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RESCCUE

RESILIENCE TO COPE WITH CLIMATE CHANGE IN URBAN AREAS.

CONTINGENCY PLAN

Updated version

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RESCCUE - RESilience to cope with Climate Change in Urban arEas - a multisectorial approach focusing on water
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Document history

DATE	VERSION	AUTHOR	COMMENTS
01/03/2019	3.0	Marc Velasco	An updated version that updates the tables of risks and materialized risks is prepared.
01/04/2019	3.1	Montse Martínez	Internal review of version 3.0 before sending it to the reviewers
30/04/2019	Final	Marc Velasco	Several reviews have been included to prepare the final version

1. Changes with respect to the DoA

None

2. Dissemination and uptake

Public

3. Short Summary of results (<250 words)

The Contingency Plan describes general and specific risks related to three main activities of RESCCUE project: research activities, project management and dissemination and exploitation of results. The corresponding prevention actions, as mechanisms to partially or completely prevent these risks, as well as contingency plans to solve them in case of their occurrence, have been carefully elaborated and detailed in the document.

The main risks identified correspond to issues such as: lack of source data or intermediate results hindering the proper evolution of the project; insufficient commitment/collaboration of partners or stakeholders; high complexity of the project due to the interconnections and interdependencies of the analysed domains (urban services); conflicts within the consortium; financial deviations or laxity of partners; IPR issues; involvement of critical infrastructures, which make difficult the dissemination of particular results; or lack of visibility and impacts of project results.

This Contingency Plan has been updated in month 36, taking into account what has occurred during the last 12 months since the submission of the first updated version.

4. Evidence of accomplishment

This report



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1 Introduction

This document is developed as part of RESCCUE (RESilience to cope with Climate Change in Urban arEas-a multisectorial approach focusing on water) project, which has received funding from the European Union's Horizon 2020 Research and Innovation program, under the Grant Agreement number 700174.

The Contingency Plan corresponds to Deliverable 8.3 of Work Package 8 (WP8) – Project Management. WP8 will ensure an optimal coordination and management of RESCCUE, guaranteeing the effective implementation of the project activities. The specific objectives of WP8 include:

- Manage the Project and the consortium in an efficient and result-oriented manner to ultimately ensure the fulfilment of the whole project objectives
- Ensure an effective interaction with the European Commission and the coordination of the legal, financial and administrative aspects of the project
- Implement coordination procedures, the quality-control of results and streamlined decision-making and re-planning procedures when necessary

Within this framework objective, the Contingency Plan document intends to identify potential challenging core tasks as early as possible and to envisage prevention and contingency measures to avoid or reduce the probability of negative occurrence and consequences that might affect the project results or impact the duration or costs of the project tasks.

Given that potential risks can rise along the project lifespan, an initial version was created in M12, it was later updated in M24 and has now been updated again in M36. This is going to be the last update of this document, facing the last year of the project with the proper tools to address all the possible risks that may arise.

After this introduction, the structure of the deliverable is simple: the possible risks are identified followed by a proposal of prevention measures and a contingency plan for each one. Differences between risk prevention and contingency can be described as follows:

- Risk prevention is intended to reduce or minimize the risk before it occurs, so that, reducing the impacts of its occurrence.
- Risk contingency is keeping backup plan in the worst case scenario when risk occurs. It helps the project adopt another method or process without suffering much loss.

In this version, the section called *3 Materialized risks* has also been updated. This section presents some of the risks that have been materialized during the first two years of the project, together with the actions undertaken in each case.

The deliverable ends with a set of conclusions derived from this risk analysis.

2 Identification of risks

A 'risk' is a probable situation that has the potential to cause an unwanted change in the project objectives and expected results (increasing their duration and cost). RESCCUE aims to contribute in building more resilient cities by providing innovative methodologies and tools to improve the ability of cities to withstand and recover quickly from multiple shocks and stresses and maintain continuity of services. All the methodologies and tools developed during the project will stand out for their capability to be deployed to different types of cities, with different climate change pressures. RESCCUE project involves 18 partners and 3 case-studies. Due to the nature of the activities carried on within the project, there are relevant risks that must be addressed to ensure the successful execution of the project.

These risks encompass both internal and external factors. **Internal factors** derive from the fact that RESCCUE is a collaborative research project, so that, typical issues related to the management and coordination of the consortium and the dissemination and exploitation of the project results may rise. Likewise, there may be **external factors** such as the supply of key data by external companies/entities out of the consortium, the involvement of critical infrastructures and so confidential data, etc.

The Project Coordinator (Aquatec) have conducted a thorough analysis of the risks connected with the execution of the project activities that might affect the achievement of the project objectives through a participatory process involving all RESCCUE partners. Rather than elaborating the Contingency on its own, the coordinator asked partners to identify those potential deviations and risks connected to their corresponding tasks, activities, deliverables and milestones within the project. The exact process to define risks included the following:

- 1) Preliminary identification of risks done by the coordinators based on:
 - a. Identification of risks in the proposal phase of RESCCUE project
 - b. Identification of risks done by the different WP leaders at the different Project Management Team (PMT) meetings carried out monthly (compilation of identified risks from the beginning of the project up to M10)
 - c. Identification of risks made by all the partners through the internal technical reporting (performed every 6 months)
- 2) The first version of the table compiling the different identified risks was distributed among the different partners through Basecamp, so that every partner could review it and add their identified risks.

Such participatory process allowed foreseeing additional risks different from those anticipated in the proposal, as well as refine some previously suggested prevention measures, covering all the WPs and addressing the 3 case-studies heterogeneity.

The potential risks perceived by the consortium have been finally compiled in the following tables and classified according to different categories:



- Research activities
- Project management
- Dissemination and exploitation of results

For each one of the identified risks, the affected WPs were identified, together with a proposal of prevention 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.

These analysis that was conducted on the first version of the Contingency Plan, has been reviewed and updated in the two next versions in M24 and M36.

Table 1 - Risks and risk-prevention measures related to RESCCUE implementation – research activities category

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
<p>Delay of the activity, or failure in achievement of milestones</p>	<p>All WPs</p>	<p>The PMT will seek for early detection of any problems in order to ensure the proper coordination of WPs by regularly checking the progress of the action. Additionally, safety schedule buffers have been considered in the duration of RESCCUE.</p> <p>Implementation plans for the WP will be also developed by the WP leaders in order to support the proper coordination of WPs by regularly checking the progress of the action.</p> <p>A Ms Project Gantt Diagram for the whole project has been prepared, updating the percentages of advancement per each task and deliverables every PMT meeting. This allows to easy track the deviations as soon as they occur.</p>	<p>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 always delayed, the Coordinator, with the support of the EC may take action in order to ensure proper completion of the tasks (redistribution of tasks, subcontracting, etc.)</p>

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
<p>Lack of data availability</p>	<p>WP 2, 3, 4, 6</p>	<p>Data availability is crucial when it comes to model any kind of systems. Lack of data is often one of the main causes of delays and cost increases. In RESCCUE, the fact of having public administrations and services operators on board, will for sure ease the data acquisition, since they are normally the owners of the data.</p> <p>In the cases in which the data owner is not a partner of RESCCUE, having the municipalities within the consortium helps contacting them and reaching favourable agreements to gather the data.</p>	<p>WP leaders should notify to the Coordinator problems in data gathering. 3 possible procedures are foreseen once this problem occurs:</p> <ul style="list-style-type: none"> - If there are problems collecting data from organizations, administrations and services operators that are RESCCUE 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. -If there are problems collecting data from organizations, administrations or services operators that are not RESCCUE partners, the Coordinator, case-study coordinators or other RESCCUE partners will write a letter asking to the city 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 to 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. - In case the previous measures do not work, alternative data sources will be identified. <p>Finally, in case an activity is compromised, the coordinator will notify the EC Project Advisor in order to adapt the WP implementation plan. The EC may take action in order to ensure that the adaptation of the WP implementation plan does not compromise the project achievements.</p>

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
<p>Uncertainties and low performance of the climate models</p>	<p>WP 1</p>	<p>Climate change simulations have large associated uncertainties. Not only due to their nature, but also because a lot of assumptions have to be done in order to predict the future. When using this data in the several models, the uncertainties are transferred. This will be especially critical in RESCCUE, where the cascading effects take a core role in the impact assessment.</p> <p>This can imply that end-users do not trust in the results provided. In order to improve end-users acceptance, model results must be tailored to their needs. In addition, sensitivity analysis will be done for the several impact assessments in order to identify the main sources of uncertainty.</p>	<p>Cascade of uncertainties will be analyzed focusing on the main sources that originate it. The uncertainty associated with the climate models will be estimated from their past performance (validation period). Natural climate variability will be measured using an ensemble strategy built on the best climate models (prioritizing simulations whose error is the smallest). The uncertainty of these future emissions will be considered combining the multi-model ensemble and multi-scenario ensemble.</p>
<p>Uncertainties and low performance of the sectorial models</p>	<p>WP2</p>	<p>To increase the certainty and performance of sectorial models, a detailed calibration and validation of the models is needed.</p>	<p>In case that some of the data needed for the calibration and validation processes is not available, the Coordinator will ask to the Project Advisor to contact the city authorities with political influence to sign an official letter asking for the data needed.</p> <p>As a last resort, some of the budget related to WP1 data acquisition could be used to acquire the data needed for this task within WP2.</p>

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
		<p>To calibrate and validate these models, recent data is required, although this data requires, in some cases, the deployment of a set of sensors and equipment that can't be acquired within the RESCCUE framework according to the Project budget. Luckily, the three RESCCUE research sites are cities that have a lot of physical data availability with respect to the chosen sectorial models.</p>	
<p>Uncertainties and low performance of the impact models</p>	<p>WP3</p>	<p>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 (economic damage, affected assets, consequence on people safety, etc.), collection of such datasets is often complicated.</p>	<p>In case that some of the data needed for the calibration and validation processes is not available, the Coordinator will ask to the Project Advisor to contact the city authorities with political influence to sign an official letter asking for the data needed. Otherwise, the results of the impact models will have to be used without having undergone a proper validation.</p>



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Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
		<p>On one hand, the information required is not always made available in the same way throughout the three research sites, and on the other hand, due to privacy issues of economic losses, the information must be treated in an aggregated way.</p> <p>For this type of impact models, a validation can be done in an aggregated way and thus, having the data at such level of detail would be enough.</p>	
<p>High complexity of interdependencies</p>	<p>WP4</p>	<p>RESCCUE approach focuses on the multisectorial assessment of urban services. In big and dense urban areas, the existing interdependencies might be so complex that the assessment might not be feasible.</p> <p>In the cases in which this is found, the outputs of the sectorial models will be simplified by considering only the most critical parts as identified in WP3.</p>	<p>No contingency actions are required</p>

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
<p>Difficulties to integrate the new modules in Hazur</p>	<p>W1, WP4 and WP5</p>	<p>In Task 4.2, the new Climate Change Scenarios and Strategies modules must be created within Hazur tool. However, the driving variables, scopes and lack of common data incorporates a lot of complexity to the issue.</p> <p>With the intention of performing simple but comprehensive and balanced Hazur new modules, coordination between the technical teams of WP1, WP4 and WP5 must be strengthened.</p>	<p>If no agreement regarding the modules scope is achieved, the Coordinator will intercede in order to jointly look for the best approach. Only as a last resort, the issue will have to be brought to the attention of the EC Project Advisor.</p>
<p>Involvement of key partners and stakeholders</p>	<p>All WPs</p>	<p>RESCCUE project requires a strong involvement of all its partners and stakeholders to achieve the project's goals. Due to political or managerial changes it is possible that some key partners or stakeholders change their involvement regarding RESCCUE, not willing to provide data or participating in some processes or tasks.</p>	<p>If the several tools explained in the risk-prevention measures are not enough, it means that it will be necessary to undertake more extreme measures. In some cases, using the tools described in the Consortium Agreement as the legal bonding document can be helpful to convince a partner. In case no agreement was reached, the Project Advisor would be consulted to identify a possible solution such as changing the scope of this particular issue.</p>



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Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
		<p>In these cases, the project partners with the support of the Coordination Team will try to convince the partner/stakeholder about the benefits of implementing RESCCUE's approach. Support of local partners/stakeholders will be crucial to convince the dubious party. Promote win-win strategies and make the parties feel part of the project, as well as provide extra resources to support them in the development of tasks will also be helpful.</p>	

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
Partners do not meet deadlines	All WPs	Development of internal control mechanisms, such as the monthly PMT meetings, where the coordinator can monitor other partners' activities and their progress. Implementation plans for the WP will be developed by the WP leaders in order to support the proper coordination of WPs by regularly checking the progress of the action. Additionally, the Coordination Team keeps track of deadlines and sends reminders to partners through regular communication by email and phone calls. The global Gantt Diagram that is updated monthly also helps identify these problems.	If a partner does not meet a deadline, the Coordination Team will inform the Project Advisor in advance to explain the reasons for the delay and to ask for an extension. The Coordination Team will send a reminder to the partner and wait up to two weeks. If the partner does not react, the research coordinator will convene the PSB in a video conference, where the case will be discussed and decided upon. Sanctions may range from giving a last deadline, to financial shortcuts or withdrawal of project responsibilities.
Low quality of deliverables	All WPs	The quality of deliverables is ensured by an internal and external peer-reviewed system. Every task leader should send its deliverables to these two reviewers at least three weeks before the submission deadline to the EC. Reviewers have one week to send their feedback to the partner in charge of the deliverable for corrections.	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.

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
		The final version of the deliverable is approved by the project coordinator before its submission.	
High dependency among tasks from different WPs	All WPs	Given the interconnected and sequential approach presented in RESCCUE, 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. The Ms Project Gantt Diagram will also be very helpful here.	Given that some delays might occur due to the problems in other WPs, a detailed Gantt chart of the whole has been prepared 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 has been 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. Special focus will be put in the critical tasks so any problems can be solved as soon as possible.



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Table 2 - Risks and risk-prevention measures related to RESCCUE implementation – project management category

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
<p>Lack of coordination among partners/ WPs/ tasks</p>	<p>All WPs</p>	<p>Aquatec, with the support of Cetaqua, have extensive experience in coordinating large projects, and thus they will ensure the necessary respect for interdependencies. Effective coordination is ensured by the management structure. Other key partners within RESCCUE are experienced project coordinators (e.g. LNEC, UNEXE) and they can support Aquatec if needed.</p> <p>The Project Management Team (PMT) meetings are precisely an instrument to detect these coordination problems and address them as quick as possible.</p> <p>In addition, due to the existing interdependencies among several WPs, it is required to organize bilateral technical meetings between the WP leaders when needed.</p> <p>Finally, within each WP it is also recommended to have technical meetings between all the involved partners, to make sure that the work is progressing as planned and making sure that the work done by different teams is adequately aligned.</p>	<p>Given that the correct coordination is crucial to ensure the achievement of project’s objectives, several actions are done to guarantee it (prevention measures) so that no contingency measures are being considered.</p>
<p>Low collaboration among partners</p>	<p>All WPs</p>	<p>A variety of communication tools are provided by the project to facilitate collaboration among partners (see Deliverable 8.1 Project Management Manual).</p> <p>Partners are regularly encouraged to use them, making sure that any new person joining the project is updated and trained on how to use them.</p>	<p>If there is not enough coordination and collaboration among WP leaders, the Coordination Team will organise an extra PSB meeting in a video conference to discuss the situation and prompt collaboration.</p>

		The Project Steering Board (PSB) meets every six months to ensure the coordination and the flow of communication among WP.	If a lack of collaboration is identified among other partners, extra meetings, online and/or face to face, will be encouraged and organised, if needed, by the Coordination Team.
Withdrawing a consortium member or key personnel from the project	All WPs	Withdrawing a consortium member or key personnel from the project is a last resort solution that must be avoided by all means. It will be crucial to identify alternative solutions, such as receiving support from the other partners, the EC or other stakeholders.	The PSB will consider the substitution of the withdrawing member or the re-allocation of tasks among other partners. If needed, the consortium will make use of its networks. The replacement of key personnel within the team will be sorted out considering that each member of the consortium has personnel with overlapping expertise.
Conflicts within the Consortium	All WPs	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 meeting carried out every 6 months	If no resolution is achieved the PSB will be involved in order 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.
Financial deviations or laxity of partners	WP8	The project proposal was thoroughly thought to provide appropriate budget to each task and partner to achieve the project plan. Partners send interim technical and financial reports every six months to the Coordination Team, so that a rigorous budgetary control mechanism for the project as a whole is performed, sufficiently sensitive to provide warning of any likely problems in time for remedial action to be taken.	If a partner needs to change the allocation of financial resources, the Coordination Team will discuss the situation and request the change to the Project Advisor.



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		The Coordination Team keeps smooth and regular communication with partners to discuss any potential financial barrier/deviation and tackle it as soon as it is identified	
Extra costs in the process of purchasing equipment	WP8	In case extra costs for purchasing equipment are required, a deep analysis of the necessity will be analysed by the affected partner and the Coordination Team so that to reduce it just to the strictly necessary.	If additional funds are needed, first of all a possibility to re-allocate budget from another budget category will be checked with the Project Advisor. If this possibility was rejected, alternative finance sources will be searched.

Table 3 - Risks and risk-prevention measures related to RESCCUE implementation – dissemination and exploitation of results category

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
Lack of visibility of project achievements	WP7	<p>The effectiveness of dissemination activities will be constantly monitored and additional channels of dissemination will be utilized if necessary. Promotional materials will be developed to adequately address the target groups of RESCCUE.</p> <p>A dissemination plan will be developed and the dissemination and communication activities will be monitored regularly in order to assess whether any changes need to be implemented.</p>	<p>If the consortium detects that the effectiveness of the dissemination activities is lower than expected, other dissemination actions will be emphasised (e.g.: news in local media, engaging with other educational networks) to increase the project activities' visibility.</p>
IPR issues	WP7	<p>The Consortium Agreement defines in detail all the background and foreground knowledge expected to arise in the project. Additionally, specific agreement among partners will be signed. IPR issues are followed-up throughout the duration of the action by the PSB, which will mediate, if needed, to solve problems arising due to this issue.</p> <p>Additionally, D7.4 – Dissemination and Exploitation Plan will include a specific section where all the IPR issues will be presented, and an agreement with all partners will be reached.</p>	<p>In case any discrepancies exist during the preparation of D7.4, or any disagreements appear afterwards, the whole PSB will have to take a vote in order to solve the problem.</p> <p>The decision making process described in the Consortium Agreement will be the one followed in these cases.</p>

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
<p>The consortium does not assure the project results will be effectively exploited beyond its duration</p>	<p>WP7</p>	<p>An exploitation and business plan were developed and several updates have been produced. Additionally, the PSB and the Project Advisory Board (PAB) will focus on actual possibilities for exploit the results.</p> <p>Within the Exploitation Plan, an exhaustive plan to monitor and follow up all the exploitation actions was prepared, so the result owners could ensure the impacts of their results.</p>	<p>In case some of the identified actions to exploit results do not show the expected effectiveness, it will be replaced by other ones.</p>
<p>Reduced benefits of the RESCCUE results to the consortium members and the EU</p>	<p>WP7</p>	<p>In many cases, research projects end up with results that are never used and do not generate any further revenue. In order to avoid that, ensuring that the consortium members and the EU benefit from the project, D7.3 – Business Plan, together with D7.4 – Dissemination and Exploitation Plan must develop a feasible product roadmap allowing RESCCUE results to be commercialized</p>	<p>In case it is detected that the business plan developed is not capable to establish a clear product roadmap, it should be updated to ease the revenue stream of the project results.</p>
<p>Difficulties to transfer the RESCCUE results to other urban areas</p>	<p>WP6 and WP7</p>	<p>For the RESCCUE Project it is crucial to make sure that the results of the project are easily transferable to other urban areas, in order to make sure that the advancements and findings developed are not limited to the three RESCCUE research sites. This is why in WP6 there is a last task that focuses on this (D6.3 – Manual of best practice), and additionally this issue will be an important part of the D7.4 – Dissemination and Exploitation Plan.</p>	<p>If the work done in D6.3 and D7.4 is not enough to ensure the replicability of research results, the PSB will have to meet extraordinarily to identify a proper action plan to achieve this. Given that this might be detected in early stages of the project or at the very end, the PSB should be prepared to act quickly in case this happens.</p>

Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
Involvement of critical infrastructures	WP 2, 3 and 4	RESCCUE project involves critical infrastructures related to the urban services being analysed (water services, transport, telecommunication, energy supply and solid waste). This will affect the level of detail and dissemination of project's results. The description of the data regarding critical infrastructure and the required protection level has been defined in D8.2 (Data Management Plan) in collaboration with the partners and stakeholders owning such data.	In case specific data involving project results need to be protected, the deliverables including those (5 deliverables) have been re-classified as confidential so that just the project partners and the EC have access to them. In order to not impeding too much the dissemination and exploitation of RESCCUE's results, the rest of dissemination material (papers and other publications or even alternative versions of deliverables) may include results in a way that critical infrastructures are not jeopardized, but enough details are provided to allow replicability and continuity of the research, development and innovation performed in RESCCUE project.
Low impact of the project on local communities	WP7	RESCCUE, being a project built around three research sites, has to be communicated not only globally, but also locally. It means that the citizens of Barcelona, Bristol and Lisbon have to be informed about the project their city is part of, as well as about its potential benefits.	In case of lack of local-level communication activities, WP7 will seek support from the City Councils in order to implement the most appropriate communication activities for each city.
Decreasing website visits	WP7	The number of visits to the RESCCUE 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, new social media channels will be looked for in order to attract the visitors to the website. Also, it will be considered to publish different kind of contents (related external news and links, funny facts, etc.) which could interest wider audience.



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Description of risk	WPs involved	Proposed risk-prevention measures	Contingency Plan
<p>The consortium does not contribute to the RESCCUE blog</p>	<p>WP7</p>	<p>The RESCCUE blog was born as a potential communication tool to raise awareness among climate change and urban resilience. The idea is to publish a new blog post twice a month, so this way each of the 18 project partners is asked to provide one blog article every 9 months.</p>	<p>In case of low involvement in the RESCCUE blog activities, the format of the blog posts will be modified (more videos, interviews, videos, etc.), which means greater involvement of the communication team in order to minimize the effort required from the project partners.</p>

3 Materialized risks

In this updated version of D8.8, this section has been updated in order to identify which risks have been materialized during the last year and what actions have been taken, in order to learn from them and thus be able to better cope with upcoming risks.

Table 4 presents these cases that have already occurred between that beginning of the project and M36.

Table 4 - Risks materialized within the first 36 months and actions taken to mitigate their impacts

Type of risk	Description of the risk and actions taken
Delay of the activity, or failure in achievement of milestones	Several times throughout the project, the expected deliverables and tasks have been delayed. In all those cases, the WP leader has informed the Coordinator, who in time has notified the delay to the EC Project Advisor. Doing it this way, the delays have always been controlled and kept as small as possible.
Involvement of key partners and stakeholders	Due to varied reasons that were out of the control of the RESCCUE consortium, two stakeholders initially identified decided not to be involved in the project (Bristol Water and Telefonica). Nevertheless, along these two years of the project, many new stakeholders have been contacted and are interested in the RESCCUE results and therefore, the global count of stakeholders has increased since the beginning of the project (in D7.4 a detailed analysis of stakeholders can be seen).
Withdrawing a consortium member	Due to the lack of interest of Bristol Water in RESCCUE, the partner SASUK decided to not participate in the project any longer. Therefore, SASUK was removed from RESCCUE and a new partner that could contribute to the water sector for the Bristol case was identified: Wessex Water. After a few months of defining the approach and administrative issues, finally they joined the consortium and will be a key piece in the Bristol research site.
Low quality of deliverables	During the official project review done by the EC in M18, a few deliverables submitted in this period were rejected. Although most of the comments were minor, in some cases it was identified that the approach followed was not explained with enough clarity, leading to misunderstandings. These deliverables were amended and resubmitted and this particular issue is currently solved. However, the members of the consortium and in particular the whole PMT, will put more efforts in submitting documents with a clear explanation of the scope and with more accurate language and terminology.

Withdrawing key personnel from the project

During the last year, major issues with changes in personnel have occurred, as the Project Coordinator and two Work Package leaders have left the RESCCUE consortium. The several institutions that employed these key people have reacted quickly, appointing their substitutes as soon as possible and undertaking efficient knowledge transfer to ease the transition.

In addition, Pere Malgrat, the former RESCCUE project coordinator has also been kept close to the project, as he will now be member of the Project Advisory Board.

4 Conclusions

This document describes general and specific risks related to three main activities of RESCCUE project: research activities, project management and dissemination and exploitation of results.

The main identified risks can be synthesized into the following list:

- Conflicts within the consortium
- Financial deviations or laxity of partners
- IPR issues
- Lack of source data or intermediate results hindering the proper evolution of the Project.
- Insufficient commitment/collaboration of partners or stakeholders
- High complexity of the project due to the interconnections and interdependencies of the analyzed domains (urban services)
- Involvement of critical infrastructures, which jeopardize the dissemination of particular results
- Lack of visibility and impacts of project results, decreasing its future continuity or exploitation

The corresponding prevention actions as mechanisms to partially or completely prevent these risks, as well as contingency plans to solve them in case of their occurrence have been carefully elaborated and are detailed in the document.

This Contingency Plan has now been updated in month 36, and this is going to be the last version of the document. Monitoring the risks and learning from them, has allowed to improve the management of the project over the last three years and now, facing the last year of the project, all the plausible problems that may arise are controlled and taken care of.