Monitoring & Evaluation (M&E) Plan and Impact Statement Form

Objective of the M&E Plan and Impact Statement:

- The M&E Plan and Impact Statement must be designed based on the Technical Assistance Response Plan and must enable the Implementer to complete the Closure Report at the end of the assistance.

Process for filling in the form:

- The Implementer must identify relevant quantitative and qualitative indicators as specified in the Closure Report. A sub-set of indicators to monitor and assess must be chosen among these.
- The Implementer may also identify other specific, measurable, achievable, relevant, and time-bound indicators suitable to monitor Activities, Outputs and anticipated Outcomes from the technical assistance and add to the M&E Plan and Impact Statement.
- During implementation of the TA or FTA, the Implementer must collect all relevant data as described in the Monitoring & Evaluation Plan. Aggregated data on selected indicators as well as an updated version of the Impact Statement will be presented in the Closure Report at the end of the assistance.

Basic Information	
Title of response plan	**Tecnologías para el diseño y adaptación al cambio climático de un Plan Estratégico Regional de Manejo Costero en la Provincia de Buenos Aires.**
Technical assistance reference number	**2017000004**
Country/ countries	**Argentina**
NDE focal point and organization	**Gabriel Blanco (Ministerio de Ciencia, Tecnología e Innovación Productiva - Argentina.**
Sector(s) addressed	**Coastal zones / Adaptation**
Technologies supported	**Coastal infrastructure rehabilitation / Climate change monitoring / Coastal zoning**
Implementation period and total duration	**14 months (total duration: 25 months)**
Total budget for implementation	**U$D 182.000**
Designer of the response plan	**INA (Argentina) and IMFIA (Uruguay)**
Implementer of response plan	**INA (Argentina) and IMFIA (Uruguay)**

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
Output 2: Revision and update of the technological tools applied in 2013 for the evaluation of sustainable infrastructure investment in the Buenos Aires region	Document summarizing international experiences and recommendations for Buenos Aires (*in Spanish and English*). List of nationally available instrumental and numeric modelling databases (*in Spanish*). Document identifying the needs and recommendations for update (*in Spanish*).	Overall number of participants engaged in the technical reports.	Record of reports. List with literature sources. Consultation with stakeholders. Report with the review of technological tools.	Three (3) reports: i) a document summarizing international experiences and recommendations for coastal management, ii) a list of nationally available instrumental and numeric modelling databases, and iii) a document identifying the needs and recommendations for the modelling strategy update. Targeted and delivered reports and activities are the same.
Activity 2.1: Compilation of international experiences on coastal infrastructure risk analysis and design	At least 40 international and national literature sources are reviewed. At least 5 international coastal management plans are reviewed.	Number of bibliographic sources and international plans reviewed.	Record of reports. List with literature sources.	One hundred seventy six (176) international and national sources (reports and papers). More than 130 sources reviewed than the targeted. Five (5) coastal management plans reviewed. No difference between targeted and reviewed in the assessment of coastal management plans.
Activity 2.2: Revision and update of available technological tools.	At least 10 technological tools are reviewed and evaluated in terms of use, scope and difficulties.	Number of technological packages reviewed. Number of institutions that provide information.	Report with the review of technological tools. Consultation with stakeholders.	Thirty one (31) technological tools (software for coastal modelling) were analysed. More than 20 technological tools than the targeted were reviewed. Eight (8) national

				scientific and technological institutions from Argentina were analysed in their role as providers of information and support for coastal management. An important number of national scientific and technological institutions were evaluated for their possible participation in coastal management.
Output 3: Development of a structured database for Buenos Aires	Report containing the draft database structure (*in Spanish*). Report from workshop (*in Spanish*).	Overall number of participants engaged in the technical reports.	Data collection. List with institutions that received the data. Notes from meetings and consultations. Consultation with stakeholders. Workshop reports.	Ten (10) people from five (5) different institutions were involved during the activities related to the developing of the data base and the validation workshop. Two (2) documents resulted from this activity, as stipulated, one detailing the developing of the database and another highlighting the activities of the validation workshop.
Activity 3.1: Database design. Structuring the data of the different coastal dynamics variables in an easily accessible and friendly database.	Designed database including variables linked to coastal dynamics.	Number of institutions that provide information. Number of variables with historical records. Number of layers of information (raster and vector) of the Geographic Information System developed.	Notes from meetings and consultations. Report with the detail of the variables included in the database.	Ten (10) institutions provided data for the database Twenty eight (28) variables of coastal dynamics have historical records At least twenty (20) layers of information integrate the Geographic Information System. As planned, a database

				of the coast of the province of Buenos Aires was implemented (1.7 Gb of data was transferred to the Buenos Aires province authorities).
Activity 3.2: Validation workshop. Meeting with the stakeholders to share the collection of information and the analysis of the coastal management state of the art.	Realization of at least 2 sessions in the validation workshop. At least 4 institutions participating in the validation workshop.	Number of training sessions and capacity strengthening activities. Number of participating institutions. Number of people who participate in the validation workshop (men and women). Level of satisfaction of the participants about the validation workshop (men and women).	Workshop attendance records. Stakeholder interviews. Workshop reports. Photos and videos. Satisfaction surveys regarding training.	There were two (2) sessions in the validation workshop, one for the database transferring and another for the definition of the location of the detail models. Five (5) institutions were represented during the validation workshop. No women participated in the validation workshop. Satisfaction surveys were not conducted.
Output 4: Analysis of the effects of climate change and variability on marine variables in Buenos Aires	Report on historical analysis of dynamics (*in Spanish*). Report on projections of climate change dynamics (*in Spanish*). Report including graphic outputs and explanations on the impacts of erosion caused by the combined effect of flooding and erosion in Buenos Aires (*in Spanish*). Report on the methodology and criteria applied (*in Spanish*).	Overall number of participants engaged in the technical reports.	Record of reports. List with literature sources.	Four (4) reports: i) historical analysis of dynamics, ii) projections of climate change dynamics, iii) impacts of erosion caused by the combined effect of flooding and erosion, and iv) methodology and criteria applied. More than seventy (70) bibliographic sources reviewed for the whole Output 4.
Activity 4.1: Historical analysis of marine	Report on historical analysis of coastal dynamics (in Spanish).	Number of bibliographic sources reviewed.	List with consulted sources. Historical report of	Fifty five (55) bibliographic sources reviewed for the historical analysis

dynamics.	Statistical analysis with information on at least the last 20 years of coastal dynamics.	Number of bibliographic sources filiations consulted.	coastal dynamics.	report. 31 years of Water levels (1985-2016) and 39 years of Waves and Winds (1979-2018)
Activity 4.2: Projections of climate change dynamics	Report on climate change projections. Utilization of at list 2000 computational hours.	Number of studies and bibliographic sources reviewed. Number of computational hours.	Technical Report. Records of the duration of each simulation.	Nineteen (19) bibliographic sources reviewed for the climate change projections report. Approximately 22000 hours of computational coast.
Activity 4.3: High resolution analysis of impacts and risks in Buenos Aires	Report on the possible impacts of erosion and flooding on the coast of the province of Buenos Aires (*in Spanish*). Utilization of at list 1000 computational hours.	Number of detail numerical models. Number of computational hours.	Technical Report. List of detailed numerical models. Records of the duration of each simulation.	Three local numerical models: Necochea-Quequen, Mar del Plata and Las Toninas. Approximately 2500 hours of computational coast.
Output 5: Technology transfer	Atlas of Risks and Impacts on the coast (*in Spanish*). Coastal management manual (*in Spanish*). Training course materials (*in Spanish*).	Overall number of participants engaged in the technical reports.	Workshop attendance records. Stakeholder interviews. Workshop reports.	As stipulated, an Atlas of Coastal Risks and Impacts (with 16 layers of present data and 11 layers of future projections data), a manual of contributions to coastal management (100 pages) and a technology transfer workshop were developed.
Activity 5.1: Development of training material	Training with guidelines for the use of the software. Document with basic guidelines for coastal planning.	Total number of tools, technical reports and information material supported by the assistance.	Training materials.	More than forty (40) documents and software for training implemented on a virtual learning platform (*costabsas.moodlecloud.com*)
Activity 5.2: Training	Transfer workshop of the numerical models developed during the Technical Assistance. At least 2 organizations trained.	Number of training days and capacity building activities. Number of people who received the	Workshop attendance records. Photos and videos. Stakeholder interviews.	Three (3) training days (face-to-face in Mar del Plata) plus twenty (20) hours virtually. Seventeen (17) people

		training (men and woman). Total number of organizations trained. Percentage of participants who increased their skills through training (obtained from the training survey form). Level of satisfaction of the participants about the validation workshop (men and women).	Satisfaction surveys regarding training.	participated in the training (5 women and 12 men). These people represented fourteen (14) institutions. 100% of the people surveyed stated that they would participate in new trainings related to the topics addressed in the course. Regarding the expository clarity of the trainers, the totality of the responses evaluated it as VERY HIGH (13 mentions) and HIGH (4 mentions). Regarding the possibility of applying numerical modeling tools in their respective fields of professional technical work, almost all of the responses were positive (between VERY HIGH and HIGH possibilities; there was only one negative mention). About the duration of the course, half of the people consulted consider that it has been insufficient. The didactic materials used in the training have been highly valued by 16 of the 17 participants. A transfer workshop of the numerical models developed during the Technical Assistance was developed in Mar del Plata during three

				(3) consecutive days. People from twelve (12) more institutions were trained than planned. For this, the collaboration of the National University of Mar del Plata was essential.
Output 6: Monitoring and evaluation	TA Monitoring and Evaluation plan (*in English*). TA impact description (*in English*). TA Closure and Data Collection Report (*in English*).	Overall number of participants engaged in the technical reports. Percentage of participants who increased their capacities due to the TA. Number of side meetings between INA, IMFIA, DPH, CTCN, Experts, etc.	Stakeholder interviews. Monitoring reports of the project coordination team.	Three (3) reports: TA M&E, TA Impact Description and TA Closure. Six (6) semi-structured interviews conducted with the heads of the institutions that were part of the TA. An evaluation report about the process of implementation of the activities and the compliance of the committed outputs: i) assessment of the activities and components from the perspective of the different actors, ii) identification of achievements, difficulties and recommendations for future proposals, iii) the gender dimension.

Note: The Response Plan may contain information useful for the section below. The information in the table below will be used by the CTCN for public communication of the achieved and expected results of the Technical Assistance through the CTCN website www.ctc-n.org and other communication channels.

See for example: https://www.ctc-n.org/sites/www.ctc-n.org/files/benin_a_ag_forestry.final_.pdf

Impact Statement	
Challenge	**The oceanic coast of the Buenos Aires province has a great diversity of beaches, with different wave and tide patterns, and where more than 30 towns are concentrated. Activities associated with tourism and commercial activities linked to the movement of ports are the main ones. This coastal region is affected by numerous environmental and climatic problems, mainly due to coastal erosion. This technical assistance has two general objectives: to diagnose the current state of the coastal dynamics and the implementation of a risk analysis due to Climate Change that serves as input for a Coastal Management Plan.**
CTCN assistance	***• Determine the changes happened in the dynamics coast during the last decades (sea level, swell, wind, morphological changes).*** ***• Estimate from Climate Change projections the possible future coastal scenarios.*** ***• Develop transfer work technological, training and training associated with the project.*** ***• Delineate a map of risk and vulnerabilities, as a starting platform to adapt the guidelines for an Integrated Coastal Management Plan.***
Anticipated impact	***• The project will contribute directly to the planning and exploitation of basic socioeconomic resources for the province's coast: tourism and port activity.*** ***• The coast of Buenos Aires is one of the main tourist destinations in the country (recreational use of the beaches). Their protection and adequate planning is important for the maintenance of this natural resource.*** ***• In the port activity, the Port of Mar del Plata (fishing) and the Port Quequen (cereal grains) stand out. The projections obtained will be indispensable for the verification and adaptation of port structures that guarantee their operation.*** ***• The elaboration of a comprehensive plan with a regional focus will serve as a reference for establishing contingency actions and assistance for the inhabitants (approximately 1 million) of the different municipalities in the face of the occurrence of severe weather events.***
Anticipated co-benefits from the TA	***Among TA activities, Climate Change projections were determined, generating the bases for the development of different types of adaptation measures. Although the TA's focus is on coastal erosion and floods, these projections could be used to evaluate problems associated with social and / or economic issues, biodiversity or ecosystem services, among others. This approach also has implications for the economic development of this region: more resilient coasts mean more and better tourism, trade and port operations. At local governments scale, the results of this TA may be used for the elaboration of local regulations related to the use and exploitation of the costing space. As a general co-benefit, the awareness of the population about the importance of caring for / protecting the marine environment and the need to adapt human activities to favor the natural development of coastal processes can be highlighted.***
Gender aspects of the TA	***The inclusion of the gender perspective in the monitoring and evaluation of TA (based on the analysis of secondary information and field surveys) sought to investigate the limitations - material and symbolic - that explain***

	the low participation of women in the field of Hydraulic Engineering in general, and in the project in particular. ***Two out of twelve of the members of the technical team are women.*** ***Even though the relationship between coastal erosion management is neither direct nor evident, positive actions can be included that facilitates and promotes the participation of women in a more equal way.***
Anticipated contribution to NDC	***- This technical assistance does not propose direct contributions to the NDCs of Argentina.*** ***- It is part of the current efforts and adaptation needs linked to the NDCs of Argentina in the research and development aspects (mapping of vulnerabilities and risks as a tool for the management of adaptation to climate change) and institutional strengthening (capacity building in human resources and improvement in inter-institutional coordination for planning and management).***
The narrative story	***The maritime littoral of the Buenos Aires province (Argentina) is affected by several environmental problems: the main one is coastal erosion. The main forces of this dynamic are the action of the waves and the impact of severe storm surges.*** ***Anthropic activities such as the construction of coastal defenses, urban growth over dunes, the extraction of sand and the exploitation of aquifers without proper management have aggravated erosional processes and increased vulnerability to Climate Change.*** ***The technical assistance requested by the Department of Maritime Coast of the Buenos Aires Province (Argentina) contemplates among its objectives to advance with current knowledge of the coastal dynamics of the Atlantic Coast, to assess the impact of climate change on this area, to determine the risks and to provide recommendations for a future Integrated Coastal Management Plan.*** ***The main products of these projects are the enhancement of the numerical modelling tools for the management department, the capacity building, the assessment of impacts of Climate Change in coastal erosion and the preparation of a manual of coastal management recommendations for the Buenos Aires Province maritime littoral.***
Contribution to SDGs	***This project contributes to the following Sustainable Development Goals (SDG):*** ***• SDG 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation*** ***The implementation of numerical models will allow to design reliable, flexible and quality coastal defense infrastructure, which favour the sustainability of the beaches.*** ***• SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable*** ***The integral analysis of the coastal dynamics of Buenos Aires Province within the framework of Climate Change will allow us to think about actions to mitigate possible impacts in the coastal towns.*** ***• SDG 13: Take urgent action to combat climate change and its impacts*** ***The assessment and projection of the dynamics of the coast and its forcings will allow anticipating the elaboration of adaptation measures to Climate***

	Change in the Buenos Aires Province coast. The products to be generated during this technical assistance will be inputs for the preparation of a future Regional Strategic Plan for Coastal Management.
Reference to knowledge products	***None of the knowledge products of the UNFCCC Technology Executive Committee (TEC) were used in the development of the TA.***