

# **Elaboration of Legal and Institutional Framework for Multi-hazard Early Warning System and Climate Information**

## **Work plan**

### Obsah

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## Bidder's performance monitoring and evaluation mechanism and tools:

### 1. Steering Committee (SC)

SC will consist of appointed representatives from Bidder and project participants. SC will meet quarterly, as well as before each deadline for delivery to give internal approval to deliverables. SC minutes will be at the disposal of the client, if requested. SC will use a review of deliverables conducted by experts working independently on the project team.

*CzechGlobe: Jiri Kolman, email: kolman.j@czechglobe.cz*

*VUV: Pavel Balvin, email: pavel.balvin@vuv.cz*

*DEKONTA: Ales Kulhanek, email: kulhanek@dekonta.cz*

*Association Regional-Rural Development for Future Georgia: Ivane Grigolashvili, email: vgrigolashvili@rdfg.ge*

### 2. Coordinator

*Mr. Pavel Cincera, email: pavel.cincera@ecn.cz*

The coordinator will ensure day-to-day project management and planning as well as prepare regular reports to SC and will immediately report any changes or risks which may affect the project or quality of the deliverables.

The coordinator will collect monthly reports from each expert, when reports of non key experts must be approved by relevant key expert.

3. 2 Key experts will be responsible for on-time delivery and expected quality. They will review and approve internal outputs of non key experts. Key experts will report to the coordinator.

4. Non key experts will be responsible for the realization of tasks appointed to them by key experts. They will report to the coordinator after their relevant Key expert approval.

5. National experts will be responsible for the realization of tasks appointed to them by key experts according to their ToR. They will report to the coordinator after their relevant Key expert approval.

## Phase 1. Technical Note/annual work plan

Develop a detailed methodology, work plan and resourcing plan in close cooperation with the UNDP project team and Chief Technical Advisor;

Responsibility: Coordinator. Other experts allocated: International expert (key expert) No 1 (DRR), International expert (key expert) No 2 (legal), National experts.

Methodology: the work plan will be developed to allocate sufficient time to each task. Expected timeframe is described at the page 6 (Work schedule).

## Phase 2. Desk Research

The team of experts will:

1. Conduct an in depth analysis of the institutional set up for multi-hazard early warning components and climate information (multi-hazard mapping, vulnerability and risk assessment), that includes stakeholder mapping for each component and relevant capacity assessment. Considering the results of the stakeholder mapping, a composition of thematic working group for legal and institutional framework should be prepared in order to conduct thematic working group meetings during implementation of the assignment. [P1] The activity will be supplemented by a team of international experts, hired under the project for the development of multi-hazard mapping methodology and SoPs, including experts on institutional capacity assessment and forecasting models, to be hired by GCF project. At least 2 thematic working group meetings s[P2] should be organized during implementation of the overall assignment, or more as deemed required by the service provider.

Experts: Lumír Němec, Adam Emmer (CzechGlobe), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili (RDFG), David Tsipuria, Bikash Dash

2. Identify gaps and specific needs for the establishment/ improvement of institutional framework for multi-hazard early warning system, that includes the definition of specific mandates and standard operation procedures in close cooperation with relevant stakeholders;

Experts: Lumír Němec, Adam Emmer (CzechGlobe), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili (RDFG), David Tsipuria, Bikash Dash

3. Prepare Capacity Development Plan based on the needs for the establishment/ improvement of the institutional framework; the activity will be implemented with the technical support from international experts on Institutional Capacity Assessment .

Experts: Lumír Němec, Jiří Kopáč (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG)

4. Review and in-depth analysis of legal framework for multi-hazard early warning components and climate information (multi-hazard mapping, vulnerability and risk assessment), that includes stakeholder mapping for each component and relevant governing laws and policy documents.

Experts: Michal Nekvasil (Jiří Kolman), Ondřej Perlinger (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG)

5. Identify the gaps and needs for development/amendment of specific policies and any other legal documents (by-laws, decrees etc.) to regulate components of multi-hazard early warning system and multi-hazard mapping, vulnerability and risk assessment based on the methodology and SoPs to be developed by the team of experts working on the issue;

Experts: Michal Nekvasil (Jiří Kolman), Shota Kublashvili, Ketevan Papashvili (RDFG)

6. Conduct a review of existing practice and capacities for operation and maintenance of hydrometric monitoring network, identify gaps and develop recommendations for improving the protocol for O&M (Operation and Maintenance) in close cooperation with relevant stakeholders (NEA, NFA, MEPA), including the Capacity Development Plan. The activity will be implemented with the technical support from an International expert on Institutional Capacity Assessment to be hired by the project.

Expert: Pavel Balvín(VUV), Roman Kožín(VUV), Ondřej Perlinger (Dekonta), Vano Grigolashvili, Sophio Devdariani (RDFG)

7. Review existing status of integrating climate induced flood and droughts risks management into water legislation:

- a. Review in detail the policies, strategies and plans within the water management sector. Identify entry points in the policies and plans for introducing climate change induced flood and drought considerations within the water management sector.
- b. Undertake detailed technical review studies on climate change impacts on the water resources sector in Georgia.
  - i. Review all existing practices, processes, etc. Relating to the hydrological assessments of water resources (surface and ground water assessments) within each basin and the extent to which climate change considerations are included.
  - ii. Review all existing practices, processes, etc. relating to water supply and demand assessments (Urban and rural domestic water supply demands, irrigation demands, industrial and mining demands, environmental flow requirements) and

identify whether climate change induced flood and drought considerations are systematically included.

- iii. Review all existing practices, processes, etc. relating to river basin water allocation assessments and identify whether climate change-induced flood and drought considerations are systematically included.

- c. Review of existing River Basin Management Planning practice, methodology and procedures in Georgia.

Experts: Pavel Balvín (VUV), ~~Adam Vizina (VUV)~~, Jan Hlom (VUV), Adam Beran (VUV), Ondřej Perlinger (Dekonta), Michal Nekvasil, Sophio Devdariani (RDFG), Ercan Buyukbas

Responsibility: International expert (key expert) No 1 (DRR), International expert (key expert) No 2 (legal). Cooperation with Non Key experts and National experts.

Methodology: Desk research (collecting and review of documents, strategies and policies), but accompanied by a series of Skype conferences with National experts. National experts will ensure all relevant documents and strategies and will provide consultations to International experts. In frame of this activity one mission (M1, refer to Work schedule) will be realized to collect necessary information and to discuss preliminary proposed solutions with national and subnational stakeholders. International experts from both teams (Non key experts) and the Coordinator will participate in the mission.

## Phase 3. Institutional Framework for multi-hazard early warning system

The team of experts will:

1. Develop structural set up for Early Warning System with the clarification of roles, responsibilities and institutional arrangements for EWS at all levels, particularly the communication and dissemination of early warnings to be reviewed and validated by relevant stakeholders on thematic working groups.

Experts: Lumír Němec, Adam Emmer (CzechGlobe), Jiří Kopáč (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG), Juan Fernandes, Eugen Platita

2. Develop Standard Operational Procedures, Communication Protocols and Codes of Conduct for each of the agencies responsible for the various elements of the MHEWS and response, to be implemented in close cooperation with relevant stakeholders.

Experts: Lumír Němec, Jiří Kopáč (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG), Juan Fernandes, Eugen Platita

3. Develop a set of procedures for operational maintenance of hydrometric monitoring network, to be validated and approved by relevant stakeholders. The activity should be implemented in close cooperation with international expert on hydrometeorological network to be hired by GCF project.

Experts: Pavel Balvín(VUV), Jan Hlom (VUV), Adam Beran (VUV), Sophio Devdariani (RDFG), Ercan Buyukbas

Responsibility: International expert (key expert) No 1 (DRR). Cooperation with Non Key experts and National experts.

Methodology: Desk work, outputs of previous Phase will be utilized by Czech and other international experience as well. In frame of this activity, one mission (M2, refer to Work schedule) will be realized to collect the necessary information and to discuss the preliminary proposed solutions with national and subnational stakeholders. An International expert (Non key expert) from the DRR and EWS team will participate in the mission.

## Phase 4. Legal framework for multi-hazard early warning system and multi-hazard mapping, vulnerability and risk assessments

The team of experts will:

1. Prepare/amend relevant policy documents by-laws, laws, etc. to regulate all components of multihazard early warning system in close cooperation with the legal staff from relevant stakeholders;

Experts: Michal Nekvasil (Jiří Kolman), Ondřej Perlínger (Dekonta), Shota Kublashvili, Sophio Devdariani (RDFG)

2. Prepare/amend relevant policy documents, laws, by-laws to reflect the requirements of unified methodologies and relevant SoPs for multi-hazard mapping, vulnerability and risk assessments in close cooperation with legal staff from relevant stakeholders;

Experts: Michal Nekvasil (Jiří Kolman), Ondřej Perlínger (Dekonta), Shota Kublashvili, Sophio Devdariani (RDFG)

3. Provide inputs to ensure integration of climate induced flood and droughts risks management into water legislation, through:

- a. Development of recommendations for incorporating climate change induced flood and drought considerations into all aspects of the practices, processes and plans for water resources hydrological assessments, water demand assessments, and water allocation assessments. Incorporation of the EU Guidance document No. 24 – River Basin Management in a Changing Climate – into water legislation.
- b. Consultation with sector leaders on findings of study and invitation of comments on recommendations.
- c. Development and codifying detailed methodologies for incorporating CC flood and drought modelling results into risk assessments, strategies, policies and plans for water resources management.
- d. Development and finalization of robust sector policies and legislative frameworks and guidelines incorporating climate change induced flood and drought risk management into water legislation, including enabling guidelines and/or tools for effective implementation of new policies.
- e. Development of capacity building roadmap on how to integrate new policies, plans and strategies into water management planning, including

management tools that will be needed for implementation and enforcement for new policies. This activity will be conducted in association with the Institutional Capacity Development expert.

Experts: Pavel Balvín(VUV), ~~Adam Vizina(VUV)~~, Jan Hlom (VUV), Roman Kožín (VUV), Ondřej Perlinger (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG)

4. Development of a roadmap for implementation and embedding of the new legislation, policies etc. within relevant institutions along with development of Capacity Development Plan for development of climate risk informed legislation across all sectors.

Experts: Michal Nekvasil (Jiří Kolman), Shota Kublashvili, Ketevan Papashvili (RDFG)

Responsibility: International expert (key expert) No 2 (legal). Cooperation with Non Key experts and National experts.

Methodology: Desk work, outputs of previous Phase will be utilized by Czech and other international experience as well. In frame of this activity one mission (M3, refer to Work schedule) will be realized to collect necessary information and to discuss preliminary proposed solutions with national and subnational stakeholders. An international expert (Non key expert) from the Legal and Policy team will participate in the mission.

Table: Work schedule

Month/ Task	15th/ JAN	JAN 2020	FEB 2020	30th MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	30th AUG	SEPT 2020	OCT 2020	NOV 2020	16th DEC 2020
1.1													
2.1			M1										
2.2			M1										
2.3			M1										
2.4													
2.5			M1										
2.6			M1										
2.7													



3.1						M2							
3.2						M2							
3.3						M2							
4.1											M3		
4.2											M3		
4.3											M3		
4.4											M3		

Deadline for deliverable according to the contract.

M - Missions are scheduled to map the situation and consult with stakeholders the outcomes and progress.

Three missions: M1, M2, M3 are scheduled.

**Participation in the missions:**

M1: Coordinator, International expert (Non key expert) from DRR and EWS Team, International expert (Non key expert) from Legal and Policy Team

M2: International expert (Non key expert) from DRR and EWS Team

M3: International expert (Non key expert) from Legal and Policy Team

Table: Tasks and experts

Task Number - Deliverable	Leading expert	Experts	Guarantor	Deadline
Deliverable A				30th March - April
Task 2.1	Adam Emmer (CzechGlobe)	Lumír Němec (CG), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili (RDFG), David Tsipuria, Bikash Dash	P. Raška (CG)	
Task 2.2	Adam Emmer (CzechGlobe)	Lumír Němec (CG), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili (RDFG), David Tsipuria, Bikash Dash	P. Raška (CG)	
Delivarable B				30th March - April
Task 2.3	Lumír Němec (CG)	Jiří Kopáč (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG)	P. Raška (CG)	
Deliverable C				30th March - April
Task 2.4	Michal Nekvasil (CG)	Ondřej Perlinger (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG)	Jiří Kolman (CG)	
Task 2.5	Michal Nekvasil (CG)	Shota Kublashvili, Ketevan Papashvili (RDFG)	Jiří Kolman (CG)	
Deliverable D				30th March - April
Task 2.6	Pavel Balvín (VUV)	Roman Kožín(VUV), Ondřej Perlinger (Dekonta), Vano Grigolashvili, Sophio Devdariani (RDFG)	P. Raška (CG)	
Deliverable E				30th March - April
Task 2.7	Pavel Balvín (VUV)	<del>Adam Vizina (VUV)</del> , Jan Hlom, Adam Beran (VUV), Ondřej Perlinger (Dekonta), Michal	P. Raška (CG)	

		Nekvasil, Sophio Devdariani (RDFG), Ercan Buyukbas		
<b>Deliverable F</b>				<b>30th August</b>
Task 3.1	Lumír Němec (CG)	Adam Emmer (CzechGlobe), Jiří Kopáč (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG), Juan Fernandes, Eugen Platita	P. Raška (CG)	
Task 3.2	Lumír Němec (CG)	Jiří Kopáč (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG), Juan Fernandes, Eugen Platita	P. Raška (CG)	
<b>Deliverable G</b>				<b>30th August</b>
Task 3.3	Pavel Balvín (VUV)	Adam Beran (VUV), Jan Hlom, Sophio Devdariani (RDFG), Ercan Buyukbas	P. Raška (CG)	
<b>Deliverable H</b>				<b>16th December</b>
Task 4.1	Michal Nekvasil (CG)	Ondřej Perlinger (Dekonta), Shota Kublashvili, Sophio Devdariani (RDFG)	Jiří Kolman (CG)	
Task 4.2	Michal Nekvasil (CG)	Ondřej Perlinger (Dekonta), Shota Kublashvili, Sophio Devdariani (RDFG)	Jiří Kolman (CG)	
<b>Deliverable I</b>				<b>16th December</b>
Task 4.3	Pavel Balvín (VUV)	<del>Adam Vizina</del> (VUV), Jan Hlom (VUV), Roman Kožín (VUV), Ondřej Perlinger (Dekonta), Vano Grigolashvili, Shota Kublashvili, Ketevan Papashvili, Sophio Devdariani (RDFG)	Jiří Kolman (CG) + Michal Nekvasil	
<b>Deliverable J</b>				<b>16th December</b>
Task 4.4	Michal Nekvasil (CG)	Shota Kublashvili, Ketevan Papashvili (RDFG)	Jiří Kolman (CG)	

## List of contacts „Czech team“

Czech team including Georgian partner organization

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Jiri Kolman (CG)	<a href="mailto:kolman.j@czechglobe.cz">kolman.j@czechglobe.cz</a>	kolmancvgz	
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## Contact UNDP manager

Salome Lomadze, email: [salome.lomadze@undp.org](mailto:salome.lomadze@undp.org)

## List of contacts – external team

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Eugen Platita	eugen.platita@gmail.com		

## Annex: Detailed description of external expert team

Task	Deliverables	International Consultant/company	NAME	Deliverable deadline	Contact
Phase 2 Desk Review					
Review and assessment of the existing hydrometeorological, geological and agrometeorological monitoring network for all hazards. Review the existing coverage, physical condition and data collection procedures including the quality of data. Identify and design the requirements for an effective and optimised monitoring network for strategic hazard risk management, forecasting and early warning in the future and optimised station coverage	Design document of the optimised national hydrometric network.	International consultant in hydrometeorology	Ercan Buyukbas	2019-10	<a href="mailto:ercanbuyukbas@gmail.com">ercanbuyukbas@gmail.com</a>
Work with the Telecommunications expert to undertake an assessment of the telecommunications network to support telemetered and automated stations	Report on the existing institutional arrangement for hydrometric network management, operations and maintenance			2020-02	

<p>Assess the institutional arrangements (to be led by the institutional specialist) for the operation and maintenance of the hydrometeorological, geological and agrometeorological observation network and suggest manpower and financial requirements, and training needs, for the efficient O&amp;M of the optimized network. Assess existing roles and responsibilities and the capacity of staff responsible for operating and maintaining the network. Assess the existing protocols for the collection, transmission, sharing, storage, management and use of the observed data</p>					
<p>Inventory of the stakeholders to be involved in the implementation and operation of the centralized Multi-hazard early warning system</p>	<p>The matrix of stakeholders, listing each stakeholder and his involvement in the future ICT solution implementation and/or operation</p>	<p>Local company: GEC</p>	<p>David Tsipuria</p>	<p>2020-02</p>	<p>- <a href="mailto:dtsipuria@geccooperation.com">dtsipuria@geccooperation.com</a></p>

<p>Review of the legal framework related to the scope of the project and identification of the legal constraints or other issues limiting the potential establishment and success of the centralized multi-hazard early warning system in Georgia, in addition, to providing recommendations on legal amendments that might be necessary to mitigate these challenges</p>	<p>Review of the legal framework, including proposals on necessary legal amendments in order to ensure establishment and sustainability of Georgia's centralized multi-hazard early warning system</p>			<p>2020-02</p>	
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<p>Develop the technical score card templates for each component of the MHEWS in cooperation with relevant international and national experts working on specific issues, that includes but are not limited to:</p> <ul style="list-style-type: none"> <li>• Multi-hazard mapping (inputs to be provided by the team of experts hired by the project for development of multi-hazard mapping methodology and on-job training plan);</li> <li>• Multi-hazard risk assessment (inputs to be provided by the team of experts hired by the project for development of multi-hazard mapping methodology and on-job training plan);</li> <li>• Forecasting and modelling capacities per each hazard (inputs to be provided by following international experts in hydraulic and hydrological modelling, drought forecasting, hail forecasting, landslide forecasting, windstorm forecasting, hailstorm forecasting to be hired by GCF project project);</li> <li>• Centralized multi-hazard risk information and knowledge management system (inputs to be provided by international expert for development of unified data repository for MHEWS, to be hired by GCF project)</li> <li>• Multi-hazard monitoring and</li> </ul>	<p>Capacity assessment scorecard templates</p>	<p>Institutional Capacity Assessment expert</p>	<p>Bikash Dash</p>	<p>2020-02</p>	<p><a href="mailto:bikashdash@ymail.com">bikashdash@ymail.com</a></p>
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warning – inputs to be provided by international experts working on legal and institutional framework

- Communication and dissemination – inputs to be provided by team of international experts working on development of SoPs for MHEWS
- Preparedness and response Capacity – inputs to be provided by international expert working on development of methodology for risk informed preparedness/response planning.

<p>3. Conduct institutional mapping and baseline capacity and gap assessment report of the stakeholders for all components of MHEWS in close cooperation with relevant team of experts working on specific issues, through: consolidation of the capacity assessment reports prepared by relevant team of experts under the programme.</p>	<p>Institutional Mapping Report</p>			<p>TBD</p>	
<p>Develop the Capacity Development Plan (mid-term up to 4 years and long term). The Capacity Development plan along with other issues should consider development of internships and voluntary schemes for University students and should be conducted through</p>	<p>Finalized Capacity Development Plan and Baseline Capacity Assessment Report</p>			<p>TBD</p>	
<p>Conduct stakeholder mapping for multi-hazard mapping and risk assessment, including governmental agencies and academia to form a working group for validation of the methodologies</p>	<p>Desk review</p>	<p>International Company- TBD</p>	<p>TBD</p>		

<p>Conduct in-depth comparative analysis of international best practices and national experience in hazard mapping for floods, landslides, mudflows, avalanches, hailstorms, windstorms, and droughts in Georgia in close consultations with project partners and stakeholders;</p>					
<p>Conduct in-depth comparative analysis of multi-hazard risk assessment and profiling practices internationally and nationally</p>					
<p><b>Phase 3 - Institutional Framework for multi-hazard early warning system</b></p>					
<p>Support NEA and other stakeholders in initial design of the Multi-hazard Forecasting and Early Warning system</p>	<p>Initial MHEWS System Design</p>	<p>Forecasting and Early Warning Expert</p>	<p>Juan Fernandes</p>	<p>2020-11-22</p>	<p><a href="mailto:juan.fernandez.sainz@gmail.com">juan.fernandez.sainz@gmail.com</a></p>
<p>Support on initiation activities for the other hazards, including the support in the data collection of historical events, assessment of existing capacities and initial design of the forecasting of each hazard</p>					

Develop hydrometeorological network O&M plan for the optimized monitoring network including optimized institutional arrangements and financial requirements for O&M	Hydrometeorological network O&M plan for the optimized hydrometeorological monitoring networking including optimized institutional arrangements, and financing requirements for O&M	International Consultant on Hydrometeorology	Ercan Buyukbas	2020-08	<a href="mailto:ercanbuyukbas@gmail.com">ercanbuyukbas@gmail.com</a>
Develop agrometeorological network O&M plan for the optimized monitoring network including optimized institutional arrangements and financial requirements for O&M	Agrometeorological network O&M plan for the optimized agrometeorological monitoring networking including optimized institutional arrangements, and financing requirements for O&M	International consultant	Michele Bernardi	2020-11	<a href="mailto:m_bernardi@libero.it">m_bernardi@libero.it</a>
Develop data/information sharing system design concept	Data/information sharing system design	International consultant in Systems and Technology Expert	Eugen Platita	2020-08	<a href="mailto:eugen.platita@gmail.com">eugen.platita@gmail.com</a>

<p><b>Phase 4 - Legal framework for multi-hazard early warning system and multi-hazard mapping, vulnerability and risk assessments</b></p>					
<p>Consolidation of the hazard modelling and mapping methods into unified methodology for multi-hazard modelling and mapping in close consultation with project partners and stakeholders, the methodology should include set of procedures, data needs and guidelines. The unified methodology should be reviewed and validated by the thematic working group</p>	<p>Unified methodology for Multi-hazard mapping and risk assessment</p>	<p>International Compnay - TBD</p>	<p>TBD</p>	<p>TBD - 2020</p>	