

The national self-assessment of the 5.1. ex-ante conditionality on risk prevention and risk management:

the existence of national or regional risk assessments for disaster management taking into account climate change adaptation

According to the CPR Regulation (1303/2013) and EAFRD Regulation (1305/2013), the **criteria for fulfillment** of ex-ante conditionality are:

A national or regional risk assessment, with the following elements, shall be in place:

- + A description of the process, methodology, methods and non-sensitive data used for risk assessment as well as of the risk-based criteria for the prioritization of investment;**
- + A description of single-risk and multi-risk scenarios;**
- + Taking into account, where appropriate, national climate change adaptation strategies.**

The conditionality is applicable to the Large Infrastructure Operational Programme and National Rural Development Programme.

The **Ministry of Internal Affairs – General Inspectorate for Emergency Situations (MIA-GIES)** is the **national authority responsible for this ex-ante conditionality fulfillment**. Ministry of European Funds requested and received **JASPERS support** in order to fulfill the ex-ante conditionality on risk prevention and risk management.

As a consequence, during the Partnership Agreement and Operational Programme negotiation, Romania assumed an **action plan** in order to meet the requirements of the conditionality and the following actions were taken:

- 1. updating the institutional and legal framework for risk prevention and management;**
- 2. implementation of RO-RISK TA project, consisting in several activities answering to the ex-ante conditionality criteria;**
- 3. development of the National Action Plan on Climate Change which detail the sectorial actions of the National Strategy in the field.**

These actions were implemented taking into account the criteria for fulfillment of ex-ante conditionality, as follows:

- + A description of the process, methodology, methods and non-sensitive data used for risk assessment as well as of the risk-based criteria for the prioritisation of investment**

- 1. updating the institutional and legal framework for risk prevention and management**

During the Partnership Agreement negotiation process, it was pointed that in Romania the legislative framework on risk management is oriented mainly on response actions and disaster management and that it is less developed on risk assessment. At the same time, the analyses revealed that recorded data on hazards and disasters are managed within different ministries/institutions, according to their responsibilities for risk management within the national system for emergency situations management.

As a consequence, it was decided that one action for the ex-ante conditionality fulfillment have to be a study focused on the needs identification in the field of legal and institutional framework

optimization. The study envisages the screening of the national regulations governing disasters risk management, focused on legislative gaps, overlaps and best practices on the growth of institutional capacity. In addition, the study has to contain a chapter dedicated to recommendations on improvement of legal and institutional framework for ensuring the continuity of the process of assessing the risks of disasters.

As is described below, some of these activities were already developed by MIA-GIES (a part of regulatory framework being now already modified), and the rest will be contracted during the first part of the next year. Those remained activities have no direct impact on the risks evaluation process itself.

As a consequence, the efforts were oriented towards improving the primary, secondary and tertiary legislation in this field. Therefore, the following actions were taken:

- **setting-up the Department for Emergency Situations and the National Committee for Special Emergency Situations** through the EGO No 1/29.01.2014, approved through Law No. 139/2014;
- **setting-up the National Platform for Disaster Risk Reduction (NPDRR)** through GD no. 768/2016. The development of The NPDRR was part of the implementation of the measures under the Hyogo Declaration¹. It is organized and operates as a national multi-sectoral and interdisciplinary mechanism, consisting of the technical and scientific support groups and NGO representatives, the associative structures of local authorities, professional associations, trade unions, higher education institutions and research institutes, cultural institutions of religious denominations and associations recognized by law and mass – media;
- **setting-up the National Risk Assessment Working Group (GLERN)**. The legal basis for **GLERN** establishing was created within the GD no. 768/2016. It will be operationalized by GIES through ministerial order until December 2016 (GLERN is the interinstitutional body, where central public administration, academia and research institutions are represented, with the purpose to develop a cyclical process of risk assessment in an institutional well defined framework).

<http://www.igsu.ro/index.php?pagina=legislatie>

http://igsu.ro/documente/legislatie/ORDONANTA_DE_URGENTA_Nr21.pdf

<http://legislatie.just.ro/Public/DetaliuDocument/180860>

2. Implementation of RO-RISK TA project

Methodology for National Risk Assessment

The main results of the process of risk assessment in Romania were achieved in accordance with the **Methodology for National Risk Assessment**, based on **individual assessments of sectoral risks**.

Details on risk assessment methodology it can be found at: <http://www.igsu.ro/documente/RO-RISK/Metodologia%20de%20evalua%20unitara%20a%20riscurilor%20-%20prima%20versiune%20draft.pdf>

The methodology was developed based on the provisions of the Commission Guidance on Ex-ante Conditionalities for the European Structural and Investment Funds, through two types of activities:

¹ <https://www.unisdr.org/we/coordinate/hfa>

research activities, represented by various studies and analysis, and *consultation with various stakeholders* involved in risk management and assessment.

For **research activities**, during the entire process of elaboration of its first draft, the provisions of the **Commission Staff Working Paper - Risk Assessment and Mapping Guidelines for Disaster Management and ISO 31010** were taken into consideration.

The research activities consisted in conducting sociological research, comparative studies and legislation analysis aiming at gathering data on the existing situation regarding institutional framework and possible way of improving it, identification of various thresholds for impact indicators, identification of methodological similarities for various already existing regulation and methodologies in force for different types of risks.

The studies developed in the research activity included also analysis and identification of best practices cases across European countries. The methodologies from various countries were analyzed in a comparative manner and recommendations regarding the best approach to be adopted in Romanian case, were formulated.

Another useful output of the research activity consisted in an overview of the existing domestic regulation related with evaluation and risk management.

This information was further used in formulating the main elements of the methodological framework to be applied in case of assessment of all types of risks. Some of the definitions or other elements of the Methodology were considered and proposed for adoption.

During the **consultation stage** a **wide range of actors and stakeholders** were involved and various instruments were used such as:

- Surveys among citizens and representatives of various institutions regarding the risk acceptability – thresholds of impact indicators for various risks;
- Interviews with relevant representatives of the institutions involved in risk assessment and management – identification of best approach in development of various components of the methodology;
- Workshops – the methodology was subject to discussions during three (3) workshops organized in order to reach a relative consensus among specialists regarding the thresholds and main components of the methodology. The main topics of the discussions were the following: description of scenario development and selection, description of the main types of impact with corresponding thresholds, technical solution for calculation of possible impact, cross border issues, techniques for calculation of global impact and a proposal for presenting in a common matrix with all types of risks in Romania, based on values of their estimated impact and likelihood. The participants to the workshops were mainly from specialized departments in ministries and governmental agencies (90 specialists from central agencies and authorities with responsibilities in the field of risks management, research institutes, universities, NGOs);
- Input from the partner institutions of GIES involved in developing of sectoral risk assessments (assessments developed for each type of risk consisting in description and analysis of risk scenarios) – a final set of recommendations were formulated after disseminating the first draft of the methodology to those institutions which were later involved in its application in the assessment of each type of risk (research institutes, universities, central agencies and authorities).

The risk assessment took into consideration **all categories of impacts, respective: human, economic, environmental, as well as political and social impacts and transborder aspects.**

Detailed economic and sociological methodologies were developed in order to support the sectoral risk assessments. During this phase, the content of the Methodology was once more subject to a consultation process, thus being modified, according with the recommendations of the institutions involved in the sectoral risk assessment.

In order to calculate the impact for all the criteria, the scale for the Impact of the Criteria (C) had 5 range of scales, from very high impact to very small impact and is common to all the indicators. The scale included a series of indicators which were selected and defined as a result of the consultations with experts and public authorities, taking into account the European Commission recommendations, the methodologies of the Member States and the commonly accepted thresholds as representative of the impact.

Physical Impact

This type of impact referred to the negative physical effects of a risk event of the exposed elements. The analysis of the impact of the criteria was performed for each of the selected scenario for each type of risk. The indicators composing this type of impact were: number of deceased people, injured people, evacuated people, people with no access to basic services, number of people in distress, kilometers of affected transport infrastructure, kilometers of affected utilities infrastructure, number of machinery and equipment, sq. km. of affected area and environment - the protected area affected.

Economic Impact

The economic impact referred to the costs associated with human loss, the costs associated with direct material loss, costs associated with environmental loss, costs for the intervention of the task forces and indirect costs.

Social and psychological impact

The analysis for the social and psychological impact generated due to the occurrence of a risk event was a substantial element of the impact analysis. It had a key role in the selection of the most important national risk scenarios. It consisted of disruption to everyday life and the psychological impact.

Study on acceptable risk in Romania, through a TA contract

Establishing a threshold of risk accepted is a necessary step for the purpose of carrying out a systematic process for assessing risks, in line with ISO 31000 and 31010. Romania has addressed this issue through a survey which on the one hand reflects the opinion of the Romanian society of the acceptance of the risk, and on the other hand represents input into the risk assessment phase treated within the unitary methodology of risk assessment at the national level. The study had three components, as follows:

- study on the classification **criteria for impact assessment of risk** at the national level, which included:
 - comparative study on the classification criteria of impact used by EU Member States within national risk assessment methodologies;
 - survey on population, central and local public authorities, academics and experts from research institutes;
 - report including conclusions and proposals on defining criteria for impact.
- study on the level of acceptability of risks and global risk at the national level;

- comparative study on the level of acceptability of the risks at European and international level;
- surveys conducted for the population and the local and central public authorities, validated by academics and experts within research institutes;
- report including proposals on the level of acceptable risk in Romania;
- study on the determination of the level of risks awareness and the degree of preparedness of the population in the event of disasters;
 - questionnaires dedicated to determine the level of risk awareness among the population;
 - questionnaires dedicated to determination of the degree of training of the population in the event of disasters;
 - investigation on the representative sample of the population regarding the level of risk awareness and preparedness for disasters;
 - report including conclusions resulting from the surveys.

Setting up the database with risk exposure and response capabilities and the development of WebGIS application and GIS portal

The GIS system contains information for 10 specific hazards of Romania, as follows: floods, drought, earthquakes, landslides, epidemics, Seveso accidents, forest fires, accidents involving dangerous substances, nuclear accidents and zoonosis.

The GIS system contains the risks maps, geo-processing GIS tools for determining multi-risk areas and GIS portal for the dissemination of information.

Also, the system consists of databases containing the information on the elements at risk and intervention capabilities at the level of administrative territorial unit. This information is mainly collected by the National Agency of Cadaster and Real Estate Publicity and the National Institute of Statistics. Risk assessment involves the use of a wide range of data. For the data for which there are no information available, data collection in the field will be ensured.

The system allows the interconnection of all institutions involved, irrespective by their hierarchical level, and provides the information on the overall and sectoral risk in Romania. This information is a prerequisite for a coherent disaster management. Moreover, the system will provide modern tools for management of emergency situations via the GIS portal. This leads to a vehicle of sharing the existing resources (maps, templates, geoprocessing tools, etc.) to support decision making for interventions in disaster as well as aid distribution to those affected.

Authorized institutions will share with the system implemented by IGSU, hazard maps for different scenarios, the information being stored in the system for calculating multi-risk. The system will be integrated with GIS / non-GIS implemented (ex. INIS Geoportal) that will enable the creation of complex geoprocessing tools for creating risk maps.

The system is currently under development, and it is available only online to users and partners in the RO-RISK project for loading data and running tests (<https://www.ro-risk.ro/SitePages/Pornire.aspx>). According to the implementation plan of the project, the GIS portal will be available for the public by the end of February 2017.

The list of major risks to treat at national level

At the same time, Romania has set a series of objectives which aim for an efficient risk management and achieving a residual risk less than acceptable level and which contribute to the prioritization of investment in this area. This prioritization will be based on the risk assessment which provides the list of major risks to treat.

According to statistical frequency and to historical data, **the risks with the highest probability to occur in Romania are: floods, drought, earthquakes, landslides, epidemics, Seveso accidents, forest fires, accidents involving dangerous substances, nuclear accidents and zoonosis.**

Romania developed the national evaluation of the risks in order to provide valuable information for further prioritization of the actions meant to diminish the possible vulnerabilities and to improve the response capacity as well as prevention capacities in case of occurrence of these risks.

Taking into consideration the aspects above mentioned, the investments will envisage:

- to achieve a high level of protection against disasters by preventing or reducing their potential effects/impact from the economic, social and environmental point of view;
- to enhance preparedness to respond to disasters;
- to facilitate rapid and efficient response in the event of disasters or imminent disasters;
- to increase public awareness and preparedness for disasters.

The results of the national risk assessment are presented in the National Report for Risk Assessment, which will be available on GIES web-site by January 2017.

Description of single-risk and multi-risk scenarios

The risk assessment process, its instruments and results have been developed according to the **guidelines and the Commission Staff Working Paper on "Risk assessment and Mapping Guidelines for Disaster Management" from 21st December 2010 and ISO 31010**. It also took into account the **National Climate Change Adaptation Strategy and National Action Plan on Climate Change** which address the impact of climate change on health, agriculture and forest, biodiversity and ecosystems, water (including costal and marine areas), infrastructure and constructions.

The main elements of the Methodology were applied and the scenario was built as follows:

Single risk scenarios

For each of the risk assessed, the worst – case scenario was build, based on historical data. The analysis was based on the value of the indicators for each type of impact. As an example, in the case of the risk of earthquakes, one of the major earthquakes which took place in Romania was in March 1977. Its consequences were considered a benchmark for the worst - case scenario for this type of risk. Similar approaches were developed for the scenarios that were developed for the rest of the risks.

Baseline analysis was the starting point in identifying and building scenarios. These elements were important because they enable, during the scenarios building process, to differentiate between:

- Scenarios that were based on historical events that had a major likelihood to occur (floods, dangerous transport accidents, etc.);
- Scenarios which may include indirect risks and longer-term development (global warming, climate changes).

Experts from various fields were involved in order to identify different scenarios. In addition to sectoral risk experts (experts in physics, epidemiologists, etc.), experts with other specializations were involved (experts in public administration, construction, agriculture, sociologists, economists,

etc.). The team's multidisciplinary nature enabled the identification and informational scenario building, in a more accurate manner.

The methodology presented a series of features that should be followed in this first stage, which aimed at the identification of an extensive number of possible risk scenarios (approximately 40 for each type of risk).

All scenarios were identified based on the hazard's likelihood. Subsequently, the scenario's impact was checked, in order to establish whether it is affecting Romania's national or sectoral strategic interests. These two elements enable further the selection of a number of plausible scenarios (5 for each type of risk).

A general checklist was pursued during the scenarios building phase, according to the criteria mentioned in the Commission Staff Working Paper on "Risk assessment and Mapping Guidelines for Disaster Management".

Multi-risk scenarios

The development of multi-risk scenarios in the process of risk assessment is recommended by the European Commission, in particular to the Member States which are in a later stage of the national risk assessment. The following steps are recommended:

1. Identifying multi-hazard scenarios, starting from the first event and assessing other possible triggers for other possible hazards or events leading to hazards;
2. The exposure and vulnerability analysis for each hazard and risk separately in each line of the scenario;
3. The estimated risk for each hazard, adverse event and multi-risk scenario.

Multi-risk scenarios refers to the appearance of several different risk events, but interconnected, such as NaTECH events (Natural Hazard Triggering Technological Disasters), or events generating a domino effect. These were the object of a multi-risk assessment for situations where an event triggers multiple events with different risks (e.g., an earthquake followed by several fires).

A multi-risk assessment consists in determining the events overall risk which:

- Occur at the same time;
- Follow each other, being initiated by the same trigger or hazard;
- Do not follow chronologically, but the events' occurrence influences the same exposed/vulnerable elements.

Moreover, in the risk analysis and scenario development for a range of hazards (droughts, floods, forest fires etc) was considered scenarios developed on the basis of projections in future and taking into account the climate change aspects.

The results of risk assessment for hazards considering climate changes is currently under development and will be available online through the RO-RISK GIS portal by mid of December.

As regards **coastal erosion risk**, it was not analyzed in the national evaluation of risks because this risk was evaluated in the Flood risk management plans (FRMPs) in Dobrogea and in the Master Plan "Coastal zone protection and rehabilitation" (due to vicinity with Black Sea). The Master Plan sets out the strategic vision for the management of the entire Romanian coast and provides a prioritized approach, sustainable oriented medium-term (2014-2020) and long term (2021 - 2041) in order to manage and combat erosion consequences and implications related to the environment, marine ecosystems, economic and social values of the coastal area.

The Master Plan can be accessed on the “Romanian Waters” National Administration web-site <http://www.rowater.ro/dadobrogea/Master%20Plan%20privind%20Protecia%20i%20Reabilitarea%20Zonei/Master%20Plan.pdf>

✚ Taking into account, where appropriate, national climate change adaptation strategies

The National Strategy on Climate Change 2013-2020 was approved by the GO 529/2013. The Strategy addresses two main components: the reduction of greenhouse gas emissions concentration (Mitigation) and adapting to the effects of climate change (Adaptation). This Strategy was up-graded and the National Action Plan on Climate Changes was elaborated through technical assistance with World Bank support (OPERA CLIMA Project).

The new Strategy and Action Plan were approved through Governmental Decision no.739/2016 and it was published in the Official Journal no. 831 and no. 831bis./20.10.2016. The Strategy and the Action Plan are available on the Ministry of Environment, Water and Forests web-site <http://www.mmediu.ro/categorie/schimbari-climatice/1>.

During the national risk assessment the specific elements of climate changes contained into the Strategy and Plan on Climate Changes were taken into account. Thus, historical events and available statistical data, as well as projected ones like temperature, heat waves, droughts, heavier precipitation and flooding, forest fire etc., relevant for climate change were used in developing all documents - Strategy, Action Plan and risk assessment.

As consequence, some scenarios for floods, drought and forest fires in the process of national risk assessment were developed taking into account the evolution of climate factors (temperature, precipitation, desertification process, erosion), in order to estimate the occurrence and impact on Romanian territory.. In addition, the risk analysis shows that some actions on climate changes are closely related and should be implemented in synergy and full coordination with the disaster risk management policies, for the above mentioned risks.

The National Strategy on Climate Changes, the National Action Plan on Climate Changes and the results of the national risk assessment revealed that Romania need to develop climate-proofing investments from the perspective of prevention, protection, public awareness, preparation, response and recovery/reconstruction.

All documents highlight that adoption of the cross-cutting and integrated approach is needed. Accordingly, climate change must be managed in all operational programs, particularly those that concern the energy, transport, urban development, water resources, forestry, agriculture and rural development. In addition to addressing cross-sectoral, approach, integration requires different measures: reducing GHG emissions, adaptation to climate change, institutional availability and adequate financing instruments, as well as participation and inclusion of multiple stakeholders. Thus, in response to current and future climate changes impacts, Romania has to invest in all fields, but especially in infrastructure and physical assets.

To ensure a planned and systematic process of risk treatment in prioritizing investments were taken into account the following principles:

- Protection of human life is paramount and therefore the investments must be made to reduce all risks;
- Reduction measures must be taken for each risk separately, but must also consider the multi-risk scenarios and synergies among risks where it is feasible;
- Investments for covering one risk should be distributed depending on their importance and impact on risk reduction;

- Risk treatment measures are financed and implemented proportional to the level where the risk is situated under national risk assessment.

To conclude, a national risk assessment is in place, providing information related to the process, methods and data uses, developed based on single-risk and multi-risk and embedding climate change. The relevant operational programme will take into account the results of National Risk Assessment. Based on this, the conditionality 5.1. is considered to be fulfilled.