International Climate Initiative 2016

Project proposal

to the

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

Verbesserte Climate Services für Infrastrukturinvestitionen (CSI)
Enhancing Climate Services for Infrastructure investments (CSI)
(16_II_143_Global_G_Climate Service für Infrastrukturinvestitionen)
(PN: 2016.9025.4)

submitted by

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

GIZ INTERNAL TRANSLATION

Please enclose the following attachments:

☒	Annex 1: Implementing partner(s) / Subcontractor(s)

_____
Place, date

_____
Legally binding signature
Vera Scholz

_____
Place, date

_____
Legally binding signature
Mohamed El-Khawad

Stamp

1 Project master data

1.1 Project

Project number	16_II_143_Global_G_Climate Service für Infrastrukturinvestitionen
Project title	Enhancing Climate Services for Infrastructure investments (CSI)
Country/countries of implementation	Brazil, Costa Rica, Nile Basin Initiative (NBI), Vietnam
Project duration	03.2017-02.2020

External funding:		0,00 €
Third-party grants:		0,00 €
Subtotal:		***0,00 €***
BMUB funding volume	2016:	103.778,03 €
	2017:	1.946.552,31 €
	2018:	1.981.602,67 €
	2019:	1.268.066,99 €
	2020:	0,00 €
	2021:	0,00 €
	2022:	0,00 €
Subtotal:		***5.300.000,00 €***
Total funding volume:		**5.300.000,00 €**
Partner funding:		***0,00 €***

1.2 Submitter

Name	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Department	Climate, Environment, Infrastructure (G300)
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Website	www.giz.de
Institution	Federal implementing agency
Legal structure	GmbH
Non-profit status	☒ yes ☐ no
Total staff	16,410 (31.12.2014)
Staff for the project	A total of 9 full time equivalents: 3.6 staff in headquarters in Germany (128 expert months), 4.5 national staff (153 expert months), in addition one part time international GIZ staff member in each partner country (a total of 29 expert months)
Year established	1975/2011
Turnover [€/year]	1,959,324,193 EUR (2014)
Experience in the target region [years]	Brazil: >40 years, Costa Rica: >20 years, Nile Basin Initiative: 14 years, Vietnam: 20 years

		Experience in activities relevant to the project [years] Adaptation to climate change: >10 years Climate Services: 10 years International Climate Policy: > 20 years Advice for planning processes: >40 years <u>Role/function of submitter in the project proposed</u> The Deutsche Gesellschaft für Internationale Zusammenarbeit is the implementing agency on behalf of BMUB.
1.3	Partner institutions for embedding the project in the country of implementation / in the target region	Political counterparts of the project are in Brazil and Costa Rica the Ministry of Environment, in Vietnam the Ministry of Planning and Investment and in the Nile Basin the Nile Basin Initiative. **Political counterpart in Brazil:** **Ministry of Environment *(Ministério do Meio Ambiente, MMA),*** *Secretário Everton Frask Lucero (gabinete.smcq@mma.gov.br)* ***With the commission, the political counterpart Ministério do Meio Ambiente (MMA) is entitled to request directly from GIZ the services to be rendered. Details will be settled in an implementation agreement between GIZ and the political counterpart. The German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMUB) may exercise its rights under the agreement, especially those under the general agreements, without the consent of the political counterpart MMA.*** **Political counterpart in Costa Rica:** **Ministry of Environment and Energy (Ministerio Ambiente y Energía, MINAE)**, Ms. Andrea Meza Murillo, Director for Climate Change, andrea.mezamurillo@gmail.com ***With the commission, the political counterpart Ministerio Ambiente y Energía (MINAE) is entitled to request directly from GIZ the services to be rendered. Details will be settled in an implementation agreement between GIZ and the political counterpart. The German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMUB) may exercise its rights under the agreement, especially those under the general agreements, without the consent of the political counterpart MINAE.*** **Political counterpart in the Nile Basin:** **Nile Basin Initiative (NBI)**, Chair of the Nile Council of Ministers, c/o Mr. Teferra Beyene, Executive Director of the NBI, tbeyene@nilebasin.org ***With the commission, the political counterpart Nile Basin Initiative (NBI) is entitled to request directly from GIZ the services to be rendered. Details will be settled in an implementation agreement between GIZ and the political counterpart. The German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMUB) may exercise its rights under the agreement, especially those under the general agreements, without the consent of the political counterpart NBI.*** **Political counterpart in Vietnam:** **Ministry of Planning and Investment (MPI)**, General Director of the Department of Science, Education, Natural Resources and Environment, Dr Pham Hoang Mai, hmaipham@mpi.gov.vn To achieve best possible infrastructure planning processes in Vietnam at the provincial level, the political counterpart is the Ministry of Planning and Investment (MPI), instead of the Institute of Meteorology, Hydrology and Environment (IMHEN) mentioned in the project outline. ***With the commission, the political counterpart Ministry of Planning and Investment (MPI) is entitled to request directly from GIZ the services to be rendered. Details will be settled in an implementation agreement between GIZ and the political counterpart. The German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMUB) may exercise its rights under***

		the agreement, especially those under the general agreements, without the consent of the political counterpart MPI.
1.4	Implementing partners and subcontractors	**1. Deutscher Wetterdienst (DWD, German Weather Service)** • ☒ Implementing partner ☐ Subcontractor • Capabilities and experience relevant to the project The Deutsche Wetterdienst (DWD, German Weather Service) acts mainly as the national meteorological service of the Federal Republic of Germany in the context of public service and provides users in different sectors with weather and climate information. DWD represents Germany in the intergovernmental committees of the World Meteorological Organization (WMO) such as the Global Framework for Climate Services (GFCS) and coordinates the Deutscher Klimadienst (DKD, Climate Services for Germany). The experience and expertise of DWD are in demand in many international collaborations such as IKI projects funded by BMUB like DataClim (implemented by GIZ, 10_II_074_IDN_G_Datenbank). In the project SASSCAL funded by the Federal Ministry of Education and Research (BMBF), DWD promotes capacity building for management of climate data in selected meteorological services in southern Africa. • Function/role in the project proposal The implementing partner DWD is the lead agency responsible for Output 1 'Improved use of Climate Services'. For this, DWD primarily focuses on advising the weather services in the partner countries along the value chain for climate information, from the coordination of climate observations to produce user-oriented Climate Services. It will assist in the development of selected aspects of Climate Services in the target countries including capacity building. In addition, the DWD supports the sharing of experience and feeding of project results into international bodies such as the GFCS. **2. World Federation of Engineering Organizations (WFEO)** • ☒ Implementing partner ☐ Subcontractor • Capabilities and experience relevant to the project The WFEO connects regional engineering organisations through thematic working groups, for example on the environment, which developed the Code of Practice on Principles of Climate Change Adaptation for Engineers. The WFEO engages in topic development and capacity building of its member organisations. It is accredited by UNFCCC and other UN organisations and cooperates with the WMO under a MoU on the joint work and use of Climate Services by engineers. • Function/role in the project proposal Dissemination of project results and exchange of experience with engineering organisations as well as in the framework of international conferences, such as climate negotiations or specific events for engineers. **3. Engineers Canada** • ☒ Implementing partner ☐ Subcontractor • Capabilities and experience relevant to the project Engineers Canada has extensive experience in the evaluation of climate risks of infrastructure. 45 infrastructure systems in Canada have been analysed by the PIEVC protocol developed for this purpose. In the area of capacity building, Engineers Canada has trained engineers and environmental scientists in Costa Rica and Honduras on climate risks and vulnerability analyses. Engineers Canada has also been involved in more than 100 professional workshops and presentations, including the Framework Programme of international climate negotiations. Engineers Canada has a broad spectrum of knowledge and expertise in the development of practical guidelines on adaptation to climate change for engineers, both at national

and international levels. Engineers Canada has determined needs for climate information of engineers on behalf of the World Meteorological Organization (WMO).

- Function/role in the project proposal
  Engineers Canada will make the PIEVC Protocol available through a licensing agreement, as well as provide services in the areas of advice, evaluation, training, presentations, capacity building, development of training material for the local level and technical support. In addition, Engineers Canada will perform vulnerability analyses of infrastructure with the PIEVC protocol. Engineers Canada, in collaboration with the World Federation of Engineering Associations (WFOE), will also grant the project access to engineering experts in climate adaptation of infrastructure in Canada and the target countries.

4. Costa Rican Association of Engineers and Architects (Colegio Federado de Ingenieros y de Arquitectos de Costa Rica, CFIA)

- ☐ Implementing partner ☒ Subcontractor
- Capabilities and experience relevant to the project
  From 2010 to 2011, the professional association has applied in Costa Rica the methodology for determining the climate vulnerability of infrastructure developed by Engineers Canada (see above). The national weather service in Costa Rica was also involved.
- Function/role in the project proposal
  Implementation of climate risk assessments of infrastructure facilities in Costa Rica, in cooperation with Climate Service providers. Documentation of experience and participation in the sharing of experience. Development of training material.

5. Ministry of Environment (Ministério do Meio Ambiente, MMA),

- ☒ Implementing partner ☐ Subcontractor
- Capabilities and experience relevant to the project
  MMA has been coordinating the development of the national adaptation plan since 2013. As part of this process institutional and individual competences have been strengthened which will be utilized for the implementation of the NAP.
- Function/role in the project proposal
  MMA acts both as political partner and as implementing of this project in Brazil. The department of licensing and environmental assessment of the secretariat for climate change and environmental quality is responsible for the coordination of the national adaptation agenda and the NAP. Its core task is to improve the enabling environment for the implementation of the NAP. This includes strengthening of the information basis for adaptation to climate change.

6. Instituto Nacional de Pesquisas Espaciais – INPE
(Centro de Previsão de Tempo e Estudos Climáticos - CPTEC)

- ☒ Implementing partner ☐ Subcontractor
- Capabilities and experience relevant to the project
  INPE is an internationally renowned Brazilian institution, which plays an important role in climate change research. It provides science, policy makers and society with climate information...
- Function/role in the project proposal
  INPE is implementing partner in component 1 of the project.

7. Nile Basin Initiative (NBI)

- ☒ Implementing partner ☐ Subcontractor

	• Capabilities and experience relevant to the project As international cooperation mechanism for the countries of the Nile river basin the Nile Basin Initiative supports the common usage of water resources and the planning of investment projects. • Function/role in the project proposal NBI acts both as political partner and as implementing of this project. A financing agreement is foreseen to conduct workshops and trainings with member states of the NBI.

2	**Project classification**	
2.1	Emission allowances	BMUB funding is used directly for greenhouse gas mitigation and/or carbon sinks, which will contribute to generating emission allowances, emission credits, or any other type of CO_2 compensation certificates. yes ☐ no ☒
2.2	Further information on the classification of projects in funding areas II-IV	For projects in the funding areas Adaptation (II), Conservation and sustainable use of natural carbon sinks/REDD+ (III) and Biological diversity (IV): In which group or groups of ecosystems is the project mainly active? (multiple answers possible) The project does not focus on particular ecosystems but on long lived infrastructure systems, e.g. for energy, water or transport services. An improvement of climate services can also contribute positively to planning or management of various ecosystems. ☐ Fresh water, wetlands, rivers and lakes ☐ Forest and forestry ☐ Grassland, savannahs and deserts ☐ Oceans and coasts ☐ Mountains ☐ Agriculture ☐ Other: For projects in the funding area Biological diversity (IV), as well as for biodiversity relevant projects in the funding areas Adaptation (II) and Conservation and sustainable use of natural carbon sinks/REDD+ (III): Targets of the Strategic Plan for Biodiversity 2011-2010 of the CBD (Aichi Targets) To which of the 20 Aichi Targets does the project contribute? Please name up to 3 targets, which the projects mainly helps to attain. None of the 5 strategic fields and associated Aichi goals is directly applicable to the project.

3	**Brief description**	
3.1	Structured brief description	Developing countries invest billions of euros in infrastructure, most often without taking climate change into account. This creates high risks for economic damage. Climate information and matching Climate Services can mitigate these risks. Many INDCs state this as a priority. Nevertheless, Climate Services have been hardly used for infrastructure in developing countries so far. The aim of the project is: decision-makers and their technical support structures use Climate Services in planning and climate risk assessment of infrastructure investment. The project promotes supply and demand for Climate Services in the target

	countries. It supports meteorological services in the provision of Climate Services and authorities in using them for infrastructure planning. Cooperation partners are Deutscher Wetterdienst (DWD) and engineering associations. The project promotes dialogue among countries and authorities, meteorologists and engineers. Results are introduced in the climate negotiations through partners.

4	**Project concept**	
4.1	**Starting situation**	
4.1.1	Starting situation in the target region	Every year, emerging and developing countries invest billions of euros in durable infrastructure projects.[1] Rarely, future climate developments are systematically considered, resulting in high risks for damages and bad investments (OECD, 2016).[2] In 2015 insuracnes companies paid USD 27 billion in compensation for damages caused by natural disasters. 94% of theat amount were caused by extreme weather events which will increase due to climate change (Munich RE, 2015).[3] In the partner country Costa Rica, damage to public infrastructure accounts for 78% of all economic damage from extreme weather events (INDC Costa Rica, 2015). Many countries, among others the target countries Brazil, Costa Rica and Vietnam, therefore focus in their INDCs on the need to enhance the resilience of their infrastructure. Protecting durable infrastructure against the effects of climate change requires customised planning processes as well as a range of services making climate information more usable for decision-makers. However, so far, many countries lack such Climate Services - particularly with regard to infrastructure planning. The World Meteorological Organization (WMO) has divided national providers of Climate Services into four categories according to their abilities to provide Climate Services. Accordingly, only 24 out of 190 countries reached the highest category. 120 countries were in the lowest two categories and therefore do not have the ability to meet the needs of important sectors for climate information (WMO, 2011).[4] Even if Climate Services are available, there is often a deficit of its use in relevant decision-making processes (USAID, 2012).[5] Either there are no such requirements in the planning process or there is a lack of awareness among decision-makers. The result is that new infrastructure projects are planned without reference to future climate development, thereby increasing their vulnerability. The failure of critical infrastructure systems such as water and energy supply due to climate extremes acutely reduces the population's adaptability and has a significant impact on the economy. Another deficit is the lack of knowledge about climate vulnerability of existing infrastructure. In a national survey, the operators of infrastructure in the UK, for example, could in many cases neither state how their infrastructure is affected by climatic conditions, nor which measures to adopt (UK Committee on Climate Change, 2014).[6] However, this information is essential for an effective climate risk management. Increasing the resilience of infrastructure through an enhanced use of Climate Services therefore constitutes an important field of work in the process of national adaptation planning (NAP). The target country Brazil has identified infrastructure as one of the priority areas of the NAP. So far, however, there is little practical experience on how this can be implemented.

[1] Global infrastructure investments for the period 2015 to 2030 are estimated at 90 trillion USD according to the report of the New Climate Economy (2014) „Better growth, better climate."
[2] OECD (2016): The role of government in making infrastructure investment climate resilient: draft survey of current practices. Working Party on Climate, Investment and Development. ENV/EPOC/WPCID(2016)2.
[3] http://www.reuters.com/article/us-disaster-insurance-idUSKBN0UI0XI20160104
[4] WMO (2011): Climate knowledge for action. Report of the high-level taskforce for the Global Framework for Climate Services. WMO-No.1065.
[5] USAID (2012): Climate Services for Climate-smart development. A preliminary guide for investment.
[6] UK Committee on Climate Change (2014): Buildings and infrastructure ill-prepared for changing climate. https://www.theccc.org.uk/2014/07/08/buildings-and-infrastructure-ill-prepared-for-changing-climate/

	At the global level, the WMO has established the Global Framework for Climate Services (GFCS) that defines principles and priorities for the promotion of Climate Services[7]. National and regional projects can network under the umbrella of the GFCS[8], however, the GFCS is no implementation or financial instrument. The Climate Services Partnership was launched in order to promote the exchange of experience among scientists. In 2015, the Public Private Partnership for Climate Services and Resilient Development was founded in the US to increase, in cooperation with actors of the development cooperation (among others USAID, DFID) and the private sector (among others Google), the quality and availability of Climate Services[9]. Within the support programme of the UN general assembly 2016 Germany jointly with 16 other states has signed the „Joint Declaration on Harnessing the Data Revolution for Climate Resilience“, with the aim to strengthen the use of data in order to increase climate resilience.[10] These initiatives prove that the potential of Climate Services for the reduction of climate risks has been recognized internationally. One focus of the work is on the sectors agriculture and water, whereas durable infrastructure is rarely the focus. The World Federation of Engineering Organizations (WFEO) issued a recommendation for action for engineers at the end of 2015. Engineers Canada has developed a protocol for assessing climate risks of infrastructure developed, the Public Infrastructure Engineering Vulnerability Committee (PIEVC) Engineering Protocol tried and tested in Canada and Costa Rica.[11] Previous activities and initiatives to promote Climate Services are often limited to either the supply side (the creation of Climate Services) or their embedding in planning processes. Frequently, there is a lack of an integrated approach linking all actors, i.e. providers, decision-makers and engineers. The project brings all these groups together in the selected target countries to enhance and to make the best use of the Climate Service value chain for infrastructure decisions.[12]
4.1.2 Project integration into strategies of the target country	Although the situations in the three target countries and the Nile Basin Initiative is different, there is a general lack of both access to Climate Services for decision-makers and systematic consideration in infrastructure planning processes. **Brazil** At the end of 2015, Brazil experienced its worst drought since weather records began, resulting in the failure of existing water and energy infrastructure in many cities (The Guardian, 23.01.2015)[13]. Due to the public perception of Brazil's vulnerability to climate change, the issue of adaptation has significantly gained political importance in recent years. In its INDCs, Brazil explicitly refers to the vulnerability and adaptation needs of critical infrastructure, particularly in urban areas. The National Adaptation Plan of Brazil, which was adopted in May 2016, includes a specific chapter on infrastructure. Activities stated include vulnerability analyses of central infrastructure sectors, analysis of gaps in knowledge and development of adaptation measures. Thus, the CSI project is perfectly embedded in the national climate policies. It also benefits from close cooperation with the IKI project 'Supporting Brazil in implementing its National Agenda to adapt to climate change' (16_II_137_BRA_G_NAP Brazil). **Costa Rica** According to the Fifth IPCC Assessment Report (2014), Costa Rica is especially affected by the impact of climate change. According to the INDCs, extreme weather

[7] Basis for the implementation of the GCFS on global level is the implementation plan: WMO (2014): Implementation Plan of the Global Framework for Climate Services, http://gfcs.wmo.int/sites/default/files/implementation-plan//GFCS-IMPLEMENTATION-PLAN-FINAL-14211_en.pdf

[8] The Project has the potential to become a „contributing project“ for GFCS.

[9] https://www.whitehouse.gov/the-press-office/2015/06/09/fact-sheet-launching-public-private-partnership-empower-climate-resilien

[10] http://www.state.gov/globalgoals/releases/262189.htm

[11] http://www.pievc.ca/about-pievc

[12] This also contributes to the User Interface Platform, one of five pillars of the GFCS.

[13] http://www.theguardian.com/world/2015/jan/23/brazil-worst-drought-history

	events caused damages in the amount of USD 1.1 billion from 20115 to 2011, 78% of which account for public infrastructure. In 2006, Costa Rica adopted a national climate strategy. It is currently working on a roadmap for the National Adaptation Plan, to be made available by 2018. The INDCs expressly mention the adaptation of public infrastructure as a focus of adaptation. A defined objective is to use, by 2020, methods to identify and avoid vulnerabilities of infrastructures and to develop a national infrastructure vulnerability monitoring programme. The project supports the Ministry of Environment in the attainment of this objective. **Nile Basin Initiative** The Nile Basin Initiative (NBI) has operated since 2001 as a coordination mechanism for cross-border water management of the 10 countries bordering the Nile. The purpose of the NBI is among others the prioritisation and preparation of transnational infrastructure projects mainly in energy, irrigation and water management. Investments of over USD 1 billion have already been realised and the current investment pipeline in various stages of preparation contains USD 6 billion in planning. These investments are not yet routinely informed on future climate developments by Climate Services. Therefore, the NBI climate strategy includes the objectives of improved data and support for climate-resilient investment planning. The project can thus contribute to the implementation of the NBI climate strategy and its regional investment preparation agencies. **Vietnam** Rising sea levels and increasing extreme weather events such as heavy rainfall and long periods of drought affect the 17 million people living in the Mekong Delta. In addition to the impact of climate change, the vulnerability of local infrastructure is aggravated due to a lack of maintenance and shortcomings in the planning process. Political strategies include the Vietnamese Climate Change Strategy (NCCS, 2011), the Strategy for Green Growth (VGGS, 2013) and the INDCs (2015). Both INDCs and NCCS emphasise the need to modernise hydro-meteorological observations and forecasts. To date, the national weather service IMHEN can provide only insufficient contributions to the downscaling of climate forecasts at provincial level. The guidelines for infrastructure planning and investments in public goods so far include insufficient climate data and scenarios. Besides the improvement of climate forecasts, it is therefore essential to create, in cooperation with provinces, new guidelines for climate-oriented planning. In the context of investment planning this is largely a task for the Ministry of Planning and Investment (MPI), which acts as the political counterpart of the project.
4.2 Project goals and results	
4.2.1 Target group	The target group are decision-makers and their technical support structures in national and possibly sub-national authorities of the target countries, which affect decision-making in the planning of infrastructure projects. This includes the responsible staff of ministries such as transport, agriculture, planning, finance, environment and national meteorological and hydrological services. Other stakeholders include, on the one hand, commercial actors whose business models are based on services in the field of competence of the mentioned authorities (such as consultants, professional associations, private providers of Climate Services), and, on the other hand, public and private investors for infrastructure projects (such as development banks and funds, commercial banks or private construction companies). The project is also aimed at the international professional public in the context of climate change negotiations, WMO and meteorological services, international and national engineering organisations, construction and planning sectors as well as providers of international Climate Services.
4.2.2. Impacts (long-term results)	Due to the lifetime of several decades of infrastructure, future vulnerabilities are influenced by current investment decisions. Therefore, the systematic consideration of climate scenarios in the approval and planning of infrastructure projects contributes to reducing the vulnerability of the infrastructure stock. This decreases the risk of failure of infrastructure under extreme exposure and avoids the high cost of upgrading (OECD, 2016).

	The reliable functioning of critical infrastructure such as energy and water supply or transports provides co-benefits for the economy and population. In addition, an improved offer of Climate Services and more robust planning processes make a direct contribution to increasing the adaptation capacity. The targeted use of Climate Services in the investment planning of infrastructure projects thus add to the resilience of the economy and ensure sustainable development. The project approach represents a practical example of a successful and effective climate risk management, which is also important in the international debate about NAP, adaptation in INDCs and Loss and Damage.
4.2.3 Outline of the results chain underlying the project proposal	Increasing changes in climate require the consideration of climate information in investment planning to avoid bad investments and to take into account climate adaptation as early as the planning phase. The goal of the project is therefore to achieve in the three target countries and the Nile Basin Initiative the enhanced use of Climate Services by decision-makers in the planning of infrastructure investments (**Outcome level**). If this is done systematically, the long-term vulnerability of infrastructure stock can be reduced, thus increasing the resilience of the population and the economy (**Impact level**). For the attainment of these goals, the project uses a holistic approach, which targets the creation and use of Climate Services (Output 1), investment planning requirements (Output 2) and procedures for risk assessment of infrastructure (Output 3). Additional efficacy is a result of integration into climate policy processes at country level and the combination of different groups of stakeholders (suppliers of Climate Services, decision-makers and technical experts) through joint activities (Outputs 1-3) as well as the national and international exchange of experience (Output 4). **Output 1** aims at the enhanced use of Climate Services. For this purpose, an inventory of existing Climate Services is taken in each target country and the Nile Basin Initiative, identifying on this basis measures to improve the infrastructure-related Climate Services in each target country and the NBI. In addition, national dialogue for a will be held between users and providers of climate services. This will preferrably take place in the context of the NAP process or as part of the implementation of national contributions (INDCs). The implementing partner DWD provides the national weather services with its expertise for the implementation of selected measures. DWD will share the experience gained from establishing Climate Services for Germany (DKD) among others. For instance, Brazil wants to create a knowledge management platform which would include climate change impacts as well as possible adaptation measure (goal one of the Brazilian NAP). **Output 2** supports the systematic consideration of climate services through adjustments or updates of relevant planning processes or requirements for infrastructure investments**.** Together with decision-makers from authorities, the project will identify possibilities for the systematic consideration of climate risk information in infrastructure planning and make country-specific recommendations. **Output 3** promotes the specific use of Climate Services for the risk assessment of infrastructure investments. National or regional engineering associations acting as implementing partners elaborate together with the suppliers of Climate Services a climate risk report for selected infrastructure objects. They examine how the objects are affected by various climatic influences and what adaptation measures can be taken. Based on the experience of this analysis and previous applications, handouts and training material are created to disseminate this approach.[14]. **Output 4** comprises the documentation and dissemination of results and exchange of experience between the target countries and at international level. GIZ and the implementing partners DWD and engineering associations present the experience in the framework programme of the climate negotiations and the Global Framework for Climate Services. In addition, exchanges with international actors and multipliers

[14] The method developed by the Public Infrastructure Engineering Vulnerability Committee (PEIVC) has been applied in Canada about 40 times already.

(such as development banks, standardisation organisations) as well as the professional public will be encouraged.

The four outputs are closely interconnected and ensure in their combination the impact and visibility of the project. A particular emphasis is placed on the intelligent connection between supply and demand of Climate Services. Accordingly, potential users of climate services will be involved in steps to strengthen climate services (output 1) whereas providers of climate services will be involved in strengthening their use for climate risk assessments and planning provisions (outputs 3&2).

The specific context and needs of the three partner countries and the Nile Basin Initiative in regard to the improvement of climate services and their use for planning processes differ substantially (compare 4.1.2). This requires **flexibility in the implementation of the project in each partner country.** The stocktaking activities at the beginning of the project (activities I.1, I.2 and II.1) are meant to identify the specific needs and to effectively direct the project activities to the national context.

4.2.4 Outcome (overarching project goal) including indicators

Outcome:

Decision-makers and their technical support structures in the three target countries and the Nile Basin Initiative are increasingly using national Climate Services in the planning and climate risk assessment of infrastructure investments. This takes place in the context of the implementation of national climate policy processes, in particular the NAP process and the national contributions (INDCs).

Indicators for the outcome:

Outcome indicator 0.1:

The use of national Climate Services in the planning and climate risk assessment of infrastructure investments has increased by X%.

Unit	Baseline (start of project)	Target value (end of project)
Number of cases	X% (value to be determined at the start of the project)	X% (value to be determined individually for each partner country at the start of the project based on baseline assessment)

Means of verification:

Documentations of usage through report analysis (such as emails, surveys, references in documents)

Outcome indicator 0.2:

In two partner countries or one partner country and the Nile Basin Initiative, proposed procedures for the integration of Climate Services in planning and climate risk assessment of infrastructure investments are adopted or updated by the end of the project.

Unit	Baseline (start of project)	Target value (end of project)
Proposed procedures	Baseline study as part of the project activity	2 more than baseline

Means of verification:

Documentary proof of the proposed methods and their validity by representatives of the partner countries and the Executive Director of the Nile Basin Initiative.

4.2.5 Outputs (specific project goals) including indicators and work packages (activities)

The difference context of the partner countries and the Nile Basin initiative requires a needs-oriented prioritisation of activities. The activities described in this section are prioritized differently by the four partners and will not all be implemented in the same fashion. This has been accounted for in the determination of target values.

For outputs 1 to 3 relevant stakeholders and implementing organisations will be identified in every partner country and by the NBI at the start of the project.

Output I: Enhanced use of Climate Services

The target countries and NBI have taken inventory of existing Climate Services and initiated priority activities to make Climate Services more user-driven and relevant to decision making.

Indicators under Output I

Indicator I.1:		
Under the leadership of national weather services and the persons responsible for climate at NBI, the target countries have taken inventory of the existing Climate Services.		
Unit : Inventories	Baseline (start of project): 0	Target value and date of attainment: 4 by IQ 2018
Means of verification: Content analysis of the written documentation of inventories		

Indicator I.2:		
Authorities engaged in providing weather and climate services in partner countries and respective units of NBI have implemented measures to improve Climate Services.		
Unit : List of priority measures	Baseline (start of project): 0	Target value and date of attainment: 3 by end of project
Means of verification: Content analysis of the adopted priority measures		

Work package (WP I): Enhanced use of Climate Services

Lead agencies: national partners (e.g. INPE) and DWD, contributions by: GIZ, Engineers Canada.

Activity I.1: Selection of possible further national cooperation and implementation partners in the area of climate services.

Activity I.2: Baseline study of the current use of Climate Services by decision-makers in the planning and climate risk assessment of infrastructure investments (Indicator 0.1).

Activity I.3: Stocktaking of existing Climate Services (national, international, public, private) with suppliers and end users.

Activity I.4: Design and implementation of a national dialogue forum on Climate Services, for example in the context of NAP or INDCs follow-up processes. In case of NBI a regional dialogue forum (possibly adjacent to other events).

Activity I.5: Based on the inventory outcome, identification of measures to improve user-orientation and relevance for the use of Climate Services in the planning and

climate risk assessment of infrastructure investments that are implementable in the short term.

Activity I.6: Technical advice for weather services in the target countries regarding improvement measures that are implementable in the short term along the climate data value chain (from the coordination of climate monitoring to user-oriented ready-to-use Climate Services).

Results of WPI will be promoted and disseminated through WP IV 'International Exchange of experience and knowledge management'.

Milestones corresponding to Output I

Milestone I.1: 4 National or regional dialogue forums for Climate Services have taken place (IQ 2018)

Milestone I.2: Written results of the stocktaking of climate services are available (IQ 2018)

Output II: Integration into planning processes

Partner countries have taken steps for the systematic integration of climate risks in the planning of infrastructure investments.

Indicators under Output II

Indicator II.1:

The planning authorities of the target countries and NBI have each developed a technical guideline for the integration of climate risks in their planning processes for infrastructure projects.

Unit :	Baseline (start of project):	Target value and date of attainment:
Technical guidelines	0	3 technical guidelines by IIQ 2019

Means of verification:

Content analysis of technical guidelines.

Indicator II.2:

20 additional staff members of relevant ministries and state agencies have been capacitated to consider climate risks in the planning of infrastructure investments.

Unit :	Baseline (start of project):	Target value and date of attainment:
Staff members of relevant organisations	0	20 capacitated staff members until IIQ 2019

Means of verification:

Lists of participants of trainings and workshops as well as further activities for capacity building

Indicator II.3:

2 target countries or one target country and the Nile Basin Initiative have considered climate services and resilient infrastructure in national policy documents.

Unit :	Baseline (start of project):	Target value and date of attainment:
Policy documents	1 (Brasil)	3 until IVQ2019

Means of verification:

Political frameworks, e.g. National Adaptation Plans or revised NDCs.

Work package (WP II): Integration into planning processes

Lead agencies: national partners and GIZ. In Brazil the project IPACC II is working complementary to this work package in particular with regards to activities II.3 and II.4.

Activity II.1: Baseline study on current planning processes and requirements for the use of Climate Services in the planning and climate risk assessment of infrastructure investments in the target countries (Indicator 0.2).

Activity II.2: Depending on partner needs: Provide technical advice for the implementation of national climate policy processes, in particular the NAP process and the INDC contributions related to Climate Services and climate-resilient infrastructure.

Activity II.3: Identification of opportunities (entry-points) and development of specific recommendations for the systematic integration of climate risks in infrastructure planning.

Activity II.4: Provide partners with technical advice for developing technical guidelines on the integration of climate risks in their planning processes for infrastructure investments.

Activity II.5: Capacity development of relevant staff of ministries with relation to infrastructure planning for the integration of climate services based on the results and experiences of project activities.

(Results of WPII will be promoted and disseminated through WP IV ‘International exchange of experience and knowledge management‘.)

Milestones corresponding to Output II

Milestone II.1: Recommendations for action and technical guidelines for the integration of climate risks in planning processes of infrastructure investments in the target countries and NBI are available (IIQ 2019)

<u>Output III:</u> Climate risk assessment of infrastructure

Partner countries and NBI gained experience in the assessment of climate risks of infrastructure projects.

Indicator III.1:

Partner countries and NBI have each conducted a climate risk assessment for an exemplary infrastructure project.

Unit :	Baseline (start of project):	Target value and date of attainment:
Assessment report	0	4 by IQ 2019

Means of verification:

Content analysis of the assessment reports

Indikator III.2:		
30 technical experts have been trained in the implementation of climate risk assessments of infrastructure projects.		
Unit: Technical experts	Baseline (start of project): 0	Target value and date of attainment: 30 by IQ 2019
Means of verification: Participation lists of trainings and capacity building workshops in the context of concrete climate risk assessments.		

Work package (WP III): Climate risk assessment of infrastructure

Lead agency: activity 1-2: national partners and GIZ; activities 3-6: national partners and Engineers Canada together with national or regional engineering organisations (if applicable), contributions from GIZ and DWD.

Activity III.1: Selection of possible further national cooperation and implementation partners in the area of infrastructure (e.g. in Brazil: Urban Ministry)

Activity III.2: Selection of examples of infrastructure projects to be evaluated together with partners

Activity III.3: Drawing up climate risk assessment reports with integrated capacity building for national experts and technical support structures.

Activity III.4: Preparation of country-specific knowledge products based on the results of climate risk assessment reports.

Activity III.5: Creating handouts and training material for the implementation of climate risk assessment of infrastructure and identification of adaptation measures.

Activity III.6: In selected partner countries: Conducting studies to assess the climate-induced vulnerability of the infrastructure stock (for instance, either at national level or in specific regions or for selected categories of infrastructure).

Milestones corresponding to Output III

Milestone III.1: Results of climate risk assessment reports are available (IQ 2019)

<u>Output IV: International exchange of experience and knowledge management</u>

Partners share results and their applications in the context of transnational exchanges and make them available to the international scientific community.

Indicator IV.1:		
At least 30 representatives of the target group with technical expertise or decision-making authority confirm that the international exchange of experience is helpful for their work.		
Unit : Participants of the target group	Baseline (start of project): 0	Target value and date of attainment: 30 at the end of project
Means of verification: Content analysis of the written documentation of events, webinars and other exchange formats and qualitative survey of participants		

Indicator IV.2:

Experience and results from the project on Climate Services and climate-resilient infrastructure are presented in the context of five relevant international events.

Unit :	Baseline (start of project):	Target value and date of attainment:
Presentations at relevant international events	0	5 at the end of project

Means of verification:

Event documents (such as presentations or publications). Relevant events include, for example, the international climate negotiations, NAP-Expo, Annual WFEO Conference, WMO meetings, meetings of development banks or other infrastructure investors.

Work package (WP IV): International exchange of experience and knowledge management

Lead agency: GIZ, Contributions by: national partners, WFEO and DWD as liaison with WMO.

Activity IV.1: Promoting ongoing dialogue between the partner countries and the NBI on project activities and experience with a focus on enhancing the integration of providers and users of Climate Services.

Activity IV.2: Documentation of experience and results from the project in the form of knowledge products (fact sheets, documents, videos, etc.)

Activity IV.3: Dissemination of knowledge products on relevant websites and social media platforms including the management of the subpage on Climate Services on www.AdaptationCOmmunity.net

Activity IV.4: Presentations of the experience and results in the form of technical inputs to relevant international events, for example, as part of side events of climate negotiations, *during yearly meetings of federation of engineers* or through webinars

Activity IV.5: Cooperation and networking with relevant international actors and multipliers (such as WMO: Global Framework for Climate Services, Climate Service Partnership, US initiative 'Public-Private Partnership on Climate Data and Information for Resilient Development', Climate Knowledge Brokers Group, multilateral development banks, private sector, etc.)

Milestones corresponding to Output IV

Milestone IV.1: Two events have taken place in the framework programme of relevant international conferences (IVQ 2018).

4.2.6. Standard indicators for the aggregation of results

Action indicators

☐ AM (Action Mitigation): GHG emission reduced or carbon stocks enhanced in project/programme area

Unit	Target value (end of project)	Target value for the complete lifespan of the measure (including after the end of the project)
t $CO_{2\ eq.}$		until (year)

Rational (1) for the applicability and the target value of the standard indicator and their verification (2):

Please give instructions, so that the application of the standard indicator is clearly understandable in the project context (what is measured and how?).

(1)

(2)

☐ AP (Action People): No. of people directly supported by the project to adapt to climate change or to conserve ecosystems

Unit	Target value (end of project)
Number of persons	
Proportion of women in %	

Rational (1) for the applicability and the target value of the standard indicator and their verification (2):

Please give instructions, so that the application of the standard indicator is clearly understandable in the project context (what is measured and how?).

(1)

(2)

☐ AE (Action Ecosystems): Area of ecosystems improved or protected by project measures

Unit	Target value (end of project)
ha	
km (coastline)	

Rational (1) for the applicability and the target value of the standard indicator and their verification (2):

Please give instructions, so that the application of the standard indicator is clearly understandable in the project context (what is measured and how?).

(1)

(2)

Please specify the ecosystem-improving measures as: (multiple answers possible)

☐ Restoration of ecosystems
☐ Protected area established or extended
☐ Management for protected area improved
☐ Afforestation
☐ Avoided deforestation
☐ Other:

For measures concerning protected areas, please specify the type of protected area according to IUCN criteria[15] as:

☐ Strict Nature Reserve
☐ Wilderness Area
☐ National Park
☐ Natural Monument
☐ Habitat/Species Management Area
☐ Protected Landscape/Seascape
☐ Managed Resource Protected Area

Capacity indicators

[15] Available at: http://www.iucn.org/about/work/programmes/gpap_home/gpap_quality/gpap_pacategories/.

☒ CP (Capacity Policies): No. of new or improved policy frameworks developed to address climate change and/or conserve biodiversity

Unit	Target value (end of project)
Number of political frameworks	2 at national or one at national and one at regional level (NBI) Level: ☒ global/regional ☒ national ☐ subnational ☐ local

Rational (1) for the applicability and the target value of the standard indicator and their verification (2) and – if applicable – further information (3) in case several levels are concerned:

(1) The project supports partners to promote an increased usage of climate services and climate risk information for infrastructure investment planning as part of the implementation of the NAP process or INDC contributions.

(2) Verification via content analysis of climate policy documents and affiliated documents, for example (updated) (I)NDCs, National Adaptation Plans, Adaptation Communications or National Communications as well as relevant documents of the NBI. Comparison with existing climate policy documents (as of end 2016).

Estimated scope of the policy framework(s):

☐ Greenhouse gases reduced/avoided: [t $CO_{2eq.}$] by 20 [year]
☒ Individuals reached: x by 2019 (to be quantified in the first report)
☐ Area of ecosystems improved/protected: [ha] by 20 [year]

Rational for scope and target value:
The estimation can only be conducted once has stocktaking activities (I.1 and II.1) have been completed.

☒ CI (Capacity Institutions): No. of new or improved institutionalised structures or processes to address climate change and conserve biodiversity

Unit	Target value (end of project)
Number of structures/processes	2 Level: ☒ global/regional ☒ national ☐ subnational ☐ local Applying actor: ☐ public ☐ private sector ☐ civil society

Rational (1) for the applicability and the target value of the standard indicator and their verification (2) and – if applicable – further information (3) in case several levels/actors are concerned:

(1) The project contributes to the integration of Climate Services into the planning and climate risk assessment of infrastructure investments in partner countries. The standard indicator is directly related to indicators 0.2 and II.1

(2) Verification sources of indicators 0.2 and II.1

(3) In case of the three partner countries it would be the national level. Inc case of NBI the regional level as far as institutions of NBI rather than those of its member states are improved.

Estimated scope of the structures/processes:

☐ Greenhouse gases reduced/avoided: [t $CO_{2eq.}$] by 20 [year]
☒ Individuals reached: X by 2019 [year]
☐ Area of ecosystems improved/protected: [ha] by 20 [year]

Rational for scope and target value:
The estimation can only be conducted once has stocktaking activities (I.1 and II.1) have been completed.

☒ CM (Capacity Methods): Number of new or improved methodological tools developed to address climate change and conserve biodiversity

Unit	Target value (end of project)
Number of methods	1 Level: ☒ global/regional ☐ national ☐ subnational ☐ local Applying actor: ☒ public ☒ private sector ☐ civil society

Rational (1) for the applicability and the target value of the standard indicator and their verification (2) and – if applicable – further information (3) in case several levels/actors are concerned:

(1) The project contributes to the refinement of the methodology for the assessment of climate risks of infrastructure objects (PEIVC) developed by Engineers Canada for its application in developing countries (indicator III.4).

(2) Updated or refined training materials.

(3) N/A.

Estimated scope of the methodological tools:

☐ Greenhouse gases reduced/avoided: [t $CO_{2eq.}$] by 20 [year]
☒ Individuals reached: x by 2019 (to be quantified in the first report)
☐ Area of ecosystems improved/protected: [ha] by 20 [year]

Rational for scope and target value:
The estimation can only be conducted once has stocktaking activities (I.1 and II.1) have been completed.

4.2.7 Risks and risk appraisal

1. Risk 1: Changes in responsibilities and transfers of key actors at partners

Description: The development of skills and process knowledge bears the overall risk that results from the project do not have the desired impact due to personnel fluctuation. Personnel changes can especially put the project at risk as long as recommendations for action developed together with partners are not yet sufficiently integrated by the partner system. This applies, for example, to recommendations for the enhancement of Climate Services (based on inventories and assessments) and the systematic integration of climate risks in planning processes (based on climate risk assessment reports) as long as they have not at least been embedded in the national (climate) policy agendas and translated into working guidelines, regulations or public policies.

Allocation: Output 1 and 2 are mainly affected by this risk.

Probability of occurrence: **medium**; controllability: medium

Risk mitigation strategy: The project relies on a comprehensive capacity development of several persons per organisation and persons working for various public organisations and the private sector. Through the planned activities the

	project will also be able to generate a lasting institutional demand for the established competencies and process expertise – for instance by playing an active role of feeding the (economic) importance and potential of enhanced Climate Services and infrastructure planning into the (climate) policy debate and integrating them in regulatory processes by means of guidelines or regulations for instance. **2. Risk 2: Complexity of the cooperation / deliverability** Description: The partners of the project are carefully selected and GIZ has a vast experience in cooperating with public sector organisations and the private sector. Nevertheless, the number of partners is high and coordination will be complex. The organisations involved need to get used to the working modalities and competencies of each other, so that the cooperation can be effective. Since some of the organisations involved have not worked with GIZ and DWD (who already know each other) previously, this process will take time. There remains a risk that this process can take a lot of time or fail unexpectedly. In this case, implementation may be delayed severely, in the case of serious coordination problems the achievement of individual indicators could be at risk. Allocation: Output 1, especially 2 Probability of occurrence: **low**; controllability: high Risk mitigation strategy: The project has already tested and agreed in detail suitable activities and implementation arrangements with implementing partners and subcontractors during preparation. At the beginning of implementation a steering mechanism is set up where GIZ, DWD and the participating engineering associations can coordinate their activities regularly (for example every six months) and make constraints in cooperation transparent early. Results and agreements are recorded in writing. In addition, IT-based systems (such as Skype for Business) will be used, so that those responsible can coordinate ongoing activities in the short term. Important administrative processes are prioritised as early as possible and jointly. This applies to staff seconded to the DWD, who are recruited jointly by GIZ and DWD, and the examination of financing contracts with engineering associations. Several smaller financing agreements are used to spread the risk of delays caused by incompatibilities in bureaucratic systems, and also to minimise accounting risks at GIZ. **3. Risk 3: Politicisation of infrastructure projects** Description: Larger infrastructure projects can be subject to controversial debates or conflicts, for example, between fractions within a target country or between countries. In the context of cross-border water management in the Nile Basin there are special risks to the project. Delays in decision-making processes, on which the project depends, can interfere with implementation or the achievement of targets. This may be manifested not only in real tensions but also through passivity as a way of conflict avoidance. Allocation: Outputs 1 and 3 as well as NBI Probability of occurrence: **medium**; controllability: low Risk mitigation strategy: The project relies on personal presence through national and international staff at the decision-makers and partners to better and faster assess explicit and implicit sensitivities to the exemplary infrastructure projects in the respective country contexts. The partners will also be invited to take an active role in the governance structure of the project in order to influence the strategic direction of the project in a politically sensitive manner.
4.3 Co-benefits and safeguards	
4.3.1 Contributions to economic, social and environmental development (co-benefits)	A more robust infrastructure as a result of an enhanced use of climate information ensures basic functions of an economy and government services (such as water and energy supply, disaster preparedness). The use of climate information can thus contribute to protect public and private investments and to save lives. Therefore, the World Bank estimates in the current World Development Report that the added value of investments in better weather services amounts to USD 4 to 36 billion in the world (World Bank, 2016).

	In which pillars of sustainable development are the described co-benefits located? ☒ social ☒ environmental ☒ economic
4.3.2 Safeguarding of social and environmental standards (Safeguards)	The project will apply existing GIZ standards for environment, climate and social compatibility. This includes, for example, the environmental and climate assessment (UKP), gender analysis and context analysis. When implementing activities the project therefore follows human rights principles such as the promotion of active and effective participation, equal opportunities for different ethnic groups and men and women, non-discrimination and empowerment of women and indigenous groups. The project explicitly respects that different stakeholders are represented in the various project activities. In particular, the activities implemented under work package II 'Climate risk assessment for infrastructure' are coordinated, planned and implemented jointly with representatives of relevant government agencies in a participatory approach. Moreover, the project works to ensure that the concerns and interests of local people and marginalised groups are taken into account. Following a do-no-harm approach, the projects regularly reviews if unintended negative effects may be caused by the activities to readjust accordingly (risk monitoring). The project does not finance nor implement infrastructure projects itself and has no power of decision over infrastructure projects. However, the project can affect the design and planning of infrastructure projects through technical advice and risk assessment. In this context, the observance of UKSM principles is especially important. Approaches and results of the IKI project "Strengthening Ecosystem-Based Adaptation in Planning and Decision Making Processes" (14_II_117_Global_G_Wissensnetzwerk EBA Mainstreaming) will also be considered.
4.4 Other characteristics of the project	
4.4.1 Innovation character	The innovative nature of the project consists of 2 aspects. 1.) The holistic approach of the project addresses both the supply and demand sides of Climate Services and brings together all of the key actors to increase the climate resilience of infrastructure. This includes, in addition to weather services, planning and environmental authorities, especially engineers who design infrastructure and assess their risks. So far, projects often focused on one of these groups, the Global Framework for Climate Services for instance prioritised weather services. The joint approach promotes understanding among stakeholders and contributes to the effectiveness of the achieved goals. 2.) The increased consideration of resilient infrastructure in the context of NAP process and in engineering associations is a relatively new matter. The World Federation of Engineering Associations has only issued a Code of Practice on Principles of Climate Change Adaptation for Engineers in December 2015 in parallel to the Climate Change Conference so that they take into account climate information in their work. Also during the climate negotiations in Paris in December 2015, the WMO presented an outline of a complement to the technical guidelines of the NAP process on Climate Services. At this time, little experience exists for developing countries. This compares, in contrast, to a high demand - numerous countries have included climate-smart infrastructure as a priority for adaptation in their INDCs. The project will generate targeted recommendations for action and experience, which are not yet available. Both the approach and methods and experience developed by the project can be replicated in other projects and countries. Work Package IV aims at the dissemination of the innovative content of the project.
4.4.2 Ambition and transformative effect	The systematic integration of climate information into investment decisions and planning of infrastructure contributes to a more climate change-resilient development (see 4.2.2 Impacts). The inclusion of the engineering profession, which is not

	traditionally represented in the environmental and climate debate, increases the scope and supports the understanding of important economic sectors for a paradigm shift. World Bank and WMO also emphasise the significant role of weather and climate services as a basis for more climate-smart planning and decisions. An enhanced use of Climate Services (Work Package 1) therefore contributes to the future climate resilience of the economy and population.
4.4.3 Securing sustainability after termination of funding	Securing sustainable development is provided by the following measures: **1. Embedding in national target systems and partner commitment** In all three target countries and the NBI, the goal of making infrastructure more resilient is explicitly embedded in current political frameworks and the partners are highly motivated to implement this goal (see 4.1.2). Costa Rica, for instance, has established the aim of introducing methods for vulnerability assessment of infrastructure and launching a national monitoring programme in its INDCs. The political pressure to act continues to grow due to the rising public awareness of climate vulnerabilities and increased economic damage to infrastructure. It is therefore likely that the political context will be conducive to the demand and use of project results even after the project ends. **2. Cohesion with national processes** The project activities are embedded into national processes that persist beyond the duration of the project. The dialogue forums on Climate Services (Activity I.3) will be held in Brazil in the context of national adaptation planning. In Brazil, infrastructure is a dedicated field of action of the NAP with objectives defined for the medium term. **3. Institutionalisation of products and capacity building** The activities of the project in work packages I-III will be carried out jointly with local partners who are capacitated to continue these activities. The climate risk assessment reports (Activity III.2 and III.5) will be implemented in the three target countries together with local engineering associations (if applicable) and handouts and training material will be created to facilitate replicability. The consulting services of work packages I-III are designed to support processes and products assumed by the partners. **4. Use of existing platforms** Internationally, the project uses existing platforms for knowledge management and exchange of experience in the long term such as the Global Framework for Climate Services or the platform www.AdaptationCommunity.net, founded in 2012 by the IKI project 'Inventory of Methods for Climate Adaptation' (11_II_089_Global_G_-Methodeninventar). No new international online portals or products are launched that require continuous funding. **5. Motivation of implementing partners** The implementing partners of the project are non-profit and work in the long term on the improvement of Climate Services and integration of climate change in engineering activities. Engineers Canada and the World Federation of Engineering Associations are pioneers in this field. It is therefore likely that they will dedicate own resources to the further development of the vulnerability method PEIVC (Activity III.2 and III.5) and to the international agenda setting and outreach (AP IV). DWD and GIZ aim at the conclusion of a MoU for a further cooperation beyond the project term.
4.4.4 Visibility of the project	Due to the holistic partner model (see 4.4.1), the project has access to global networks and events in the field of climate policy, infrastructure and engineering as well as Climate Services. This is used in many ways to promote the visibility of the project at national and international level. Work Package IV targets the international visibility of the project. For this purpose, side events to the climate negotiations are planned to share the experience and present the results of the project (Indicator IV.2). GIZ and the implementing partners WFEO are observer organisations that regularly hold UNFCCC side events and DWD representatives are also certified. The target group consists of national negotiators, the international expert audience including multipliers such as think tanks and

		specialised journalists. Through DWD, which represents Germany at the WMO, the project gets access to target group-specific meetings, which are also used for visibility, for example through events or as a registered project of the Global Framework for Climate Services. In addition, WFEO conferences and working groups are used for events to raise awareness of the importance of climate adaptation in the engineering community. The established online platform www.AdaptationCommunity.net is used to share products and experience of the project (activity IV.3. During the climate negotiations, the website reaches up to 2,000 page views per day. The national visibility of the project is ensured by the direct cooperation with the political counterparts and local partners and the integration in national processes such as the NAP process. For this, the project uses outreach events such as the Climate Service dialogue forums (Activity I.2) and the dissemination of knowledge products through expert networks.
4.4.5	Mechanisms for the mobilisation of private investments in climate protection and biodiversity measures	Not applicable.

5	**Interaction with international cooperation projects and other relevant aspects**	
5.1	Synergies with and links to other relevant projects and sectors (of German and international cooperation)	The project creates synergies and connections with relevant projects at the national and international level. At the international level, the project interacts with the following IKI projects: 1.) Adaptation of public investments to climate change in Latin America IPACC II (15_II_125_PER_G_ Anpassung von öffentlichen Investitionen): the project will cooperate closely with the IPACC II project with respect to the target countries Brazil and Costa Rica. Brazil can take a coordinating function since it is part of both projects. It will use experiences of IPACCI in regard to the integration of climate change into public investment planning processes. Work package II of the CSI project will only engage in a complementary fashion in Brazil since IPACCII is partly covering the topic already (especially activities II 3 and II.4). Under the IPACC II Work Packages III and IV (regional and international exchange), the experience of the IPACCII project will contribute to the work of the project, especially in the development of technical guidelines to include climate risks in investment planning (activity II.3 and II.4). The project can also make use of the dialogue mechanisms for regional exchange established by the IPACC II project (IPACC WP III). In addition, joint events or webinars are planned (WP IV). 2.) Policy advice for a climate-resilient Economic Development (16_II_141_Global_G_Politikberatung für klimaresiliente Wirtschaftsentwicklung): Vietnam is a target country of both projects. The projects cooperate in the inventory taking of national data (Activity I.2-3) and the question of how Climate Services can be incorporated in macroeconomic modelling. There is a regular exchange format in the target country Vietnam. 3.) Inventory of Methods for Climate Adaptation (11_II_089_Global_G_Methodeninventar): The project will use the platform launched by the project 'Inventory of Methods for Climate Adaptation', www.AdaptationCommunity.net, especially the subpage 'Climate Information and Services' for the dissemination of resources and experience, and host webinars on the same. The project may also rely on the products of the inventory of methods such as the 'draft checklist for climate information services'. 4.) Information platform on adaptation to climate change (CI: GRASP) (08_II_046_Global_G_GSAI): The inventory of Climate Services will include the information provided by ci:grasp (Activity I.2-3). The educational and communication activities at the interface of providers and users of Climate Services can be based on the concepts developed by the ci-grasp project. IKI-CSI explicitly does not plan to develop a new global website.

	At the national level, the project interacts with the following IKI projects: **Brazil:** Supporting Brazil in the implementation of its national agenda for adaptation to climate change (16_II_137_BRA_G_NAP Brasilien) (not yet commissioned): both projects have the same political counterpart and will closely coordinate their activities, in particular under Work Package III 'Climate policy advice'. The project director of the Brazilian IKI project will contribute to the project as a seconded expert, as planned in the personnel concept of the project to ensure close coordination. The projects will work together to consolidate the infrastructure chapter of the Brazilian NAP process. **Nile basin** Conservation of Biodiversity in the Nile Basin (IKI 14_IV_045_Afrika_G_Biodiversitätsschutz Nil-Becken) (10.2015 – 03.2020): The project can use the NBI contacts established by the existing IKI project and thus coordinate the communication with the partners. **Vietnam** The project can use the structures already established by the 'Integrated Coastal Management Programme' (ICMP, BMZ funded) in the Mekong Delta. One of the 5 provinces supported in the Mekong Delta is also the Bac Lieu Province, which has already been supported by the IKI project 'Sustainable Development of Coastal Protected Forests' until 2014. Furthermore, the project will get in touch with **relevant projects and initiatives of other donors** and aim for complementarity. Directly relevant activities of other donors in the partner countries are: • As part of its Africa Climate Business Plan (2015) the World Bank plans to establish the **Africa Climate Resilient Investment Facility (Afri-Res).** It is foreseen to develop guidelines and facilitate capacity building. A needs assessment is currently undertaken and its report is schedule for completion by end of 2016. • **The Programme on Climate Information for Resilient Development in Africa (CIRDA)** financed by GEF/LDCF and implemented by UNDP. It supports 11 countries including the NBI members Uganda, Tanzania and Ethiopia in extending their climate information systems and dissemination of information to end users.[16] • The MMA together with the Foundação Getulio Vargas and other stakeholder and with financial support of the British Council currently sets up climate knowledge platform (**AdaptaClima**)
5.2 Knowledge management in IKI projects	The processing and dissemination of knowledge products and promotion of exchange are an integral part of the project and reflected in a separate work package (WP IV). The experience gained from the dialogues of providers and users of Climate Services will be made transparent and documented (for example, in the form of reports, methodological description, assumptions regarding the climate information value chain). At the national level the project staff will assume a central role in the coordination of knowledge management. At the global level, the platform www.AdaptationCommunity.net, especially the subpage 'Climate Information and Services' will be used to disseminate project results. The project uses a combination of classroom-based sessions and webinars, which already has proven effective in the IKI project 'Inventory of Methods for Climate Adaptation'. The personal meeting of the target groups from the target countries increases the confidence and effectiveness of the virtual exchange. According to its approach (see 4.4.1) the project addresses audiences in various industries and sectors and will create target group-specific knowledge products.

[16] http://adaptation-undp.org/projects/cirda

		The international project team of GIZ and DWD are primarily responsible for the international exchange and knowledge management.
5.3	Notes on own funds/external funding/third-party grants	Not applicable.
5.4	Other aspects relevant to funding	**Shorting of the project duration** As part of the intensive exchange with implementing partners the estimation of needed financial resources has been specified and is above the level previously assumed during the project concept phase in 2015. This refers particularly to infrastructure related services. It has therefore been determined that 36 instead of 39 months project duration is more realistic in light of the available resources. **Financing agreements** The project foresees several financing agreements in the total amount of €909.400. Recipients are the German Weather Service (DWD), engineering organisations as well as the Secretariat of the Nile Basin Initiative.

Annex 1:

Implementing partner(s) / Subcontractor(s)		
1. Implementing partner / Subcontractor	☒ Implementing partner	☐ Subcontractor
	Name	**Deutscher Wetterdienst (DWD, German Weather Service)**
	Department	
	Postal code, town/city	63067 Offenbach
	Country	Germany
	Institution	Federal authority
	Legal structure	Public law body with partial legal capacity under the Federal Ministry of Transport and Digital Infrastructure (BMVI).
		Non-profit status: ☒ Federal authority ☐ no
	Total staff	2,230
	Staff for the project	2 PM, permanent DWD staff
	Year established	1952
	Turnover [€/year]	Budget EUR 307 million (2014)
	Experience in the target region [years]	Brazil: 20 years; Vietnam 16 years; Nile Basin: Egypt: 4 years
	Experience in activities relevant to the project [years]	Since its establishment in 1952
2. Implementing partner / Subcontractor	☒ Implementing partner	☐ Subcontractor
	Name	**World Federation of Engineering Organizations (WFEO)**
	Department	Committee on Engineering and Environment
	Postal code, town/city	75015 Paris
	Country	France
	Institution	International NGO
	Legal structure	Registered Not for Profit (Republic of France)
		Non-profit status: ☒ yes ☐ no
	Total staff	N/A
	Staff for the project	As circumstances require.
	Year established	1968
	Turnover [€/year]	N/A
	Experience in the target region [years]	Varies according to the member association
	Experience in activities relevant to the project [years]	12
3. Implementing partner / Subcontractor	☒ Implementing partner	☐ Subcontractor
	Name	**Engineers Canada**
	Department	Strategy and Partnerships
	Postal code, town/city	Ottawa, Ontario K1P 6L5
	Country	Canada
	Institution	NGO – National organisation for professional engineers in Canada

	Legal structure	Federally registered non-profit organisation
		Non-profit status: ☒ yes ☐ no
	Total staff	45
	Staff for the project	2
	Year established	1935
	Turnover [€/year]	N/A
	Experience in the target region [years]	Costa Rica: 4
	Experience in activities relevant to the project [years]	11
4. Implementing partner / Subcontractor	☐ Implementing partner	☒ Subcontractor
	Name	**Costa Rican Association of Engineers and Architects (Colegio Federado de Ingenieros y de Arquitectos de Costa Rica, CFIA)**
	Department	Project Management
	Postal code, town/city	Curridabat, 2346-1000
	Country	Costa Rica
	Institution	Professional Association of Engineers and Architects
	Legal structure	
		Non-profit status: ☒ yes ☐ no
	Total staff	281
	Staff for the project	4
	Year established	1903
	Turnover [€/year]	N/A
	Experience in the target region [years]	Since its establishment
	Experience in activities relevant to the project [years]	2
5. Implementing partner / Subcontractor	☒ Implementing partner	☐ Subcontractor
	Name	**Ministry of the Environment (Ministério do Meio Ambiente – MMA)**
	Department	Secretariat for climate change and quality of the environment
	Postal code, town/city	SEPN 505 Bloco "B" Edifício Marie Prendi Cruz 2º andar Sala 202
		70730-542- Brasília - DF
	Country	Brazil
	Institution	Ministry
	Legal structure	Non-profit pursuant to Federal pelo Decreto No. 34.867 of December 30, 1953
		Non-profit status: ☐ yes ☐ no
	Total staff	
	Staff for the project	
	Year established	N/A
	Turnover [€/year]	N/A

	Experience in the target region [years]	N/A
	Experience in activities relevant to the project [years]	2
6. Implementing partner / Subcontractor	☒ Implementing partner	☐ Subcontractor
	Name	**Instituto Nacional de Pesquisas Espaciais (INPE) (National Institute for Space Research)**
	Department	Center for weather forecast and climate studies (Centro de Previsão de Tempo e Estudos Climáticos – CPTEC)
	Postal code, town/city	Av. dos Astronautas, 1.758 - Jardim da Granja, São José dos Campos - SP, 12227-010,
	Country	Brazil
	Institution	Governmental research institution
	Legal structure	Governmental institution
		Non-profit status: ☒ yes ☐ no
	Total staff	1083 (2013)
	Staff for the project	TBD
	Year established	1961
	Turnover [€/year]	About 60 Mio Euro (2013)
	Experience in the target region [years]	Since establishment
	Experience in activities relevant to the project [years]	>10 years
7. Implementing partner / Subcontractor	☒ Implementing partner	☐ Subcontractor
	Name	**Nile Basin Initiative (NBI)**
	Department	
	Postal code, town/city	Entebbe
	Country	Uganda
	Institution	International Secretariat
	Legal structure	
		Non-profit status: ☒ yes ☐ no
	Total staff	41
	Staff for the project	
	Year established	1999
	Turnover [€/year]	N/A
	Experience in the target region [years]	Since its establishment
	Experience in activities relevant to the project [years]	> 5 years