



REPUBLIC OF CYPRUS  
MINISTRY OF INTERIOR

CYPRUS CIVIL DEFENCE  
GENERAL DIRECTORATE

# Report on Disaster Risk Management in the Republic of Cyprus

Prepared in compliance with Art. 6(1)d of Decision No 1313/2013/EU



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**Note1:** References to Decision No 1313/2013/EU (OJ L 347, 20.12.2013, p. 924) should be understood as: Decision No 1313/2013/EU as amended by Decision (EU) 2019/420 (OJ L 77 I, 20.3.2019, p. 1) In light of Article 28(1)a of Decision No 1313/2013/EU. Where reference is made to Member States, it shall be understood as including Participating States as defined in Article 4(12) of Decision No 1313/2013/EU.

**Note 2:** Information contained in this report has been obtain from governmental sources, during 2020, believed to be reliable at the time the information was released.

**Note 3:** Although no sensitive elements are published in this report, no information contained herein may be published or be made otherwise available except on a need-to-see basis by the EU Commission and its associates.

## Part I. Risk assessment

## 1. Risk assessment process

*Describe how the risk assessment process fits into the overall disaster risk management framework. Detail legislative, procedural and institutional aspects. Please, explain whether responsibility for the risk assessment lies at national level or at an appropriate sub- national level.*

The elements of the Risk Management Framework, in the Republic of Cyprus, involves the following elements:

a. Risk Reduction Strategy was prepared in December 2019, and will be sent for approval by the Council of Ministers. The competent authority responsible for the process is the Cyprus Civil Defence.

b. Risk assessment (including exposure and vulnerability) and capability assessment studies are carried out every three (3) years. This derives from Decision 1313/2013 and is included in the Civil Defence's budget. The competent authority responsible for these studies is the Cyprus Civil Defence, who's Legislation allows carrying out studies regarding the risk management process.

c. Risk assessment for risks arising from climate crisis, with two time frames: 2050 and 2080. in the first study was prepared in 2015. The next is expected to take place in 2021. The competent authority for this process is the Department of Environment, in collaboration with the Cyprus Civil Defence.

d. Risk planning: Currently there are plans for 24 thematic areas. This policy is now under revision, aiming at reducing the thematic plans to broader areas and devising also horizontal plans. A relevant proposal has been submitted by the Cyprus Civil Defence and a decision of the Ministry of Interior is pending. Five out of these 24 plans are prepared by the Cyprus Civil Defence and the rest by other competent authorities. Planning has been ongoing since 1999, but originally was not based on risk assessments but expert opinion. All plans, depending on their theme, need to be approved and signed by the relevant Minister.

Risk assessments are conducted at national level, as the Republic of Cyprus is an island of less than 10.000 sq. kilometres.

## 2. Consultation with relevant authorities and stakeholders

*Describe the range of relevant authorities and stakeholders involved in the risk assessment process. If appropriate: Describe the nature of their involvement, specifying their roles and responsibilities.*

The risk assessment reports so far (2015 and 2018) have been prepared by outsourced risk assessment experts, supervised by the Civil Defense Department. The data were made available by different government departments and semi-government organizations. Data is also collected by the private sector and especially facilities characterized as SEVESO III industries.

The national risk assessment reports, produced under this framework and submitted to the EU Commission, do not include classified information. For this reason they are publicly available on the website <http://www.moi.gov.cy/moi/cd> under banners NRA-2016 and NRA-2018.

For past reports, the risks examined were the result of expert opinion within the Civil Defence Department. For the next process, in 2021, the opinion of other government departments will be sought. Contacts for this purpose are on-going. Government Departments also provide data for the detailed risk analyses.

Under consideration is also a process of receiving societal perceptions on the subject: risks to examine and which to prioritise. Then, the outcome of the research will undergo a process of political decision. These societal perceptions will be one of the determining factors.

### 3. Identifying the key risks at national or sub-national level

*Identify the key risks that could have significant adverse human, economic, environmental and political/social impacts (including security). **From the above key risks, identify:** 3.1 any key risks which could have significant adverse cross-border impacts, coming from or affecting the neighboring country or countries. 3.2 Any key risks with a low probability and high impact. **Where appropriate:** 3.3 identify any key risks expected in future. These may include any emerging risks (10) that could have significant adverse human, economic, environmental and political/social impacts (including impacts on security).*

So far, the following risks have been considered

The thematic areas examined so far include

- a. Risks from climate crisis
- b. Earthquake
- c. Tsunami
- d. Floods
- e. Water scarcity
- f. Technological risks
- g. Forest fires
- h. Sea level rise
- i. Marine pollution
- j. Cyber risks
- k. Financial risks
- l. Complex crises

More risks with significant societal, financial and environmental impact that may be included in future risk assessments include

- a. CBRN-E, malicious and non-malicious
- b. Dust in the lower-atmosphere of the Eastern Mediterranean
- c. Slow burning crises, like desertification
- d. Social unrest
- e. Risks that could be triggered by neighbouring countries and affect Cyprus
- f. Migratory waves from Asia and Africa due to war and poverty.

Risks that contain sensitive information will not be considered within this framework.

Due to Cyprus being an island, we don't expect cross border risks apart from marine pollution, dust and nuclear accidents.

#### 4. Identifying climate change impacts

*Determine which of the above-mentioned key risks are directly linked to climate change impacts. Please take into consideration the existing national and sub-national climate change adaptation strategy and/or action plans (11) or any relevant climate risk and vulnerability assessments, where appropriate.*

The 2015 risk assessment on climate change included the following themes

- a. Agriculture
- b. Forestry
- c. Livestock
- d. Biodiversity and ecosystem
- e. Built environment/infrastructure
- f. Business, industry and services
- g. Energy
- h. Floods and coastal erosion
- i. Health and wellbeing
- j. Forest fires
- k. Marine and fisheries
- l. Transport
- m. Water

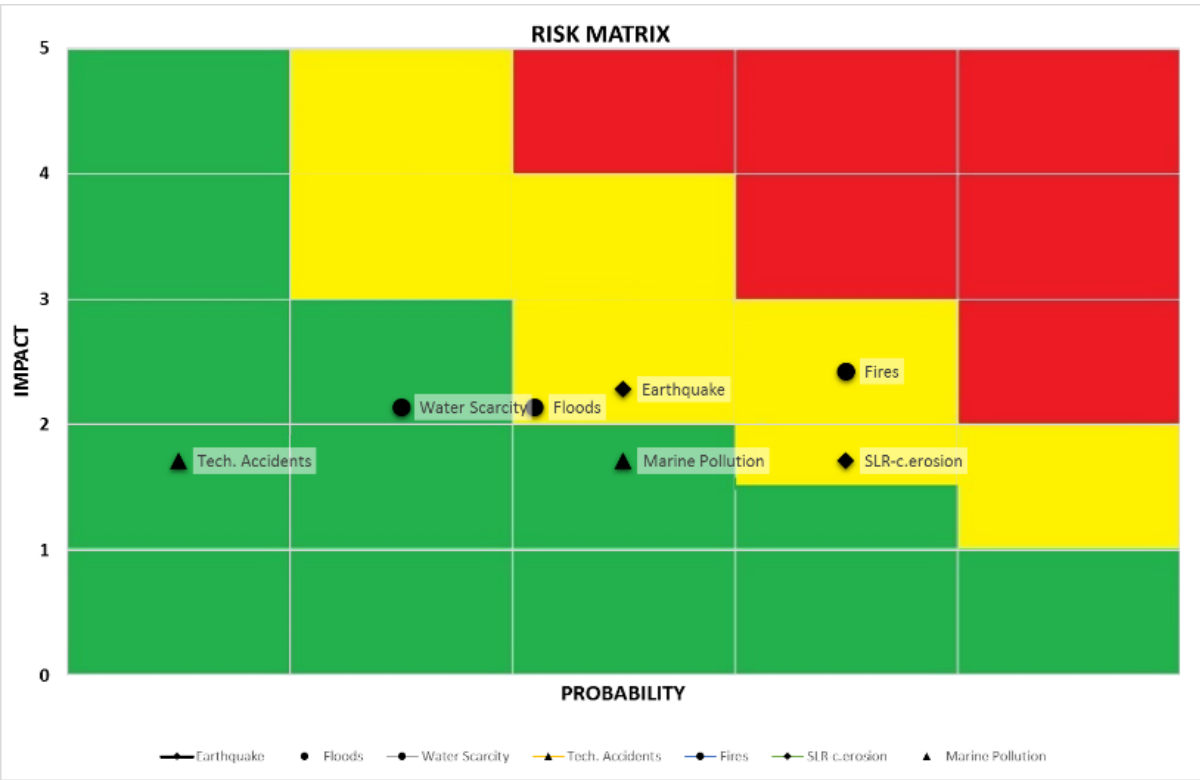
All of the above were examined in relation to climate change as well and provided feedback for the relevant government departments to proceed with measures relating to its adaptation strategy. Καλά θα ήταν το Τμήμα περιβάλλοντος αλλά και άλλες υπηρεσίες να μας ενημερώσουν τί έκαναν στον τομέα αυτό. Θα τους δοθεί για σχόλια;

### 5. Risk analysis

Describe the scale of levels of probability and impact of the key risks identified (in Q. 3) including the key cross-border and key risks with a low probability and a high impact and, where appropriate, future and/or emerging risks. Display the results in a single risk matrix or other visualized graph/model as well, if applicable. **If appropriate:** Outline the methods, models and techniques used to assess the probability and impacts of the different risks or risk scenarios

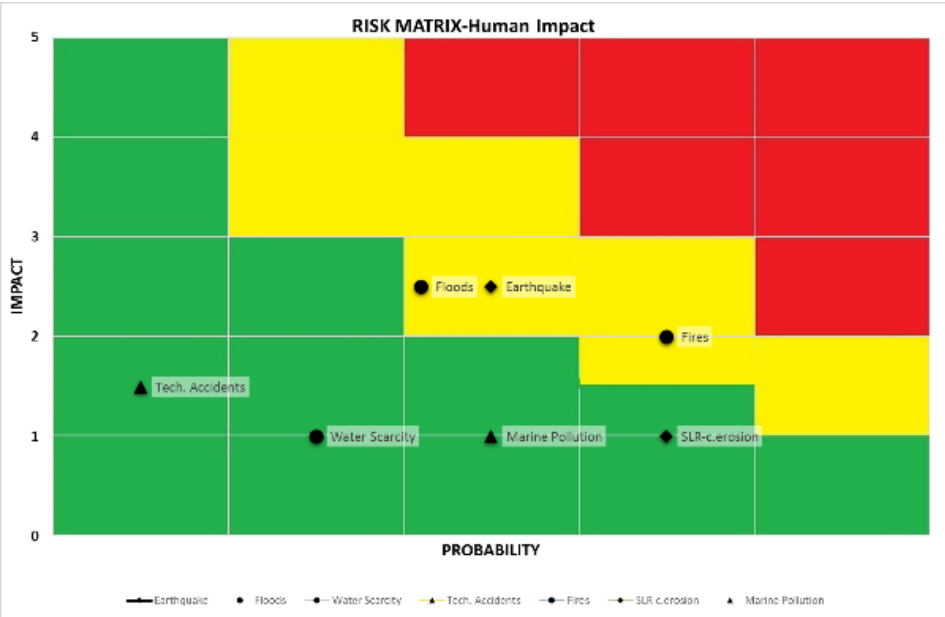
For the preparation of the risk matrix, three parameters have been considered: Human, Environmental and Economic. A Matrix was constructed for each. An integrated consequence-probability matrix resulted from the three separate parameters was also devised. All matrices are exhibited below.

Integrated Matrix

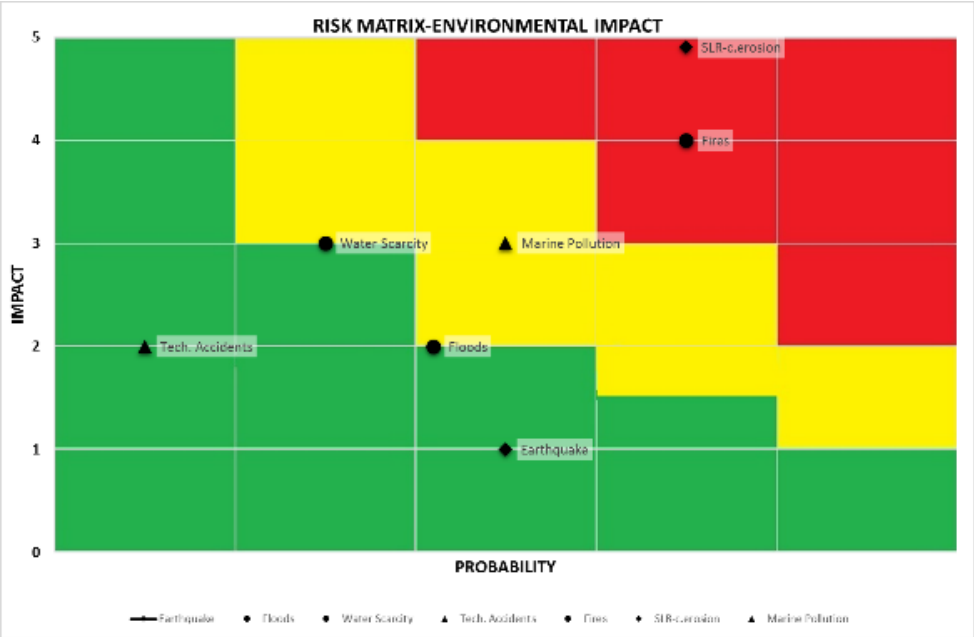




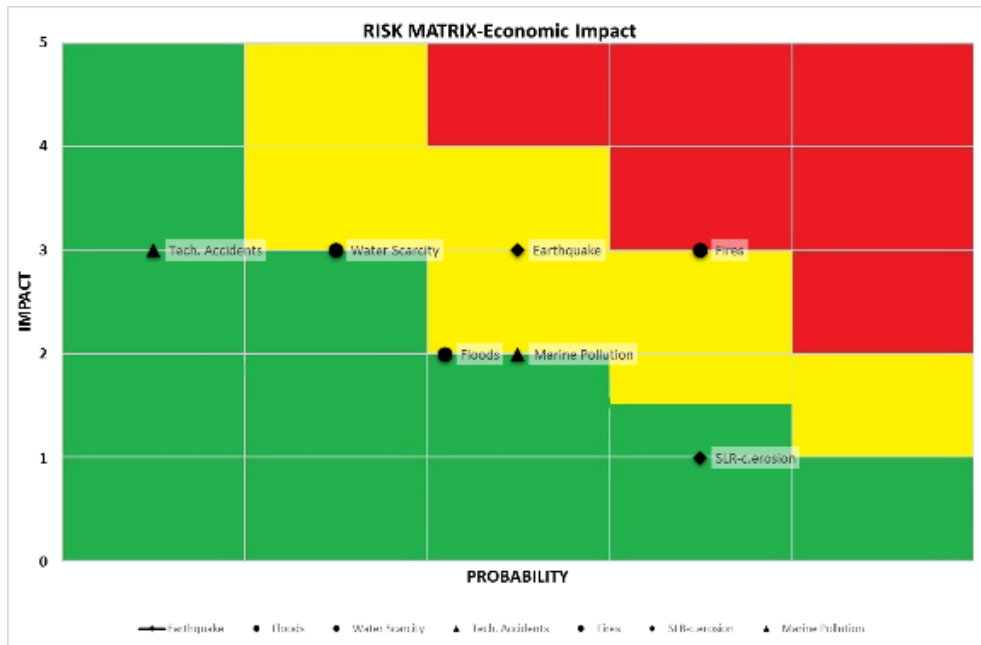
### Human Impact



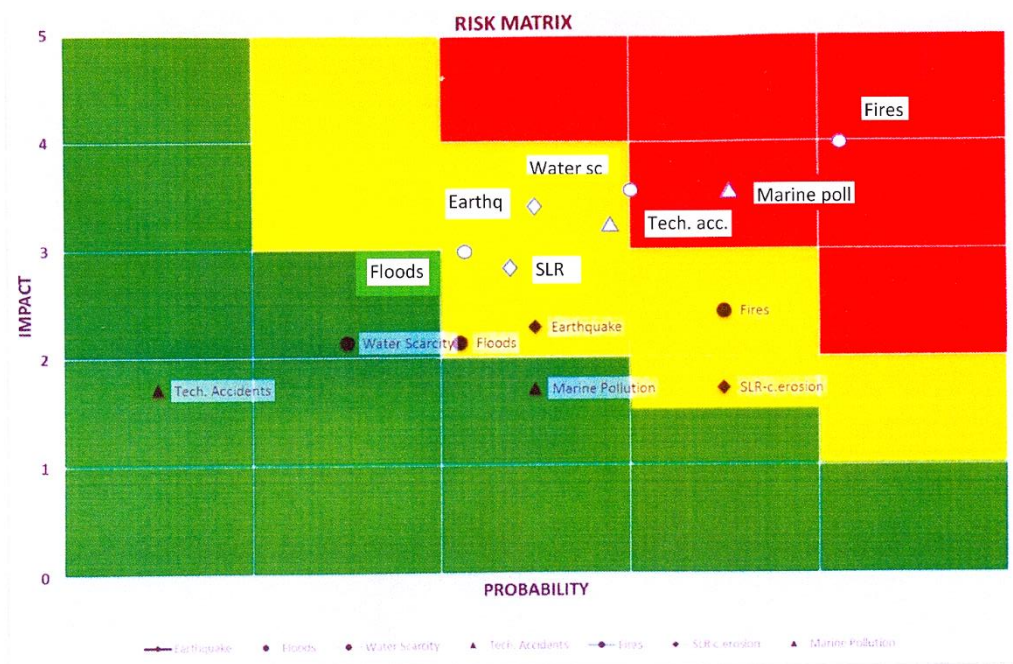
### Environmental Impact



## Economic Impact



Besides the above Matrices, another procedure resulted in a Matrix made out of the social perceptions of the same risks, quantified on a 5 point scale. On the Figure below, societal risk perceptions are marked in white color, while the scientific views as black. It is evident that for all the risks examined through the NRA, both the societal perceived probabilities and perceived impact are consistently higher.



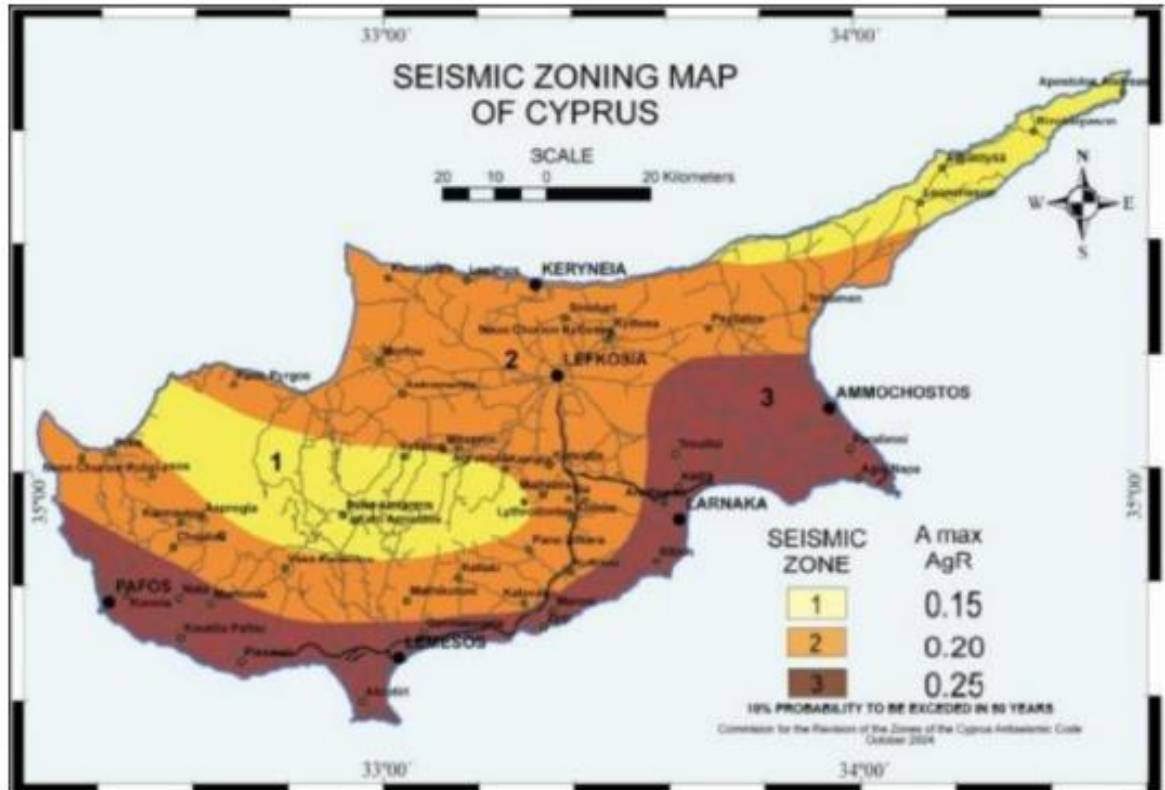
## 6. Risk mapping

State whether any risk maps have been produced showing the expected spatial distribution of the key risks as identified at the identification and analysis stages (Q3, Q4 and Q5). If so, include them as appropriate.

A number of risks have been mapped. Indicative samples are exhibited below

### Conventional risks

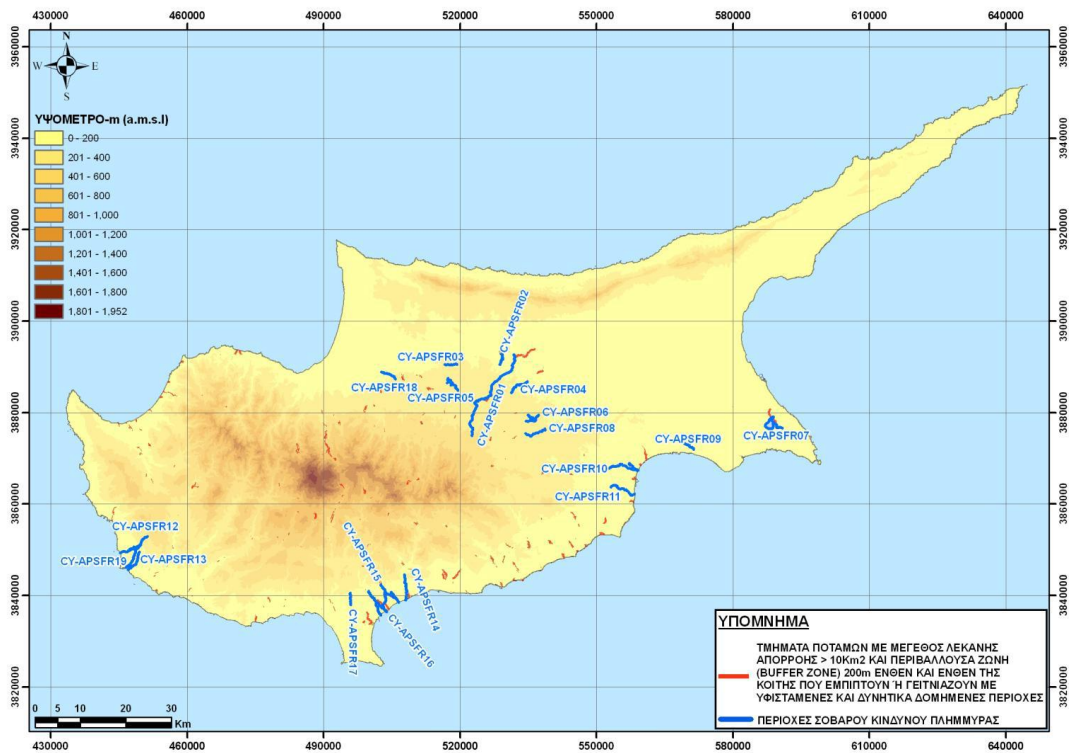
Earthquake: Seismic zoning map



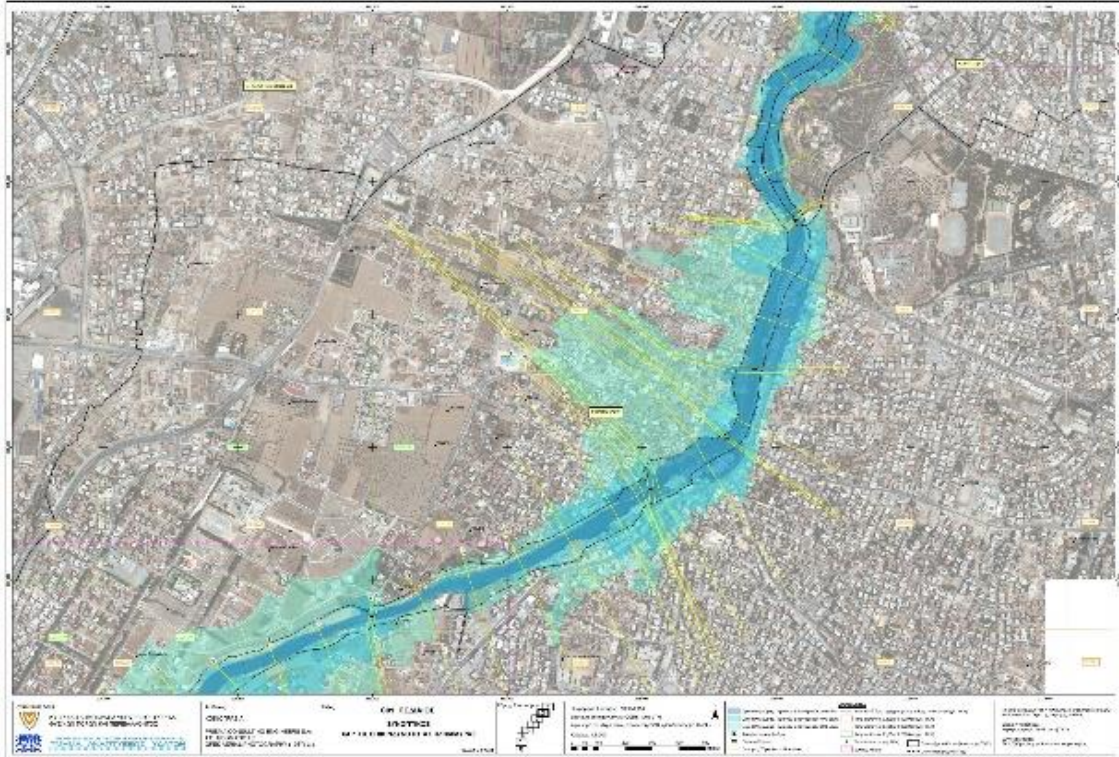
Tsunami: Distribution of geomorphological features indicating or suggesting origin by tsunami process



Floods: Rivers/streams potentially causing flooding in urban areas



Floods: A large number of maps indicating potential flooding area, water depth, no of affected, for three (3) return periods: 20, 100 and 500 years. Maps are available on the internet <http://www.moa.gov.cy/moa/WDD/wdf.nsf/All/EC4436C3C3241E17C22584A50028338A?OpenDocument>



## 7. Monitoring and reviewing risk assessment

*Outline the system in place for monitoring and reviewing risk assessment so as to factor in new developments.*

The National Risk Assessment is available to other government departments, the academia and the general public. Whenever there are new developments or new threats to be assessed, according to the consensus among government departments, the Cyprus Civil Defence undertakes conducting a new risk assessment, outsourcing it or directing it in collaboration with other stakeholders. Such examples are

1. The CBRN-E threat for which gaps were diagnosed by a coordinating committee under the Fire Service and
2. Dust in the lower atmosphere, coming either from the African or the Syrian deserts. Such incidents used to occur only once a year, during the so called in Arabic “Hamsin”. For the last about 10 years, the phenomenon occurs more than 10 times per year and worsening, due to climate change

The above risks will be assessed during 2020.

## 8. Communicating risk assessment results

*Describe the process of communicating and disseminating the results of the national risk assessment. Outline how the risk assessment results are shared among policymakers, various public authorities with different types of responsibility, different levels of administration, and other relevant stakeholders. State whether and how the general public is informed about the results of risk assessment, to make them aware of risks in their country or region and/or enable them to take informed decisions to protect themselves.*

The results, excluding sensitive information, are available on the internet at the following address <http://www.moi.gov.cy/moi/cd> under banners NRA 2018 and NRA 2016.

Besides being available on the internet, governmental services, at the head-of-department level, have been invited to a seminar and given full description of the work done and had the opportunity to clarify points and ask questions.

Besides the central level, seminars have been organised at district level, analytically describing the work done, its importance and its applications.

By promoting a risk reduction strategy and a platform under Sendai we expect that the use of this work will increase and be better coordinated among governmental departments.

## GOOD PRACTICES

*Outline recent good practices relevant to Questions 1-8.*

A practice that the Cyprus Civil Defence deems necessary are the surveys on societal perceptions of risk. For the next risk assessment, a survey of such perceptions will be a parameter, along with expert advice, on which risks should be given priority for assessing. Further than that, it is a useful tool on devising a risk communication plan, specifically how people want the info to be conveyed. It is also an opportunity to target different segments of the population: Age-wise, gender, non-Greek speakers, foreign work force, tourists etc.



## Part II. Risk management capability assessment

## 9. Legislative, procedural and/or institutional framework

*Describe the framework in place for the risk management capability assessment processes. State whether it is based on a legal act, a strategic plan, an implementation plan or other procedural frameworks. **If appropriate:** State how often risk management capability is assessed. State whether the risk management capability assessment(s) is used for decision-making purposes.*

Every governmental department makes its own capability assessment, based on its human resources, budget and equipment available. The threshold is set by its mission and the budget allocated to it by the government and approved by the parliament. The work of every department is regulated by laws, decisions of the Council of Ministers (secondary legislation) and its budget, which is set based on its mission and its strategic targets.

A strategic master plan, in the Republic of Cyprus, named ZENON, assigns roles to the different governmental departments, which have to prepare/submit special thematic plans of action for risk management. Those departments that are not responsible for prepare plans, have to prepare memoranda of action for the different plans in which they are involved. Although the need for horizontal plans of action has been realised, no political decision has yet been taken concerning the matter.

The first National Capability Assessment was finalised in 2018 and made available to the different stakeholders. The degree to which this first NCA has been used for decision purposes will be shown in time. National capability assessments were not generally prepared in the past, but the culture is slowly moving in the direction of cooperation among different ministries.

## 10. Roles and responsibilities of the competent authorities

*Describe the roles and responsibilities of the competent authorities at national or sub-national level (as appropriate), distinguishing between risk assessment, prevention, preparedness, and response, and focusing on the management of the key risks identified. Describe how horizontal coordination (the cross-sectoral approach) is ensured among these competent authorities, focusing on the management of the key risks identified.*

The following responsibilities have been assigned to governmental essential services, concerning non-major incidents:

Police: Law enforcement

Fire Service: Firefighting in urban and rural areas, rescuing

Forest Department: Firefighting in forests and 2 km around them

Civil Defence: Complements rescue operations, firefighting, etc., national contact point  
Hunting Fund: Complements firefighting in rural areas and forests.

Each essential service carries out its mandate and communication with other departments. The cooperation of the different departments is also provided in the laws governing the different operations. For the prevention and preparedness phases there exist different coordinating committees (the most prominent are for firefighting in rural areas and forests and a special committee for CBRN-E), comprising different government departments, the association of local authorities and different chambers (Chamber of Engineers, Chamber of Commerce and Industry, etc.).

If a major incident occurs, a Ministerial Committee takes over to coordinate nationally, headed by the Minister of Interior, aided by the Civil Defence. According to the incident at hand, other Ministers may be decided to head the Ministerial Committee (CBRN-E, public order, etc.).

For the restoration phase, different departments may take over and lever the available budget. As examples, a) For buildings and infrastructure, the Technical Services of the Interior Ministry aided by the Public Works Department, the Chamber of Engineers and the District Offices, b) For forests, the Forest Department, aided by the Commissioner for the Environment

Concerning the national coping plans, so far the prevention and restoration elements are not very strong. In the amendment of the plans, intended for the next two years, all phases of the disaster cycle will be given due attention.

## 11. Roles of relevant stakeholders

*State whether relevant stakeholders are informed about and involved in the disaster risk management processes for the key risks identified. If they are, describe how.*

As analytically discussed in various previous paragraphs, the governmental departments dealing with disaster risk reduction are kept informed about the national risk assessment processes and are involved directly or indirectly in national plans. Those departments involved in planning are obliged to prepare their special internal operating procedures on how to act in case a plan is activated.

The number of Departments involved in different plans is 50. The most elaborate plan is ENGELADOS, which deals with the consequences of a strong earthquake and involves all 50 different departments.

Plans under the jurisdiction of the Cyprus Civil Defence are tested by exercises, at national and district level that take place as follows: Every year the plans have to be tested, alternating between field and table top exercises.

## 12. Procedures and measures at national, sub-national and local level

*Describe the established procedures to ensure vertical cooperation between the national, sub-national and local level authorities involved in disaster risk management processes for the identified key risks.*

There exists a national master plan called ZENON, which specifies which thematic plans exist in the Republic of Cyprus.

At present, 24 different national thematic plans exist, prepared by different Ministries. These plans involve not only governmental departments but also non-governmental public organisations.

Each Department prepares its own internal plan for fulfilling its mandate foreseen in the national plan. The district offices of the different governmental departments and local authorities, in turn, have to prepare their own operating procedures to fulfil their role if a disaster strikes their territory or if they need to assist other districts.

In case of a major incident, the chain of command is as follows

President of the Republic



Council of Ministers



Governmental departments



District offices



Local authorities and local businesses

### 13. Procedures & measures at cross-border, inter-regional and international level

*Describe the procedures established to ensure cooperation at the cross-border, inter-regional and international levels for the disaster risk management of identified key risks. Describe measures in place to ensure disaster risk management for the key risks identified. **If appropriate:** State whether disaster risk management policies are developed in a way that takes account of international commitments, such as the 2015-2030 Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals of the 2030 Agenda for Sustainable Development. EN Official Journal of the European Union C 428/12 20.12.2019*

Cyprus, as a member-state of the EU, is participating in the Civil Protection Mechanism of the EU. So far, in a number of occasions, Cyprus has received and offered assistance through CECIS.

Cyprus, as an island, has only sea borders. Neighboring countries are Greece, Turkey, Syria, Lebanon, Israel and Egypt. Bilateral agreements, concerning Civil Protection, have been signed with Greece, Israel, Lebanon and Egypt. Besides bilateral agreements, among governments, Cyprus Civil Defense has special agreements for cooperation, mainly concerning training and certification, with Organizations in Germany and France.

Missions for the last 5 years concerned firefighting (Greece, Lebanon and Israel, France and Italy) and assessment of buildings after earthquakes (Greece and Albania); also, cooperation between Cyprus and Israel Health Systems for coping with coronavirus COVID 19 pandemic in 2020.

#### 14. Focus on climate change adaptation measures

*State whether synergies between disaster risk reduction and climate change adaptation measures are established at national or sub- national level (as appropriate) for the key risks identified that are linked to climate change (Q4). If so, describe how.*

A National Risk Assessment for climate change impacts has been carried out, between the years 2015 and 2016, with the cooperation of the Department of Environment and Civil Defence. The National Risk Assessment covered the following sectors

1. Coastal erosion
2. Sea level rise
3. Forest fires
4. Wilderness fires
5. Risks for human health
6. Land desertification
7. Risks for water resources
8. Risks for biodiversity
9. Risks for energy supply
10. Marine pollution

Distinctive Strategies have been developed for Climate Change Adaptation (Department of Environment) and Disaster Risk Reduction (Civil Defense). Cooperation included ensuring compatibility and synergies between the two strategies.

## 15. Focus on critical infrastructure protection measures

*State whether there are measures in place to protect critical infrastructure regarded as relevant for the continuation of vital societal functions.*

There are general measures in place for the continuation of vital societal functions like

<b>CRITICAL INFRASTR.</b>	<b>MANAGING AUTHORITY</b>
Water Supply	Water Development Department
Water Distribution	Cities' Water Boards
Electricity	Electricity Regulatory Authority
Telephony	Digital Security Authority
Internet access	Digital Security Authority
Banking	Central Bank of Cyprus
Governmental Treasury	Ministry of Finance
Airports	Department of Civil Aviation
Ports	Cyprus Ports' Authority
Highways	Public Works Department

The Managing Authorities are in charge of making sure that governmental, semi-governmental and private providers have special plans for the continuation of their functions in cases of emergencies. Major Emergencies are headed by inter-Ministerial Committees reporting to the Council of Ministers headed by the President of the Republic.

There are some plans in place to protect critical infrastructure such as provision of electricity in case of power cuts.



## 16. Source(s) of funding

*State whether the budget allows for resources to be allocated flexibly in case of urgent need and to what extent disaster funds promote preventive action. Describe the funding sources used (e.g. national, sub-national, public, private, including insurance, EU and other international funding) to take priority measures in the field of disaster risk management when assessing, preventing, preparing for and responding to the key risks identified.*

Funds for preventive actions are included in the yearly budget of the different government departments, depending on their mandate. For example, anti-seismic strengthening of schools is included in the budget of the Technical Services of the Ministry of Education and Culture. As another example, anti-flooding works e.g. retaining dams at the upstream side of cities, is included in the budget of the Public Works Department (75% of the cost), as well as in the budget of the Municipality involved (25% of the cost).

Preparedness actions are included in the budget of the relevant Departments. For example, the budgets of the Fire Service, the Forest Department and Civil Defence include provisions for equipment, training, exercises and training fields. Likewise provisions for the cost of interventions are included in the yearly budgets. Starting 2022, budgets will have to solely stem from the strategic plans of the different Departments.

Rehabilitation and return to normality costs is a different situation. In any given crisis, when the relevant Department/Ministry has exceeded its budget while trying to respond to disasters, it can apply to the Ministry of Finance to receive further funds. A provision of 500.000 euro is available in the budget per year. If necessary, further funds will be allocated.

For certain disasters, citizens are obliged to have insurance cover, as for such incidents the government only compensates the affected population using income criteria and the majority of the population is encouraged to cover the restoration costs through insurance schemes. For privatized sectors, like airports and ports, the managing companies insure assets or fund themselves for the cost of restoration after an adverse event.

For certain types of incidents as, for example, migratory movements from the Middle East, Asia and Africa, actions are co-funded by the cohesion funds of the European Union, covering costs like emergency housing and boarding.

## 17. Infrastructure, assets and equipment

*Describe what is done to ensure that enough assets are available to mitigate the impact of disasters and respond promptly to disasters associated with the key risks identified.*

As from 2018, the different government departments have available the national risk assessments for the key risks facing the country. Even before the national risk assessment, the different government agencies used to prepare their own approximate estimates. Based on these estimates, each Department foresees, through its yearly budget for acquiring the necessary assets to fulfil their daily mandates as well as respond to major emergencies.

For realistic provisions and due to budget constraints, the target is the most probable worst case scenario. For example, in the case of earthquakes, Cyprus adopts EUROCODE 8 and provides for the probability of 10% to occur in the next 50 years.

Especially Civil Defence, in most emergencies (excluding pandemics) may mobilize its human resources, namely its volunteers and conscripts (citizens doing their 2-year service in Civil Defence. Both categories are trained to respond to the basic risks assessed, as well as to provide for horizontal assistance, irrespective of the crisis.

For certain High Impact and Low Probability risks, if the national capacity is exceeded, Cyprus plans to request assistance through the European Mechanism of Civil Protection or through bilateral agreements with countries of the area of Eastern Mediterranean and the Middle East. A protocol is in place how to receive and manage assistance.

## 18. Focus on disaster loss data collection and procedures

*State whether a system is in place to collect disaster loss data. Describe how data is collected on the key risks identified.*

Historically, every government department kept its own records, with relatively low data analysis. During the last 10 years, departments started using a higher analysis database, especially concerning climate change risks, like forest fires. Also, departments that did not keep such records, made some research, in order to conduct risk assessments (according to Directive 2007/60/EC) an example is the Water Development Department, which dated back for the last 100 years, using various sources. The Meteorology Department kept unpublished data.

Although different databases were used, there is not a coherent all-inclusive data base nor statistical analyses. Furthermore, the data of the different departments are kept in their files and are not digitized; this makes finding and using data very difficult.

A proposal has been put on the table to make the provision of disaster data obligatory and be managed by the Statistical Service. So far, the Statistical Service deals with population and societal matters but is not obliged to keep disaster records. This creation of a sturdy database will require Inter-Ministerial cooperation, because the Departments involved belong to different Ministries. Pending a political decision on the matter, Civil Defence collects such data, using the methodology of the Sendai Framework. The different Departments involved generally respond to this request.

## 19. Focus on early warning systems equipment and procedures

*Describe the systems in place for early hazard detection and monitoring of the key risks identified. State whether forecasting methodologies are integrated into the system.*

The Command and Control Center of the Headquarters of the Cyprus Civil Defence is the contact point for the following risks:

RISK	ADMIN	WHO IS ALERTED BY CIVIL DEFENCE
Radiological risks	ERCC (E CURIE)	Department of Labour Inspection
Nuclear risks	IAEA	Department of Labour Inspection
Marine pollution	ERCC	Department of Fisheries, Undersecretary of Commercial Shipping
Tsunami	NEAMTWS	Department of Geological Survey
Health	World Health Organization	Ministry of Health
Various	ERCC	Depends on the nature of risk, for which the warning is

As far as hazard detection is concerned, there exist high wave sensors at the south coast (administered by the Land Survey Department) and pilot cameras in Akamas forest North West of the island, administered by the Forest Department.

As far as warning of the population is concerned, an available system is that of the network of approximately 150 electronically controlled sirens installed in cities and large villages that the Civil Defence possesses. This network has the capability of not only transmitting sound but also broadcasting phonetic messages.

According to DIRECTIVE (EU) 2018/1972 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 - establishing the European Electronic Communications Code (Recast), member states should have an early warning system, through mobile phones, by June 2022. The Republic of Cyprus has not as yet taken the political decision to do so, nor is funding available for the time being. The relevant Departments are discussing which government Department or Service will install the system and which governmental organizations will be using it. The system that preliminary qualifies is cell broadcasting but a final decision is yet to be reached.

## 20. Risk information and communication to raise public awareness

*Describe how the public is informed of what action to take when facing risks. For example, state whether a strategy is in place to educate the public and raise awareness. State whether and how target groups are involved in the definition of prevention and preparedness measures and in the implementation of the risk information and communication activities.*

The public is informed through various means what self-protection measures to take

- a. Through the websites of Cyprus Civil Defence, Fire Service, Medical Services of the Ministry of Health, etc.
- b. With printed flyers distributed by the above organizations, on occasions
- c. Through social media like Facebook, Twitter, Instagram and You Tube
- d. TV and radio spots, for specific campaigns
- e. Through SMS

During the COVID-19 pandemic, all above media have been used, in order to enlighten the public concerning hygienic measures against COVID-19. All efforts were channeled through the PIO (Press and Information Office) of the Republic of Cyprus.

The only target group that differentiates from the general public is pupils of primary and secondary education. The Ministry of Education, Culture and Sports, maintains a special office of Civil Defense (plus Health and Safety) for Schools. There exist special issues for pupils and exercises are organized at least once a year, concerning safe evacuation after an earthquake or a fire.

A formal information strategy that sets goals and differentiates between target groups does not exist, however the relevant Departments promote relevant actions to ensure that the public is informed concerning the measures to be adopted/ actions to be taken as regards risk prevention/ preparedness. The Press and Information Office of the Republic of Cyprus also assists the governmental departments in this field.

### **Good practice concerning risk communication**

Besides conventional modes of communication, for the risk of floods, the Cyprus Civil Defense started organizing, in 2019, district seminars, presentations and workshops for officials and technocrats of Governmental Services and Municipal Authorities. These face-to-face gatherings and discussion produced results concerning the awareness of the stakeholders.

Part III. Priority prevention and preparedness measures addressing key risks with cross-border impacts and, where appropriate, low probability risks with a high impact

## 21. Key risks with cross-border impacts

*List the key risks with cross-border impacts.*

### Tsunami

A tsunami in Cyprus may originate from the Cyprus seismic arc south of Cyprus. A second source of tsunami may be the Middle Eastern Seismic Arc at the coast of Israel. A third source of tsunami may be the western Mediterranean and especially the coast of two Greek islands, Crete and Rhodes. Historically, the most destructive recorded tsunami in the Mediterranean was the one of 365 AC. It originated from a volcanic eruption at the island of Santorini. There are different models of how a tsunami will propagate in the Mediterranean, taking into consideration the different possible sources.

### Technological risks

The erection of a nuclear plant in Akkuyu Turkey, will pose an increased risk for Cyprus, due to its proximity, around 80 kilometers. Due to the complete lack of cooperation between the two countries, there is no information about the new plant nor plans for coping with a nuclear accident in the area.

### Sea level rise

Indications exhibit that the sea level in the Eastern Mediterranean has increased by approximately 20 cm since the era prior to the industrial revolution. Studies carried out locally but also internationally show that the increase of sea level rise will continue geometrically, reaching 50 to 100 cm by the end of the 21<sup>st</sup> century. Measures are taken in Cyprus to ensure the increase will not affect critical infrastructure that is currently built. However, infrastructure built before the problem was realized needs to be protected.

### Marine oil spills

Cyprus is 300 kilometers North of Egypt and the exit of the Suez Canals into the Mediterranean. Besides that, its waters are shipping routes for Syria, Turkey, Lebanon and Israel. For this reason, marine pollution incidents in the area are highly possible. Cyprus has close collaboration with all the aforementioned countries, except Turkey, for coping with marine pollution. The government of the Republic has also developed capabilities of its own to face pollution both onshore and in the deep sea.



## Dust in the lower atmosphere

Dust in the lower atmosphere was an uncommon phenomenon for Cyprus, occurring for a few days only, in late spring to early summer. Since the 2000s, due to the climate crisis but also increased activities in the deserts of Egypt and Syria, the dust phenomena in the lower atmosphere are affecting Cyprus more and more, with dust days increasing from an order of magnitude of a few days per year to tenths of days. The phenomenon also affects countries like Greece and Turkey and is currently under intense research.

## 22. Priority prevention and preparedness measures

*Describe existing priority prevention measures and any that are planned.*

Prevention measures are not taken holistically but each competent authority promotes its own measures that fall under its area of responsibility. A few examples, for coping with basic national risks are the following:

### Earthquakes

Cyprus has adopted its own anti-seismic code in 1992. Since 2012 Cyprus has adopted Eurocode-8 for the anti-seismic design of buildings. However the first anti-seismic basic design criteria were introduced in 1985. For this reason, buildings designed after 1985 have the strength to resist earthquakes occurring with a possibility of 10% in the next 50 years. Besides, all public schools have been renovated and reinforced against earthquakes from footings to slabs.

### Floods

The Water Development Department has carried out an extensive risk assessment for the risk of floods, in 2013. Based on this assessment, it has devised a national plan for coping with this risk. Planning includes widening of some riverbeds at points, construction of retaining dams and controlled lowering of water dam levels when heavy rain is expected. Many local projects, including rain management capabilities are under way.

### Forest fires

During the last 20 years different prevention measures are in place which include prohibition of fires for agricultural purposes and the construction of green points for disposing of recyclable material; cleaning vegetation along roadsides in late Spring to early Summer; having anti-fire campaigns by the Forest Department and the Fire Service. Preparation measures include hiring of seasonal firefighting personnel during the fire season and strengthening the aerial firefighting capabilities of the Republic of Cyprus.

### 23. Low probability risks with a high impact

*List any low probability risks with a high impact.*

As HILP risks for Cyprus may be considered the following

Earthquake with a probability of occurrence 2% in the next 50 years

The risk assessment that was conducted in 2018 has exhibited that the damages for this level of probabilities may be catastrophic, especially when the earthquake is accompanied by a tsunami. Eurocode 8 provides for a level of probability of 10% in the next 50 years and this sets the anti-seismic strength of new construction.

CBRN-E

The risk is currently under assessment. The Cyprus Civil Defence has outsourced the study, undertaken by two leading universities in Cyprus and the final report is expected to be submitted by early December 2020.

**END OF REPORT**