

Terms of reference (ToRs) for the procurement of services below the EU threshold

Participatory impact chain analysis (ICA) as a method for assessing and identifying the physical vulnerability of critical infrastructure in Georgia	Project number/ cost centre: 20.2161.6-007.00
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0. List of abbreviations

AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2018
ToR	Terms of Reference
GIDRM	Global Initiative on Disaster Risk Management
SFDRR	Sendai Framework for Disaster Risk Reduction
BMZ	German Federal Ministry of Economic Cooperation and Development
RID	Risk-Informed Development
SADC	Southern Africa Development Community
CDRI	Coalition on Disaster Resilient Infrastructure
Red SNIP	Latin American Network of National Public Investment Systems
ICM	Integrated Catchment Management
INCENTIVA	Central American Initiative for Public Investment with Added Value
CI	Critical Infrastructure
DRM	Disaster Risk Management
AOI	Area of Interest
TWP	Technical Working Group
ICA	Impact Chain Analysis
MoESD	Ministry of Economy and Sustainable Development
MRDI	Ministry of Regional Development and Infrastructure

1. Context

About the global project GIDRM

The *Global Initiative for Disaster Risk Management (GIDRM)* is a GIZ project commissioned by the German Federal Ministry of Economic Cooperation and Development (BMZ), aiming to strengthen the German contribution to improve (disaster) risk management worldwide and to support the implementation of the Sendai Framework for Disaster Risk Reduction (SFDRR). The Initiative supports partner countries in their efforts against extreme natural and weather-related events to safeguard development efforts and to protect lives.

In its third phase (2020-2023), GIDRM aims to systemically design development measures in a risk-informed and resilient manner. A particular focus lies in strengthening risk governance structures and the resilience of critical infrastructure in the water, health, and transport sectors. Specifically, GIDRM III cooperates with selected decision-makers, regional organizations, and initiatives in Southern Africa, Asia, and Latin America in strengthening their competencies, capacities, and skills to use risk-informed development (RID) while considering context-specific fragility factors.

The project engagement in the partner countries

Currently, GIDRM is strengthening RID in Southern Africa (Botswana and Lesotho), Asia & Pacific (India and Georgia), and Latin America & the Caribbean (Colombia). In these regions, GIDRM cooperates with the following key partners in order to achieve the overall goal: the Southern Africa Development Community (SADC) Secretariat, represented by its Disaster Risk Reduction Unit, based in Gaborone, Botswana; the Coalition on Disaster Resilient Infrastructure (CDRI), based in Delhi, India; and the Latin American Network of National Public Investment Systems (Red SNIP) currently chaired by Costa Rica. In Southern Africa, GIDRM is piloting a climate risk-assessment tool with the water sector as an entry point for RID. In Latin America & the Caribbean, GIDRM concentrates on encouraging more sustainable and resilient public investments. In Western and Southern Asia, GIDRM focuses on critical infrastructure (CI) resilience.

Background

Over the past decade, global challenges from disaster risk have become increasingly severe, exacerbated by the effects of climate change. This results in more intense and frequent occurring disaster events. In addition, processes such as badly planned and managed urban development, environmental degradation, inequality and weak governance, drive disaster risk to unprecedented levels.

Despite an increasing understanding of the multi-faceted complexity of risks, these are not always adequately considered in development planning and programming, this pertains to partner regions and countries or international donors. Against this background, GIDRM is geared towards strengthening RID, translating to an understanding of development that considers multi-faceted, dynamic, interdependent, transnational, simultaneous and systemic risks. This enables participation in political decision-making to foster resilience and leave no one behind. The understanding of RID is that it allows to safeguard sustainable development by ensuring that decision-making processes in different sectors and contexts are risk-informed and thereby less vulnerable to future changes and crisis which builds overall resilience.

Societies worldwide depend on functioning infrastructure services such as water, electricity, or telecommunication, which also facilitate the operation of the transport and health systems or sewage treatment. Such infrastructures are referred to as **critical infrastructures** and considered system-relevant and essential for the functioning of society. This is particularly valid for Georgia and its fragile and highly susceptible socio-economic systems, which are highly dependent on the uninterrupted functionality of infrastructure systems. This dependency makes municipalities and communities highly vulnerable to the impact of natural hazards, while

threatening the lives of people in need of medical attention. In order to strengthen the resilience of communities, an assessment of current system conditions and an evaluation of the general critical infrastructure and people's needs must be combined in a holistic, inclusive, and equity-oriented assessment approach that provides entry points for mitigation activities.

The term critical infrastructure comprises of physical structures (e.g., roads, internet, power lines, water, and sewage network) and services provided (e.g., supermarkets, transportation, medical treatment), including the skilled workers required for these services. These complex and interconnected systems have become so ubiquitous and essential to day-to-day life that they are easily taken for granted. Accordingly, when CI is disrupted or damaged, it considerably impacts a large part of the population, the economy, and the state.

Building the resilience of critical infrastructures is therefore key. A crucial element in building infrastructure resilience is the identification of exposed and vulnerable elements within a socio-ecological system. Assessing the vulnerability of CIs is a prerequisite for "systematically developing" protection or adaptation strategies, which presents a core strategy in national disaster risk management and planning processes. This can be achieved through the application of participatory and iterative approaches to capture the perspectives, dependency, needs, and on-ground realities of all population groups. Hence, climate vulnerability and risk assessment approaches present a structured way to identify entry points for intervention measures and guide the prioritization of investments. An **impact chain**, or cause-effect chain, is an analytical tool that helps to better understand, systemize, and prioritize the underlying factors that drive risk. A sound understanding of the system of concern and the incorporation of expert/local knowledge through a participatory process (e.g., workshops, focus group discussions) form the basis for developing impact chains. This approach provides a comprehensive understanding of the key components of risk and breaks down its complexity into smaller building blocks.

Main objective

The **main objective** of the tender is to strengthen the adaptability of CI by enabling local government bodies to take better and risk-informed decisions. This is achieved through establishing impact chains related to disaster and climate vulnerability of general CI in the provinces and municipalities, adopting a multi-participatory community-based appraisal approach. The development of impact chains forms the basis for determining priority decision areas for adaptation and mitigation measures in the risk management process.

The **outcome** of the impact chain analysis will reveal which components of the CI are the most affected by the risk of interrelated climate, natural and anthropogenic factors. Based on these findings, a better investment planning process for prioritizing mitigation potentials of municipalities is achieved. The assignment provides a baseline for follow-up investigations to determine the extent to which the knowledge and well-informed understanding of the risk situation have changed the risk preparedness and management planning of decision-makers. The comparative study across multiple provinces and municipalities ensures that national agencies and stakeholders responsible for critical infrastructure investment, maintenance, and land use planning have a better understanding of systemic risks in order to take better, more risk-informed decisions.

2. Tasks to be performed by the contractor

Specific objectives

The objective of this consultancy assignment is to **operationalize the concept of impact chain analysis (ICA) as a method for assessing and identifying the physical vulnerability of critical infrastructure** in Georgia. Based on a participatory engagement approach to form an evidence-based understanding of disaster and climate change impact. The methodological

concept will be applied to the proposed study areas to achieve comparability of findings. The specific objectives are composed as follows:

1. Provide a hands-on example of building impact chains as a participatory, community-based, and gender-responsive approach. Analyse the current state of critical infrastructure regarding the components of disaster risk (hazard, exposure, vulnerability, coping and adaptive capacity) under changing climatic conditions.
2. Establish connections, dependencies, and interrelations between the identified building blocks (components of the ICA). Provide an understanding of the relationship between causes and effects within the CI and its dependent population. Identify current priorities for adaptation and infrastructure investments in the planning process of the local government.
3. Provide recommendations for actions and propose solutions for improving the risk situation for the determined most vulnerable critical infrastructure components in respect to their location (including adaptation measures, a list of prioritizations with rational, and adequate reasoning for decision making and investment planning).

Assignment period

GIZ shall hire the contractor for the anticipated contract term, from **25.10.2022** to **15.10.2023**.

Activities

All of the following mentioned activities are designed to be conducted in a mixture of participatory community engagement, literature, and desk review. The contractor is responsible for providing the following services:

1. Design a methodological concept to operationalize and conduct the impact chain analysis in a participative manner (concept to integrate cross-actor participation in workshops, inclusive and gender sensitive).
 - a. Establish a common understanding of terminologies.
 - b. Develop a concept that enables communities to better understand the complex interlinkages of risk at community level and CI.
 - c. *Define a method to select a representative sample size that determines the total number of workshops to be conducted (basis for best possible outcome).*
 - d. Outline the community engagement and outreach process. Define which communities and stakeholders will be approached.
 - e. Establish a scientific baseline:
 - i. Describe the quantitative and qualitative approach to retrieve and organise the needed information necessary for impact chain analysis (scientific baseline)
 - ii. Determine what existing data concludes about the risk landscape in Georgia (include climate projections, expert interviews with NEA and universities, and other relevant stakeholders).
 - f. Identify current priorities for adaptation and infrastructure investments in the planning process of the communities, municipalities, and the local government (against which the results of the community workshop will be evaluated).
 - g. Develop a sequence of working steps for developing simplified impact chains to maintain comparability between workshops.
 - h. Define the content and methods used during the workshop to engage participants in establishing an impact chain systematically.

- i. Define the safeguard that the most relevant factors are identified and displayed within a group of stakeholders from different backgrounds.
2. Conduct community-based workshops and develop for each training individual impact chains. Then identify the vulnerable hotspots of the CI and introduce strategies for better and risk-informed decision making to build resilience.
 - a. When regionally available, then cooperation and participation of regional representatives of the Ministry of Economy and Sustainable Development (MoESD) and the Ministry of Regional Development and Infrastructure (MRDI).
 - b. Outline the strategy to design the workshop inclusive and gender sensitive.
 - c. Integration of pre- and post-workshop assessments to determine how they perceive risk in their community before and after the planned activities.
 - d. Focus on developing a common systemic understanding of risk at community level
 - e. In a co-creation process develop individual impact chains of the AOI (comprising all spheres of the system of evaluation).
 - f. Derive interdependencies of all risk components (hazard, vulnerability, exposure, coping and adaptive capacities) and how these bio-physical, ecological, cultural, and socio-economic factors interact.
 - g. Determine the most vulnerable components of the critical infrastructure within the ICA. Derive and present strategies to the participants for prioritizing adaptation and investment decisions. Then determine a sequential order for implementing potential intervention measures.
 - h. Show how risk-informed decision making increases the resilience based on the identified hotspots or through evidence from local examples.
3. Describe results and outcomes from the impact chain analysis. Elaborate on the lessons learned from the participatory workshops and the community engagement.
 - a. Develop an impact chain representing the overall outcome of all workshops combined (representing the overall study region).
 - b. Provide a detailed sequential priority list of CI elements (including rationale) that should be considered in that order in the investment planning, thus increasing resilience.
4. Provide recommendations and propose solutions for the identified vulnerable components of CI for communities and decision-makers.
 - a. Recommendations based on the findings of the ICA, need to be referenced to the established scientific baseline.
 - b. Based on the overall identified vulnerable CI components, risk drivers and factors, community feedback develop a comprehensive catalogue for recommendation and solutions to increase community resilience.
 - c. Before finalizing the report, conduct interviews with representatives of the involved communities in the workshops to determine the extent to which the common systemic understanding of risk and the ICA has led changes in investment planning and decision taking.
 - d. Based on the interviews and the pre- and post-workshop assessment, identify and analyse the mindset change of communities and decision-makers.
 - e. Provide recommendations on what next steps should be implemented to incorporate the new understanding of risk in risk-informed decision-making processes.

- f. Provide a short description on the challenges on the local level and develop strategies to better integrate the perspective of local levels in processes of MoESD and MRDI.
5. Prepare final report, presentation, and communication material (in Georgian and English).
 - a. Prepare a communication material (e.g., infographic, fact sheet) containing lessons learned and summary of the outcomes, recommendations and proposed solutions for an audience that wouldn't read the final report.
 - b. Summarized comparison of the findings between pilot regions (further specified under chapter 2, sub-section "locations")
 - c. Digitization and visualization of the final impact chain in the form of a diagram. The product should be designed and graphically prepared for use in dissemination (aggregate to regional level, each province).
 - d. Identify interlinkages within geographical locations and compare the findings between the regions, to work out a comprehensive understanding of the interlinkage of risk at community levels.
 - e. Evaluation of the findings comprising the pre and post workshop assessments and the changes in risk perception through the workshop activities.
 - f. Describe the observed changes in investment planning and decision-making.
 - g. Final presentation to showcase results and lesson learned to GIZ/GIDRM

Location

The proposed study areas for this assessment comprises of the two provinces Racha-Lechkhumi and Kvemo Svaneti and Mtskheta-Mtianeti. The regional focus concentrates on the municipalities: Lentekhi, Tsageri, Ambrolauri, Oni, Mtskheta, Dusheti, Akhgori, Tianeti and Stepantsminda. However, the actual study areas will be further defined in consultation with the contractor and its expertise and may deviate from the initially proposed region. This process will be agreed on in collaboration with GIZ/GIDRM after the contractor confirmed the contractual terms.

Supporting Documents

- Contractor is expected to research relevant documents, methods, contacts and data as needed.
- The contractor will be provided with relevant GIZ documents, if any, in close coordination with the contract manager.
- GIZ/GIDRM will facilitate and coordinate the cooperation between the ministries MoESD and MRDI with the contractor

Outcomes and Deliverables

The consultant is responsible for providing the following services:

- Regular virtual meetings with GIZ/GIDRM and their partners
- Develop workplan and inception report for the application of above-mentioned activities for the entire project timeline. The consultant may suggest work plan adjustments to reflect and address the beneficiaries needs.
- Inception report (2-5 pages, due at kick-off meeting)
- First Draft of baseline report covering the data analysis
- Presentation and discussion of preliminary results with GIZ/GIDRM
- Interim report on the implementation status of the project (5-7 pages)

- Final report should be in Georgian and English language, not exceeding 10-15 pages excluding attachments
- Presentation and discussion of final results with GIZ/GIDRM and their partners
- A detailed record of the impact chain analysis as report and diagram of the study region
- Guiding document (step-by-step) to apply developed methodological approach for the ICA in the participatory workshops and processing of findings into outcomes.
- Methodological concept to operationalize and conduct the impact chain analysis in a participative manner
- Comprehensive catalogue for recommendations and solutions to improve community resilience based on the identified vulnerabilities of CI (including a list of prioritizations measures with rational, and adequate reasoning for decision making and investment planning).
- 3x communication materials (e.g., infographics, factsheets, impact chain diagrams, etc.) for public dissemination that summarizes the outcomes, lessons learned, recommendations, and proposed solutions for communities and decision-makers.
- All developed impact-chains (that are not final results) shall be attached to the annex.

Certain milestones, as laid out in the table below, are to be achieved by certain dates during the contract term:

Milestone	Deadline
Kick off meeting (inception and context setting)	01.11.2022
Workplan and inception report (concept note)	12.11.2022
Three progress checks throughout the project timeline with carefully selected deep-dives	Dates to be suggested
Interim presentation and report on the implementation status of the project & submission of preliminary findings.	12.03.2023
Presentation of preliminary results	01.07.2023
First draft of assessment report	15.07.2023
Presentation of final results to GIZ/GIDRM	15.08.2023
Submission final report and all deliverables	25.08.2023

3. Concept

In the bid, the bidder is required to show how the objectives and activities defined in Chapter 2 are to be achieved, if applicable under consideration of further specific method-related requirements (technical-methodological concept). In addition, the bidder must describe the project management system for service provision. The incorporation of the ministries MoESD and MRDI in the ICA process is a mandatory prerequisite for this tender (GIZ/GIDRM will facilitate and support outreach and communication to connect contractor with ministries; integration into workshop activities and processes is the responsibility of the contractor).

Technical-methodological concept

Strategy: The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1). Following this, the bidder

presents and justifies the strategy with which it intends to provide the services for which it is responsible (see Chapter 2).

The bidder is required to present the actors relevant for the services for which it is responsible and describe the **cooperation** with them.

The bidder is required to describe the key **processes** for the services for which it is responsible and create a schedule that describes how the services according to Chapter 2 are to be provided. In particular, the bidder is required to describe the necessary work steps and, if applicable, take account of the milestones and contributions of other actors in accordance with Chapter 2.

Other specific requirements

- In line with GIZ equality guidelines, the selected community-based participatory impact chain development process has to be conducted in an inclusive and gender equity-oriented approach
- The adopted methods for providing this service must be described in detail.

Project management of the contractor

The bidder is required to explain its approach for coordination with the GIZ project.

- The contractor is responsible for selecting, preparing, training and steering the experts (only national, short and long term) assigned to perform the advisory tasks.
- The contractor makes available equipment and supplies (consumables) and assumes the associated operating and administrative costs.
- The contractor manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.

The bidder is required to draw up a **personnel assignment plan** with explanatory notes that lists all the experts proposed in the bid; the plan includes information on assignment dates (duration and expert days) and locations of the individual members of the team complete with the allocation of work steps as set out in the schedule.

4. Personnel concept

The bidder is required to provide personnel who are suited to filling the positions described, on the basis of their CVs (Chapter 5), the range of tasks involved and the required qualifications.

The below specified qualifications represent the requirements to reach the maximum number of points.

Team leader

Tasks of the team leader

- Overall responsibility for the advisory packages of the contractor (quality and deadlines)
- Coordinating and ensuring communication with GIZ, partners and others involved in the project
- Regular reporting in accordance with deadlines

Qualifications of the team leader

- Education/training (2.1.1): University qualification (German 'Diplom'/Master) in engineering and technical studies or social science (i.e., public administration, international studies, project management, geography)
- Language (2.1.2): Good business language skills in English
- General professional experience (2.1.3): 15 years of professional experience in sustainable development context in Georgia
- Specific professional experience (2.1.4): 10 years of experience in applying community-based workshops and assessment approaches
- Leadership/management experience (2.1.5): 15 years of management/leadership experience as project team leader or manager in a company
- Regional experience (2.1.6): 10 years of experience in Georgia
- Development Cooperation (DC) experience (2.1.7): 5 years of experience in DC projects
- Other (2.1.8): evidence of profound experience in conducting scientific research projects

Short-term expert pool

Minimum of 2 and maximum of 4 members (all experts can also work at the same time and share the calculated number of days)

Tasks of the short-term expert pool

- All above mentioned activities (chapter 2) can be performed by the expert pool.

Qualifications of the short-term expert pool

Education (2.6.1):

- 1 expert with university qualification in critical infrastructure or related degree
- 1 expert with university qualification in disaster risk management or related degree

Language (2.6.2):

- 2 experts with very good language skills in English
- All experts with very good language skills in Georgian

General professional experience (2.6.3):

- 1 expert with at least 7 years of professional experience in the critical infrastructure sector
- 1 expert with at least 7 years of experience in conducting risk or vulnerability assessments (in the context of natural hazards)

Specific professional experience (2.6.4):

- 1 expert with proven skills in producing high quality communication materials made available to the local population (at least 5 work samples)
- 1 expert with strong background as facilitator in community-based and participatory approaches and capacity development (at least 5 work samples)

Regional experience (2.6.5):

- 2 experts with at least 5 years of experience in Georgia (country)

Other (2.6.7)

- 1 expert with track record of scientific research
- 1 expert with at least 5 years of experience in incorporation gender equality and inclusivity into development cooperation projects

The bidder must provide a clear overview of all proposed short-term experts and their individual qualifications.

Soft skills of team members

In addition to their specialist qualifications, the following qualifications are required of team members:

- Team skills
- Initiative
- Communication skills
- Sociocultural competence
- Efficient, partner- and client-focused working methods
- Interdisciplinary thinking

Travel

The bidder is required to calculate the travel by the specified experts and the experts it has proposed based on the places of performance stipulated in Chapter 2 and list the expenses separately by daily allowance, travel, accommodation expenses and other expenses.

- The contractor will only be required for domestic travel in Georgia.

Other Costs

Workshops, training

The budget provided by GIZ for implementing these activities amounts to **GEL 73.000,00**.

The foreseen expenditures shall reflect the following indicated items and their attributed terms and conditions for usage and distribution (other intended positions please indicate in your proposal):

- Conference venue (e.g., booking fees, configuration)
- Catering (e.g., food, drinks, delivery, serving, etc.)
- Electronic services (e.g., sound system, speakers, etc.)
- Workshop materials (e.g., paper, pens, etc.)
- Transportation (e.g., buses)
- Facilitation (e.g., moderator, note taker, etc.)
- Interpretation

Specification of other direct costs

A budget of up to **GEL 5.000,00** can be included in the price sheet based on individual *requirements*. This cost position includes procurement of outsourced services (for example: graphic designer (e.g., visualization of workshop outcomes, dissemination and communication materials) or translator (e.g., reports, non-event documents), etc.)

The allocated budget for these services cannot be exceeded. However, it is possible to fall below this value and to use it for other production processes (please specify). The foreseen expenditures shall reflect the following indicated items and their attributed terms and conditions for usage and distribution (other intended positions please indicate in your proposal):

Price ceiling:

A price ceiling for fees and expenses (including other costs) of **GEL 199.500** (excluding VAT) shall be set for the tendered service. Bids whose prices exceed the upper price limit will be excluded from further evaluation.

Payment:

The payment will be split into three tranches: The advance payment of 30% will be transferred before the **15.11.2022** and is tied to the delivery of the workplan and inception report. The interim payment of 40% will be transacted after successful submission of the report on the implementation status of the project and submission of preliminary findings report before **15.03.2023**. The final payment of 30% will be made after the written approval (via e-mail) of the final submission of all deliverables through the contract coordinator at GIZ/GIDRM before **31.08.2023**.

5. Requirements on the format of the bid

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) is to be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). It must be legible (font size 11 or larger) and clearly formulated. The bid is drawn up in **English** (language).

The complete bid shall not exceed 10 pages (excluding CVs).

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted. The CVs shall not exceed 4 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long. The CVs can also be submitted in **English** (language).

If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment.

Please calculate your price bid based exactly on the aforementioned costing requirements. In the contract the contractor has no claim to fully exhaust the days/travel/workshops/ budgets. The number of days/travel/workshops and the budget amount shall be agreed in the contract as 'up to' amounts.