ICARIA
Improving climate resilience of critical assets

www.icaria-project.eu

A. de la Cruz (27th February 2023)

D6.2a Implementation Plan and Risk Contingency Plan

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D6.2 a: Implementation Plan and Risk Contingency Plan

Summary

This document is the first version of the Implementation Plan and Risk Contingency Plan. First, it indicates how the workload of the project has been divided and organized as well as the way to evaluate if the project objectives are reached according to the schedule and within the budget. Additionally, it defines key steps to following in order to initiate the project action. The second part lists a number of risks that could affect different aspects of the project outcome. It includes risk mitigation measures and a contingency plan for each case.

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D6.2 a	WP 6	
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Document history

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27/02/2023	1.3	Alex de la Cruz (AQUA)	Final version

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List of Acronyms and Abbreviations

CoPs	Communities of Practitioners
CSF	Case study facilitators
GA	Gran Agreement
KoM	Kick off Meeting
KPI	Key Performance Indicators
NDA	Non-disclosure agreements
PMT	Project Management Team
SSO	Specific Subobjectives
WP	Work Package

Executive summary

This initial Implementation Plan and Risk Contingency Plan have two different aims. On the one hand, it presents the strategy that will follow along the project to ensure that all lines of work evolve at a satisfactory pace while all objectives, milestones, and deliverables are reached according to the schedule defined in the Gantt Diagram. With this aim, the project work has been divided into Work Packages and subdivided in Tasks with specific Deliverables. All of these work divisions have one responsible consortium member assigned. A Project Management Team will meet on a monthly basis to coordinate the action and interaction of all Work Packages and to take action in case of delays, deviations or lack of results are observed. Furthermore a total of 22 Key Performance Indicators (KPIs) have been defined to ensure the quality of the project outputs.

On the other hand, in collaboration with the members of the Project Management Team, a total of 20 risks that could affect the initial steps of the project have been identified. Risk prevention measures and a contingency plan have been defined for each case.

This Contingency Plan will be updated in months 6, 18, and 30 of the ICARIA project under the supervision of the Project Management Team.

1 Introduction

The present document is the initial version of the Implementation Plan and Contingency Plan of the ICARIA (Improving Climate Resilience of Critical Assets) project, which is being developed within the European Union Research and Innovation funding program Horizon Europe under the Grant Agreement (GA) number 101093806.

The document corresponds to Deliverable 6.2a of Work Package 6 (WP6) - Project Management. The general objective of WP6 is to ensure an efficient coordination and management of both the technical-scientific and the financial matters of the project to ensure the fulfillment of all objectives and milestones defined in the GA. The specific objectives of this WP are as follows:

- Quality assessment of project progress, results, and impact.
- Timely submission of deliverables and reports to the European Commission
- Keep the project within budget and schedule while achieving the objectives
- Risk mitigation and management
- Establish effective communication channels Consortium –Commission

This version of the Implementation Plan and Contingency Plan, corresponding to deliverable D6.2a, has a double principal objective. First, this document has to define a strategy indicating the steps to be followed during the initial months of the project, so all members of the consortium can begin their action in a coordinated manner. Second, it aims to identify potential risks that could compromise reaching the objectives in all stages of the project. Furthermore, the Implementation Plan and Contingency Plan will define specific mitigation and contingency measures for every risk identified to prevent and/or reduce their impact.

Given the fact that along the whole lifespan of ICARIA its characteristics and nature will evolve, new and different risks will become relevant for the final project success. Consequently, an updated version of the Implementation Plan and Contingency Plan will be delivered in months 6, 18 and 30. These will take into account new risks to be considered in each phase of the project. All versions of the Implementation Plan and Contingency Plan will include input from the Project Management Team (PMT) as well as any member of the consortium.

2 Implementation plan

2.1 Work organization

In order to translate the general objective of ICARIA to a concrete and implementable work plan, seven specific sub-objectives (SSO) have been identified. These serve to define which are the main lines of work to be followed and are conceived to be SMART: Specific, Measurable, Achievable, Realistic, and Timboud.

According to these SSOs, the workload involved in this project has been structured in 6 work packages (WP). Within each WP, a number of tasks have been established to define specific lines of work. Each task is associated with one or more deliverables which are meant to document the results reached. This organization of the workload is reflected in the Gantt Diagram defined in the project proposal document and it is the cornerstone of the implementation plan of the ICARIA project. It reflects both the scheduling of beginning and end of all tasks and the deadline of the deliverables that will be produced as well as the main milestones that define the key moments of the project where a certain degree of project evolution should be reached. ICARIA's Gantt Diagram can be found in Annex I of this document.

Furthermore, reporting periods have been scheduled. These will serve to evaluate and report the technical evolution of all work packages, tasks and deliverables. Reporting periods will also evaluate the financial aspects of the project. If deviations are observed, the situation will be assessed and adequate measures will be taken to readjust any given situation. According to the project proposal, two official reporting periods have been scheduled: M18 and M36. These will involve the formal delivery of reports to the project officer to present the technical evolution of work and to justify the adequate management of funding and resources. Additionally, internal reporting periods will take place in months 6, 12, 24, and 30. These will allow to keep a frequent control of project evolution and as an early warning system to detect deviations before they have a significant impact on the project management and its results.

The organization of the work efforts will be led by the Project Management Team (PMT). This body, which includes each WP leader, the project coordinator and a representative of each case study facilitator member, will meet on a monthly basis. These meeting will serve to (1) coordinate the action and cooperation among WPs, (2) evaluate the evolution of the the ongoing tasks and deliverables preparation, (3) identify action to be take to prepare upcoming tasks, (4) identify risks that can threaten any aspect of the implementation of the project and define mitigation measures, and (5) asses the fulfillment of the project objectives according to the schedule.

2.2 Measurement of fulfillment of objectives

In order to make ICARIA's objectives and SSOs measurable, a number of Key Performance Indicators (KPIs) have been defined. They are related to specific tasks, have a specific month of achievement and have been conceived so they serve to accurately assess the evolution of the process to achieve a specific SSO. The evaluation of KPIs achievement at a given month will be a clear and measurable way to determine if the project develops according to the plan.

The following table summarizes the KPIs that have been defined and the SSOs that they correspond to.

Table 1: Summary of KPIs defined to measure the achievement of objectives in ICARIA project
Source: Icaria Project proposal (Annex 1 Part B)

KPI*	SSO*	Corres. deliv.*	Dead-line	Description	Probability of timely achievement
KPI 1.1	SSO 1	D1.1	M9	Framework (aligned with EC technical guidance on climate proofing of infrastructure 2021-2027) presented, at least, in 1 international conference and 1 open access scientific journal	Medium
KPI 1.2		D4.3	M33	Testing methodology in all ICARIA implementations (3 trials) and replications (3 mini-trials)	High
KPI 1.3		D1.3	M18	Four data collection templates (1. hazard, 2. exposure, 3. vulnerability, 4. socio economic impact)	High
KPI 2.1	SSO2	D1.1	M12	Finalized concept of combination of the different approaches (at least 2) to obtain downscaled scenarios with uncertainty measurement for the near and long term	Medium
KPI 2.2		D1.2	M12	Number of CMIP6 climate models (at least 10 using the statistical approach, at least 2 using the dynamical approach**) downscaled at a local*** scale (points) to feed asset risk assessment	Medium
KPI 2.3		D1.2	M12	The method and results will be discussed within at least 1 open-source publication and 1 conference	High
KPI 3.1	SSO3	D1.3	M18	Use of data gap filling and data uncertainty methods recommended in D1.3 in all the three ICARIA case studies during the replication phase (mini-trials)	High
KPI 3.2		D4.3	M33	Satisfactory validation (75% satisfaction in Communities of Practice (CoP) poll results) of data gap and uncertainty methods recommended in D1.3 in the ICARIA case studies during replication phase (mini-trials)	High
KPI 4.1	SSO4	D4.2	M30	Successful implementation and assessment of ICARIA modeling framework through 3 trials	High
KPI 4.2		D4.2	M33	Successful replication of ICARIA modeling framework in at least 3 mini-trials	High

KPI*	SSO*	Corres. deliv.*	Dead-line	Description	Probability of timely achievement
KPI 4.3		D4.3	M33	More than 3 publications on analyzing the interactions between multi-hazards and critical infrastructures, the knock-on effects of compound/cascade disasters, and the ICARIA modeling framework applications	Medium
KPI 4.4		D4.3	M33	Presenting the methods and results in, at least, 15 specialized journals / forums / conferences	Medium
KPI 5.1	SSO5	D4.2 & D4.3	M36	More than 3 scientific publications on peer-reviewed indexed and open access journals about the holistic resilience assets and tangible impact assessment methods and their implementation within ICARIA case studies	Medium
KPI 5.2		D4.3	M33	Successful implementation and replication of the multi-risk and resilience assessments in the 3 ICARIA sites (average of 75% satisfaction on poll results among CoPs)	High
KPI 6.1	SSO6	D3.3	M18	For each of the asset categories that are investigated in the project, a minimum of 3 relevant adaptation solutions of ICARIA portfolio, applied and assessed in at least one of the case studies	High
KPI 6.3		D3.5	M33	Satisfactory implementation of the DSS (75% satisfaction on CoP poll results)	High
KPI 6.3		D3.5	M33	Use of DSS in all the 3 ICARIA case studies for trials and mini-trials	High
KPI 7.1	SSO7	D5.3	M36	Availability of ICARIA website with more than 250 visits/month from M12 to M36	Medium
KPI 7.2		D5.5	M36	Minutes of the CoPs workshops during the project (3 minutes for each case study)	High
KPI 7.3		D5.5	M36	More than 10 regions (including followers) interested in ICARIA demos participating in final event	Medium
KPI 7.4		-	M36	Organization of Final Conference on climate-proofing infrastructures with more than 200 attendances	Medium

* KPI: Key Performance Indicator; SSO: Specific sub-objective; Corres. deliv.: Corresponding deliverable
** Dynamically downscaled climate projections based on at least 2 different CMIP6 and 2 different RCM models
*** High-level, hazard climate projection based on statistical approaches and AI-improved dynamical projections

2.3 Initiation of project activity

In order to initiate the action of all members of the consortium in a coordinated manner, in M1 a Kick off Meeting (KoM) was organized in Barcelona, headquarters of the project coordinator partner. The KoM took place between the days 26th and 27th of January with a total of 37 attendees and having all members of the consortium represented with at least one person. This permitted that all patterns could get to know each other and WP leaders could present the main lines of work that will be developed in each case.

Both during the KoM and bilateral meetings hold between the project coordinator and different WP leaders, the following issues have been identified as key during the initial steps of the project:

1. Rapidly initiate work of Task 1.1 (WP1) in order to define a concise and comprehensive framework and overall methodology for hazard and impact modeling, of climate-related hazards (e.g., extreme events, combined events, cascading effects) on critical assets. This task will also include the development of a common nomenclature for the whole project.
2. Organize meetings between FIC, the partner responsible for Task 1.2 (Climate scenario building), and the Case Study Facilitators (CSF) to define data requirements and decide which climate scenarios are more relevant for each case.
3. Organize a bilateral meeting between WP1 and WP2 in order to align the project framework definition with the efforts on developing novel methodologies for multi-hazard assessment (Task 2.2 and 2.3).
4. Coordinate the work and expectations of results of WP1 and WP2 with the work plan on WP3, as the methodology defined for the impact assessment (Task 3.1) and the development of a framework for the holistic resilience assessment (Task 3.2) strongly depend on the results and data provided for WP1 and WP2.

3 Identification of risks, mitigation measures and contingency plan

In the context of project management, a "risk" is understood as a probable situation that can cause an unwanted change in the project objectives, schedule or planned activities. ICARIA involves a consortium of 15 partners and 3 case-studies. Hence, a number of risks can potentially affect the desired outcomes of the project, some of them were even identified during the development of the project proposal. Therefore, it is essential to identify each risk and define appropriate contingency measures.

These risks can be associated with both internal and external factors. Internal risks derive from inadequate management and coordination of the consortium and results disseminations, while external risks are associated with matters beyond the control of the consortium (e.g., data availability, involvement of key external stakeholders, confidentiality issues).

As project coordinator, AQUATEC has conducted an identification and analysis of the risks that can threaten the adequate execution of project activities, paying special attention to those that directly affect the key steps for the project initialization. This analysis has been conducted through a participatory process that has involved the members of the PMT. The steps followed in the risk definition process are as follows:

1. Preliminary identification of risks done by the coordinators based on:
    a. Identification of risks in the proposal phase of ICARIA project
    b. Identification of risks done by the different members of the PMT
2. Definition of a specific list of risks and defining risk-prevention measures and a contingency plan for each case.

Thanks to developing this process in a participatory manner it was possible to amplify the points of view involved in the risk identification. These risks were also categorized in the following fields

- Project management
- Research
- Dissemination and exploitation

For each one of the identified risks, the affected WPs were identified, together with a proposal of mitigation measure(s) to avoid or reduce the probability of negative occurrence and a Contingency Plan to mitigate the consequences of its occurrence and increase the final project success.

Table 2: Identification of risks related to project management and proposal of risk-prevention measures and contingency plan

Description of the risk	WP involved	Proposed risk-measures	Contingency plan	Impact	Probability
Lack of coordination among partners / WPs / tasks	All	AQUATEC has extensive experience in coordination of large research projects similar to ICARIA. Moreover, the governing structure of the project is designed to promote the interaction and participation of all members. Furthermore, a large number of consortium members have worked together previously in other research projects with satisfactory results. In case coordination problems are observed, the monthly PMT will assess and solve them. WP's implementation plans will be prepared, with detailed interdependencies (inputs/outputs) between tasks in every WP and between WP's, identify which partner is doing what and when, ensure approval of such plan by each partner in the WP and by the coordination. Finally, the PMT and the project coordinator will promote bilateral technical meetings between WPs with close interaction.	Coordination meetings along the project will address all issues that might occur at every given time	High	Low
Low collaboration among partners	All	The Project Management Manual (D6.1) will provide tools to foster partners' collaboration. Moreover, the schedule of regular meetings at all levels will promote the necessary collaboration to meet objectives. Finally, the Project Steering Board (PSB) wil sit regularly to ensure the coordination and the flow of communication among	If the measures defined to promote collaboration are insufficient, extraordinary meetings will be held to address the problem. Depending on each specific situation these meetings will involve the whole PST, specific	High	Low

Description of the risk	WP involved	Proposed risk-measures	Contingency plan	Impact	Probability
		WP.	WP/task/deliverable leaders or specific members of the consortium.		
Withdrawing a consortium member or key personnel from the project	All	All the partners were completely committed to this project at the project start, as indicated by their contributions on the Kick off Meeting. The level of satisfaction with project development and the risk of partner or key personnel withdrawing will be periodically assessed in PMT and PSB meetings if needed. According to Consortium Agreement partners have an obligation to transfer work so far completed to an alternate partner in case of withdrawal.	In case a partner or key personnel needs to withdraw for unforeseen reasons, the consortium will first look for a possibility to replace the necessary skills within the consortium. If this fails, an alternative partner with necessary skills will be sought.	Medium	Low
Conflicts within the Consortium	All	Partners are aware that the Coordination Team is available at any time for any complaint or dissatisfaction with the working plan in order to find solutions that can be discussed in extraordinary meetings by using video conference. Partners can also express and discuss their concerns to find appropriate solutions in the plenary meetings.	If no resolution is achieved, the PSB will be involved to mediate and resolve the situation between conflicting parties. As the last resort and if the conflict provokes negative outcomes or changes in the project execution, the Coordinator will explain the problem and its causes to the Project Advisor, and find a solution according to the European funding principles.	Medium	Low
Financial deviations or	All	During the project proposal, an adequate budget was thoroughly developed between all partners considering	If a partner needs to change the allocation of financial resources, the	High	Low

Description of the risk	WP involved	Proposed risk-measures	Contingency plan	Impact	Probability
laxity of partners		the resources and efforts that will be required in each task. Moreover, partners will send internal technical and financial reports every six months to the Coordination Team so the evolution of expenses with respect to the total budget can be evaluated. This will allow the coordinator to detect any deviation in time to take measures if needed.	Coordination Team will discuss the situation and request the change to the Project Advisor.		
Extra costs in the process of purchasing equipment	All	In case extra costs for purchasing equipment are required, a deep analysis of the necessity will be analyzed by the affected partner and the Coordination Team so that to reduce it just to the strictly necessary.	In case extra costs for purchasing equipment are required, a deep analysis of the necessity will be analyzed by the affected partner and the Coordination Team so that to reduce it just to the strictly necessary.	Mediu	Low

Table 3: Identification of risks related to research activities and proposal of risk-prevention measures and contingency plan

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
Insufficient engagement of stakeholders and local actors in the co-creation	All	Risk owners participating in this proposal have explicitly committed to building local communities of users and the project plan is explicitly designed with concrete roles and plans for working with these communities.	Monitor and help the regional partners by the creation of Communities of Practitioners. Task 5.4 (M1 to M36) is focused on stakeholder engagement.	Medium	Medium
Difficulties in establishing the baseline regional / critical infrastructure resilience and agreeing on how to address them.	WP 1, 2, 3 and 4	The definition of a common framework for the project in WP 1. The Consortium could utilize the methodology and tools developed in the RESILOC project to facilitate this process.	If needed, specific Workshops for each specific case study can be organized the Case Study Facilitators and/or the trial and minitrial coordinators	High	Medium
Delay of the activity or failure in achievements of milestones	All	Monthly PMT meetings will pay careful attention to upcoming delivery deadlines and will also keep track of the evolution of all lines of work ongoing on the project in a continuous manner. If a potential delay is identified in a specific deliverable or milestone, a meeting between the	In case an activity is delayed, the coordinator will notify the EC Project Advisor to jointly try to solve the problem. In case an activity is repeatedly late, or some WPs are	Medium	Medium

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
and KPIs		coordination team, WP leader and Task/Deliverable responsible will be held. If necessary, the rest of the contributors to the deliverable will also attend the meeting. In that meeting, opportune measures for each specific case will be defined to ensure a timely delivery of the document.	always delayed, the Coordinator, with the support of the EC, may take action in order to ensure proper completion of the tasks (e.g., redistribution of tasks, subcontracting)		
Lack of data availability for modeling and risk assessment	WP 1, 2, 3 and 4	ICARIA will devote many efforts to fill data gaps through the implementation of different novel techniques and strong background acquired by project partners (AIT specialist in the use of AI to achieve downscaled climate scenarios and hazards and CERTH specialist in the use of no-conventional methods to validate hazard and impact models).	If a data gap cannot be filled, WP leaders have to notify the coordinator to follow one of the following foreseen strategies: 1. If there are problems collecting data from organizations, administrations and services operators that are ICARIA partners, the Coordinator will formally request them to provide the data. The signature of additional NDAs or the use of partially dummy data (with fake coordinates, for instance) can be explored. 2. If there are problems collecting data from organizations, administrations or services operators that are not ICAIRA	High	Low

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
			partners, the Coordinator, case-study coordinators or other ICARIA partners will write a letter asking the corresponding authorities to ask for the collaboration of the organizations, administrations or service operators. The signature of NDAs or the use of dummy data (fake coordinates, for instance) can be explored. If this situation persists, the Coordinator will ask the Project Advisor to contact the city authorities with political influence to sign an official letter asking for the collaboration of these external administrations, organizations or service operators in the project. 3. In case the previous measures do not work, alternative data sources will be identified. Finally, in case an activity is compromised, the coordinator will notify the EC Project Advisor in order		

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
			to adapt the WP implementation plan. The EC may take action to ensure that the adaptation of the WP implementation plan does not compromise the project achievements		
Uncertainty chain affecting the reliability of results (climate projections, hazard and risk results and adaptation benefits)	WP 1, 2, 3 and 4	ICARIA will devote great resources to analyze uncertainty sources and propagation in Task 1.3 and specific uncertainties caused by different environmental drivers and humanitarian activities evaluated using generalized likelihood uncertainty estimation (GLUE) method or fuzzy set approach (WP2.2).	If uncertainty causes a major issue in results reliability, extraordinary monographic meetings will be organized in order to identify the causes and define corrective actions. These measures could be redefinition of frameworks, changing methodologies or exploring different data sources.	High	Low
Uncertainties and low performance of the models	WP 2, 3 and 4	To increase the certainty and performance of models, a detailed calibration and validation of the models is needed. To calibrate and validate models recent data is required. It is expected that this data will be either gathered from members of the consortium who have access to it (mainly	In case that some of the data needed for the calibration and validation processes is not available, the Coordinator will ask the Project Advisor to contact the local authorities with political influence to	High	Low

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
		the Risk Owners) or from external parties who could be included in the local CoPs. If needed it could also be considered to deploy a set of sensors to carry field measurements.	sign an official letter asking for the data needed.		
Uncertainties and low performance of the impact models	WP 3	To increase the certainty and performance of impact models, they must be calibrated using actual damages or impacts data. As this information can be very varied in terms of its nature (e.g., economic damage, affected assets, consequence on people safety), collection of such datasets is often complicated. For this reason, each case of study is expected to involve stakeholders in their CoPs who are able to provide this kind of data.	If a CSF is unable to obtain data for impact, it can ask the Coordinator to formally request this data to public authorities. If this measure was to fail, alternative data sources could be explored.	High	Low
Low quality of deliverables	All	The quality of deliverables is ensured by an internal and external peer-reviewed system. It involves two rounds of revision for each deliverable. The first one is done by a member of the consortium who has not been involved in the development of the document. The second one will be done by the project coordinator, who will approve the final version to be delivered.	If a deliverable does not have the expected quality for a European research project, the Coordination Team will not submit it and ask the partner to improve its content and/or presentation. In case of delay, the Coordination Team will inform the Project Advisor in advance to explain the reasons for the delay.	High	Low

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
High dependency of several tasks in previous tasks from other WPs	All	Given the interconnected and sequential approach presented in ICARIA, the results of some tasks are highly dependent on what is previously done in other WPs. Therefore, a good coordination between WPs is needed, through the PMT meetings as well as bilateral WP meetings.	Given that some delays might occur due to the problems in other WPs, the Gantt chart of the whole project will be updated to assess the advancements of the project, but also to determine the severity of the existing delays. Additionally, a flow diagram or table clearly showing the links and information flow between WPs and tasks will be prepared in order to identify, for each WP, the input and output needs and respective WPs, tasks and deliverables. This flow will facilitate the identification of dependencies and the definition of the more critical.	High	Low

Table 4: Identification of risks related to dissemination and exploitation activities and proposal of risk-prevention measures and contingency plan

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
D&E activities raise little interest	WP 5	During the early stages of the ICARIA project, the communication team leading WP5 (led by CETAQUA) will develop a Dissemination and Communication Plan (D5.1) to define strategies to maximize the impact of ICARIA. This plan will also consider generating synergies with other EU projects such as MAIA or MIRACA. This Plan will be updated by the end of the project to define how to manage D&E activities after the end of the project.	If a low interest in the project is detected, the reasons for this will be analyzed by WP5 leader together with the PMT and an improved version of the Communication and Dissemination Plan will be developed.	High	Low
Difficulties to implement ICARIA results in other regions	WP 4 and 5	Along the project, a group of follower regions as well as the Project Advisory Board will actively participate in the project development. They will provide an external point of view from the perspective of an "outsider" region who could apply the results of ICARIA when developing their own risk assessments and resilience plans. Their input will serve as a reference to identify weak points in the replicability of the work produced. Furthermore, during the minitrials of climate scenarios, the CSF will be able to assess if the work developed by other partners for the trials in other regions is applicable to their own case study.	Both during the Plenary Meetings and Technical Meetings, hence every 6 months, the project members will hold technical discussions regarding the implementation and replicability of the work delivered. These meetings will serve to identify issues in this sense and to define a common strategy to address them.	High	Medium
Low impact of the project in	WP 4	A dissemination and communication plan will be prepared in WP5. This document will define strategies to ensure the	During the monthly coordination meetings and consortium plenary	High	Medium

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
potentially interested regions		outreach of ICARIA results to specific groups of stakeholders who are of special interest in the project (e.g. policymakers, regional governments and metropolitan authorities). Moreover, WP5 action will include the mapping of specific potentially interested stakeholders who will be reached and engaged through the presentation of reports and the organization of conferences and workshops.	meetings, KPIs regarding the outreach of ICARIA results will be assessed. If the efforts made fall short, the situation will be assessed to identify the reasons causing that situation and adequate measures will be defined to improve the situation.		
Low engagement with the Communities of Practitioners (CoP) of the Case Studies	WP 5	Before forming the CoPs, Task 5.4 will predefine the profile of stakeholders who are relevant to the project aim, who have a specific interest and who can provide an add-on value to the development of the project. When the CoP is constituted, an initial meeting will be organized to define expectations, responsibilities and contributions expected from each stakeholder. Regular meetings/workshops will be organized to maximize the involvement of the CoPs in the Project and incorporate their input into the work developed.	In case one or several members of a CoP do not contribute to the project in the expected terms, a meeting will be organized to identify the reasons and redefine the terms of their role to improve their participation.	Medium	Low
Decreasing website visits	WP 5	The number of visits to the ICARIA website reflects the engagement with the project. In particular, the objective is to convert new visitors into returning ones and in this way to build a strong community interested in climate change and urban resilience topics.	In case of decreasing website visits, specific actions will be carried out to attract visitors to the website. This could include increasing the number of recurrent publications (news and	Medium	Low

Description of the risk	WP involved	Proposed risk-prevention measures	Contingency plan	Impact	Probability
			blog entries), the creation of audiovisual and/or interactive media, or exploring new channels to share the link to the website, thus being social media, technical or general media and the project partners' websites.		

4 Conclusions

Regarding the project implementation, in order to organize the whole workload of the ICARIA projects six WP with specific tasks related to specific lines of research have been defined. Each one is linked to one or more deliverables that are meant to document all results reached. The timely delivery of work and the fulfillment of project objectives will be assessed by an internal evaluation system that is based on the following points:

- Reporting periods of two kinds: internal (M6, M12, M24 and M30) and official (M18 and M36).
- Monthly PMT meeting to assess progress and coordinate WPs
- A set of 22 time-bound measurable KPIs
- A Gantt Diagram indicating all deadlines of the project

This document also indicates that the first steps to follow in order to initiate the project action are the following ones:

- Initiate Task 1.1 (WP1) to define a concise and comprehensive framework for the project
- Organize meetings between Task 1.2 leaders CSFs to define the climate modeling scenarios
- Meeting between WP1 and WP2 in order to align the project framework definition with the efforts on developing novel methodologies for multi-hazard assessment
- Coordinate WP1, WP2 and WP3 due to the high degree of interdependencies among them.

Regarding the second part of the delivery, 20 risks for the project and the corresponding measures and contingency plans have been identified for the following topics: research activities, project management and dissemination and exploitation of results. The main issues identified are:

- Conflicts within the consortium, including lack of commitment
- Deviation in financial matters or results production
- Lack of source data
- Excessive uncertainty in a given step of the project compromising the reliability of subsequent results
- Lack of impact of results compromising the outreach of the project

This Contingency Plan will be updated in months: 6, 18 and 31 under the supervision of the Coordination Team and the PMT.

Annex I: Project ICARIA Gantt Diagram

Table 5: Project ICARIA Gantt diagram

WP	WP and task title	Start M	End M
WP1	Project framework, climate scenarios and modelling inputs	1	18
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Task 1.2.	Climate scenario building	1	12
Task 1.3.	Modelling input requirements, data gaps and uncertainties	3	18
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Task 2.3.	Coupled hazard models: methodology and tool	6	18
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WP3	Impacts evaluation and DSS	3	33
Task 3.1.	Tangible impacts assessment methods	3	12
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Task 3.5.	WP3 lab: testing of methods and tools	13	18
WP4	Case studies: implementation, replicability and exploitation	6	36
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Task 4.2.	Trial implementation and assesment	19	30
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WP6	Project coordination and management	1	36
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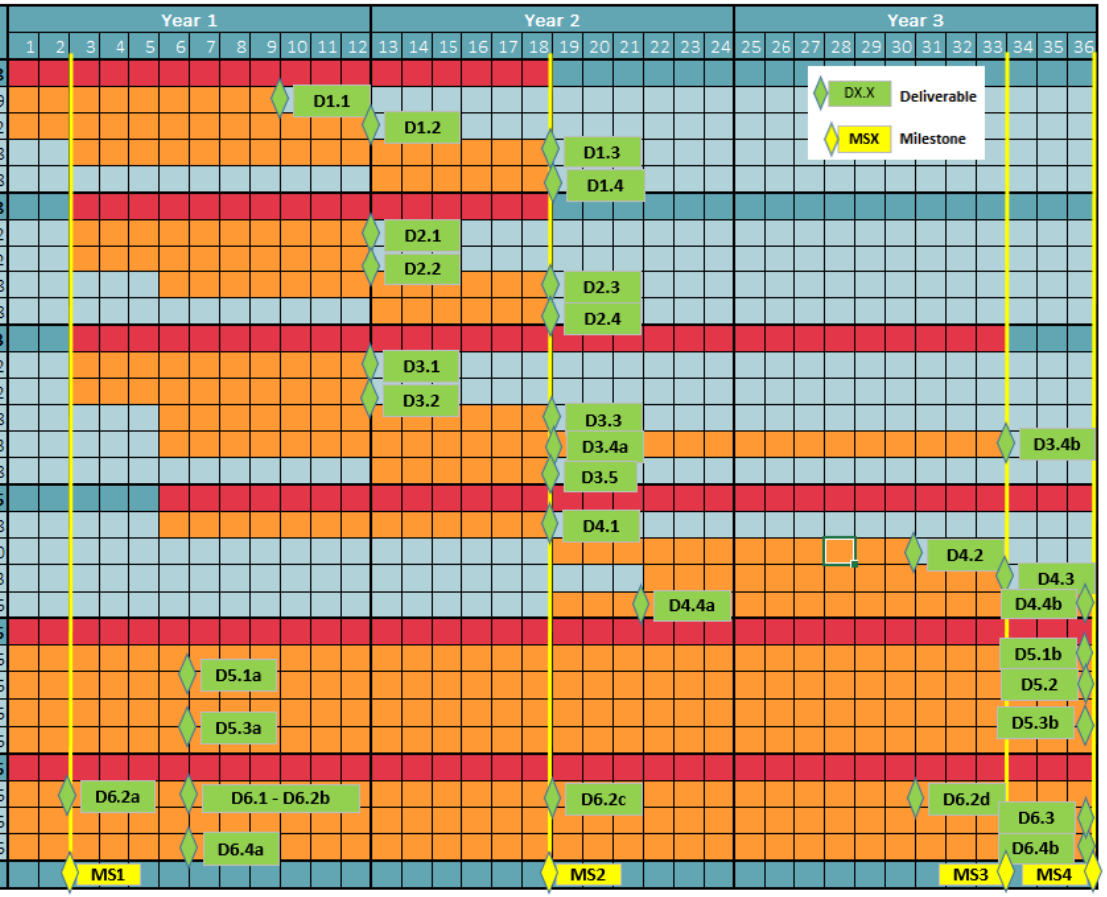
Task 6.3.	Data management	1	36
MILESTONES			



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Improving climate resilience of critical assets

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