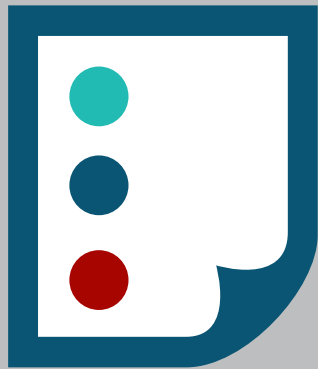




PathoCERT



# THE PATHOCERT STAKEHOLDER ENGAGEMENT PLAN

**Requirement analysis,  
Engagement of  
Professionals through  
Communities of Practice &  
Social Engagement**

**2021**

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# ABBREVIATIONS/ ACRONYMS

CCD	Cyprus Civil Defence
CETAQUA	Centro Tecnológico del Agua
CERTH	The Centre for Research and Technology, Hellas
CoP	Community of Practice
CSCP	Collaborating Centre on Sustainable Consumption and Production
EMASAGRA	Empresa Municipal de Abastecimiento y Saneamiento de Granada, S.A.
EU	European Union
EYATH	Thessaloniki Water Supply & Sewage
FR	First responder
GIS	Geographical Information System
HRT	Hellenic Rescue Team
KWR	Water Research Institute
MOIB	Ministry of Interior, Bulgaria
SPEIS	Granada's Prevention, Firefighting and Rescue Services
SUNDO	Sundosoft Ltd
STWS	Satways EPE
UCY	University of Cyprus
WATNL	Waternet
WP	Work Package

## ● Introduction

**PathoCERT** (Pathogen Contamination Emergency Response Technology) is an EU H2020 funded project that focuses specifically on waterborne pathogen contamination events, with the aim of increasing the capabilities and coordination of first responders during such emergency events. Throughout the project novel, cost-effective and easily usable technological solutions will be developed to support first responders in their work enhancing their situational awareness and ability to rapidly and safely respond to unknown threats. Stakeholder engagement and pilot activities will be conducted in 6 countries (i.e., Granada, Spain; Amsterdam, the Netherlands; Limassol, Cyprus; Thessaloniki, Greece; Sofia, Bulgaria; and Seoul, South Korea) to test and validate developed technological solutions.

To ensure the design and deployment of better technologies, services and governance mechanisms with a higher likelihood of effectiveness and long-term success, the **PathoCERT** (Pathogen Contamination Emergency Response Technology) relies on a multi-stakeholder, participatory and co-creative approach. The latter is materialised in the form of **Communities of Practice (CoPs)** deployed in each of the project's target regions i.e. Cyprus, Greece, Spain, the Netherlands, Bulgaria and South Korea.

In the PathoCERT project, stakeholder engagement is understood as an ongoing, inclusive dialogue among all relevant actors that can contribute directly or indirectly to improving the protection of FRs against multiple and unexpected dangers as well as enhancing their response capacities. Furthermore, it is seen as a process for agenda-setting and collective implementation of activities that are shaped according to local needs, challenges and areas of opportunity.

With its vast experience in multi-stakeholder engagement processes, the CSCP is leading the work package on stakeholder engagement within PathoCERT, with responsibility for guiding the partners in implementing such participatory processes. Through the activities of this WP, partners and key stakeholders are united in order to foster dialogue and partnerships.

The AA1000 Stakeholder Engagement Standard and its components (Figure 1), applied in a flexible manner, guide the development of the overall stakeholder engagement plan for each project pilot city/region. The stakeholder engagement plans are similar for all 6 regions, with slight differences regarding the main stakeholders involved, the technologies considered most important given regional/national emergency management systems, existing technologies and processes in use.

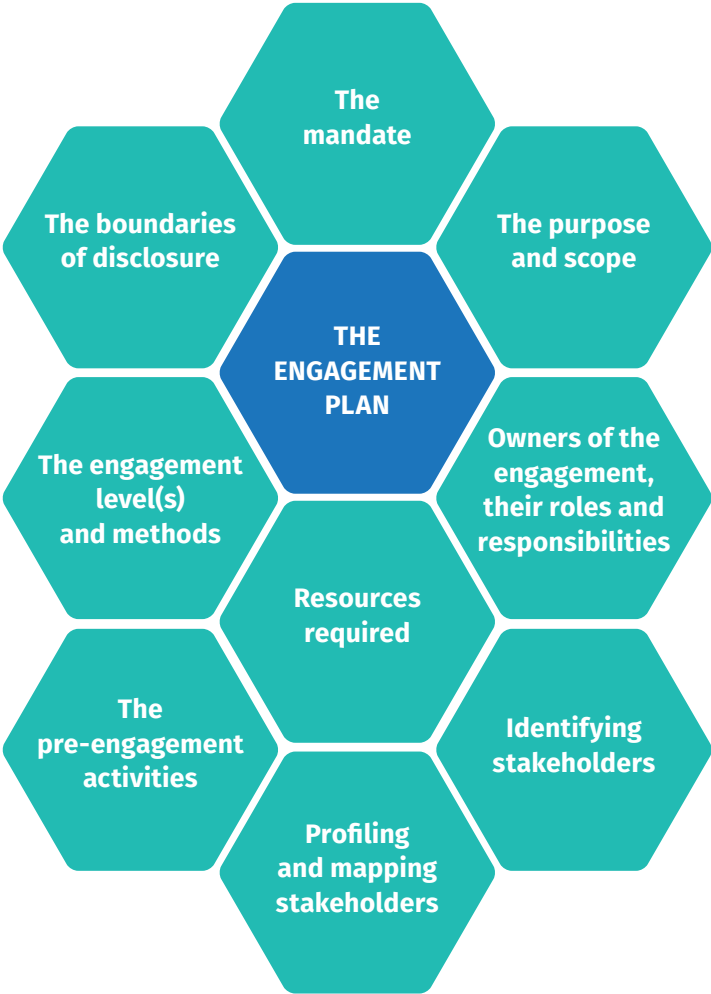


Figure 1: Adapted from AA1000 accountAbility (2015). Stakeholder Engagement Plan

## ● The mandate, purpose and scope of the PathoCERT stakeholder engagement approach

The **overall mandate** of the stakeholder engagement approach – in PathoCERT - is to ensure the design and deployment of better products, services and/or governance mechanisms with a higher likelihood of effectiveness for managing emergencies. Simultaneously, this enables the deployment of solutions that are being shaped and respond to the needs of all concerned parties throughout the various stages of emergency management (please see [Box 1](#)). The involvement of various stakeholders allows for a transdisciplinary and interdisciplinary approach and exploration of all available insights when developing strategies and solutions for action.

More specifically, the stakeholder engagement process has a **multi-fold purpose**, namely: feedback provision; system scoping; exchange of experiences and learnings; testing and experimenting; and dissemination and outreach. Each of these purposes is summarised below.

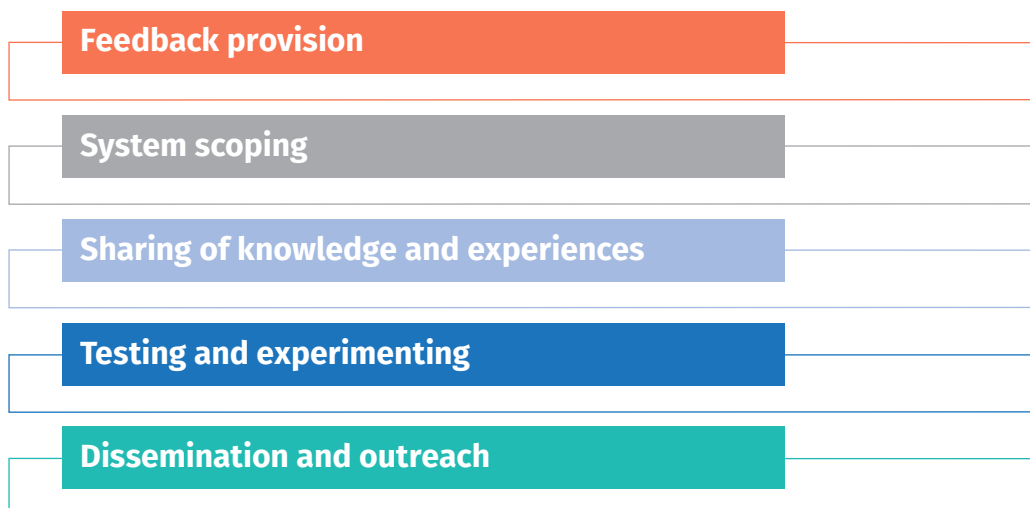


Figure 2: Purposes of PathoCERT's stakeholder engagement process

- **Feedback provision** and exchange with key project stakeholders on project outputs results in project partners being able to understand the needs and perspectives of these stakeholders/beneficiaries in a more comprehensive manner, leading to the design of higher quality products and services with increased usability.
- **System scoping** is used to discover the project outputs' potential in practice, showcasing the potential existing challenges, barriers and opportunities to their wider deployment.

- **Sharing of knowledge and experiences** enables the generation, exchange and sharing of interdisciplinary as well as cross-border/country learnings and experiences, with the goal of maximizing reciprocal learning effects.
- **Testing and experimenting** with the technologies allows the FRs and other operational actors to interact with the developed technologies and tools, and give further feedback and suggestions, as well as to use them under realistic simulated scenarios.
- **Dissemination and outreach** has the function of promoting and disseminating the project and its outputs to the project's key stakeholders and beyond.

In addition to these purposes, each pilot city/region focuses on specific pilot activities which are also a central component of the PathoCERT stakeholder engagement process, since they evolve around pre-defined emergency events which could lead to water contamination and thus around a specific set of PathoCERT technologies. These case studies will serve as an input to the stakeholder engagement process.

Table 1 below provides a brief description of the pilot cases studies, while Table 2 lists and briefly describe all project technologies.

### Emergency management stages

based on Baird, M.E: (2010)

**Mitigation / Prevention.** The mitigation stage includes activities that reduce or eliminate the risk of an emergency situation from occurring and at the same time minimize possible consequences of said emergency situations.

**Preparedness.** In the preparedness stage emergency operation plans and standard operating procedures that address the management of diverse potential hazards are developed. In addition, this stage covers all activities dealing with planning for emergencies, training first responders, ensuring the availability of food, water and medical supplies in case of an emergency event or installing alarm systems.

**Response.** The response stage begins as soon as the disaster occurs or shortly after it has occurred. This stage includes short term activities such as the coordination of emergency first responders, the activation of the emergency operation plans, and any other plans that are pertinent to the emergency response effort. Activities here are also meant to reduce the risk of other damages resulting from emergency event (e.g. looting, water supply contamination). During this stage assessments are also being made about the recovery process following the emergency event.

**Recovery.** The recovery stage addresses the short-term basic needs of those affected by the disaster and deals with the restoration of the community to pre-incident conditions or as close to pre-incident conditions as possible. Long term activities such as community redevelopment or the rebuilding of destroyed property are also part of the recovery from an emergency event and may continue for several years.

Box 1: Emergency management stages



TARGET REGION	PILOT DESCRIPTION	TECHNOLOGIES
<b>Granada, Spain</b>	The first scenario will focus on the detection of possible pathogen contamination, threat assessment and incident management system following a contamination caused by the mixture of wastewater and drinking water caused by an <b>earthquake</b> in the city of Granada. Mature technologies will be tested in this scenario to measure the impact of the tools at a later stage of development. The second scenario will focus on the search, rescue and pollution control in the supply reservoir.	PathoWARE, PathoSENSE, PathoTHREAT, PathoINVEST, PathoVIEW, PathoSAT, PathoTWEET, PathoTeSTICK, PathoDRONE, Patho IMS
<b>Amsterdam, the Netherlands</b>	The case study will conduct a joint epidemiological and criminal threat assessment and investigation of an <b>intentional</b> contamination of the water supply system of the system of Amsterdam with biological agents that cause disease among citizens and/or visitors of mass events.	PathoTHREAT, PathoINVEST, PathoSENSE, PathoTWEET, PathoIMS, PathoVIEW
<b>Limassol, Cyprus</b>	Detection of possible pathogen contamination, threat assessment and incident management after a contamination caused by the mixture of wastewater and drinking water after an <b>earthquake</b> . In this scenario the challenges of such an incident will be identified and early prototypes of the selected technologies will be demonstrated.	PathoSENSE, PathoTHREAT, PathoINVEST, PathoWARE, PathoVIEW, PathoIMS
<b>Thessaloniki, Greece</b>	This scenario will focus on the management of contamination incidents, due to <b>severe flooding phenomena</b> in the open flow river channel that transports water to the Thessaloniki Drinking Water Treatment Plan, as well as in the delta of the river where Search and Rescue activities must take place. The performance and impact of the developed tools for pathogen monitoring, threat assessment and incident management will be studied.	PathoSENSE, PathoINVEST, PathoTHREAT, PathoSAT, PathoTWEET, PathoVIEW, PathoIMS, PathoDRONE, PathoWARE, PathoTeSTICK
<b>Sofia, Bulgaria</b>	The detection of possible pathogen contamination, threat assessment and incident management over a <b>flooded</b> area that has been contaminated by warehouses' waste material are explored in this scenario. It will investigate the use of tools to improve the safety and response capabilities of FR during a flooding incident where the water has been contaminated by waste material.	PathoSENSE, PathoTHREAT, PathoINVEST, PathoSAT, PathoTWEET, PathoVIEW, PathoIMS, PathoDRONES, PathoWARE.
<b>Seoul, South Korea</b>	The South Korean project partners are responsible for creating a GIS platform to integrate the data collected by selected PathoCERT technologies. The platform is meant to support the FRs in their work by making the information on pathogen contaminations and spreading available in a comprehensible and visual manner.	PathoTWEET, PathoSAT, PathoTHREAT, PathoDRONE, PathoView PathoINVEST, PathoTeSTICK, PathoSENSE.

Table 1: PathoCERT pilot case studies, related themes and technologies of interest

<b>PathoCERT technology</b>	<b>DESCRIPTION OF TECHNOLOGY</b>
<b>PathoSENSE</b>	A set of mobile sensing solutions for detecting the existence of pathogens and determining their type. It will be complemented by guidelines and smart interfaces to assist FRs in setting up the specialized sensing equipment in as little time as possible while reducing human errors.
<b>PathoTeSTICK</b>	A portable sensor to allow FRs to rapidly distinguish both if contamination has taken place and between multiple pathogens when touch a water source.
<b>PathoSAT</b>	Collects data and images from satellites to identify water contaminations and their extent.
<b>PathoTWEET</b>	Analyses data and photos from social media to assess the occurrence, severity and extent of a water contamination events.
<b>PathoDRONE</b>	Collects water samples from water bodies that first responders are unable to reach. It supplies PathoSENSE with water samples for evaluation and identification.
<b>PathoVIEW</b>	Allows FRs to see relevant information from and communicate with PathoWARE through smart wearable interfaces and augmented reality systems. For example, FRs will be warned if an area poses a high risk to the FRs health through obstacles and possible hindrances.
<b>PathoWARE</b>	A platform that collects data from geographical information systems (GIS) as well as from water authorities and integrate it into the data generated by PathoSENSE, PathoDRONE, PathoSAT and PathoTWEET to provide the FRs with a complete picture of the emergency situation.
<b>PathoIMS</b>	Incident Management Software to facilitate the communication between FR's headquarters and the Command and Control Centre.
<b>PathoINVEST</b>	Provides information to the incident commander on the threat risk (after a contamination has been identified), predicts the evolution of events and foresees possible impacts. This tool starts the epidemiological and criminal investigations of the water pathogen contamination.
<b>PathoTHREAT</b>	Provides information on the proper course of action concerning specific pathogen contaminations by utilizing various databases to ensure the safety of the FRs and that of citizens.

Table 2: Brief description of the PathoCERT technologies

## ● Pre-engagement activities

As part of the stakeholder engagement process, pre-engagement activities have been conducted in the form of a stakeholder mapping and baseline requirement analysis in order to gain a holistic overview of the existing procedures and current situation in each of the project's target city/regions.

### Identification, profiling and mapping of stakeholders



Figure 3: PathoCERT's key stakeholder groups

Even though the individual stakeholders of each target region differ, **5 main stakeholder groups** have been identified that play central roles in the emergency management of each region and have key roles during the emergency management cycle (Box 1). These are summarised in the Figure 3 above.

A **profile for each of the 5 groups** was created by first looking at their overall work, influences, interests and importance in the emergency management sector. Then the reasons for engaging with these stakeholders were identified, showcasing how they contribute to the project and why they are being considered. It was also analysed what impact PathoCERT has on the stakeholders and why it is relevant and beneficial to them. The role of the stakeholder in the emergency management cycle was showcased, as they can exert most influence in that stage. Lastly, the PathoCERT technologies that the stakeholder groups are most interested in – depending on the technology's potential to support their work – were identified. Table 3 provides a summary of this collected information.

The local partners of each pilot city/region were tasked with identifying specific actors within the five stakeholder groups that are most relevant for their country's/region's emergency management frameworks. The result of the mapping exercise was a visualisation of the emergency management organisation chain combined with an analysis of their operations, settings, relationships and interest for engaging in the emergency and disaster management sector. These stakeholders have been and/or will be further engaged during the project lifetime. Figure 4–9 below showcase the output of this exercise.

## Baseline requirement analysis

In addition, a **baseline requirement analysis** was conducted. This aimed at developing a good understanding of the current emergency response and disaster management systems in each target region, including applied technologies, and the main challenges and opportunities for improvement within. The examination and analysis of requirements, needs, challenges and opportunities is central to ensuring that the project develops and tests appropriate solutions that contribute to improving and advancing the emergency and disaster management systems. The baseline analysis exercise showed that the emergency and disaster management frameworks throughout the target regions are well advanced and in line with the most recent developments. In addition, it led to identifying some challenges and/or gaps which represent leverage points for further improvement of the system for a more effective management. These are summarised in [Table 4](#) below.

Whereas the stakeholder mapping provided knowledge about the relevant stakeholders and their significance for the project, the baseline requirement analysis focused on the environment of stakeholders' operations. The stakeholder mapping was helpful to find out the relations of the stakeholders and their specific role, while the baseline requirement analysis provided the essential context to assort and comprehend the needs, challenges and opportunities which provide leverage points for improving and designing better solutions. Thus, the stakeholder mapping and baseline requirement analysis were interlinked, as both sought to better understand the operations within the emergency and disaster management system / sector of the project pilot regions.

For a more detailed overview of the output of these exercises, please refer to the ['PathoCERT's stakeholder mapping and baseline assessment' report](#) .

	FIRST RESPONDERS	CIVIL PROTECTION	WATER UTILITIES	PUBLIC AUTHORITIES	RESEARCH INSTITUTES
<b>Stakeholder profile</b>	Includes fire departments and medical services First to arrive at the scene At risk of being exposed to unknown, possibly hazardous waterborne substances	Main task is to protect civilians Are in contact with all actors involved in emergency management Provide a framework and standard operating procedures	Private and public companies Responsible for a safe water supply in cities Detect contaminations in water distribution networks Are involved in emergency management communication in case of waterborne pathogen contaminations	Local, regional and national governments, public health authorities Create the legislative framework for emergency management Can influence the working conditions of emergency management actors through legislation	Research institutes and universities Provision of knowledge on emergency management Up-to date expertise on newest technological developments and/or analytical models
<b>Emergency management stage</b>	Response Recovery	Mitigation Preparedness Response Recovery	Mitigation Response	Mitigation Preparedness Recovery	Mitigation Recovery
<b>Reasons for engaging with this stakeholder</b>	Gathering feedback and input from FRs on usability of developed technologies Validation of technologies through FRs Provide in depth knowledge of needs and challenges	Technologies need to be compatible with existing structures and procedures Provide knowledge on emergency management	Provision of expertise and advice on waterborne pathogen contaminations Provide insights into compatibility of technologies with their systems	Ensuring the compatibility of solutions with legislation Can provide the necessary executive power to make changes in the operational frameworks	Provision of technical knowledge and expertise on the technologies and their validity
<b>Impact of the project on the stakeholder</b>	Increased physical safety during emergency events Improved coordination and communication with all actors More effective management of emergency situations	Access to new technologies and procedures in emergency management to increase the effectiveness of mitigation, preparedness, response and recovery	Enhance ability to react to waterborne pathogen contaminations; Closer cooperation with FRs when managing waterborne contaminations; Direct access to data from source of contamination	Eases communication with all actors involved; Better oversight of emergency situation	Key learnings can be taken up by research institutes; Receive new impulses for managing emergency situations
<b>PathoCERT technologies of interest</b>	All technologies	PathoIMS	PathoTeSTICK PathoSENSE PathoIMS PathoTWEET	PathoIMS PathoINVEST PathoSAT	PathoTeSTICK PathoSENSE PathoIMS

Table 3: Profile of PathoCERT's key stakeholder groups

Figure 4: Overview of the stakeholders mapped in the Spanish emergency management system

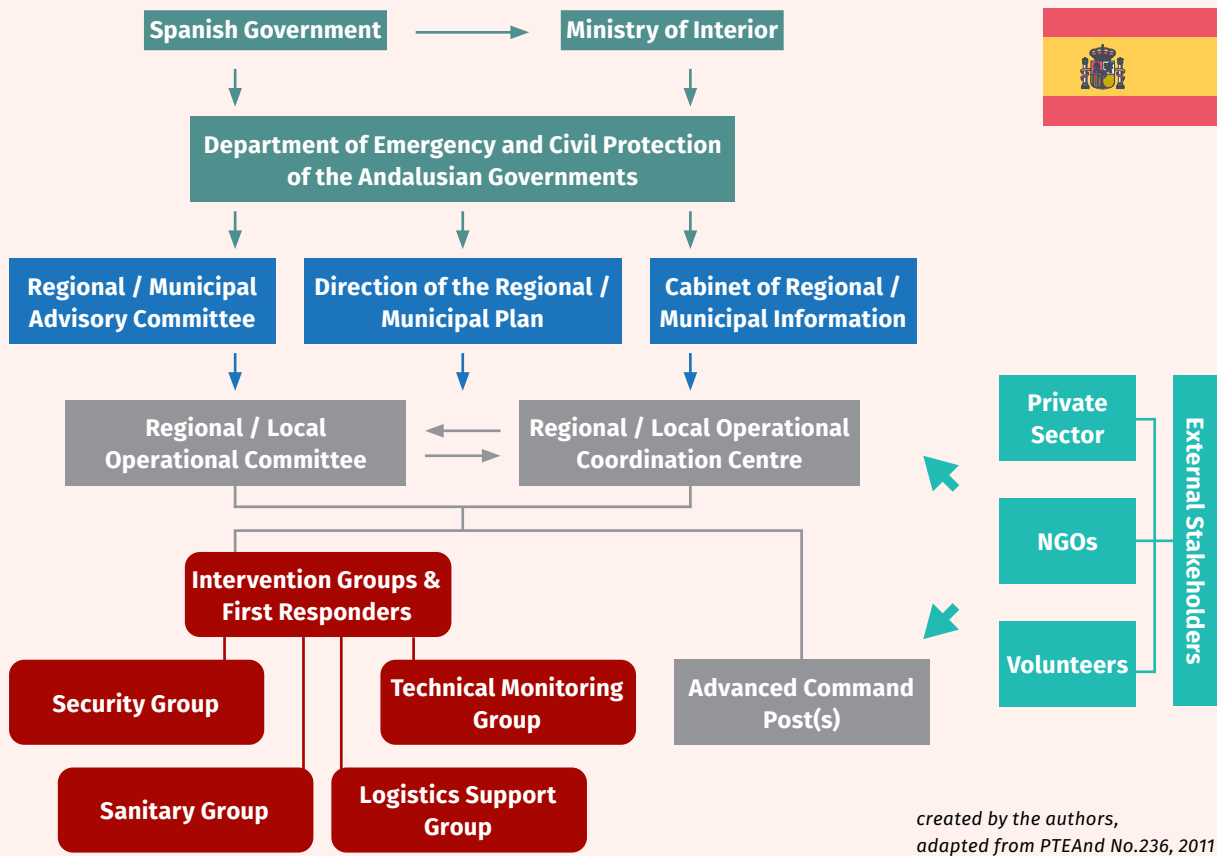


Figure 5: Overview of the stakeholders mapped in the Dutch emergency management system

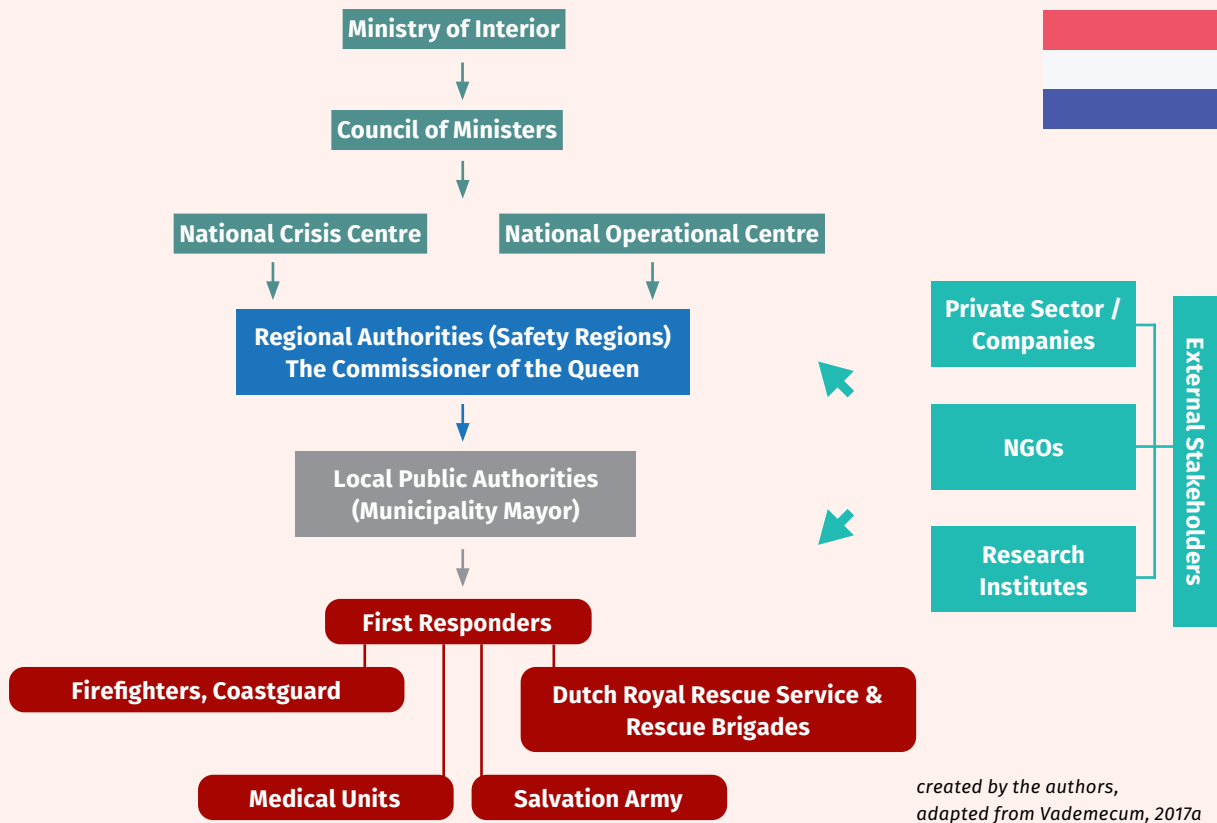
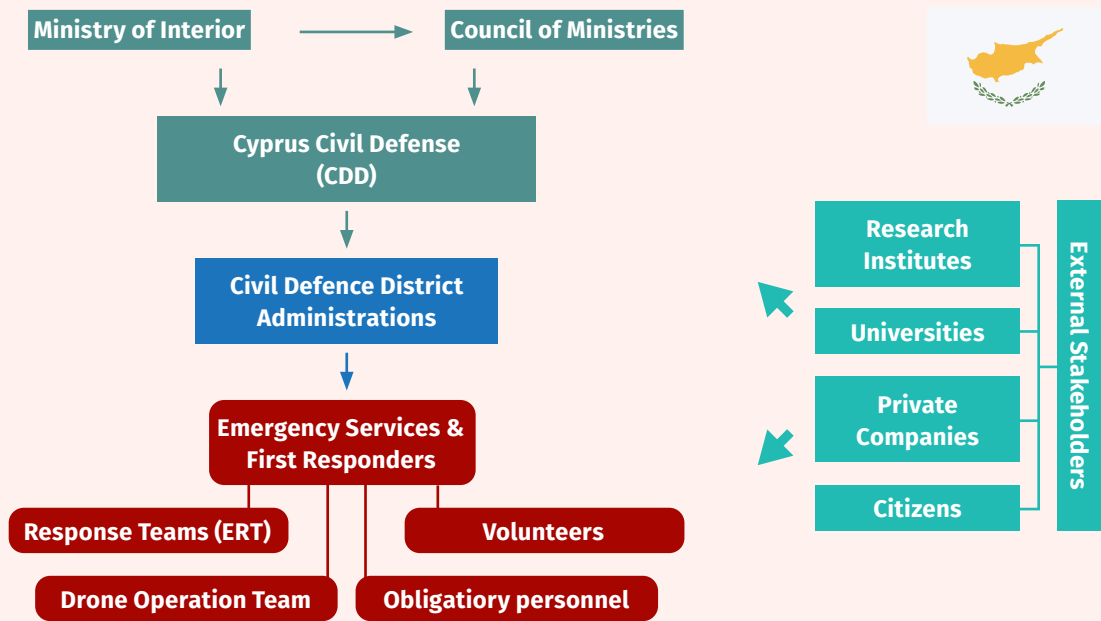
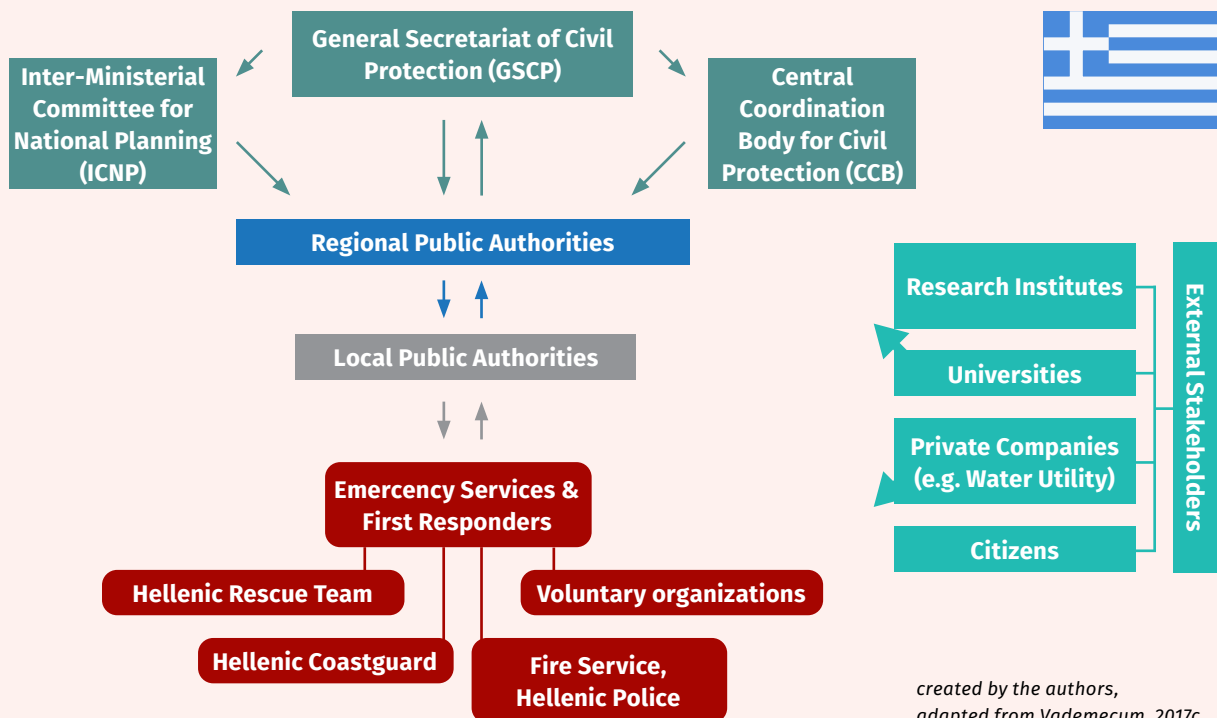


Figure 6: Overview of the stakeholders mapped in the Cyprian emergency management system



created by the authors, adapted from Vademecum, 2017b

Figure 7: Overview of the stakeholders mapped in the Greek emergency management system



created by the authors, adapted from Vademecum, 2017c

Figure 8: Overview of the stakeholders mapped in the Bulgarian emergency management system

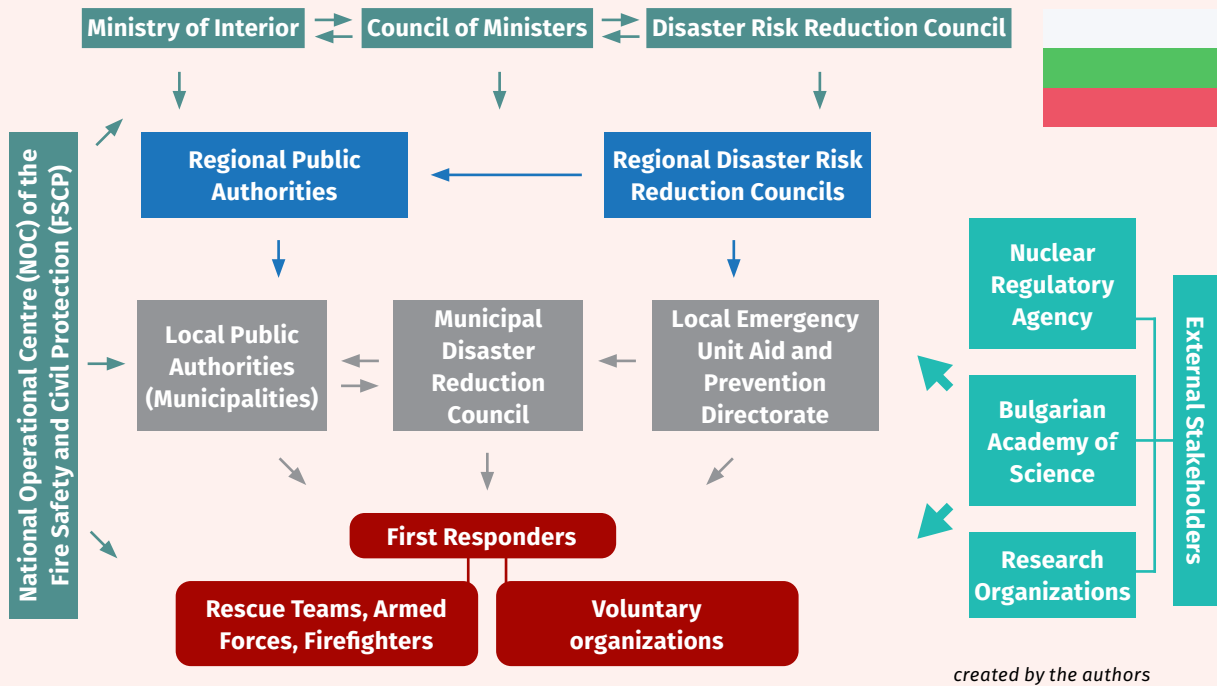
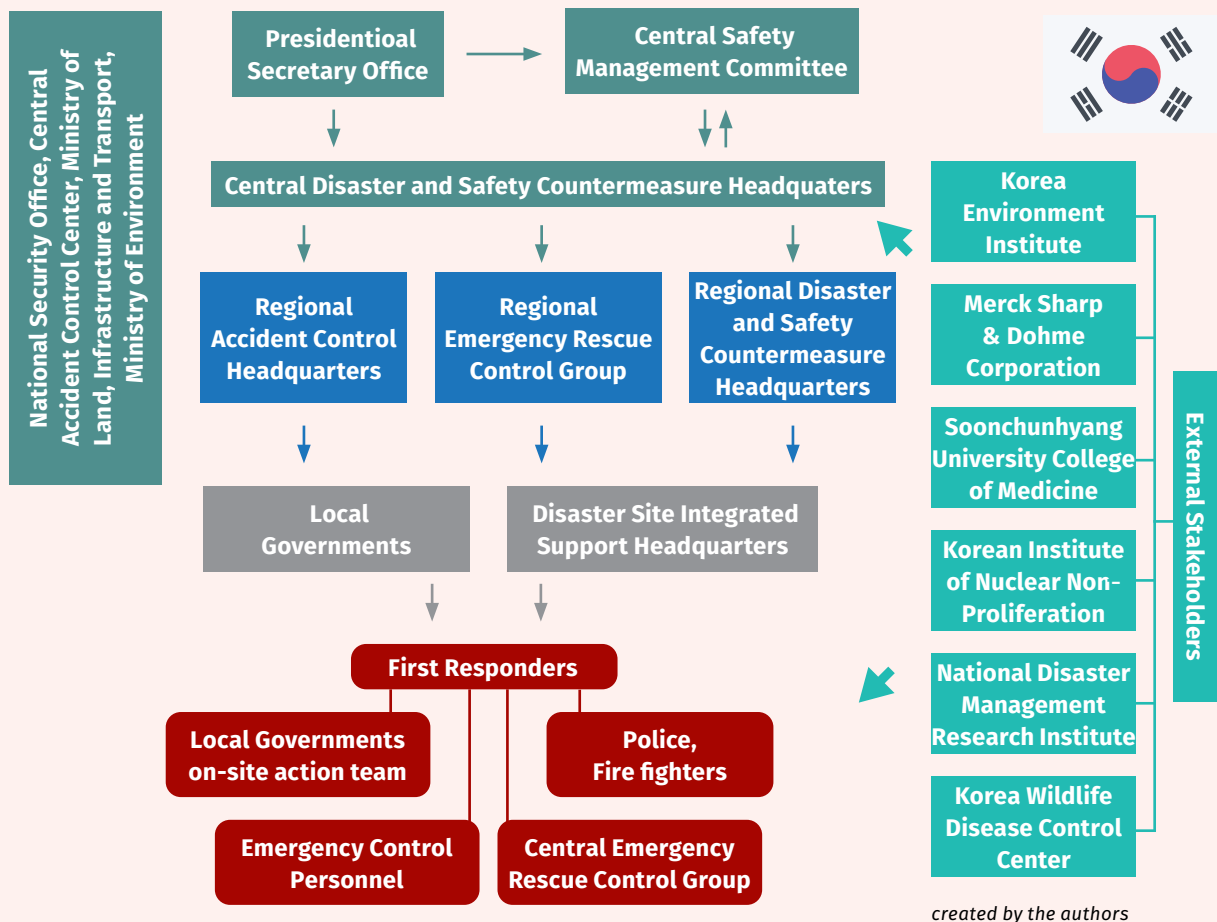


Figure 9: Overview of the stakeholders mapped in the South Korean emergency management system





Target region	LEVERAGE OVERVIEW
<b>Granada, Spain</b>	<ul style="list-style-type: none"> <li>• Increase the intra and inter coordination among operational actors</li> <li>• Expand the operational actors' practical experience with different incidences</li> <li>• Integrate the operational actors' needs and requirements into the technological / technical solutions</li> <li>• Enlarge the funding and financial resources for improving the emergency management sector</li> <li>• Increase social awareness and engagement in the emergency / disaster incidents and related management frameworks</li> <li>• Connect and collaborate with stakeholders outside the immediate organisational chain</li> </ul>
<b>Amsterdam, the Netherlands</b>	<ul style="list-style-type: none"> <li>• Enlarge the funding and financial resources for improving the emergency management from a technological point of view</li> <li>• Further improve citizens awareness about appropriate behaviours throughout an emergency management cycle</li> <li>• Building a workforce composed by draftee operational officers</li> </ul>
<b>Limassol, Cyprus</b>	<ul style="list-style-type: none"> <li>• Design and integrate activities corresponding to the prevention stage of the emergency cycle</li> <li>• Extend the funding and financial resources for improving the emergency management sector</li> <li>• Increase the integration and acceptance of new technologies</li> <li>• Increase social awareness, engagement and citizen participation in the emergency management framework</li> </ul>
<b>Thessaloniki, Greece</b>	<ul style="list-style-type: none"> <li>• Increase the coordination among operational actors</li> <li>• Expand on financial resources and increase acceptance towards new technologies</li> <li>• Further improve citizens' understanding and engagement in emergency events</li> </ul>
<b>Sofia, Bulgaria</b>	<ul style="list-style-type: none"> <li>• Further define roles and responsibilities within the emergency management system</li> <li>• Invest resources in the quick uptake of technological resources</li> <li>• Diversify means of social awareness and engagement for a more effective reaching of vulnerable groups</li> </ul>
<b>Seoul, South Korea</b>	<ul style="list-style-type: none"> <li>• Cultivate trust in FRs towards new technologies and procedures</li> <li>• Enable FRs flexibility of action in following the manuals during an emergency situation</li> <li>• Increasing the social awareness concerning proper behaviour during emergencies</li> <li>• Integrating education on correct behaviours during emergencies into public educational curricula</li> </ul>

Table 4: Leverage points for further improving the emergency management frameworks in the project's target regions

# The PathoCERT stakeholder engagement approach

## The PathoCERT Communities of Practice

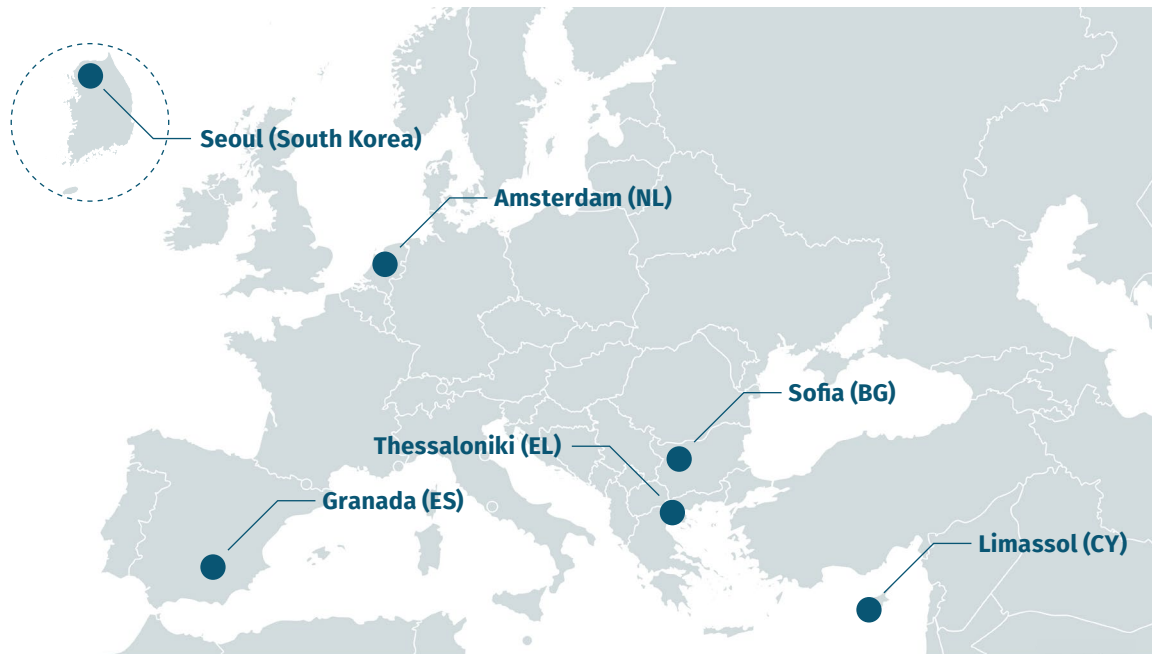


Figure 10: PathoCERT's and CoPs target regions  
(Europe Map created with mapchart.net / South Korea Map by Vemaps.com)

To practically implement the multi-stakeholder engagement approach and drive the development and uptake of novel processes and tools on the ground, the concept of **Community of Practice (CoP)** is applied in PathoCERT. A CoP can be defined as a structure that brings together a group of actors who share a common interest in a topic and come together to fulfil both individual and group goals. Accordingly, regular interaction is a crucial part of the methodology facilitated by regular face-to-face as well as online meetings.

When setting up a CoP three main aspects need to be considered, namely:

- **Mutual engagement:** The CoP members need to have a shared domain of interest and commitment that distinguishes them from others. This shared domain creates common ground, inspires members to participate, guides their learning, and gives meaning to their actions;
- **Joint enterprise:** CoP members pursue this common domain of interest through joint activities, discussions, problem-solving opportunities, information sharing and relationship building. The building block of the joint enterprise creates the social fabric for collective learning and knowledge exchange;

- **Shared practice:** CoP members are actual practitioners in this domain of interest, and build a shared repertoire of resources and ideas that they take back to their practices. While the domain provides the general area of interest for the community, the practice is the specific focus around which the community develops, shares and maintains its core of collective knowledge.

In the PathoCERT project, a CoP has been established in each of the six project target regions in order to enable the successful promotion, development, testing, and adoption of new processes and solutions linked to water related emergency situation. The various CoP meetings engage the identified stakeholders on a regular basis, starting with at least 2 meetings per year (**for a total of 6 meetings** for each pilot city/region throughout the project lifetime).

Furthermore, the CoPs will be an opportunity to engage and reach out to citizens. Even though not an official target group, citizens can be affected by water contamination and their cooperation is necessary for a successful handling of emergency events. In other instances, citizens directly support the management of an emergency event through volunteering and participating in responsive actions.

To build relationship with lay people, the project and CoPs will rely on so-called 'local champions'. These are citizens known in the local communities already knowledgeable and somehow active in the operating field of FR (e.g. firefighter volunteers). These champions will act as local ambassadors that facilitate the uptake of the project activities by more citizens. Local partners will support with the identification, reaching out and engagement of local champions.

# The PathoCERT European Community of Practice

In addition to these six local CoPs, in order to enhance the project and replication potential and further disseminate key experiences and learnings, a so-called pan-European CoP will be set up. The European CoP will be composed of selected representatives of the six regional CoPs and of other stakeholders that operate on a supranational level (e.g. Emergency Response Coordination Centre (ERCC); Copernicus Emergency Management System; Health Emergency preparedness and Response Authority (HERA) and similar). The format and activities of the pan-European CoP will follow the overall setting and approach adopted for the local/regional ones with the difference that pan-European CoP meetings will be organized on a supra-national level to enhance and best disseminate project’s knowledge, findings and key learnings and thus furthering the mainstreaming of PathoCERT outputs to actors operating in countries not directly addressed by the project pilot cities/regions.

**Figure 11 below summarises briefly the CoP process**

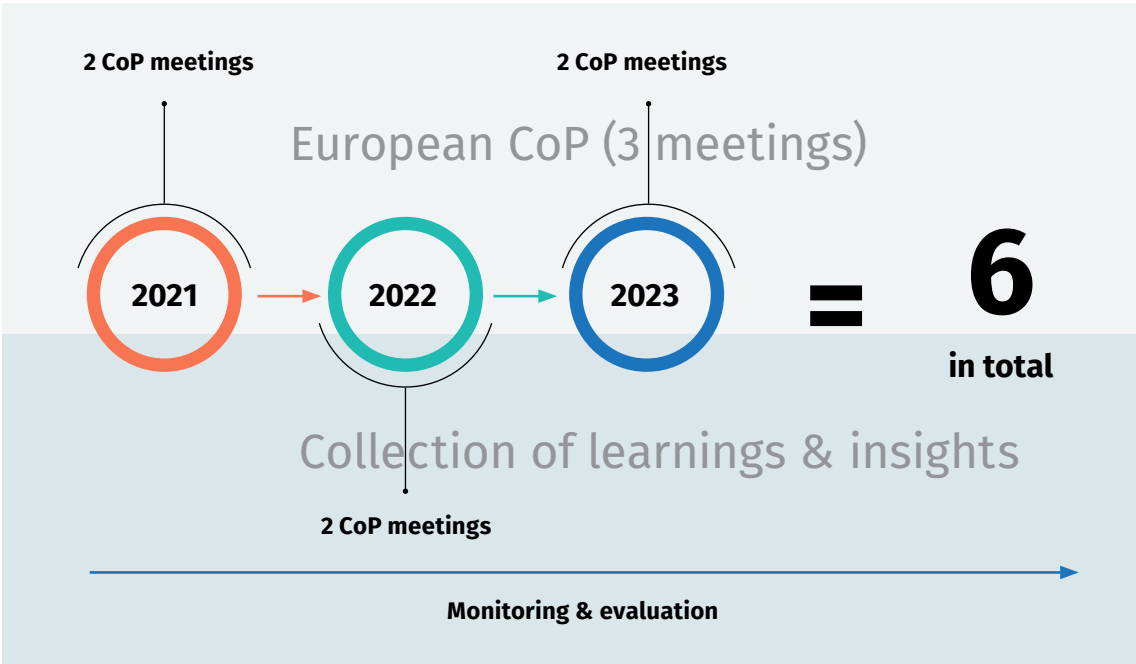


Figure 11: The PathoCERT CoP process in a nutshell

## Roles and responsibilities

The CoPs in each target region are organised and implemented by the project’s local partners. In each target region there is one leading partner and several others with a supporting role. Table 5 provides an overview of the local partners and their position in this process. The local partners, especially those in a leading role, have a variety of responsibilities which have been summarised below:

- Identify, communicate and invite stakeholders that could become part of the CoPs;
- Further define and narrow the topics of the particular CoP meetings;
- Further define the meeting’s structure and build the respective agenda;
- Run the CoP meeting;
- Report back on the meeting’s results and outcomes, including preparing a report and collecting respective materials.

In this process, the CSCP has a coordinating role. More specifically, it oversees the design, implementation of and reporting on the stakeholder engagement process, and guides and empowers the local partners in its effective implementation. Depending on specific needs, the CSCP can take the role of the session’s moderator and facilitator. Whereas in the context of the European CoP, the CSCP is the partner responsible for organising, implementing and reporting.

Target region	ORGANISATION
<b>Granada, Spain</b>	SPEIS (leading partner); CETAQUA & EMASAGRA (supporting partners)
<b>Amsterdam, the Netherlands</b>	WATNL (leading partner); KWR (supporting partner)
<b>Limassol, Cyprus</b>	UCY (leading partner); CCD (supporting partner)
<b>Thessaloniki, Greece</b>	EYATH & HRT (leading partners); STWS & CERTH (supporting partners)
<b>Sofia, Bulgaria</b>	MOIB (leading partner); UCY (supporting partner)
<b>Seoul, South Korea</b>	SUNDO (leading partner)
<b>European CoP</b>	CSCP (leading partner); all local partners (supporting role)

Table 5: Roles in PathoCERT’s CoPs

## Boundaries of disclosure

During the CoP meetings valuable information is generated concerning the emergency management systems as well as inputs on needs and challenges of involved actors. **Exchange of information and insights** internally between stakeholders and the project partners is an important part of PathoCERT as the technical work packages immensely profit from stakeholders' feedback and input on the technologies. To ensure the continuous exchange and information with the members of the CoP, the project will set up special dedicated members' sections on the project's website, where all the results and other information or background materials stemming from the various CoP meetings will be captured and stored. Conventional communication channels such as email and social media will still be utilised to maintain the exchange with CoP stakeholders too.

Throughout the project, insights are continuously shared across all WPs and between project partners and the results of the CoPs are also made available to all project partners (in a summarised format). This enables the exchange of learnings and best practices between the various CoP target regions. The outcomes of the CoPs are especially pertinent to the technological work packages as the opinions and suggestions of the stakeholders should be taken up when developing the technologies.

Outputs and outcomes of the project will be communicated externally through publicly available deliverables. In addition, as mentioned above, the three **European CoP** meetings which will be organized during the project will further disseminate the results outside of the project consortium to a European audience. This will enable European countries not involved in PathoCERT to profit from the developed solutions and potentially apply them in their respective countries and emergency management systems.

## Resources required

The involvement of the local partners expertise is critical for a successful setting up of a CoP. Therefore, it is important that partners develop a sense of ownership for their regional CoPs which is why they are tasked with organizing the CoPs themselves with the support and guidance of the CSCP on structure and content. Given that conducting stakeholder engagement in the form of CoPs has been a novel approach for some project partners, and in order to enable a successful implementation of the PathoCERT multi-stakeholder engagement approach, specific tools have been developed and made available to project partners.

For example, to support partners' understanding of the format and practicalities necessary to setup a CoP, the CSCP developed **a manual** including: a step by step guide to key activities and aspects to consider when engaging with stakeholders; a comprehensive set of engagement tools that can be used to facilitate and moderate CoP meetings; as well as various templates to support the facilitation of exchanges and dialogue. The manual is an extended and more detailed version of this stakeholder engagement plan. Complementing the manual and for the purpose of further enhancing local partners' skills in conducting the CoP meetings, **3 Train the Trainer sessions** have been conducted. The sessions covered aspects related to defining the objectives and purposes of the CoPs, further identifying and reaching out to stakeholders as well as designing and running successful CoP meetings.

The CSCP will continuously support the partners by monitoring the process, identifying challenges and opportunities as well as taking responsive actions to mitigate challenges or exploit opportunities. For each round of CoP meetings, the CSCP will prepare detailed **action plans** and support partners in **shaping the specific meetings' objectives and agendas**, continuously building on the outcomes and findings of previous CoP meetings, the stakeholder mapping, and the baseline requirement analysis, thereby enabling an overarching approach, also in view of interlinkages with the technical work-packages.

## Involvement in upcoming CoP meetings

Emergency management frameworks are complex systems that require a holistic and systemic approach to improving them and by default enhance the safety of the actors that respond and are in the field during the events. The PathoCERT project contributes to improving these frameworks by developing novel, cost effective and easily usable technological solutions and processes as well as guidelines. Such outputs will be field validated by project beneficiaries and will aim at increasing the capabilities and coordination of FRs during emergency events.

To ensure the design of effective solutions that capture as much as possible the realities and needs of stakeholders, PathoCERT relies on a multi-stakeholder, co-creative and participatory engagement process, materialized through CoPs. This process will involve the engagement of multiple actors through the six project target regions (i.e. Granada, Spain; Amsterdam, the Netherlands; Limassol, Cyprus; Thessaloniki, Greece; Sofia, Bulgaria; and Seoul, South Korea).

The PathoCERT project invites all interested parties to join us in such exchanges and dialogues and together co-create for a more resilient and safer Europe. To learn more about the project and to get involved, please visit the project's website [www.pathocert.eu](http://www.pathocert.eu) or contact us.

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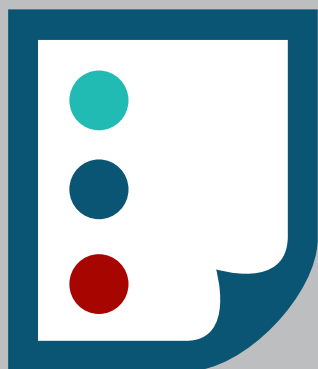
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