.

In Macedonia, three large morphological zones can be pointed out: Western Macedonia, the Povardarie (or the region following the course of the river Vardar) and Eastern Macedonia.

2.1.1. **Western Macedonia** – Morphologically represented with considerable mountain relief, where the mountain peaks reach heights over 2,500 m and the river valleys most often have a shape of a ravine. Korab is the highest peak reaching a height of 2,764 m .

2.1.2. **The Povardarie** – In this region there are mostly plains and valleys, such as the Skopje valley, the Ovcepole valley, The Tikves valley and the Gevgelija valley. These valleys either gradually pass one into another or are separated with relatively low mountains and hills.

The mountains in this zone are not so wooded which is the reason why some of their sides are prone to erosion.

2.1.3. **Eastern Macedonia** – This relief zone spreads eastward from the Povardarie zone up to the Bulgarian border. A general characteristic of these mountains is that they are not very wooded, they are rounded and they are prone to erosion.

## **2.2. Hydrographical net**

As regards the hydrographical characteristics, The Republic of Macedonia is placed among those regions with relatively satisfactory water resources (subterranean waters, springs, water flows and rains), but with considerable inequality in their distribution.

All of the water resources are not salty waters and they consist of the waters of the interflowing of the Vardar, the Strumica and the Crni Drim.

From a hydrographical point of view, the net of the water flows is almost symmetrically distributed following the course of the river Vardar as a centre.

The total length of the rivers and the subsidiary water flows is 2,500 km and of flashes is 3,000 km or 190 km per 1 km<sup>2</sup>, which shows that we have a very expanded hydrographical net.

Besides this, in Macedonia there are 3 natural lakes and 69 artificial accumulations, twenty of which are with high flood-gates.

## **2.3. Climatic conditions**

The mediterranean and the continental climate with their variations are present in Macedonia. The average yearly temperatures are from 0<sup>0</sup> on the high mountains in Western Macedonia up to 14.5<sup>0</sup> in the low part of the Povardarie region.

The territory of the Republic of Macedonia is not characterized with strong winds and most often they have two directions of blowing: northward and southward direction or the directions are most often modified with the direction of spreading of the river valleys and the mountains.

## **2.4. Communal infrastructure**

In our country there are several types of constructions present, but the one which is exploited the most is the low construction. The high constructions are present in the bigger cities. The high constructions are characterized with seismic building, but also in the individual constructions the needed level of security is present.

The streets and the squares in the cities and towns, with the exception of those in Skopje, are not big enough for a greater degree of communication.

About 50% of the dwelling places are old buildings and houses made of thin and flammable building material and they are located in the older parts of the cities and towns and the villages and this means that they are not resistant enough so they can be ruined easily, they can catch fire, the electric installations can be destroyed easily.

The water supply goes through town-waterworks, regional and local waterworks and in the habitations in the mountains from natural springs.

The industrious waste waters, with small exceptions, are dropped as insufficiently purified into the water flows or into the city canalisations.

## **2.5. Infrastructure in the traffic area**

In the field of traffic and connections, the infrastructure consists of the built facilities (streets and means of connections) for realizing the road traffic, the railway traffic, the air traffic, the lake traffic and the postal traffic.

In the Republic of Macedonia 12,000 km of roads were built, from which: 909 km of highways, 3,384 km of regional roads and 7,816 km of local roads.

The railway traffic is realized on rails with total length of 650 km, from which 393 km are main rails for international traffic and 257 km are subsidiary rails.

The larger part of our Republic is connected by subterranean cable lines, whereas the rest of the country uses aboveground wire lines.

To satisfy the needs of the air traffic two airports have been built in our country (Skopje and Ohrid), as well as 12 facilities with concrete tracks for landing of the planes for the needs of the agricultural and sports aviation.

## **2.6. The environment and its protection**

We can categorize the territory of the Republic of Macedonia, from the aspect of the quality of the environment, as satisfactory, in a relatively good condition.

This comes from the small density of the population and the relatively small urban and industrious development which is characterized with several bigger cities and about ten industrious objects as potential sources of dangerous contamination.

As far as the technical and technological accidents are concerned, they have happened in our country in a small quantity and they have been of a local character. We can notice air and water contamination in the bigger cities and river flows, primarily because of the old age of the production facilities and the transport means, i.e. out-of-date and outlived machines, instruments and technologies. The problem with the communal contamination is also present, but because of its character and the everyday raising of the public consciousness, through modern organization and management, we expect it, with international help, to be overcome soon.

The situation with the contamination and the protection of the environment in our country is a category which is guaranteed with the Constitution and it is constantly followed and analysed. But, with the passing of the Law for protection and promotion of the environment and the nature and other laws and acts (from 1996 up to now) and the founding of the Ministry for environment (1998), in the Republic of Macedonia the relation and the management with the environment started to grow and to be intensified and regulated through the principles and the regulations of international contracts and conventions, all this aimed towards providing conditions for a good-quality environment on local, regional and global level.

The development of the Republic of Macedonia in the future will be organized and regulated by the standards of sustainable development, with a rational organization and usage of the space and its natural and created resources and potentials which can be either renewed or not.

In our country, for following, controlling and dealing with the situation and the conditions in the environment, besides the Ministry in charge of this, a contribution and a significant role also have the other Ministries, expert organizations and institutions for scientific research. They have to represent, in the future, an integral net which through an efficient coordination and exchange of data using up-to-date technical and technological solutions in the projects and in the legal and normative sphere will provide instruments for the creation of modern and safe life and work.

In the course of these activities and efforts for providing a good-quality environment, a great role and a life-force, primarily in the raising of the public consciousness, represent the ecological non-governmental organizations.

In the Republic of Macedonia, in this moment, many projects are being realized concerning the question of environment and their aim is to improve the present situation which in the past was not treated appropriately and carefully. Besides these projects, the systems for permanent and integral monitoring of the condition of the air, the water and the soil are being renovated and upgraded, so in recent times these should be an efficient

sources of data about the normal and the incidental condition of the surrounding where we live and work.

To make this monitoring system complete and final, as a system from which we will obtain elementary data about the situation with the environment and to be alarmed if there are any technical and technological accidents, our country receives and expects the needed technical and financial help and support from the developed countries of the international community.

### **3. Evaluation of the imperilment**

#### **3.1. Seismic activity and evaluation of the imperilment from earthquakes**

According to the earthquakes that have already happened and the expected seismic activity in the future Macedonia is the most active region on the Balkan and further in the Mediterranean. We must put a special emphasis on the high frequency of disastrous earthquakes. In the last 100 years, in Macedonia there were 12 disastrous earthquakes solely from its own seismic zones.

According to the expected intensities by the scale of Mercal, 52.3% of the inhabited places in Macedonia belong to the IX and X degree of seismic activities, 40% to the VIII and 7.7% to the VII degree.

The disastrous earthquake in 1963 took 1,070 human lives and the harm that was done then comprised 15% of the national income of the then-existing Yugoslavia or 302.4% of the total national income of Macedonia for the same year.

The quantity of the consequences was so large because of the absence of preventive measures and the inappropriate application of the technical regulative.

As a conclusion about the seismic activity and the consequences from the earthquakes that have already happened and from those that are expected to happen in the future, we may say that the seismic activity is very high and with the fast economic development of our country the seismic risk has risen very much.

With the purpose of overcoming the consequences from the activity of the earthquakes, in the Republic of Macedonia a law was passed for seismic construction of all kinds of buildings and a chart for earthquake zones.

Besides this, in the course of making the urbanite plans, elements which are vital for the protection from elementary disasters and especially earthquakes are incorporated in them.

#### **3.2. Imperilment from floods**

Considering the specific type of relief and the topographic, geographic and climatic conditions in our country, the floods as a type of natural disasters, very often happen in our country.

The data collected during the previous years point to the fact that all the water flows, including the river Vardar, have a flood character and are prone to floods, a fact which makes the defence and the protection very complicated and specific.

In the course of the 20<sup>th</sup> century, in Macedonia five major floods have happened: in 1916, 1935, 1937, 1962 and 1979.

The average rainfalls per year on the territory of the Republic of Macedonia are 745 mm and in the river basins of the Vardar 708 mm, the Crni Drim 733 mm and the Strumica 791 mm.

The following regions are flooded from the waters: low Povardarie, Strumica field, Polog, Struga field and Prespa field.

Due to the coming out of the waters from the river basins over 100,000 hectares of fertile soil are endangered.

When speaking about this issue, it is worth mentioning that in the amortization of the strength of the flood wave a great role play the built accumulations. But, on the other hand, in the case of their violent destruction, it will have enormous consequences for the people and the material goods which are situated on the course of the accumulations.

With the purpose of lessening the consequences, 264 km of defensive flood-gates and walls and about 156 km of regular beds have been built. Besides these, over 250 flashes from the total amount of 1,590 have been cultivated with different kinds of biological things.

Having in mind the complexity of the problem of the defence and the protection from floods, the present organization and equipment of the companies that deal with water supply is not satisfactory.

### **3.3. Imperilment from the destruction of high flood-gates**

As regards the defence, the high flood-gates and their accumulations have various meanings. One of them is supplying water for the population and the economic activities, but on the other hand, there is the potential danger, because of the great consequences which would be present in the case of destruction of the flood-gates in the endangered regions situated on the course of the accumulations.

In Macedonia, 69 flood-gates have been built so far, 21 of which are classified as high flood-gates according to the current regulations (one flood-gate is being built at this moment).

According to the estimations about the sudden destruction of the high flood-gates, the consequences would be the following:

- Flooding of about 88,000 hectares, endangering the lives of about 122,000 people, and also to this number we should add the number of people that would be harmed if the “Kozjak” flood-gate (which is now being built) is destroyed;
- Disabling 33 economic facilities (factories, mines, thermal power stations, etc)
- Flooding, burying under, destroying or disabling in any other way 360 km of roads with a modern roadway and 119 km of railways.

In case of sudden destroying of the flood-gates in Macedonia, the flooding waves would not enter and have any influence in the neighbouring countries, except for the flood-gates in Western Macedonia whose destruction would have consequences in Albania.

The situation with the high flood-gates is the following: no analysis about the consequences for three flood-gates has been made, marking of the highest points up to which the flood waves would reach have been made on four flood-gates, radio and phone connections have been set on all the flood-gates, all the flood-gates have plans for informing the population, but all of them lack devices for automatic alarming.

The companies that deal with the high flood-gates make systematic monitoring of the flood-gates and the accumulations.

### **3.4. Imperilment from high snowy drifts**

According to the statistic data, the average number of days under a snowy cover higher than 1 cm ranges between 10 days in the region of Gevgelija, Kochani and Strumica, 20-40 days in the region of Skopje, Kumanovo, Pelagonija, Ohrid and Prespa and up to 210 days in the mountain regions (Pelister, Shara and Jakupica).

The average maximal height of the snowy cover ranges between 20 cm in the Povardarie region, 30 cm in Pelagonija and 150-200 cm on the high mountains.

The snowy drifts happen very often on the highway at Katlanovo, on the road Shtip-Veles at Saramzalino and Lozovo, Gradsko-Prilep, Bitola- Resen and Kumanovo-Sveti Nikole.

They also happen on the Novo Selo-Mavrovo-Debar road in the training centres in the Bunec village, the "Mavrovo" flood-gate, "St. Jovan Bigorski" the monastery and the Kosovrasti village.

On the railway, snowy drifts happen at the village Tabanovce-Kumanovo-Skopje, Veles-Kochani, Kumanovo-Beljakovce. The railway is sufficiently prepared and equipped for dealing with the drifts.

In the postal traffic, there is damage only in the air lines.

In the wire electric net, there is damage from snowy drifts on the Vrutok-Shpilje conduit on a part of it long 6 km on the Bistra mountain.

The conduits Vrutok-Skopje, Kavadarci-Prilep, Shtip-Veles, Bitola-the border with Greece and Bitola-Dubrovo are endangered from storms.

### **3.5. Imperilment from crumbling and sliding of the earth**

From sliding of the earth, the most endangered roads are Tetovo-Shapka, Lakovica-Negotino, Makedonska Kamenica-Delchevo, Krushevo-Sladuevo, Debar-Struga and the Kumanovo-Veles highway.

### **3.6. Imperilment from fires and explosions**

On the territory of the Republic of Macedonia basically there are two main types of risk of fires. These are the potential possibilities of setting different objects on fire and fires on open space (woods, national parks, pastures, agricultural areas, etc.). This distinction is made because of their characteristics with regard to the possibility of them endangering human lives, material goods, the distinctive equipment for their extinguishing, the necessary infrastructure for extinguishing the fires, etc.

The greatest risk is in the industrious facilities, especially in the chemical and the petrochemical industry in the bigger cities, where in the case of a fire, in short time it can expand itself and have major consequences. Then there are the public objects where there is a large number of people present at the same time, then the buildings and especially the skyscrapers, etc.

The most characteristic thing about this kind of fires is that their extinguishing lasts relatively shortly, approximately three hours, in which period of time the fire is either localized or the object is ruined and there are possible human casualties. In the process of extinguishing the fire, the regular fire-brigades take part as forces whose mobilization should not be more than one hour long.

Fires in facilities which would be greater than the capacities for their extinguishing might happen in a situation of an earthquake when there would happen several simultaneous fires.

Bearing in mind the climatic conditions in the Republic of Macedonia, the types of vegetative flammable material and other factors, we can say that there are great potential possibilities for the occurrence of fires in the woods and other open spaces which would cause great material, ecologic and other kinds of damage. Thus, only in 2000, over 35,000 hectares were burned. For the extinguishing of these fires which may last several days, besides the insufficient motivation of the human potential, a great handicap is the fact that there are not special vehicles and air vehicles for this purpose. The extinguishing of these fires oftentimes is problematic when they are fires on the border regions with the neighbouring countries, because of the activities in extinguishing which are not coordinated and synchronized.

### **3.7. Imperilment from the break of epidemics of contagious diseases**

The current situation in the break and the spread of contagious diseases, the water supply, the urbanization of the inhabited places, the degree of health education of the population and the overall development of the preventive medical protection have a great influence on the improved sanitary and hygienic condition, but still the epidemiological condition is constantly insecure. This statement comes from the fact that there is still a large number of sick people with contagious diseases and there is occasional occurrence of epidemics of a smaller or larger quantity, then the still unsolved supply with healthy and clean water for a part of the population, the non-hygienic disposal of the waste materials, etc.

In the last period of 20 years, the following contagious diseases were present mostly: flu, contagious jaundice, food poisoning, etc, some of which appeared in the form of smaller or larger epidemics. Besides this, the geographic position of the Republic of Macedonia, the climatic factor, the considerable migratory movements (economic, touristy, religious, etc.) and other factors provide the possibilities for the occurrence of contagious diseases and their expanding into epidemics.

### **3.8. Imperilment from contagious diseases among the animals**

The geographic position, the configuration of the terrain, the climatic conditions, the way of breeding and feeding the domestic animals can all be a reason for the occurrence of contagious diseases, such as: plague at the pigs and the poultry, foot and mouth disease, leukaemia at the bulls, etc. With the introduction of noble races of cattle, poultry and other animals and with their concentration in the form of great agglomerations, a new pathology was introduced characteristic for these animals which requires efforts for improving the staff and equipping a veterinarian service both in a laboratory and outdoors on the terrain. In the last period, a huge problem was the small number of veterinarian staff, but with the opening of the Veterinarian Faculty in Skopje, this situation has considerably improved.

### **3.9. Imperilment from vegetable diseases and pests**

The Republic of Macedonia has approximately 660,000 hectares of a fertile soil on which people grow a large number of corn and industrious cultures, as well as fruit plants and the woods which occupy an area of about 900,000 hectares. In these conditions, it is very likely that a large number of vegetable diseases and pests will occur which may cause great material damage. According to the situation so far, we can mention the

following diseases and pests which are more significant from an economic point of view: grey rotting of grapes, curling of the leaves of the peach trees, grasshoppers, etc.

The results from the dealing with the vegetable diseases and pests can be various which directly depends upon the degree of involvement of experts on the terrain and the equipment with substances for protection of the plants. It is generally agreed that the experts from the scientific institutions and the expert services in the enterprises, in a situation with provided material conditions, chemical preparations, mechanization, etc., are capable of dealing successfully with the present problems in the field of the protection of the plants.

### 3.10. **Imperilment from accidents with poisonous and dangerous substances**

The Republic of Macedonia has modest facilities in the area of the chemical industry, but having in mind the size of the territory and their location, in case of accidents, there is a possibility of threatening the lives and the health of people and contamination of the environment (the water, the air, the soil).

The major industrious facilities which cause consequences for the lives of the people and the environment are the factory AD "Ohis" – Skopje (chlorine, vinyl chloride) and the metallurgic combine "Zletovo" – the department "Chemistry" (ammoniac, sulphurous and phosphorus acid).

Besides these, all the bigger industrious facilities have smaller or greater quantities of various chemical substances which can damage the health of people and can harm the environment, but they are most often with an internal and local character.

Also, we have to bear in mind the fact that there is international transport going on through the territory of the Republic of Macedonia (railway transport, road transport) by which different kinds of chemicals are transported and in case of accidents they can be released into the air and can endanger the lives of the people and the environment.

## 4. **National politics, plans and projects**

The authorities (the Ministries), according to the type of the accident, are competent for the preventive protection from accidents in the Republic of Macedonia.

In case of occurrence of natural disasters, epidemics or technological accidents, the competent Ministries are responsible for dealing with the consequences, crisis headquarters are formed by the authorities or the Republic forces for civil protection are engaged by a decision on the part of the Government (republic and regional headquarters and units for civil protection). Having been engaged, the Republic forces for civil protection take over the role of a coordinator among all the participants in the activities for protection and rescuing from the existing accident.

With that purpose, the Ministries have plans for action in case of accidents in the area of competence that they have.

The Republic headquarters for civil protection has a Plan for action in case of a major crisis situation for all the kinds of expected accidents and it can be involved directly or just several regional headquarters for civil protection can be engaged in dealing with the accidents in the endangered regions.

This issue has been regulated with several laws for different kinds of accidents and a number of acts and regulations (a Law for urbanite planning, a Law for investing construction, a Law for the waters, a Law for protection from fires and explosions, a Law for health protection, a Law for protection of the environment, a Law for the protection of the plants, etc.) as well as a Law for protection from elementary disasters in which are

defined all the types of accidents, under whose authorities they are and what should be done in case of occurring one. This law was passed in 1977, when the Republic of Macedonia was a part of the Social Federative Republic of Yugoslavia and this law is, in organizational point of view, in collision with the present social system of Macedonia.

When speaking about prevention, we can say that the occurrence of the accidents is followed and monitored by a number of expert organizations and institutions that work within the appropriate Ministries or the subjects that deal with the production facilities.

In our Ministry of Defence functions a Republic centre for monitoring, informing and alarming. This centre is organized also in most of the villages.

The reporting is done by USW radio system and phone connections.

The Ministries and the regular services whose job is in the function of the protection and rescuing, within the frames of their regular work make appropriate preparations of their staff for dealing with the accidents which are under their authority.

Besides this, the Republic forces for civil protection are trained and prepared for dealing with the accidents.

Within the frames of the educational system, in the secondary schools and the universities, during the course of the subject Defence and protection, the students learn about different kinds of accidents and also they learn about the measures that should be taken for protection and rescuing from them.

## **5. Governmental structures**

The authorities which are competent for dealing with different kinds of accidents in the Republic of Macedonia are:

- the Ministry of Agriculture, Forestry and Water Supply under whose authority are the following accidents: hail, drought, floods, destruction of flood-gates;
- the Ministry of Environment and Planning of the space for: earthquakes, strong winds, sliding of the earth, crumbling of the earth on roads and railways, snowy drifts, etc.;
- the Ministry of Health for: epidemics, chemical accidents, higher degree of radioactivity, accidents where large number of people are hurt, etc.;
- the Ministry of Internal Affairs for: fires, explosions and traffic accidents;
- the Ministry of Labour and Social Politics for taking care of endangered people.

Besides this, in our country there is an education of staff for dealing with different kinds of accidents. Also, several institutions were founded and function now dealing with this problem, such as: the Republic institution for health protection, the Republic institution for hydrometeorology, the Institution for seismic engineering and engineer seismology, the Veterinarian institution, The Institution for protection of the plants, etc.

With a Decision passed by the Government of the Republic of Macedonia, when an accident happens, no matter of which kind, the Ministry of Defence – the Sector for civil protection – engages the Republic forces for civil protection, the headquarters and the units. In certain cases, the President of the Republic may order that the Army should be engaged in dealing with accidents from a larger degree.

With regard to the size of the regions for which they are responsible, The Republic of Macedonia is divided into 34 regions whose centres are in the bigger cities, five of which are in Skopje, and the competent Ministries there have their Regional units with a certain number of employees.

The size of these regions varies from several hundreds km up to 2,000 km<sup>2</sup>.

The activities of the authorities and the Republic forces for civil protection are financed by the Government, from the budget of the Republic, and the public institutions and services provide a part of their funds from their activities.

On the level of regions, the financing is by the Government through the regional organizational units of the authorities, and the local self-government is partly financed by the Government, whereas the communal enterprises which are under their authority have their own sources of funds, but, in case of bigger accidents, the Government will cover a part of their expenses for engagement in dealing with the accidents.

## **6. Non-governmental organizations**

On the territory of the Republic of Macedonia acts and functions the Red Cross of Macedonia as a non-governmental organization with a great number of its own organizational structures and activities (34 municipal organizations and a large number of enterprises and educational institutions).

Within the frames of this organization, on a republic level, a Commission for readiness in case of accidents is formed, and on a municipal level there are also commissions which are activated when needed, but in all of them there is one person (an assistant) whose in charge of the preparation and administration of the activities for taking care of the endangered people. There is also a special unit for emergency interventions which is trained and made able to rescue people from endangered and non-reachable objects and regions, giving first medical help and transport of people to the nearest medical institutions.

In our country there are many non-governmental organizations in the form of associations of civilians, such as: the Republic fire union, scouts, mountain associations, hunters' organizations, etc. which have appropriate material and technical possibilities and capacities to take part in the activities of protection and rescuing.

Besides this, in certain cities and towns there are other non-governmental (mostly religious) organizations which are of humanitarian character.

## **7. Material and human resources**

In case of accidents, the authorities, the enterprises and the public institutions and services use their own means of transport, but in case of bigger accidents and when the Republic forces for civil protection are engaged, then vehicles from the companies for bus and transport traffic are used.

Also, their own system and the public system for telecommunications are used, and especially the net of the system for monitoring and informing which is an essential part of the Ministry of Defence.

In case of bigger accidents, as accommodation facilities can serve the objects of the summer and winter resorts and other facilities that are used for a vacation and recreation. A part of them are a property of the Government, i.e. the authorities, and most of them are a property of the enterprises and other companies and institutions, services, associations, organizations and the Red Cross. These are located on the whole territory of the Republic of Macedonia.

These objects are of a firm construction, bungalows and camping trailers, but in the warmer months tents can be set with an equipment and resources from the Republic forces for civil protection, the Red Cross, the reconnoitring organizations, etc.

The Republic units for civil protection are engaged when there is a need for searching and rescuing people which were covered up or people which are in high objects, and also the fire brigades, the alpinists and other people can be involved in these activities.

For rescuing missions in the mountains, the alpinist and the skiing associations are engaged.

In case of accidents of a larger degree, we would need a help from other countries.

The medical staff in the Republic of Macedonia is large enough to satisfy the normal needs of the population and also, within its frames, there is a service for giving urgent medical help.

In case of accidents, there is, most often, the possibility that the whole country would not be endangered, so, in the regions which are not endangered a number of intervening teams from the medical centres can be formed and sent to help the hurt people. But, we must mention here that in case of bigger accidents, we would need a help from other countries.

With the purpose of training the staff in the regular services and the people who work in the field of civil protection our own educational staff is engaged, as well as experts for certain areas of interest and collaborators from other countries.

The competent authorities and the other services for the engaged staff give a logistic support with their own means and funds.

The logistic support of the Republic forces for civil protection is in charge of the assistant to the Chief of the logistic headquarters in the Republic and the regional headquarters for civil protection together with the logistic unit.

In the Republic of Macedonia there is a Republic hydro meteorological service with its centre situated in Skopje and a number of hydro meteorological stations all over the territory of Macedonia whose job is to monitor and follow the current situation and to inform about it.

Within the frames of this organization, there functions a system for protection from hail with six radar polygons and 315 stations which deal with protection from hail.

## **8. International and national which offer help**

Until now, the Republic of Macedonia has had a need for international help, but, also, it has participated in giving help outside the borders of its territory.

From the point when our country became autonomous, it has taken up many activities for establishing close connections in the field of cooperation in dealing with crisis situations and it is an active participant in all the initiatives for regional and wider cooperation. Here, we must put a special emphasis on the cooperation with the countries from Southeast Europe, in the course of which many multinational meetings have been held and the Agreement for the formation of a Council for civil and military planning in crisis situations in the countries from SEDM is in its final phase of signing it. The Government of the Republic of Macedonia has already appointed a person who will sign the agreement.

Also, in its procedure is the Agreement for establishing a cooperation with the Republic of Bulgaria in the field of elementary accidents and technical and technological disasters.

Our country has an experience in receiving international help in dealing with crisis situations. Here we should mention the earthquake that happened in Skopje in 1963 and the refugee crisis in Kosovo in 1999.

On the other hand, our country has participated in giving help in other countries. Here we should mention the extinguishing of the fire that happened in the oil facilities which were a property of Mr. Mamidakis in Thessalonica, then the earthquake in Ere van, the earthquake in Turkey and the flood in Romania.

## **9. Connections outside the borders of the country**

In the Republic of Macedonia currently exist a number of international humanitarian organizations with which our Government cooperates in giving humanitarian help to the Kosovo refugees which are now in Macedonia.

There are many humanitarian organizations and the more significant are: the International Red Cross and Half moon, the International Committee of the Red Cross, the World Food Programme and UNHCR.

The cooperation between the Government of the Republic of Macedonia and the above mentioned organizations, as well as with the rest of the international and other humanitarian organizations, is on a high level and the effect of it satisfies all of the parties involved in it.

In the field of regional cooperation, the Republic of Macedonia is a country open for both receiving and giving help in dealing with accidents. When speaking about this, we must mention the help that we received from the Republic of Bulgaria and the Republic of Greece in dealing with the wood fires this year, and also, speaking in wider terms, the help from the Czech Republic, Germany and other countries.

## **10. Conclusion**

On the basis of what was previously said about the general characteristics of our country, as well as the evaluation of the degree of imperilment in crisis situations and the evaluation of the needs and the possibilities for action in preventing and eliminating the consequences, we can say that the Republic of Macedonia is very endangered and in certain cases it will find itself in an unenviable position.

This statement comes from the possibilities for occurrence of disastrous consequences in many types of crisis situations, but before all in the case of earthquakes and floods, sudden destruction of the high flood-gates and fires on open spaces (woods and corn fields).

We can note two periods in the organization and the preparation of the system for protection and rescuing in the Republic of Macedonia.

One of these periods was at the time before the independence of our country when a special care was taken to enable the population, the workers in the enterprises, the authorities and the enterprises to protect themselves and to give help to other subjects and a special emphasis was put on the organization and the preparation of the civil protection as a unique organized structure for protection and rescuing.

The civil protection in that period, besides the organizing of the necessary number of headquarters and units for civil protection, was intensively prepared through different kinds of training and was equipped with a sufficient number of types and quantities of equipment and material and technical means.

In the period of transition, the civil protection reorganizes itself according to the needs of the country, but its development with the necessary material and technical equipment was left behind.

In this period, just small insufficient quantities of financial means were allotted from the budget which were sufficient only for keeping in life the system for protection and rescuing people and material goods.

In the year 2000 there has been a progress made in the training of the forces for civil protection (headquarters and units), when 39 manoeuvre units, 30 regional headquarters, 67 commanders and chiefs of the municipal headquarters for civil protection (in the local self-government) had an elementary training and when 30 exercises were performed.

This trend is going to continue in this year, but the equipping of this structure is still the sore point and something which has to be improved in recent future.

The equipment and the material and technical means of the civil protection were provided before 1990, a large number of the means are old-fashioned, and the rest offer low technical possibilities and we are behind in the usage of modern technical means.

As far as the level of organization and preparation of the other subjects that participate in the protection and the rescuing are concerned, we can say that, speaking in terms of organization and staff, they can be put in function of protection and rescuing, but speaking in terms of material and technical development, they are, also, behind. In this context we can mention the Department for protection from fires within the Ministry of Internal affairs, the Department for veterinarian protection and the service for protection within the Ministry of Agriculture, Forestry and Water Supply.

These subjects lack a sufficient number of modern technical equipment which would be used in the actions of protection and rescuing.

Bearing in mind the fact that the Republic of Macedonia is situated in the middle part of the Balkan Peninsula, being endangered from the inside as well as from outside influences, we feel that the international factor should have a major role in the protection and rescuing in crisis situations (elementary and other types of accidents).

Besides this, we suggest that a regional centre for dealing with crisis should be formed in Macedonia, which would function within the frames of the Pact for stability. This could be very important because the position of Macedonia can be in function of the neighbouring countries, and, also, because of our Institute for seismic engineering and engineer seismology, world-wide known, which, besides seismic research, works on other problems in the field of the protection and the rescuing.

**Sector for civil protection**

**Assistant to the minister**

*Dusan Gjorgjievski*