



COLLECTIEF

RISK MANAGEMENT PLAN



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Executive Summary

This Risk Management Plan shows how risk aspects are taken into account in a variety of processes and activities within the COLLECTiEF project. The interrelated risk processes have impact on the project work from its start to its end. The risk of a project is typically defined as an event or condition that could have a negative impact on the smooth implementation of the project. Risks can arise from unexpected technical difficulties or scientific findings, poor communication or co-operation between the partners, resource shortage by the partners, objectives not achievable in terms of budget or feasibility, partners leaving the consortium, external factors and unexpected events influencing the project actions from the context, human operational errors: planning errors, poor quality, etc. Risk Management is the process of continuous monitoring identifying, reporting, assessing, and responding to risks. The Risk Management Plan sets out a framework to define how risks associated with COLLECTiEF activities will be identified, analysed, and managed. The management process will identify and monitor technical and management risks as well as any other issues that might affect the project progress towards its objectives. The risks will be identified within the following areas: legislative and regulatory risks, technological, economic, and financial, market and commercial, social, and environmental risk.

Therefore, the goal is to carry out mitigation actions as early as possible. The Risk Management Plan is effective throughout the lifetime of the project and is open to revision if necessary. Responsibilities for risk planning, assurance, and control are shared between all partners, which allow various views on risk issues to reach the optimal outcome.

The present version of the Risk Management Plan represents the base for the future analysis about risks related to the project and their monitoring and responses. Further updates of the Plan will be due at M12, M24 and M36.



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1. Specific roles and responsibilities

The organizational structure of COLLECTiEF has been chosen according to the DESCA model grant agreement governance structure such that the objectives can be achieved within the project's lifetime, thereby guaranteeing the highest quality possible. The project organogram shows the various stakeholders and their assemblies in the project (Figure 1):

- the EC Project Officer (ECPO)
- the Coordinator (CO) and the Management Support Team (MST)
- the Innovation & Technical Board (ITB)
- the General Assembly (GA)
- the Executive Board (EB)
- the Dissemination and Exploitation Team (DET)

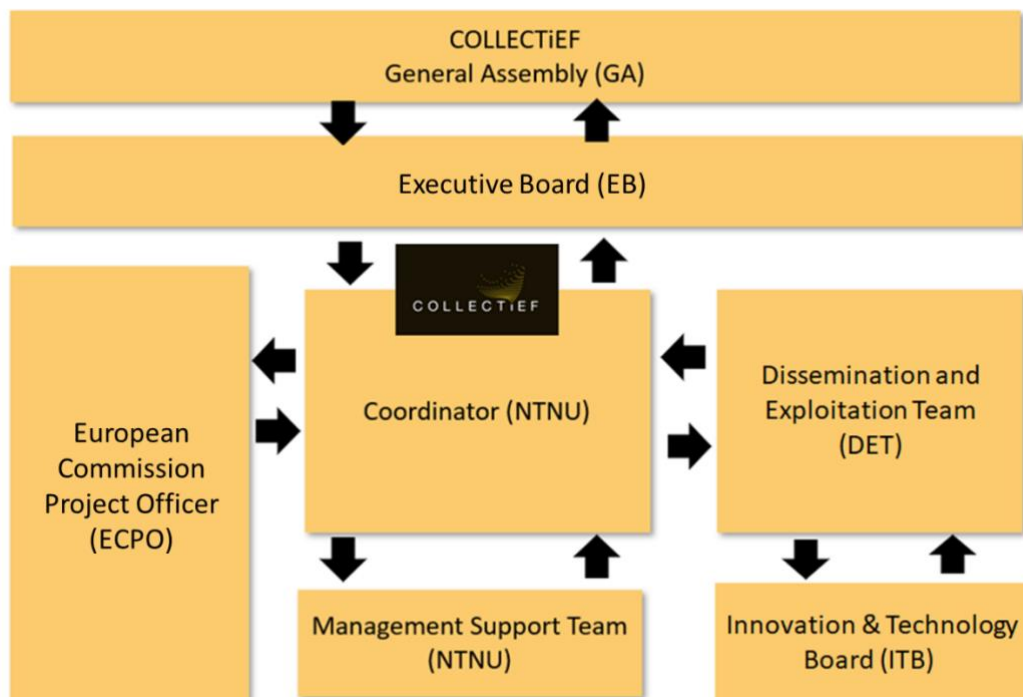


Figure 1 Organizational structure of COLLECTiEF

The GA is the decision-making body of the consortium and consists of one representative of each consortium partner. The CO is the legal entity acting as the intermediary between the consortium partners and the Funding Authority; the CO will be supported by the Management Support Team (MST), which will help with the day-to-day management of the project. The CO will name a project manager (PM) for that reason.



A risk registry will be maintained by the CO. The completion of milestones will be followed closely by the CO, and deliverables will be peer-reviewed by the consortium (see D1.1, “Management and Quality Plan”). With the support of the Management and Quality Plan, being the main point of reference for all management measures and processes, as well as a comprehensive description of roles and responsibilities, the Consortium will implement all the necessary measures to avoid risks from happening. If any risk occurs, the CO and the Consortium will implement necessary contingency measures to contain negative effects on activities and, accordingly, outputs. If a risk cannot be mitigated in the way foreseen in the proposal, and that would result in either a substantial delay or a loss of output of the project, the CO will inform the ECPO immediately and will present a possible solution for solving the problem.

Risk management will be performed under the supervision of the Project Coordinator, who will be responsible for the following tasks:

- Allocating the required resources and time to execute D1.1 Management and Quality Plan within the scope of the project budget and schedule.
- Developing, distributing, and implementing D1,1 Management and Quality Plan.
- Monitoring the project to identify and avoid any new or changing risks.
- Updating the initial risk registry with the support of the Consortium.
- Contributing to risk mitigation and contingency planning.
- Developing and/or updating the risk response strategy.
- Coordinating with the Consortium to monitor risks and implement risk response strategies.
- Managing quality control procedures on deliverables.
- Monitoring the effectiveness of the risk management strategies.
- Reporting regularly to the Consortium.
- Making the final decision on risk actions, in co-ordination with the WP Leaders.

Executive Board responsibilities include:

- Monitoring the assigned risks and informing the Project Coordinator of any threats or opportunities to the project.
- Jointly Assessing the probability that a risk will occur and specifying the criteria used to assess the probability.
- Jointly Assessing the impact of risks on project cost, time, scope, and quality of activities, and specifying the criteria used to assess the impact.
- Consulting on the risk response strategy.

Work Package (WP) Leaders are responsible for the following tasks within their work package(s):

- Identifying and describing any risk.



- Helping to identify the risk owners and assisting in developing the risk response strategies.
- Performing the risk response steps assigned.
- Reporting on the progress of the risk response to the Project Coordinator.
- Assisting the Project Coordinator in activities associated with risk monitoring and control.
- The monitoring of the foreseen and potential new risks will be conducted also through the regular meetings of the Executive Board and of the General Assembly and through the internal project progress reporting process set in the WP1.

2. Risk management procedure

The risk management procedure includes the following steps: risk identification, analysis, response planning, and monitoring and control. In the beginning of the project a table of risks is forecasted. This table will be completed and updated during the project progress. This Risk Management Register (See Table 1) will be maintained and will be used to record all possible risks of the project and any subsequent measures or actions required.



Figure 2 Scheme of Risk Processing for the project

2.1. Risk identification

Risk identification will be done throughout the life cycle of the COLLECTiEF project, with an emphasis on identifying risks as early as possible in order to enable effective response planning and subsequent monitoring. A Risk Identification will be performed within the work packages.

WP leaders will report the risks and suggestions for the risk priority to the Executive Board, which will agree on the final risk priority as well as on the respective response strategy. Identified risks will be included into the Risk Registry. This registry will be accessible to the consortium through the Microsoft Teams platform.



2.2. Risk Analysis

Risks which have been identified and documented are analysed by the probability that the risk may occur and, if it occurs, the size of the possible impact. The exposure to a given risk is estimated using a risk matrix which includes the two dimensions: likelihood and impact.

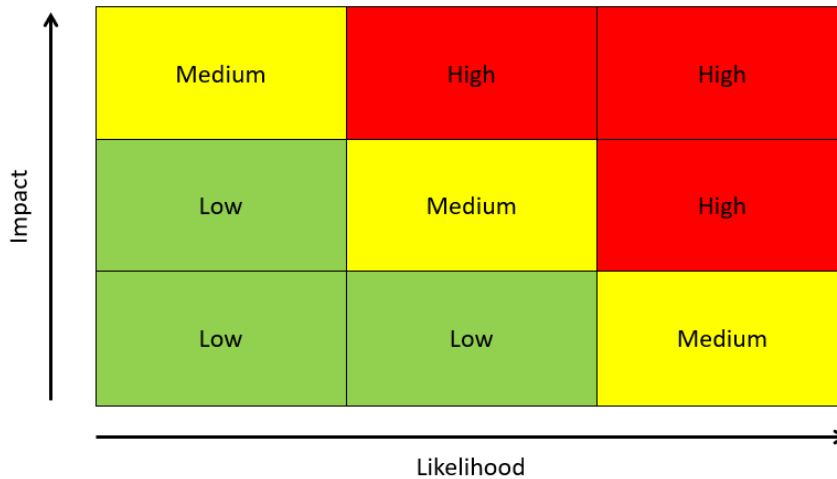


Figure 3 Risk Matrix

The levels of risk can be defined as followed:

- Low: very unlikely to occur
- Medium: quite possible to occur
- High: more likely to happen

2.3. Response planning

The response planning allows to develop strategies and plans to minimize the effects of risks in order to enable sufficient control and management. Higher priority risks receive more attention than lower priority risks to ensure that the risk will not occur. The following strategies will be taken (depending on the risk category):

- Very high risks: Avoidance – Eliminate the threat by eliminating the cause.
- High and medium risks: Mitigation – Identify ways to reduce the probability or the impact of the risk.
- Low risks: Acceptance – Monitor the risks but no other action will be taken.

Every registered risk is followed by a mitigation plan including actions to avoid the risk from occurrence, and a contingency plan that is executed if the risk occurs. For each major risk, a course of action will be outlined in order to minimize its impact. Ways to prevent the risk from occurring, reducing its impact, or probability of occurring will be identified. This may include adding tasks to the project schedule or adding resources.



2.4. Risk Monitoring and Control

The level of risk on a project will be tracked, monitored, and reported throughout the project lifetime. The project management will report the risks as a component of the project status process for this project. All project change requests will be analysed for their possible impacts to the project. Each Work Package Leader is responsible for the Risk Management within their Work Package. Each project partner is highly encouraged to communicate and discuss any (possible) risks and response planning with their Work Package Leader. It is the responsibility of all COLLECTiEF partners to communicate to the Project Coordinator about the status and effectiveness of each risk and mitigation plan in order to update the Risk Management Register and assess the relevance of the tools. Risk exposure will be continuously re-evaluated and modified accordingly and the results of monitoring and control will be documented.



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Table 1 – Risk Management Register

Risk No.	Risk	WPs	Migration Plan	Likelihood (1-3)	Impact (1-3)	Risk Category	Contingency Plan	Risk owner	Progress on action	Status (open – waiting – closed)
R1	One of the partners leaves the consortium	all	Partner's expectations will be continuously verified in order to ensure their commitment to the project	1	3	medium	Depending on project progress, finish project with remaining partners or add new partner			
R2	Tools and methodologies do not work for all cases/applications: e.g., trained on a specific pool of data	2, 3	Close monitoring of project progress for that aspect	2	2	medium	Train the model again, find another modelling approach			
R3	Implementation phase: <ul style="list-style-type: none"> • Waiting for building permission (administrative and procedural) • Risks of damage to the building/the building management during installation • Decisions of owner take too long (regulatory) 	3, 4	<ul style="list-style-type: none"> • The COLLECTIEF partners will work closely with the building partners to foresee any complications. • Engaging pilots partners and involved stakeholders in time during the project actions. 	2	3	high	Replace the demo building if necessary. However, the plan of activities entails sufficient time for implementing the innovative solution before the implementation in the pilot cases.			



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R4	Delays in the implementation in the pilots due to restrictions for the COVID situation	4	The coordinator and the involved partners will monitor COVID situation at the context.	1	3	medium	If necessary, some implementation actions could be anticipated respect others, for example to reduce the contacts with the buildings occupants.			
R5	Monitoring: <ul style="list-style-type: none"> • The data from the buildings may not be correctly acquired; lack of data; missing data • Failure in placing the sensors at appropriate locations in buildings. • Damages or faults of the installed components. 	5	<ul style="list-style-type: none"> • The Sphensor™ system has a Border-Router with data logging features to solve on-line data communication issues. • The sensors and the electronic components will be placed following mounting guidelines and recommendations in published literature. 	2	2	medium	For missing building data: use trend analysis/extrapolation to close the gaps; compare to historical values.			
R6	Evaluation: KPIs and methods for assessment not being adequate	5	Our experts from academy and industry in the consortium will ensure development of appropriate KPIs and assessment methodologies	2	2	medium	KPIs will be adjusted based on the feedback from small-scale test period at living lab as well as during large-scale demonstration phase.			
R7	Data protection <ul style="list-style-type: none"> • Low participation of occupants in the surveys. • Low internal validity of survey responses 	5	Standardized and already tested questionnaires will be used.	2	2	medium	For lack of response to surveys or low validity of survey data: select interview candidates instead and conduct structured interviews.			



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R8	Failure to demonstrate a sustainable business model for the COLLECTiEF system due to equipment costs/willingness to pay or high customization costs based on the climatic situation or the occupants' needs	6	In the demo projects different climate zones will be taken into account, and the variety of buildings on which the solutions will be demonstrated will reflect a good representation of occupants' needs.	2	3	high	The business models can take these aspects into account, and can be adapted, e.g. to specific building typologies, thus reducing the need for customization.			
R9	Conflicts in intellectual property rights (IPR)	6	Proper analysis will be conducted in the dedicated task 6.5, starting from the background declarations from the Consortium Agreement and basing on the contributions and activities performed during the projects.	2	2	medium	Support for IPR strategies and agreements will be delivered in the framework of the task 6.5.			
R10	Failure to reach and engage a sufficient number of stakeholders at the COLLECTiEF events	7	All consortium partners have extensive professional networks in their respective countries that will be engaged. The dissemination plan will set several verification moments to early identify deviation and develop contingency plans.	1	2	low	Work with "multipliers" in the respective countries (e. g., associations) and equip them with the material needed to inform the stakeholders via their channels; discuss metrics to track attention			



3. Conclusion

This Risk Management Plan demonstrates that risk aspects are taken into account in a variety of processes and activities within the COLLECTiEF project. The Risk Management Register (Table 1) introduced the risks and the related actions which will be taken to avoid an occurrence or to react immediately. This will be done through the risk management procedure which includes the steps: risk identification, analysis, response planning, and monitoring and control. The plan is effective throughout the lifetime of the project but is open to revision if necessary. The responsibilities of risk avoidance and mitigation are shared between all partners, which allow for a qualitative monitoring and response strategy

