

PIEVC Pathfinder

Questionnaire to support the selection and tailoring of climate resilient infrastructure services for GIZ-internal and external partners



Introduction to the PIEVC Protocol, Program, Alliance, and Service Hub

Infrastructures of all types, gray as well as natural are vulnerable to the impacts of climate change. Many of these impacts are already apparent and will become more frequent and severe over the decades to come. Infrastructure systems must therefore be designed, built, operated, and managed in ways that help ensure their structural integrity, longevity, and effectiveness (in delivering services) under the already-changed climate and when faced with still more significant changes to come. To safeguard infrastructure investments in the Global South (~\$5 trillion/year), it is essential to systematically assess and manage climate vulnerabilities and risks across the full lifecycle of infrastructure investments. It is essential to “climate proof.”

Canada’s Public Infrastructure Engineering Vulnerability Committee (PIEVC) oversaw the development and rigorous testing of the PIEVC Protocol, a premier tool and approach for assessing climate change and infrastructure related risks. Over the past 16 years, the PIEVC Protocol and companion products have supported many hundreds of climate change and infrastructure risk assessments across Canada, Latin America, the Nile River Basin, Lesotho, and Vietnam. The full PIEVC Family of Resources is free for use (<https://pievc.ca/protocol/>). There is also a large and growing library of PIEVC-based assessments that can be accessed (<https://pievc.ca/assessments/>).

The **PIEVC Program** is now managed by the **PIEVC Alliance**, whose members include GIZ, the Climate Risk Institute (CRI), and the Institute for Catastrophic Loss Reduction (ICLR).

GIZ and CRI work to advance PIEVC Program services in the Global South, including through GIZ's **PIEVC International Service Hub** (PIEVC Service Hub). Through its advisory and training services, and companion products, the Service Hub strives to support and deliver climate and infrastructure risk assessments and help build the enabling environments required to sustain climate proofing over time, with partner countries across the Global South.

The Service Hub provides **services in various areas**: climate and infrastructure risk assessment, climate information services, institutionalizing climate resilience, human capacity development, and a practitioner network. To help advance climate resilient infrastructure outcomes across GIZ's full portfolio of projects, project leads and country partners can draw on services from across one or more of these areas.

Purpose of this "Pathfinder"

The purpose of the PIEVC Pathfinder is to help the PIEVC Service Hub effectively establish customized service packages by collecting targeted information about the context and objectives of the project in question. The PIEVC Pathfinder can also be used as a vehicle to discuss with partner institutions the opportunities PIEVC services offer, to develop mutual understanding, refine modes of cooperation, and plan for activities to achieve desired outcomes.

Using the Pathfinder

The Pathfinder is configured as a questionnaire with a mix of closed and open-ended questions. The more context you provide as a project proponent the better the PIEVC Service Hub can understand your requirements and suggest suitable sets of customized advisory services.

Most questions in the Pathfinder are of at least modest consequence for the ultimate level of effort required (financially and organizationally) to deliver related PIEVC services. Some questions, however, are of particularly large consequence in this regard. For these more consequential questions, response options are color coded, with green signifying "least effort," yellow signifying "medium effort," and

red signifying “most effort.”

The pathfinder process will typically require two iterations. The first is done by GIZ, to determine whether the PIEVC service offering is generally of relevance, and to establish the approximate scope of required services. The second, more in-depth iteration is facilitated by CRI, GIZ’s strategic partner for implementing PIEVC services.

The Pathfinder is still developing as a tool. It does not therefore claim to be complete or comprehensive. Your support with the continued improvement of the PIEVC pathfinder is much appreciated!

Complementary Pathfinder resources

- PIEVC Service Offer Factsheet
- PIEVC “Produktsteckbrief”
- PIEVC catalogue and guidelines
- PIEVC video – what is PIEVC
- PIEVC website and case study repository

Focal points of contact for use of the Pathfinder

Your GIZ focal points for assistance with the Pathfinder are:

- Sandra Schuster (FMB)
- Mareike Bentfeld (GIDRM-Globe)
- Niklas Baumert (CSI-Globe)
- Katharina Lotzen (CSI-Globe)

Pathfinder Part 1: Background and objectives of the GIZ project

1. YOUR PROFILE (RESPONSIBLE RESPONDENT) – Please complete the fields in the right-hand column.

Full Name

Role / Function

Email address

Department

Sector

With whom have you filled in this questionnaire? (e.g. partners, other projects etc.)

2. YOUR PROJECT – Please complete the fields in the right-hand column.

Name

Description

Project ID/number

Start & End Date

Regions/countries of activity

Website URL

Overall Project context that relates to PIEVC services

Does the project focus on risk treatment (developing and implementing adaptation solutions)? Please explain.

Pathfinder Part 2: Scoping PIEVC services for risk assessment

3. TYPE OF INFRASTRUCTURE IN FOCUS – Please check the relevant boxes and provide additional explanations in the right-hand column based on the questions to the left.

Do you need advice on selecting the infrastructure system for the risk assessment?

yes
If “yes,” you may wish to skip over the rest of the questions in this section (3) and pass directly to Section 4.

no

Which infrastructure sector(s) does the project address?

Terrestrial transportation, specify:
Marine Transportation, specify:
Aviation, specify:
IT Infrastructure, specify:
Energy production, specify:
Energy transmission, specify:
Urban infrastructure, specify:
Rural infrastructure, specify:
Social, cultural and institutional infrastructure like schools, hospitals, settlements, government buildings etc., specify:
Green infrastructure, specify:

What is the general spatial configuration of the infrastructure you may wish to assess?

Linear (e.g., roads, transmission lines)
Non-linear (buildings, seaports, power plant)
Mixed (combination of network and point infrastructure)

Is your focus a (large) portfolio of infrastructure assets of similar types? (E.g., many hospitals, or many sea- or airports to be assessed at once)

yes
If "yes," please elaborate:

no

Is your focus a (large) portfolio of infrastructure assets of different types? (E.g., a city district with different types of assets: schools, roads, hospitals, water supply...)

yes
If yes, what are the different types of assets, and what is the setting?

no

Is your focus a single infrastructure asset? (E.g. one seaport with its different infrastructure components, or one section of a road with its different components)

yes
If "yes," please elaborate:

no

Does green infrastructure play a role?

yes
If "yes," please elaborate:

no

Which phases for the project/infrastructure lifecycle should the risk assessment address? (Multiple answers possible)

New infrastructure at planning stage:
risk assessment at infrastructure (strategic) planning stage, pls specify the context, provide context:
risk assessment at project identification stage (prioritization, location), provide context:
risk assessment at project preparation stage (project planning, concept design, detailed design), provide context:
risk assessment at project funding stage (Procurement, funding source, insurance), provide context:

Existing infrastructure
risk assessment for increasing resilience of existing infrastructure
risk assessment at decomposition stage

Please provide any further contextual information you feel might help characterize the infrastructure system(s) to be assessed.

4. STRATEGIC OBJECTIVE(S) OF THE ASSESSMENT (considering GIZ project logic model) – Please indicate the objective(s) of the assessment by checking the boxes and adding descriptions in the right-hand column for the relevant options to the left.

To serve as a demonstration case for initial awareness-raising, to stimulate thinking about, e.g., institutionalizing key aspects of climate resiliency in infrastructure development

please describe the strategic objective(s) in your own words:

To directly support decision-making related to specific project, including its overall risk management strategy

please describe the strategic objective(s) in your own words:

To support a broader set of risk assessments required to enable the integration of climate resiliency considerations into a range of planned or potential infrastructure projects

One of multiple independent risk assessments for different types of assets, e.g. ports, roads etc.

A sequence of related risk assessments (e.g. first portfolio analyses of many assets, then based on identified high risk assets further conduct separate detailed risk assessment of these)

Other

Please specify:

5. FORMAT OF THE ASSESSMENT & DEGREE OF STAKEHOLDER INVOLVEMENT – Please check the box in the right-hand column that corresponds to the preferred format of the assessment & degree of stakeholder involvement to the left. Add a description as possible.

<p>Desktop-based assessment that receives input from the owners and operators of the infrastructure via a set number of virtual/digitally based interactions.</p>	<p>please describe the strategic objective(s) in your own words:</p>
<p>Desktop-based assessment that receives input from the owners, operators, and stakeholders of the infrastructure via one or more in-country investigative missions and related one-on-one meetings.</p>	<p>please describe the strategic objective(s) in your own words:</p>
<p>Assessment that includes a full participatory process, engaging stakeholders and experts through several facilitated workshops and related capacity building (mostly facilitator-led but blended with E-learning opportunities, see below).</p>	<p>please describe the strategic objective(s) in your own words:</p>
<p>Other modes, please specify:</p>	

6. DESIRED TYPE AND FORMAT OF HUMAN CAPACITY DEVELOPMENT (HCD) – Please check the box(es) in the right-hand column that correspond to your HCD preferences to the left.

A follow-up training needs assessment will be executed. This is to scope the overall desired approach for HCD. This section is strongly connected with question 5. All trainings offered can be blended based on specific requirements. A separate section on institutionalization of HCD is reflected in question 17.

<p>Awareness raising materials incorporated into an inception workshop or the risk assessment workshops (standard)</p>	<p>E-learning</p>	<p>Instructor-led training</p>
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Separate awareness raising course for diverse target groups	E-learning	Instructor-led training
Specialized Topic 1: Training for engineers	E-learning	Instructor-led training
Specialized Topic 2: Training for climatologists	E-learning	Instructor-led training
Specialized Topic 3: Training for PIEVC process facilitators	E-learning	Instructor-led training
Specialized Topic 4: “ Training of Trainers ” for various topics	E-learning	Instructor-led training
Specialized Topic 5: Training for the procurement of climate risk and resilience related services	E-learning	Instructor-led training
Others as desired 1, please specify:	E-learning	Instructor-led training
Others as desired 2, please specify:	E-learning	Instructor-led training
Others as desired 3, please specify:	E-learning	Instructor-led training
Any questions?		

7. ANTICIPATED STAKEHOLDER INVOLVEMENT AND THEIR ROLE – Please complete the fields in the righthand columns to indicate the affiliations, roles, and prior experience of the practitioners and stakeholders who should be involved in the assessment.

Practitioner or stakeholder type	Name and description of the entity	Role of the Stakeholder in the Project (e.g., primary, secondary, boundary)	Degree of involvement (observer, active participant, leading role, none)	Prior experience / capacity level with respect to climate risk assessment (low, medium, high)
Infrastructure owners				
Infrastructure operators				
Planners				
Regulators (codes and standards, ensuring law enforcement, surveillance of code of conduct)				
Climate Service Provider 1: Monitoring data				
Climate Service Provider 2: Projections & Scenarios				
Climate Service Provider 3: Value adding CS product development				
Infrastructure users				
Communities				
Financial institutions				
Universities				
NGO's				
Donors				
Others, pls specify (e.g., private sector)				

8. DESIRED TYPE OF CLIMATE DATA PRODUCTS FOR THE ASSESSMENT – Please check the box(es) in the righthand column that correspond to your preference(s) on the left. Provide context or explanations as possible.

Note: PIEVC applications can be conducted in environments with scarce climate data by utilizing existing globally available data sets. However, these data can be limited in their ability to support analyses of extreme events and the use of impact threshold-based climate indices.

<p>The assessment shall use existing data on climate and climate change from international portals and other online tools, or country specific products without further refinement</p>	<p>please provide context:</p>
<p>The assessment shall include the development of the full spectrum of customized climate data products and use existing data</p>	<p>please provide context:</p>
<p>Other</p>	<p>please specify:</p>

9. DESIRED TYPE OF ADVISORY ON CLIMATE SERVICES FOR RISK ASSESSMENT – Please check the box(es) in the righthand column that correspond to your preference(s) on the left. Provide context or explanations as possible.

<p>The project partners will play the lead role in creating new customized climate data products, using consultants to provide guidance.</p>	<p>please provide context:</p>
<p>Consultants will play the lead role in creating new customized climate data products; project partners will contribute data and will be trained to replicate the efforts of the consultants.</p>	<p>please. provide context (current capacities of partners with respect to climate service delivery, available climate service products:</p>

Consultants will play the lead role in creating new customized climate data products for demonstration project partners will be trained to replicate the efforts of the consultants and and to establish climate services as a standard product.

please provide context:

Any questions?

please specify:

10. RISK TREATMENT -- Please check the boxes in the righthand column that correspond to your preference(s) on the left.

Risk treatment is a subsequent step that comes after risk assessment. End the end of the risk assessment process recommendations are being developed. These are being used as a starting process for risk treatment, in which risk treatment options are being generated, assessed, selected, and finally implemented.

Do you plan to proceed to risk treatment as part of the project?

yes
if yes, please address the other questions in this section.
no

Please indicate the specific steps towards risk treatment you wish to take.

Elaborate risk treatment options
Technically evaluate and select options using tools such as multi-criteria analysis, cost-benefit analysis, and cost comparison, with the option to include a multi-stakeholder process.
Implement risk treatment options

Any questions?

Please specify:

11. CONNECTION TO PIEVC INTERNATIONAL PRACTITIONERS NETWORK -- Please check the boxes in the righthand column that correspond to your preference(s) on the left.

Shall partners become members of existing network (facilitated digital community of practitioners)?

yes
no

Is there willingness to share experiences through webinars in the network?	yes no
Any questions?	

12. Overall QUESTIONS not matching the above categories?

Pathfinder Part 3: Scoping PIEVC services for institutionalization of climate resilient infrastructure

13. Policies and planning -- Please check the boxes in the right-hand column that correspond to your preference(s) on the left. Provide context or explanations as possible.

Advisory on integrating infrastructure resilience into national & subnational adaptation strategies / plans	please provide context and specify:
Advisory on climate resilient infrastructure investment planning	please provide context and specify:
Sectoral strategies and plans	please provide context and specify:

14. Guidelines and Manuals -- Please check the boxes in the righthand column that correspond to your preference(s) on the left. Provide context or explanations as possible.

Customization of existing global PIEVC manuals and guidelines to country and project specific risk assessment manuals to be adopted by the partner institution

please provide context and specify:

Other advisory demands with respect to developing guidelines and manuals

please provide context and specify:

15. Laws and regulation -- Please check the boxes in the righthand column that correspond to your preference(s) on the left. Provide context or explanations as possible.

Advisory on integrating climate resilience into Codes and Standards

please provide context and specify:

Advisory on procurement frameworks and practice

please provide context and specify:

16. Professional practice (Education and Training) -- Please check the boxes in the righthand column that correspond to your preference(s) on the left. Provide context or explanations as possible.

Advisory on competency frameworks for professionals

please provide context and specify:

Advisory on the application of new standards and tools

please provide context and specify:

Curriculum and training development for post-secondary education

please provide context and specify:

Credentialing

please provide context and specify:

17. Incentive mechanisms -- Please check the boxes in the righthand column that correspond to your preference(s) on the left. Provide context or explanations as possible

Adaptation finance	please provide context and specify:
Certification	please provide context and specify:
Infrastructure finance	please provide context and specify:

18. CLIMATE SERVICES -- Please check the boxes in the righthand column that correspond to your preference(s) on the left. Provide context or explanations as possible.

Advisory to establish data repositories and systems	please provide context and specify:
Advisory on climate service governance (data, institutional arrangements, National climate service framework)	please provide context and specify:

19. ANY QUESTIONS and COMMENTS?