Report on capacities and capacity building needs at the national and local self-government level for adaptation to changed climate conditions

REPORT 2

List of Abbreviations

GDP	Gross domestic product
CeSID	Centre for Free Elections and Democracy
GHG	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
LSU	Local self-government units
EU	European Union
RCP	Representative Concentration Paths
UNDP	United Nations Development Program
USD	U.S. dollar
UNFCCC	UN Framework Convention on Climate Change

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INTRODUCTORY NOTES

Having in mind the growing climate change , the imperative of today is to inform and educate the target audience about their nature, as well as why climate change occur, the damage that occurs as their result, i.e. floods, droughts, heat stroke and other consequences and adaptation.

The role of communication and capacity building in this process is very important whythe team involved in the project implementation aims to contribute to:

➔ Raising the level of awareness and education of the general public and all relevant stakeholderson the topic of climate change, dangers, threats, but also the opportunities that climate change create.

➔ Improving the work of Ministries, as well as organizations and institutions that perform certain tasks and activities in the segment of climate change for the needs of the Ministries, in terms of greater transparency and efficiency; and

➔ Improving the exchange of information in the process of preparation, adoption and implementation of public policies, strategic documents and regulations in the field of climate change and more efficient integration of adaptation issues into strategic documents.

The organization of trainings, trainings and other forms of communication plays a significant role in this.

1. CURRENT SITUATION

Based on many years of experience in the field, experts involved in project implementation, as well as the results of analyses for the needs of the Draft National Adaptation Plan, the Second and the Third Report of the Republic of Serbia under the UN Framework Convention on Climate Change (UNFCCC) and the first report within this project, it is clear that the aspect of climate change, except in rare cases, is absent in the creation and implementation of sectoral policies and legislation.

Moreover, at the level of local self-governments, there are almost no development documents that, at least declaratively, include the problems of climate change.

Climate change legislation, although prepared in 2017, still has draft status without clearly defined deadlines for adoption by the Government and the Assembly.

Although the organizational units responsible for the work in the field of climate change from the aspect of the sectors to which they belong exist in the line Ministries (Energy and Agriculture), the issue of climate change is still considered the exclusive competence and responsibility of the Ministry of Environmental Protection.

The intersectoral approach to solving the problem of climate change is not dominant, not even in scientific and research circles, and there is almost no non-governmental organization that deals exclusively with this area.

Activities and measures that are implemented and contribute to the fight against climate change are the result of fulfilling sectoral legal obligations and /or financial interests (increasing energy efficiency, renewable energy sources, flood protection, irrigation, etc.), and not "climate" responsibilities.

Mechanisms for strengthening horizontal connectivity at the national level have been initiated on several occasions, primarily through the formation of various working groups, but the task of the working group ends with the completion of the project and such mechanisms are temporary, one of the attempts was the formation of the National Council for Climate Change, which was established by the Government of the Republic of Serbia at a session held on November 20, 2014. The then Minister of Agriculture and Environmental Protection. was appointed the president of this body. The tasks of the Council were to monitor the state, development and implementation of national policy in the field of climate change, sectoral policies and other planning documents, from the aspect of consistency with national climate change policy and propose measures for directing, coordinating and improving policies, measures and activities in this area.; monitor the implementation of international obligations of the Republic of Serbia in the field of climate change, propose measures to mitigate climate change, i.e. reduce greenhouse gas emissions and adapt to changed climate conditions; consider the need for amendments to laws and other regulations relevant to the field of climate change and give opinions to the Government; make proposals for achieving the goals of combating climate change, especially in the process of negotiations between the Republic of Serbia and the EU in the field of climate change; monitor the implementation and propose measures to improve the national strategy for combating climate change with an action plan; promote the combat against climate change and the inclusion of climate change issues in sectoral policies and the like. However, even such a mechanism has not provided a lasting solution in the field of climate change.

Mechanisms for strengthening vertical connectivity (national level to the level of local self-government units) have been initiated on several occasions, mainly through the activities of the SCTM or through the implementation of several projects. Like the previously described mechanism, networking and connection attempts were also temporary and ended with the finalization of the project.

The situation specifically in the area of the impact of climate change and adaptation to changed climate conditions is even worse, primarily because there is no EU legislation that regulates this area.

This situation is undoubtedly the result of the lack of capacity of decision makers, but also of the general public and target groups that do not recognize the importance of this problem for sustainable and financially justified development and investment planning.

A large package of problems that accompanies this area was detected in the lack and insufficient transparency of data and information, as well as the results of implemented projects. The current situation in information and data exchange mechanisms is still insufficiently transparent. Unfortunately, there is a lack of technical literacy, especially in less developed municipalities, so it is a common situation that despite the available information, it is not used or used in an adequate way.

For the purposes of this report, a combined research method was applied. In order to identify the existing and the need to strengthen the capacity to deal with adaptation to changed climate conditions, the results of surveys, interviews and analyses of public policy documents were used.

2. TARGET GROUPS AND STAKEHOLDERS

The effects of climate change on the Serbian economy and society are already visible. The expected climate change will certainly result in a series of new negative consequences for society and its development in the future.

Among the most negative direct consequences of climate change, of course, is the rise in temperatures, whose changes affect human health and life, but also water management, agriculture and energy production, forest fires and others. On the other hand, extreme rainfall, which results in floods, landslides and landfalls, directly endangers human lives and property, as well as security of supply and availability of food, water and energy.

Starting from these direct impacts of climate change on human life and work, it is clear that they can result in significant financial losses, slowdown in economic development, reduced access to health and social protection, increased poverty.

The poorer part of the population will certainly be the most endangered, so this part of the population is the most vulnerable to climate change, but the vulnerability is also reflected in all those groups that work in the areas most affected by climate change (water management, agriculture, forestry).

Estimates show that the growth of the average global temperature has a negative impact on the overall value of the GDP of the Republic of Serbia. A decrease in total GDP in relation to the potential that would be realized if there was no global warming (and including all activities affected by increasing temperature) would be (Table 1)[1]:

Table 1. Decrease in total GDP compared to that in conditions without climate change (and includes all the activities affected by rising temperatures) expressed in billions of USD and%

1 ° C	15,465 (1.20%)	328,899 (4.74%)	344,364 (4.19%)
2 ° C	58,124 (4.53%)	708,193 (10.20%)	766,317 (9.32%)
3 ° C	59,107 (4.97%)	831,296 (12.88%)	890,403 (11.65%)
4 ° C	97,536 (6.87%)	1,904,874 (18.46%)	2,002,410 (17.06%)

A reduction in total GDP can be partly avoided by timely identification of needs and adaptation to changed climate conditions.

2.1. Agriculture sector

Analyzes show that Serbian agriculture is particularly vulnerable to climate change.. In agriculture, plant production (farming, vegetables, fruit growing, viticulture) is especially endangered, as well as cattle breeding and fishing, and through them food production. Irregularities in the supply chain of raw materials for the food industry cause economic and social insecurity.[2] In the crop production segment, climate change leads to

[1] Study on socio-economic aspects of climate change, http://www.klimatskepromene.rs/wp-content/uploads/2020/04/cir_screen-_06-04-2020_DRAFT_-Study-on-the-Socio-economic-Aspects-of-Climate-Change-on-the-Republic-of-Serbia_UNDP.pdf

[2] Impacts of climate change on Serbian agriculture, http://www.klimatskepromene.rs/wp-content/uploads/2019/11/e-pub_Uticaji-promene-klime-na-srpsku-poljoprivredu.pdf

reduced yields and fruit quality. Additionally, in the case of natural disasters such as extremely low temperatures during dormancy, large amounts of precipitation due to which the land is blocked, stormy winds, extreme effects of the hail, etc. there may be complete loss of fruit and absolute damage to production.

Strengthening capacity in terms of the impact of climate change on crop production is important for both agricultural producers and owners of companies operating in the field of food and beverage production, as well as processing and purchase. The situation is similar in the livestock segment, where meat and milk processors can be important.

Also based on the results of a survey conducted among agricultural producers[3] with public participation, which resulted in a risk assessment and identification of adaptation measures, it is clear that a certain level of understanding of the impact of climate change exists among producers in the agricultural sector. This is confirmed by the attached survey prepared by CeSID for the needs of UNDP.

At the same time, it is clear that there is a need to improve knowledge, especially when it comes to options and possibilities of adaptation to changed climate conditions.

Informing about the possibilities of occurrence, but also adaptation as a reaction to the appearance of new (foreign, arrived from other continents) pests, diseases and weeds can be important for agricultural producers, as well as institutes and companies engaged in research in the field of their control.

A good example of organizational structure and networking for other areas, can be seen through the mechanism that exists in the field of agriculture as a significant potential through the Agricultural Advisory and Expert Service

Advisory work in agriculture is performed in order to raise the general level of knowledge of agricultural producers and their information, increase competitiveness and modernization of agricultural production, increase production profitability and product quality, introduce health safe food production, encourage interest associations of agricultural producers, preserve natural resources, protect the environment and improving living conditions and the culture of living in the countryside, and thus rural development.

The most important tasks of the professional service are:

- providing professional assistance in the application of scientific achievements and new technologies,
- providing expert advice and services,
- transferring practical knowledge and skills for technological and technical improvement of production
- introducing agricultural producers to good agricultural practice
- conducting demonstration experiments in different areas of agriculture

[3] http://www.klimatskepromene.rs/wp-content/uploads/2019/11/e-pub_Uticaji-promene-klime-na-srpsku-poljoprivredu.pdf

- training of agricultural producers for management of agricultural holdings and keeping bookkeeping records of farms
- providing advice on plant protection based on data from the forecasting and reporting service
- encouraging interest associations and entrepreneurship in agriculture
- providing advice and giving proposals for the expansion of economic activities as additional activities on the farm
- recommendation on rational land use

From the aspect of capacity building, the Chamber of Commerce of Serbia, more precisely the Livestock and Farming Group, the Organic Production Group and the Plant Production Group of Serbian Chamber of Commerce can also play a significant role.

Given the structure of agricultural producers in Serbia, as well as other characteristics in the sector of agricultural production, the capacity building focus should be on small agricultural producers whose adaptive capacities are low.

From the aspect of institutions important for the assessment of the impact and adaptation to the changed climate conditions, the following are important:

- Ministry of Agriculture, Forestry and Water Management - Administration for Agricultural Land;
- Provincial Fund for Agricultural Development;
- Network of agricultural advisory and expert services;
- Local self-government units;
- Agricultural farms;
- Agricultural producers and
- Scientific and educational institutions (institutes, bureaus, universities).

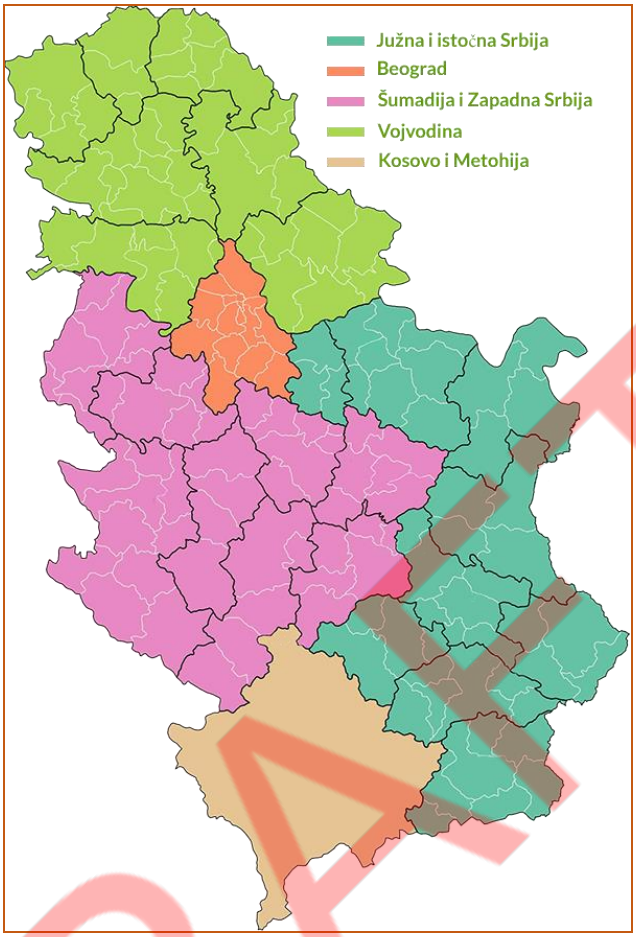

Figure 1. Schedule of the Professional Service by regions in the Republic of Serbia

Professional services are evenly distributed in the Republic of Serbia and by regions are located in the following places:

Vojvodina: Subotica, Bačka Topola, Senta, Sombor, Vrbas, Novi Sad, Ruma, Sremska Mitrovica, Kikinda, Zrenjanin, Vršac, Pančevo

Belgrade: Padinska Skela, Mladenovac

Šumadija and Western Serbia: Kraljevo, Jagodina, Kragujevac, Kruševac, Užice, Novi Pazar, Čačak, Šabac, Loznica, Valjevo

Southern and Eastern Serbia: Vranje, Leskovac, Negotin, Pirot, Smederevo, Požarevac, Zaječar, Prokuplje, Niš

Kosovo and Metohija: Kosovksa Mitrovica

2.2. Water sector

- Consideration of the need to adjust the organizational structure for the management of integrated water management systems, with a hierarchical structure in the relation: facilities - subsystems - higher order subsystems - integrated river system. This issue will be considered in consultation with the relevant structures of the water sector - from public administration, through public enterprises, to individual facilities and systems.

- Integrated water management systems are also large canal systems and they will work in increasingly difficult conditions during the development of deteriorating climatic and hydrological processes.

The organizational structure of the Serbian water sector is currently not adapted to the deteriorating circumstances that are already emerging, and the activities within the NAP should consider and propose to the competent authorities the necessary organizational and staffing changes in order for Serbia to reorganize without major problems. adverse challenges that will be increasingly pronounced. This refers to the entire water sector, from public administration bodies, through public water management companies, communal systems within which there are water supply and sewerage systems, bodies that manage water management systems, hydroelectric power plants, water information systems, necessary administrative and inspection services.

Due to the importance of water and its impact on all other spheres of life and work, besides the Ministry of Agriculture, Forestry and Water Management, which the Republic Water Directorate is an important part, the field of water is under the jurisdiction of several other ministries (construction, transport and infrastructure, mining and energy, health, environmental protection, etc.), agencies, public water management and utility companies, as well as local self-government units.

In order to be able to successfully adapt to new circumstances and respond to the challenges related to integrated water management in the context of climate change, the water sector needs to be further organized and strengthen its capacities. According to their structure and number of capacities, in public water management companies, they were mostly adjusted to the current situation. However, since a significant development of integrated water management systems is expected in the coming period, a larger number of hydraulic civil engineers will be needed to manage such complex systems. In order to see the real situation, it is necessary to determine the adequacy (by number and title) of staff involved in the water management process at all levels. It should be emphasized that there is a lack of hydro-civil engineers, at the level of local self-governments and in the PUC of water supply and sewerage. These companies employ only 246 hydraulic civil engineers in 141 companies, of which 103 are employed in the three largest waterworks in Belgrade, Nis, Novi Sad. Specific employment in the water supply and sewerage sector (according to the Association for Water Technology and Sanitation engineering, 2019) is declining. In 2015, that value amounted to 4.23 employees per 1000 water and sewage connections, while in 2017 it was only 2.91. At the same time, in the surrounding countries, the average specific employment was 9.6 employees per 1000 water and sewage connections. Considering that Serbia is about to realize a large number of wastewater treatment plants, there will be an even greater need for hydraulic engineers, as well as technology engineers.

Previous analyses in the field of the impact of climate change on water management and water resources have indicated a reduction in the flow and availability of groundwater, which can

consequently lead to significant problems with water supply and the quality of available quantities. Given that the strategic sectoral document in the field recognizes the impact of climate change on the water sector, there is an obvious need to strengthen the capacity of decision makers, i.e. institutions that create policies and prepare legislation in the field.

Insufficient capacities in the field of flood protection are illustrated in the document PERFORMANCE AUDIT REPORT Flood prevention in the Republic of Serbia[4], in which finding 1.2 states: "Public water management companies, JVP Srbijavode and JVP Vode Vojvodine, until mid-2019, did not prepare and verify any flood hazard map and flood risk map for 99 significant flood areas in the Republic of Serbia. Therefore, none of the maps was made available to the public and available to other state bodies and organizations, and they were not included in the spatial and urban plans. Without maps, there was no quality basis for: development of flood risk management plans, assessment of potential flood damage, implementation of non-investment flood defence measures and raising public awareness. "

Local governments and public companies responsible for water management also play a significant role in effectively responding to climate change in the water segment. However, among these 99 there are eight significant flood areas, which are on the waters of the second order. In addition to the fact that there is a high risk of floods with significant harmful consequences in these eight flood areas, they are managed by local self-government units, and not by JVP Srbijavode. All eight are located on the territory for which JVP Srbijavode is responsible. This is a consequence of the way waters are divided into waters of the second order. According to the representatives of JVP Srbijavode, local self-government units do not have enough capacity, neither human nor financial, to manage these important flood areas in an appropriate way, which is why this company often provides them with assistance.

From the aspect of institutions important for the assessment of the impact and adaptation to the changed climate conditions, the following are important:

- -Ministry of Agriculture, Forestry and Water Management;
- –Republic Water Directorate (Water Directorate);
- –Public water management companies: JVP "Srbijavode", JVP "Vode Vojvodine" and JVP "Beogradvode";
- –Water management centers: "Sava-Danube" (in Belgrade) and "Morava" (in Niš).
- –HS DTD;
- –Provincial Secretariat for Agriculture, Water Management and Forestry;
- –Republic Hydrometeorological Institute;
- –Environmental Protection Agency;
- –Water management companies
- –Public utility companies with water supply activities, etc.;
- Chamber of Commerce of Serbia, Association of Communal Activity

[4] https://www.dri.rs/php/document/download/2379/1

- –Scientific and educational institutions (institutes, agencies, universities).

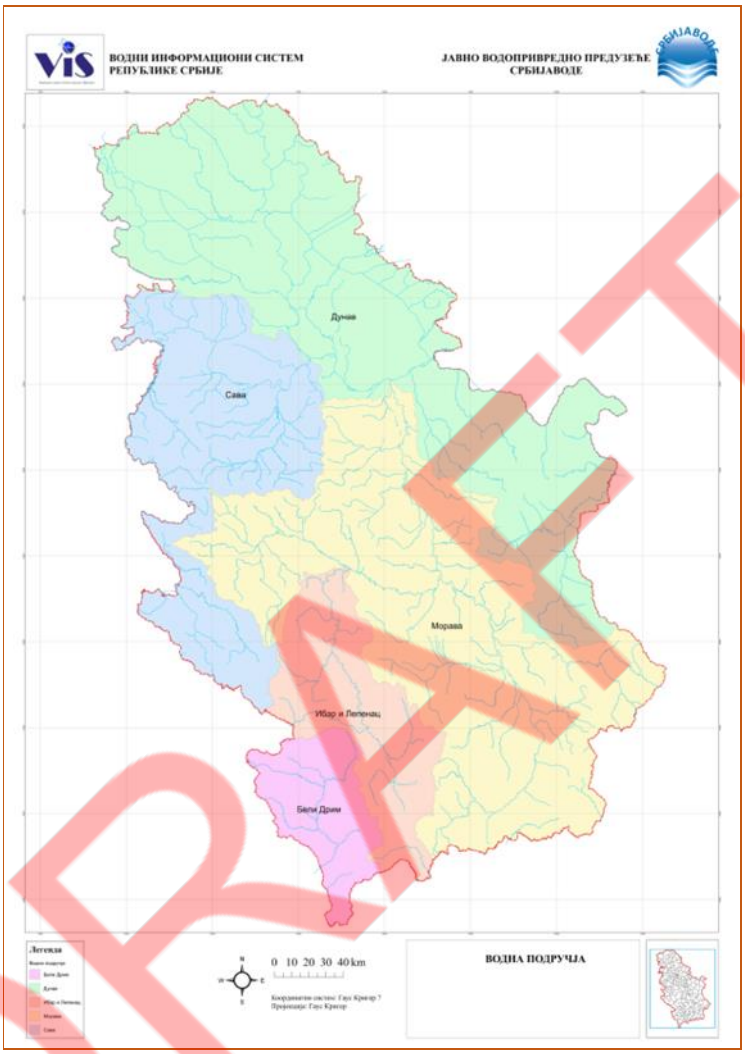

Figure 2. Water areas of the Republic of Serbia with first-order waters

Raising the awareness of local actors, including NGOs, about the importance of reducing pressures and pollution of water resources and multiplied negative effects on water quality due to climate change, could play a significant role in the process of including climate change in sectoral planning and implementation of adaptation measures. The aspect of the impact of climate change and related consequences in the water sector can be important for both energy producers (hydro and thermal potential) and agricultural producers where a significant part of adaptation measures is based on the availability of water resources (irrigation-drainage).

It is evident that capacity building, which includes analyses of the impact of climate change on water resources and water management, can be significant for decision makers in the field of agriculture, especially those in charge of subsidies and other types of assistance (e.g. lending to irrigation systems), but also forestry, having in mind the dependence of certain species on the availability of groundwater and traffic, from the aspect of water traffic.

2.3. Forestry sector

In the forestry sector, climate change results in an increase in the frequency and damage of forest fires, drying, changes in vitality and the occurrence of diseases and pests. Therefore, in addition to the capacity to recognize the consequences of climate change, the capacity for adequate prevention and response, i.e. adaptation to changed climate conditions, is also necessary. Although, the Forest Management Strategy states the need to adapt, the aspects of climate change are not included in decision-making in the sector.

Given that the creation of policies and the allocation of subsidies for the improvement of forest management is a matter of national institutions and institutions of AP Vojvodina, there is a clear need for active involvement of representatives of these institutions in capacity building activities. On the other hand, users and managers of forest assets, including protected natural areas, are an important link in the implementation of adaptation measures, and their knowledge and information in the field of the impact of climate change on the forestry sector is a prerequisite for their effectiveness.

In the forest management sector, the role of specialized civil society organizations (such as the Young Gorani) is important in certain segments.

Key actors for which there is a need for capacity building, primarily to ensure effective implementation of adaptation measures, in the sectors identified in the First and Second Reports of the Republic of Serbia under the UN Framework Convention on Climate Change, as well as the draft Low-Carbon Development Strategy with the Action Plan recognized as most affected by the changed climate conditions are shown in Figure 3 below.

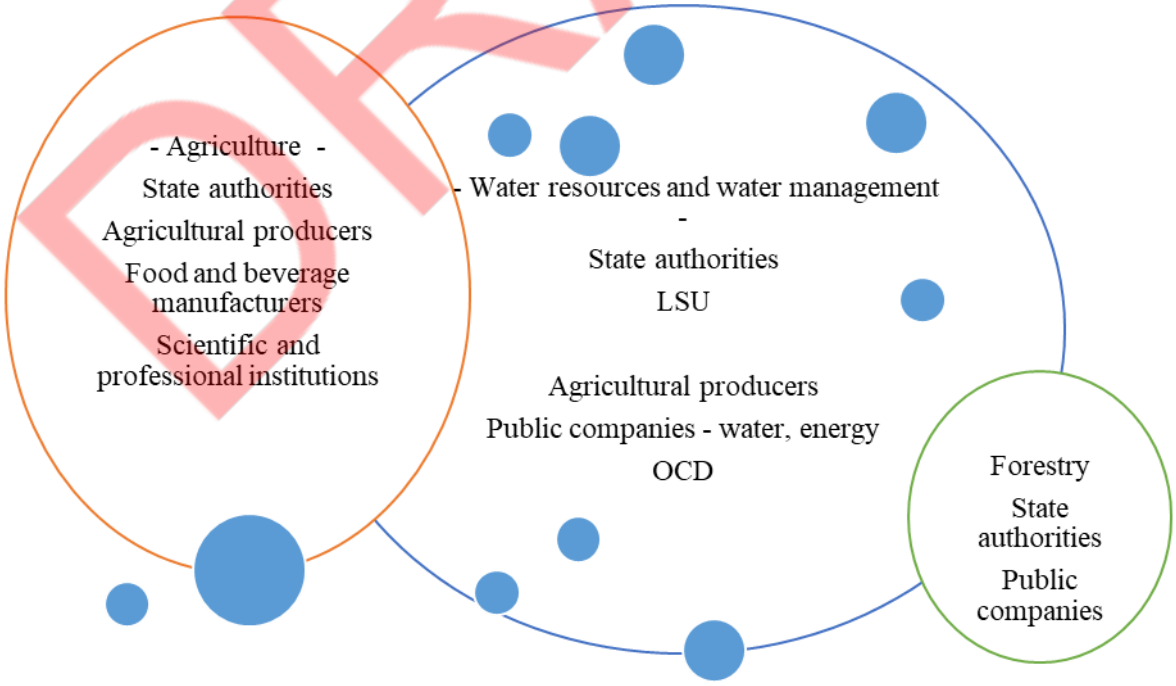

Figure 3. Key actors in the sectors rated as most affected

More specifically, the key actors relevant to the assessment of adverse impact, but also the implementation of adaptation measures are:

–Forest Administration, Ministry of Agriculture, Forestry and Water Management,

–Land Administration, Ministry of Agriculture, Forestry and Water Management,

–PE "Srbijašume",

–PE "Vojvodinašume",

–National parks: "Fruška Gora", "Kopaonik", Đerdap "and" Tara ",

– Institute of Lowland Forestry and Environment (ILFE), Novi Sad,

–Faculty of Forestry,

–Institute of Forestry, Belgrade,

Chamber of Commerce of Serbia, Association of Forestry and Wood Processing Industry, Cellulose and Paper

2.4. Energy production sector

Energy is one of the largest sectors of the Serbian economy, accounting for about 10% of Serbia's GDP.5This sector consists of the oil and gas industry, coal mines, the electricity system, the decentralized district heating system and industrial energy.

Most of Serbia's energy infrastructure is state-owned and managed by public enterprises. The Public Enterprise "Electric Power Industry of Serbia" (EPS) owns most of the energy infrastructure in Serbia, while the electricity transmission system is managed by the Public Enterprise "Electric Network of Serbia" (EMS).

Electricity production in Serbia in 2016 in EPS amounted to 36.461 billion KWh , while final electricity consumption amounted to 35.5 billion KWh . Most of the produced electricity comes from thermal power plants (70-80% of electricity), and to a lesser extent from hydroelectric power plants (about 20%). There are eight lignite thermal power plants (two in Kosovo 6) with an installed capacity of 3,936 MW and nine hydropower plants ("HE") with a total installed capacity of 2,831 MW. In addition to this, there are thermal power plants that run on fuel oil and natural gas, which are operated by heating plants with an installed capacity of 353 MW.

From the aspect of institutions important for the assessment of the impact and adaptation to the changed climate conditions,

- Ministry of Mining and Energy;

[5] Second biennial updated report of the Republic of Serbia (draft) 2020
[6] Reference to Kosovo will be understood in the context of Resolution 1244 (1999), Council of Security.

- Public Enterprise “Electric Power Industry of Serbia" (EPS);
- Public Enterprise " Electric Network of Serbia" (EMS);
- NIS (oil company);
- Environmental Protection Agency of the Republic of Serbia;
- Local self-government units and
- Scientific and educational institutions (institutes, bureaus, universities).

2.5. Transport and infrastructure sector

Similar to forest management, the segment of transport important for adaptation to changed climate conditions, rests on the work of public companies responsible for the maintenance and improvement of transport infrastructure.

The ubiquitous lack of documents, capacity and knowledge regarding the impacts of climate change and possible measures and activities of adaptation to changed climate conditions is especially noticeable among the actors whose work is important for building infrastructure, health system and disaster risk reduction.

In the part of traffic, but also infrastructure in general, construction standards largely determine the sustainability and safety of construction. Based on interviews with actors who may play a significant role in this context, a very low level of understanding of the importance of adapting construction standards to expected climate change is confirmed. The target groups find a possible connection with floods, but not with the long-term effects of climate change, such as high and low temperatures. As the stability of investments and sustainability of the system in almost all sectors is largely based on the sustainability and security of infrastructure facilities, it is clear that capacity building and education related to the impact of climate change and possible adaptation of infrastructure are priority and urgently needed.

Research of administrative, financial and institutional capacities of local LSUs in Serbia in the field of transport policy (SCTM, 2015)[7] showed that in all three dimensions LGUs do not have sufficient capacity for implementation. The pilot research, which was conducted through the project in question, and in which six selected local self-government units participated, among other things, states the following results:

- integrated planning (harmonization with environmental policy, spatial planning, etc.) assessed as very important because there is a large degree of overlap of competencies in the field of transport and other related areas. Problems: unclear responsibilities; insufficient competencies of local self-government representatives for

[7] Analyses of the impact of the process of Serbia 's accession to the European Union on local self - governments in the field of transport policy , http://www.skgo.org/vesti/detaljno/1472/okrugli-sto-odrziva-urbana-mobilnost-u-evropi-potencijal- for-local-government-development-in-srbija

existing competencies and especially for planning of a wider scope (mobility, environment); high policy influence, i.e. individual interests

- dissatisfaction with cooperation with the ministry and carriers, satisfied with cooperation with the Ministry of the Interior (because there is coordination in cooperation through local councils for traffic safety).

- Financial capacities are insufficient (up to 6% of the total budget and are realized over 90%) and are reduced to current maintenance, primarily road network, without much room for further improvements and innovations. Insufficient autonomy on budget decision-making. At that time, the Ministry of Transport received representatives of local self-government units for talks. According to reports from the meetings, their interests are mostly related to the problems of repairing road infrastructure from damage caused by landslides and floods.

From the aspect of institutions important for the assessment of the impact and adaptation to the changed climate conditions, the following are important:

- Ministry of Transport,Construction and Infrastructure,
- Republic Geodetic Authority,
- PE "Roads of Serbia"
- Traffic Safety Agency
- Port Management Agency
- Directorate for Waterways "Plov Put"
- Infrastructure of Serbian Railways a.d.
- Directorate of Civil Aviation
- Chamber of Commerce
- Local self-government units
- Public utility companies and
- Scientific and educational institutions (institutes, agencies, universities).

2.6. Health sector

Aspects of the impact of climate change on the health sector are reflected through direct and indirect impacts. Moreover, the impacts of climate change on the health sector are multiple and are reflected in the impacts on:

- Health of the individual and the population
- Health systems and requirements for certain services
- The ability of the health sector to adapt.

The Institute of Public Health of Serbia "Dr Milan Jovanović Batut", together with a network of three institutes (Novi Sad, Niš and Kragujevac) and 20 institutes of public health form a network in which there is great potential to be used by the Founder of all institutes and agencies of public health is the Government of the Republic of Serbia, which by its founding act defined their basic activities. Figure 4 shows the spatial distribution of the network of public health institutes. Previous activities in the field of climate change, as a positive indicator of intersectoral cooperation and use of the existing capacities, are based on the placement of biometeorological forecast and **Recommendations for treatment and health protection during warm weather,** which the Institute of Public Health of Serbia "Dr Milan Jovanović Batut" implements in cooperation with RHMS.

Although there are satisfactory capacities, the lack of binding procedures, the lack of coordination and prioritization of this issue, the impact analysis and monitoring of adaptation in the public health sector are significantly absent. Whether due to the combination of these impacts or the inertia of the system, impact analyses and monitoring of adaptation in the public health sector are mostly completely absent. Therefore, in the capacity building activities, it is necessary to include representatives of the relevant ministry (which makes decisions relevant to the sector), but also public health institutes that collect and process data and information relevant to the functioning and improvement of the health system in Serbia.

Figure 4. Network of public health institutes

More specifically, the key actors relevant to the assessment of adverse impact, but also the implementation of adaptation measures are:

–Ministry of Health

–Institute of Public Health of Serbia "Dr Milan Jovanović Batut"

–Institutes of public health (Novi Sad, Niš and Kragujevac)

–Public Health Institutes

–Republic Hydrometeorological Institute of Serbia
–Health institutions
–Scientific and Educational Institutions (institutes, agencies, universities).

2.7. Disaster risk sector

The inclusion of climate change aspects in disaster risk reduction depends on the capacity of the ministry in charge of emergency situations, but also of local governments that are legally responsible for disaster prevention and response.

The extent to which capacity building is needed in this area is clear given that the National Disaster Risk Assessment in the Republic of Serbia does not perceive climate scenarios as a horizontal issue and includes them only as an individual chapter indicating expected trends in key meteorological and climatological parameters.

The Sector for Emergency Situations has 27 organizational units:

- Four Emergency Situations Administrations in Belgrade, Kragujevac, Niš and Novi Sad, and

- 23 Departments for emergency situations in Bor, Valjevo, Kranj, Jagodina, Kikinda, Pančevo, Sremska Mitrovica, Užice, Šabac, Kraljevo, Leskovac, Novi Pazar, Pirot, Požarevac, Prokuplje, Čačak, Prijepolje, Smederevo, Subotica, Sombor, Zaječar and Zrenjanin.

The listed units, but also:

- RS Public Investment Office;

- RHMZ;

- River Basin Associations;

- Local self-government units that have recognized the problem of climate change (listed in Report 1);

- Professional and scientific organizations that would develop methodologies for sociological aspects of risk and damage and loss assessment

They are potential participants in the project.

Taking into account the equal importance of all possible risks generated in relation to climate change, examples of sectors for which the greatest need for capacity building has been assessed are highlighted, shown in Figure 5.

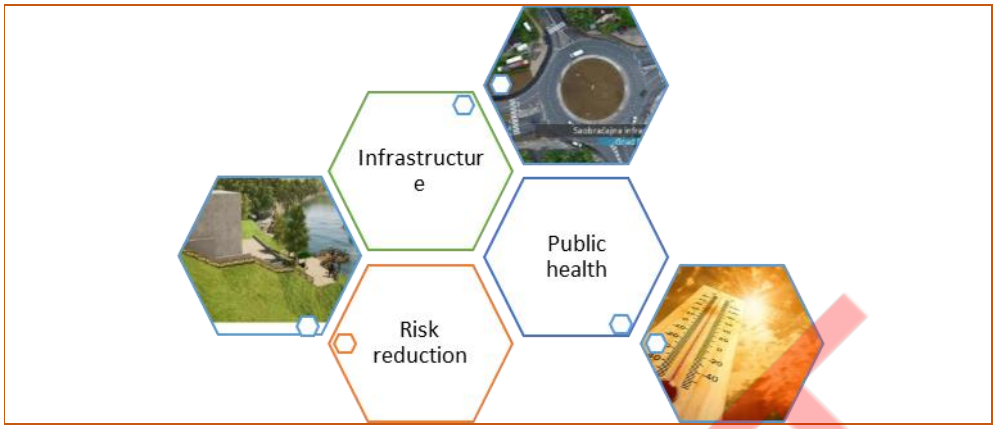

Figure 5: Sectors where there is the greatest need for capacity building

The previous analysis also indicates the existence of certain and surely more significant capacities in the sectors that were initially, in 2008, in documents of importance for climate change, identified as the most affected by the changed climate conditions.

Finally, it must be borne in mind that adaptation to changed climate conditions and the sustainability of the actions that provide it depend largely on systematic and continuous capacity building and awareness raising, but above all education through all levels of formal and non-formal education.

3. DECISION MAKERS

Starting from the representation of the impact of climate change in sectoral planning and legislative documents, there is a clear need to strengthen the capacity of employees in public administration bodies, including decision makers.

This need also arises from the obligations prescribed by the Law on Climate Change (in the draft).

According to the draft Law on Climate Change, the Ministry in charge of climate change prepares a policy document on adaptation to changed climate conditions (hereinafter: the Policy Concept), in order to identify the effects of climate change on sectors and systems, reduce adverse effects of climate change and take action, in connection with the reduction of adverse impacts. The draft law further stipulates that the competent authorities and organizations prepare sectoral strategies, programs and other public policy documents in accordance with the Policy Concept. They, as well bodies and organizations of local self-governments are obliged to submit to the Ministry by January 1 every fourth year in relation to the year of adoption of the Policy Concept a report on implemented adaptation measures, as well as phenomena such as floods, extreme temperatures, droughts and the like and their consequences.

It is evident that in addition to the administrative bodies at the national level, those at the level of local self-governments have a significant role in the implementation of adaptation measures to the changed climate conditions. The need to strengthen the capacity of local governments is confirmed by the analysis conducted by the Standing Conference of Towns and Municipalities at the level of local governments ("Analysis of the capacity of local governments - Area of Agriculture and Rural Development"). The analysis attached to this report shows that the issue

of rural infrastructure is the most important issue, for 33% of local self-employed respondents. On the other hand, economic issues (competitiveness and modernization of agricultural production, diversification of the economy, market, agricultural production, economy and employment), in 36.8% of cases represent another important field in which it is necessary to intervene. These priorities are among the areas most affected by climate change.

In other words, only the built capacities of local actors will ensure the sustainability of planning and interventions in priority areas assessed as key for further rural development, and according to the local self-government units (hereinafter: LGUs).

The existence of certain capacities in the sectors identified in 2008 as the most affected is encouraging, because a number of events in terms of capacity building in these sectors have been realized. In addition, the necessary analyses of the impact of climate change were made and a list of possible measures and activities for adaptation to changed climate conditions was made.

It is obvious that examples of good practice from these sectors should be applied to other sectors as well.

On the other hand, considering the length of the period of work in the sectors of agriculture, water management and forestry and the capacity and information, especially of the decision makers, the lack of reaction is obvious in proportion to the length of the period. The reason for this situation is certainly the outflow of staff and frequent changes at the level of decision makers, which loses continuity in activities.

Bearing in mind the above, it is recommended that in addition to strengthening the capacity of government representatives, focus on other target groups and coach training. This takes into account the experience at the international and EU level, but also at the national level in other areas. These experiences confirm that impact analyses, including those from climate change, which belong to the domain of scientific and research, are not performed by representatives of government bodies and organizations, but by research and scientific institutions.

In the area of adaptation, it is necessary to work on strengthening the capacity of decision makers/state authorities and bodies and organizations at the level of local self-governments. This is because these are the actors who define the goals of development policies, but also the aid systems (subsidies, grants, loans, etc.) to achieve them. Beside them, a significant number of other target audiences that are specific and depend on the sector being observed.

In principle, it is clear that capacity building at the national level is needed, as well as that the existence of capacity at the level of local self-governments is a precondition for implementing adaptation measures and activities, as well as fulfilling reporting obligations from the draft Law on Climate Change.

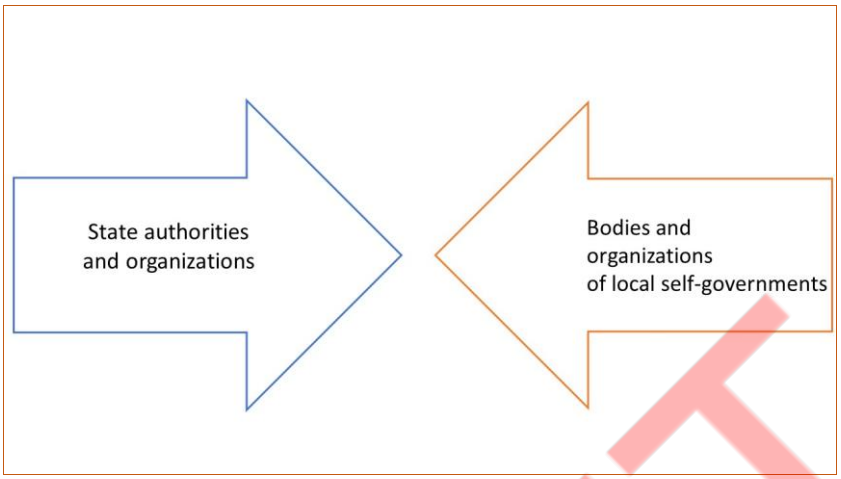

Figure 6: Key levels of stakeholders

4. LOCAL GOVERNMENT UNITS

At the level of local self-governments, the legislation dealing with the area of climate change is mainly placed in the area of environmental protection.
Local self-government units in the existing legislative framework are not obliged to draft documents that would specifically deal with adaptation to climate change. Planning and reporting on adaptation actions at the local level will be defined and required after the adoption of the Law on Climate Change (in draft), in accordance with the Paris Agreement.

The obligation of the local self-government unit is to prepare for its territory, among other documents, provided in the field of environmental protection, the Environmental Protection Program, the Local Waste Management Plan, and other important documents.

The competencies of the local self-government unit that may have an impact on the analysis of the climate change at the local level and adaptation measures can be recognized in several laws. Table 2 highlights the competencies of local self-government in the field of regulations that treat environmental protection, which in the existing framework may address the issue of climate change.

Table 2. Key competencies of the local self-government unit in drafting important documents in the field of environmental protection and connection with climate change

Law on Environmental Protection ("Official Gazette of RS", No. 135 of 21 December 2004, 36 of 15 May 2009, 36 of 15 May 2009 - other law, 72 of 3 September 2009 - other law, 43 of 14 June 2009 2011 - US, 14 of 22 February 2016.76 of 12 October 2018, 95 of 8	Plans and programs of the autonomous province and local self-government units Within the competencies determined by this and a special law, they adopt their plans and programs for the management of natural resources and goods, in accordance with the strategic documents referred to in Article 12 of this Law and their specifics.	Climate change should be integrated into these plans

December 2018 - other law) Art. 13		
Law on Environmental Protection ("Official Gazette of RS", No. 135 of 21 December 2004, 36 of 15 May 2009, 36 of 15 May 2009 - other law, 72 of 3 September 2009 - other law, 43 of 14 June 2009 2011 - US, 14 of 22 February 2016,76 of 12 October 2018, 95 of 8 December 2018 - other law) Art. 61 to Art.68	Adoption of external plans, which are an integral part of emergency response plans Programs and plans of the autonomous province and local self-government units Adopts the environmental protection program on its territory, i.e. local action and rehabilitation plan,	Climate change should be integrated into these plans as part of the risk assessment. Adaptation measures in LGU plans
Law on Waste Management ("Official Gazette of RS", No. 36 of 15 May 2009, 88 of 23 November 2010, 14 of 22 February 2016, 95 of 8 December 2018 - other law) Art. 13	Local waste management plan The Assembly of the local self-government unit adopts a local waste management plan which defines the objectives of waste management on its territory in accordance with the Strategy	The unresolved issue of waste leads to air emissions. Solving this problem has a positive effect
Law on Air Protection ("Official Gazette of RS", No. 36 of 15 May 2009, 10 of 30 January 2013) Art. 31, 33, 36	Air quality plans Adoption of air quality plans Short-term action plans Plans in case of transboundary air pollution	relationship between air quality, i.e. the amount of GHG gases and mitigation and adapt ation measures
Law on Environmental Noise Protection ("Official Gazette of RS", No. 36/09, 88/10) Art. 21	Environmental noise protection action plan	The connection between transport and noise and hence climate change
Law on Nature Protection ("Official Gazette of RS", No. 36 of 15 May 2009, 88 of 23 November 2010, 91 of 3 December 2010 - correction, 14 of 22 February 2016, 95 of 8 December 2018 - other law) Art. 52	Protected area management plan	Climate change should be integrated into these plans due to the sensitivity of biodiversity

In addition to the laws in the field of environmental protection, the context of climate change, i.e. the competence in activities that can contribute to adequate adaptation can also be identified in the following laws:

- Law on Local Self-Government ("Official Gazette of RS", No. 129 of December 29, 2007, 83 of August 5, 2014 - other law, 101 of December 16, 2016 - other law, 47 of June 20, 2018.);
- Law on Spatial Plan of the Republic of Serbia from 2010 to 2020 ("Official Gazette of RS", No. 88/10);
- Law on Disaster Risk Reduction and Emergency Management of the Republic of Serbia ("Official Gazette of RS", No. 87 of 13 November 2018);
- Law on Fire Protection ("Official Gazette of RS", No. 111 of 29 December 2009, 20 of 24 February 2015, 87 of 13 November 2018, 87 of 13 November 2018 - other laws);
- Law on Communal Activities ("Official Gazette of RS", No. 88 of 24 November 2011, 104 of 23 December 2016, 95 of 8 December 2018);
- Law on Waters ("Official Gazette of RS", No. 30 of 7 May 2010, 93 of 28 September 2012, 101 of 16 December 2016, 95 of 8 December 2018, 95 of 8 December 2018 - other law), and until the enactment of regulations based on this law, the regulations enacted on the basis of the previously valid law shall apply;
- Law on Forests ("Official Gazette of RS", No. 30 of 7 May 2010, 93 of 28 September 2012, 89 of 27 October 2015, 95 of 8 December 20018 - other law)
- Law on Public Health ("Official Gazette of RS", No. 15 of 25 February 2016);
- Law on Protection of the Population from Infectious Diseases ("Official Gazette of RS", No. 15 of 25 February 2016, 68 of 10 May 2020),
- Law on disaster risk reduction and emergency management "Official Gazette of RS", No. 87 of November 13, 2018., which obliges local governments to make local catastrophe risk assessments and
- Of key importance is adoption of:
- Draft Law on Climate Change, which introduces an obligation for local governments to report on implemented adaptation actions.

According to the level of development and available capacities, local self-government units, obligations defined by the mentioned laws and other regulations have been realized to a greater or lesser extent in the manner provided by the regulations.

What is present in almost all local self-government units is that even in the circumstances in which the obligation of the local self-government unit has been fulfilled, the same has not been considered from the aspect of climate change. For example, most local governments have developed an Environmental Protection Program for their territory, but only a small number of these strategic documents for the local government have addressed climate change in more detail.

The need to strengthen the capacity of local self-government units is reflected, among other things, in the quality and availability of documents produced by local self-government units for their territory, which are prescribed by law, and thus in the ability to recognize the need to integrate climate change into some of these documents. It would be crucial if aspects of climate change and impacts were integrated into local risk assessments and risk reduction plans and protection and rescue plans.

The capacities of LSU must be improved in terms of systematization of available data, collection and transparency of the same.

5. TARGET GROUPS

The group of decision-makers, consisting of ministries, the National Assembly, government institutions and agencies, provincial and secretariats at the level of local self-governments, is a very broad group of target audience.

Considering the identified sectors that are the subject of analysis within the project, include, among others:

1) Ministry of Agriculture, Forestry and Water Management
2) Ministry of Mining and Energy;
3) Ministry of Infrastructure, Transport and Construction;
4) Ministry of Health;
5) Ministry of Interior;
6) Ministry of Education, Science and Technological Development; as well as
7) Ministry of Environmental Protection;
8) Bodies and organizations of local self-governments.

The focus of the training for decision makers will be on the impacts of climate change and the reasons for the necessity and justification of adaptation to changed climate conditions. The trainings would include both economic aspects and examples of good practice from the country or immediate environment.

The group of significant target audiences that need to be included in the capacity building system includes:

1) Public Investment Office;
2) Republic Hydrometeorological Institute;
3) Republic Geodetic Authority
4) Research and scientific institutions, whose activities are important for adaptation;
5) Institutes of public health;
6) Public enterprises operating in the sector of water, forest, transport and energy production management;
7) Agricultural professional services;
8) Agricultural producers;

9) Associations of agricultural producers and cooperatives;
10) Association of insurance companies;
11) Standing Conference of Towns and Municipalities;
12) Chamber of Engineers and Institute for Standardization;
13) Teachers of elementary and secondary schools, as well as higher education institutions.

Trainings and other forms of capacity building would be based on the necessary data, and their ways of collecting and presenting them in a way that is easily accessible and understandable. Also, the basis of activities for these target audiences would be the possibilities of prevention and response in case of natural disasters and catastrophes, which are affected by climate change. The goal is to train future "trainers" in the field of climate change.

Training programs must include a larger number of civil servants in ministries dealing with the impact of climate change in different sectors and focus on building their capacity.

Provide mandatory training for local governments to develop climate change exposure and vulnerability assessments, as well as training to develop action plans to mitigate and adapt to climate change.

In the context of data availability and data transparency, work on raising the capacities of LSUs to use and connect available information.

Specific training programs will be developed depending on the target audience and the results that will be obtained within this, as well as related implemented and ongoing projects in which the experts are involved.

In addition to the training program, certain recommendations from the aspect of how to communicate (workshops, trainings, brochures, examples of good practice, etc.) with the target audiences will also be made. This is to provide the easiest and most efficient access to information.

In the case of creating a database and an open visual platform, certain formats will be prepared for installation on the platform.

Certainly, the idea is to organize trainings by system and/or sectoral units.