Summary report on implementation and evaluation of pilot deployment

Deliverable Number D.4.5.3.

Project Acronym	FIRESPILL
Project ID Number	10255377
Project Title	Fostering Improved Reaction of crossborder Emergency Services and Prevention Increasing safety LeveL

Priority Axis	Safety and resilience
Specific objective	2.2 - Increase the safety of the Programme area from natural and man-made disaster
Work Package Number	4
Work Package Title	Pilot projects' deployment
Activity Number	5.
Activity Title	Joint evaluation of the pilots with defining transferability options & follow- up interventions
Partner in Charge	PUBLIC INSTITUTION RERA S.D. FOR COORDINATION AND DEVELOPMENT OF SPLIT DALMATIA COUNTY
Partners involved	All
Status	Final
Distribution	Partnership
Date of release:	30/06/2023

Summary

List of abbreviations and terms

Deliverable (D)

Lead Partner (LP)

Project Partner (PP)

Pilot Project Framework Plan (PPFP)

Task force (TF)

Work Package (WP)

Abstract

The aim of FIRESPILL project was to increase the capacity of emergency services to improve cross- border efficiency in tacking natural and man- made disasters by decreasing the exposure of the population to the impact of hazards and increasing the safety of the Croatian and Italian Adriatic basin by improving emergency prevention and management measures and instruments.

Pilot actions planned within WP 4 of FIRESPILL project was the establishment of a better coordinated collective emergency planning and preparedness for risk related to fire, oil spills, pandemic, or earthquake in both countries.

The overall expected outputs of Work Package 4 related to the enhancement of Emergency Service Organization operational capabilities and increased level of preparedness in terms of reaction in case of fire, oil spills and other marine hazards, pandemic or earthquake, arising from the set-up of Advanced training centers focused on CBC management of main risks.

To reach these outputs, the FIRESPILL strategy identified three macro-actions, dedicated to the improvements of the Emergency Services Regulations, of the Emergency Management Systems and the activation of citizens' participation, in view to transform its present role of "vulnerable element" into the one of "active sensors" able, during hazardous occurrences, to concretely contribute to Civil Protection action, according to proper awareness and behaviors.

The above mentioned FIRESPILL strategy was implemented throughout design of a specific pilot actions tailored to the specific hazard whose main goal was to establish a better coordinated collective emergency planning and preparedness for risk related to fire, oil spills, pandemic, or earthquake in both countries.

As a final step, a joint evaluation of the pilot projects with defining transferability options & follow- up interventions is summarized in the document *Summary report on implementation and evaluation of pilot deployment*, that provides an inside into the existing methodologies and a proposal for the improvements for all future activities that can contribute to the improvement of the civil protection system in the program area.

1. Monitoring and evaluation: introduction

The UNDP defines M&E aim as « to provide the main parties with timely information about the progress, or lack thereof, in the production of outputs and the achievement of outcomes. This serves as a basis for decision-making to improve the performance of the programme or project and to feed into the learning processes» (2003, p. 18). According to the EC, «to evaluate a public intervention is to judge its value according to explicit criteria and on the basis of information specifically gathered and analyzed» (1999, p. 17).

M&E activities are considered pivotal by public bodies to:

- Verify the rationale of a public intervention.
- Identify reproducible successes and/or failures not to be repeated.
- Be accountable to citizens.

These goals in turn reflect three main aims:

- A cognitive aim, i.e., the need to estimate as objectively as possible the effects of interventions on society and to understand the logics of their operation.
- A normative aim, i.e., a concern to assist policy-makers and all stakeholders in making judgments about the value of such interventions.
- An instrumental aim, i.e., the need to contribute substantially to the improvement of interventions by making stakeholders aware about the meaning, conditions and consequences of their actions and decisions.

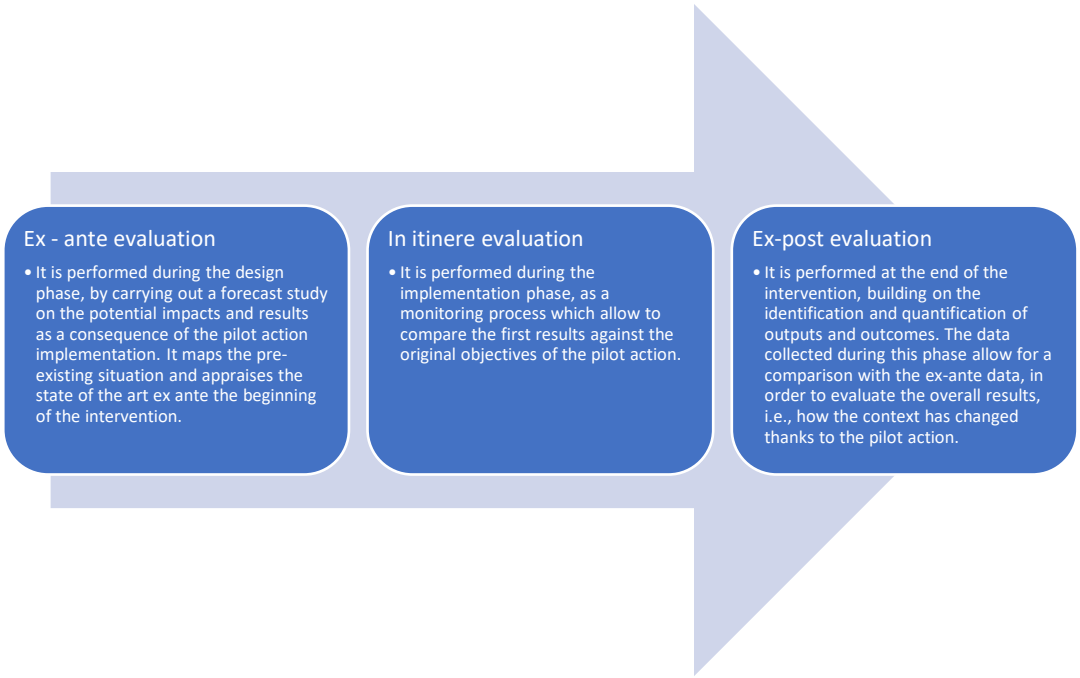
With specific regard to sustainable mobility pilot actions, a M&E process allows:

- To decide on the merit of a developed action, i.e., to decide on the opportunity to start, continue, expand rather than suspend or limit the action at stake, while making stakeholders aware of the decision and the reasons motivating it.
- To improve the abovementioned pilot action, that is to introduce finalised changes in its implementation process.
- To increase the knowledge about the operating mechanisms of the pilot action, i.e., the knowledge about processes of social change and, indirectly, to verify the application of theoretical concepts about social change that underpinned the formulation of the intervention.

- To increase the learning ability of end-users and stakeholders, through reflections on the actions performed and the consequences that have arisen, with specific reference to those who implemented the pilot action.

1.1. Monitoring and evaluation phases

M&E processes are developed following the three main phases of a project lifecycle (design, implementation and closing), according to this figure:



In this report all three phases of monitoring and evaluation of the FIRESPILL pilot activities are presented:

Ex- ante evaluation- Design of pilot activities

In itinere evaluation- Overall of Task force groups activities

Ex- post evaluation- Evaluation of pilot activities- planned v.s. implemented

All PPs of the FIRESPILL project participated in each step of monitoring and evaluation process.

2. Ex- ante evaluation- Design of pilot activities

Summary report on implementation and evaluation of pilot deployment is a is the crown of the numerous ex- ante activities that have been carried out at the beginning of the FIRESPILL project implementation. The first of them is an ex-ante evaluation that consisted of several steps:

2. 1. Analysis of capitalizing practices and outcomes

First activity that needed to be implemented was analysis of technical, scientific and practical issues related to the transferability of the deliverables and best practices from previous EU projects that related to the civil protection improvements, preparedness of citizens on different hazards to outline:

1. the essential enhancement and adaption measures to be developed

2. expected outputs to achieve specific objective:

   a) to enhance Firefighting capacity to deal with prevention and improved reaction to forest fire outbreaks by upgrading their preparedness, readiness and operational capacities, as well as strengthening cross border coordination;
   b) to enhance capacity of Coast Guard, specialized Civil Protection units to deal with oil spilling and other marine hazards by upgrading their level of preparedness in after outbreak intervention, as well as strengthening cross border coordination;
   c) to finalize an enhanced monitoring procedure based on the low cost and non-invasive instrumental seismic vulnerability measurement applicable to a large number on a widespread territory to "Eurocode 8 class III and IV" Public Buildings to catalogue their seismic safety status in order to promote an effective seismic risk prevention policy in Adriatic basin seismic high-risk areas. Also, identification and monitoring of 3 case studies in the earthquake area is planned under this pilot axis.

In order to achieve the expected outputs of particular activity the following steps were made:

- ✓ Establishment of three thematic task forces (TF)

1. TF1 (Fire and earthquake pilot deployment)- coordinated by PP10; participated by PP2, PP5, PP8, PP9 and PP12.
2. TF2 (Oil spills and other marine hazards pilots deployment)- coordinated by PP9; participated by: PP1, PP4, PP7 and PP11.
3. TF3 (Establishment of Advanced Training Centres for Civil Protection)– coordinated by PP13; participated by: PP3 and PP6.

TF members implemented the following activities:

✓ Each TF made a (preliminary) survey of capitalizing items in its thematic area and delivered a two Technical reports:

- TF 1 - Fire and earthquake pilot deployment consists of data delivered by PP10, PP2, PP5, PP8, PP9 and PP12;
- TF 2 - Oil spills and other marine hazards pilot deployment consists of data delivered by PP9, PP1, PP4, PP7 and PP11.

✓ TF3 delivered an Investment pack- Technical documents, permissions and other documents that are necessary for the realization of pilot projects that include small scale infrastructure investments/establishment of Advanced Training Centres for civil protection.

2. 2. Capitalizing practices' enhancement & adaptation

Second major activity related to further implementation of project activity in preparation of methodology for pilot projects implementation was a definition of a pilot activities that will be tested and implemented in the involved territories for which Technical Reports were used as a base.
TF members had a several meetings/workshops which resulted in providing inputs tailored to specific context, needs and willingness of each involved territory, that were finally integrated in the Pilot Project Framework Plan (PPFP) of FIRESPILL project, which is the document that detailed the project response to the challenges posed in the context of the project and provided a clear picture on how each involved territory needs to implement the pilot activities.

PPFP was structured in two thematic chapters:

- TF 1 - Fire and earthquake pilot deployment
- TF 2 - Oil spills and other marine hazards pilot deployment

TF 3 pilot activities were already defined in the Application form so they were not a part of the PPFP.

2.3. Pilot deployment design

2.3.1. Pilot deployment of fire and earthquake

The aim of pilot activity 4.2. "Fire and earthquake pilot deployment" was to improve the level of preparedness of civil protection system by the improvement of firefighting equipment (workstations, IT equipment, teaching classrooms, PS tracking systems), increasing quality of firefighting (personal) protective equipment, improvement of IT solutions used by firefighter units and of existing specialized surveillance systems.

Pilot Project Framework Plan (PPFP) about fire and earthquake risks, included proposal for pilot actions formulated by:

PP 2: COPE

PP 5: Zadar County

PP 8: Sibenik – Knin County

PP 9: Puglia Region

PP 10: Emilia – Romagna Region – Agency for Reconstruction – Earthquake 2012 (TF 1 coordinator)

PP 15 University of Padua – department of Engineering.

TF members gave their inputs tailored to specific their context, needs and willingness of each involved territory, detailing the expected response to the key-challenges of their context and providing all relevant elements about the operational needs for implementing the pilot actions, that consisted of:

- Geographic area- giving a brief description of involved area and it's substance per each theme
- Type of pilot activity
- Relation of pilot activity with previous experience/good practice
- Description/Methodology/Phases of pilot activity implementation
- Pilot team composition (external/internal, roles)
- Enhancement/adoption measures to be implemented
- Expected outputs of pilot activities (in relation to activity deliverables 4.2., 4.3. and 4.4.).

• Estimated budget
• Sustainability of pilot activities (governance model)

In detail, partners proposed the type of actions detailed below:

2.1 PP 2 COPE

COPE proposed two types of actions, in both fields:

a. the realization of a complex training process, made of: i. an educational path for Province of Teramo Civil Protection Volunteers (to qualify 15 Forest fire fighting and Earthquake rescue volunteer specialists); ii. three advanced training courses involving 30 Civil Protection Volunteers from different areas and a final drill; iii. theoretical lessons be held in "distance learning" mode.
b. A seismic monitoring of SPBs to detect gaps in building structure in terms of seismic behavior, integrating a visual / documentary seismic assessment of the building with a dynamic vibration test system, in view to characterize its response to seismic shaking.

2.2 PP 5 Zadar County

Zadar County proposed to realize training sessions in which will take part members of Civil Protection Units, in view to simulate search and rescue operation in inaccessible terrain during the event of natural or man-made hazard. Twenty members from 2 different organizations – Zadar County Firefighting brigade and Croatian Mountain Rescue Service - will coordinate ground forces in two different scenarios: i. post-earthquake rescue; ii. rescue from fire.

2.3 PP 8 Šibenik-Knin County

Similar to Zadar, Šibenik-Knin County proposed to realize training sessions with members of Civil Protection Units participating into simulated search and rescue operation in inaccessible terrain during the event of natural or man-made hazard. 15 members from two different organizations – Šibenik-Knin County Firefighting brigade and Croatian Mountain Rescue Service – are foreseen to coordinate ground forces from a command-communication vehicle - specifically equipped to enable fast, precise and efficient deployment of members of different CPS organizations in 2 different scenarios: i. a post-earthquake rescue; ii. a rescue from wildfire.

2.4 PP 9 Puglia Region

Puglia Region, intending to operate on the management of fire risk, will operate on two fronts: i. the increase in quality of the protection devices of Civil Protection volunteers and of their equipment, in view they to become part of a European module of civil protection for ground forest fires; ii. to organize an exercise to test equipment and operating models, in view to increase volunteer units' level of preparedness.

2.5 PP 10 Emilia – Romagna Region – Agency for Reconstruction Earthquake 2012

The Emilia – Romagna Agency for Reconstruction, in close cooperation with the Department of Architecture of the University of Ferrara, intends to promote three specific drill courses (max 50 participants each), aiming to train professionals in damage prevention measures and management activities following a catastrophic event. A specific focus will be given to the Emilia-Romagna regional governance strategy after the 2012 earthquake through the best practices example represented by the three case studies, located in Ferrara, Pieve di Cento and Stellata. In the 2nd and 3rd courses, participants will be trained in the use of the most recent survey methodologies and technologies for damage detection (laser scanners, drones, etc.)

2.6 PP 15 University of Padua – Department of Engineering

PP15 has planned to implement the following type of pilot actions:

a. on investigation on earthquake – related issues:

⇒ a study on topics related with earthquake-fire interaction on steel;

⇒ a study on role of deterioration on the overall seismic risk of existing road bridges (based upon case studies).

b. on capacity building: a formation activity on Quick Triage, for about 60 fire fighters technicians in the Veneto region. Specifically, the proposal includes 4 editions of 36-hour training courses, 2 editions of exercises in Friuli-Venezia Giulia on the application of the procedures and a series of seminars (organized by the firefighters) to train municipal technicians.

2.3.2. Pilot deployment of Oil spills and other marine hazards

The aim of the pilot activity 4.2 "Oil spills and other marine hazards" was to establish a better coordinated collective emergency planning and preparedness for risk related to oil spills in both countries. The specific objective of this pilot action was to enhance capacity of Coast Guard, specialized Civil Protection units to deal with oil spilling and other marine hazards by upgrading their level of preparedness in after outbreak intervention, as well as strengthening cross border coordination.

Pilot Project Framework Plan (PPFP) about the "Oil spills and other marine hazards" involved the following project partners:

PP1: Abruzzo Region

PP4: Adriatic Training and Research Centre for Accidental Marine Pollution Preparedness

and Response – ATRAC

PP7: Istria Region

PP 9: Civil Protection Department of Puglia Region (TF 2 coordinator).

PP 11: Environmental Protection Agency of Friuli Venezia Giulia

TF members gave their inputs tailored to specific their context, needs and willingness of each involved territory, detailing the expected response to the key-challenges of their context and providing all relevant elements about the operational needs for implementing the pilot actions, that consisted of:

- Geographic area- giving a brief description of involved area and it's substance per each theme
- Type of pilot activity
- Relation of pilot activity with previous experience/good practice
- Description/Methodology/Phases of pilot activity implementation
- Pilot team composition (external/internal, roles)
- Enhancement/adoption measures to be implemented
- Expected outputs of pilot activities (in relation to activity deliverables 4.2., 4.3. and 4.4.).
- Estimated budget
- Sustainability of pilot activities (governance model)

In detail, project partners proposed the type of actions detailed below:

2.1 PP 1– Abruzzo Region

Abruzzo Region will implement one pilot action. In detail, the pilot action aimed at preventing and controlling pollution along the Adriatic coasts, including risks deriving from industrial accidents and transport of potential pollutants across the sea, involving the Italian Ministry for Environment. The existing GIS database, called BIFISIC, acronym for Better Information For Industrial Safety In Croatia, (developed recently by Croatian and Italian partners in the frame of IPA twinning projects and currently in use at the Croatian Ministry of Environment and Energy) will be capitalized and enhanced with new functionalities to serve to local coastal public authorities as a cross-border platform to prevent and monitor sea pollution due to marine hazards. The BIFISIC GIS tool upgrade will be finalized specifically to marine pollution and impacts of accidents: the upgraded version will acquire and elaborate data related to the Adriatic environment, also utilizing data produced by other

pilot actions. The project will set up two servers for running the BIFISIC tool: one in Croatia (Rijeka or Split) and one in Pescara

2.2 PP4: Adriatic Training and Research Centre for Accidental Marine Pollution Preparedness and Response – ATRAC

The Adriatic Training and Research Centre for Accidental Marine Pollution Preparedness and Response will implement the following activities:

- Organization of the training courses to improve the capacity building in marine pollution preparedness and response systems and raising community awareness. The beneficiaries of the training courses are representatives of the Port authorities, Harbour Masters' offices, national and local authorities, specialized spill response companies, scientific institutions, Firefighting departments, public ports, Coast Guard, Civil protection organizations and Voluntary organizations. The objective of the course is to prepare Supervisors to coordinate / manage the response to an oil spill and on how to effectively respond to an oil spill through the deployment of equipment and resources at regional (area) or national levels. The suggested number of course participants is 20. The course comprises classroom lectures, videos, spill response equipment demonstrations, hands-on practical exercises and the course evaluation. The duration of the course is 2 (two) working days;

- Purchase of the equipment that should be used to contain pollutants and to clean up water bodies;

- Organization of the specialized exercises and simulations for coast guards and civil protection units.

2.3 PP7: Istria Region

The pilot actions of Istria Region are:

- **Region of Istria is planning to buy 500 meters of floating barriers for oil containment or absorption.** Since we currently have 300 meters of booms with a height of 350 mm above sea level, in order to achieve the optimal state of readiness,

it is necessary to procure another 500 meters of dams with a height of 520 mm above sea level. This means, that after the project we will have 800 meters of booms at our disposal, which makes it possible to prevent and limit a possible accident on the open sea of a smaller ship by encircling it with protective booms that are effective even in heavy sea conditions.

- **Region of Istria is planning to build a landing craft-fire fighting boat** according to the schemes and technical descriptions that were made as a result of a EU project HOLISTIC. The boat is approximately 9 meters long, and it is designed for safe operations in firefighting missions. Purchased equipment will be managed and maintained by the Firefighting Community of Region of Istria.

2.4 PP 9: Civil Protection Department of Puglia Region (TF 2 coordinator)

The Civil Protection, as coordinator partner of the Task Force 2, will implement the following activities:

- Methodology in order to study the ship traffic, through the mapping of the coasts and the sea surfaces, in order to simulate the cases in which there may be losses. These results can be useful for the FIRESPILL project and for the whole Mediterranean. In addition to the traffic, the oil platforms at sea will be analyzed, in fact on the basis of historical data we can simulate for each platform the actions necessary in the event of an accident. Based on these simulations it will be possible to understand what kind of equipment and what areas to study.

- Develop an application for intervention in the event of an accident: (Operation NRT Forecast of oil transport and fate) and a multimodal approach combining the various approaches of the partners (MEDSLIK-II is coupled to the CMEMS products and downscaled regional model outputs of ultra-fine resolution, eg. SANIFS);

- Purchase of the equipment that should be used to contain pollutants and to clean up water bodies;

- Organisation of the specialized exercises and simulations for coast guards and civil protection units.

2.5 PP 11: Environmental Protection Agency of Friuli Venezia Giulia

The pilot actions of PP11 is divided into two main complementary classes: pollutant dispersion evolution forecast (emergency response and restoration support) and oil-spill impacts risk assessment in order to reduce the vulnerability and response in case of incident.

Based on this, it will be implemented models to be used in case of emergency in the Gulf of Trieste (spatial resolution model) as tactic approach. The idea is to have more inputs generated on the spot, or by other institutions at local and international level and after starting one or two models to have a set of oil-spill simulation, so as to minimize the time of response in the event of an accident.

The strategic approach to use is based on three elements (risk=hazard x exposure x vulnerability) so as to support the partners in having a map and a set of indicators on the risks in the event of an accident. There will studies many scenarios considering also the Meteo-Marine inputs and Pollution source inputs so as to have an oil-spill model able to consider more scenarios (risk scenario maps) and then to insert all this in the methodology that PPs will implement (MEDLISK model).

2.3.3. Pilot deployment of Establishment of Advanced Training Centers for Civil Protection

Given the fact that the project/programme area has been facing many hazard outbreaks in the last years calling urgently for common solutions and modern approaches to be taken the aim of the activity 4.4. "Establishment of Advanced Training Centres for Civil Protection" was to upgrade the level of preparedness of the civil protection system to the higher, cross border level, throughout establishing a network of new built and the existing one centers that will be used for a presentation of best practices in the field of firefighting and civil protection, through organization of specialized seminars, trainings, and simulations for different Emergency system organizations in EU and wider.

The following pilot activities were planned in the Application form:

- Investment of new infrastructure: Advanced training center for firefighting and civil protection in **Split- Dalmatia County** (Vučevica), by PP13.

- Investment of new infrastructure: Outpost of Advanced training center for firefighting and civil protection in **Dubrovnik- Neretva County** (Kula Norinska), by PP3.
- Investment of the restructuring of existing infrastructure: Advanced training canter of Fabriano Belvedere in **Marche region**, by PP6.

3. EX POST EVALUATION OF FIRESPILL PILOT ACTIVITIES

Ex-post evaluations are used to assess whether a specific intervention was justified and whether it worked (or is working) as expected in achieving its objectives and why.

In this particular case specific interventions are the pilot projects/activities that were implemented by PPs and the goal of ex post evaluation is to check were the expected outputs achieved as planned and did implement pilot activities gave their contribution to the increase of safety in the Programme area and its resilience to natural and man-made hazards (fire, earthquake), what were the main obstacles that PPs were facing during its implementation and what are the lessons learnt.

3.1. Expected outputs/impacts of Pilot deployment

3.1.1. Expected outputs/impacts of *Pilot deployment of fire and earthquake*

Expected outputs of the *Pilot deployment of fire and earthquake* were defined in the Application form:

Deliverable 4.2.1.
❖ n° 6 Specialized trainings/drills for firefighters and CP units (1 training per involved PP). *Firefighters and civil protection units will organize specialized trainings/drills (fire and earthquake) by using and testing the equipment that will be purchased by involved PPs*
❖ n° 1 Cross border training of experts (e.g. engineers, architects, cultural heritage experts, etc.) and creation of lists of experts in earthquake emergency management. (PP10)
❖ n° 3 case studies in the earthquake area identified and monitored (PP10)
❖ n° 10 Instrumentally SPBs monitored (PP2)

The purpose of the evaluation was to establish whether the implementation of the above-mentioned outputs has led to the expected impacts of the Pilot deployment of fire and earthquake:

- enhancement of firefighting capacity to deal with prevention and improved reaction to forest fire outbreaks by upgrading their preparedness, readiness and operational capacities, as well as strengthening cross border coordination;
- establishment of an enhanced monitoring procedure based on the low cost and non-invasive instrumental seismic vulnerability measurement in order to promote an effective seismic risk prevention policy.

3.1.2. Expected outputs/impacts of *Pilot deployment of Oil spills and other marine hazards*

Expected outputs of the *Pilot deployment of Oil spills and other marine hazards* were defined in the Application form:

Deliverable 4.3.1.
❖ n° 1 Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea developed ❖ (PP4)
❖ n° 1 Oil spill operational prototype and hazard mapping capacities developed (PP9)
❖ n° 2 Enhanced simulation models for oils spills and other marine hazards (PP9, PP11)
❖ n° 5 Specialized exercises implemented (with usage of personal protective equipment and specialized equipment floating booms, boats, drones.) (1 exercise per PP)

The purpose of the evaluation was to establish whether the implementation of the above-mentioned outputs has led to the expected impacts of the *Pilot deployment of Oil spills and other marine hazards*:

- enhanced capacity of Coast Guard, specialized Civil Protection units to deal with oil spilling and other marine hazards by upgrading their level of preparedness in after outbreak intervention, as well as strengthening cross border coordination.

3.1.3. Expected outputs/impacts of *Pilot deployment of Establishment of Advanced Training Centers for Civil Protection*

Expected outputs of the *Pilot deployment of Establishment of Advanced Training Centers for Civil Protection* were defined in the Application form:

Activity 4.4.
❖ **D.4.4.1.** Investment preparation package realized. Technical documents, permissions and other documents that are necessary for the realization of pilot projects that include small scale infrastructure investments. (3 sets of documents, 1 set per each investment). Collected by PP13.
❖ **D.4.4.2.** n° 1 Realized investment of new infrastructure: Advanced training center for firefighting and civil protection in Split- Dalmatia County (Vučevica), by PP13. 1 infrastructure
❖ **D.4.4.3.** n° 1 Realized investment of new infrastructure: Outpost of Advanced training center for firefighting and civil protection in Dubrovnik- Neretva County (Kula Norinska), by PP3. 1 infrastructure
❖ **D.4.4.4**. n° 1 Realized investment of the restructuring of existing infrastructure: Advanced training canter of Fabriano Belvedere in Marche region, by PP6. 1 reconstruction

The purpose of the evaluation was to establish whether the implementation of the above-mentioned outputs has led to the expected impacts of the Pilot deployment of Establishment of Advanced Training Centers for Civil Protection:

- Advanced training centers to become a hub for cross border and international trainings and demonstration exercises, thus contributing greatly to the safety of the Adriatic basin and improving its own capacities and capacities of its emergency services to react promptly to hazards as well as mitigate consequences.

3.2. Methodology for the pilot project assessment

The evaluation steps were explained in the *Methodology for the pilot project assessment* (D.4.5.1.), with its integral part in the form of a template/an *Evaluation questionnaire* that needed to be filled out by the partners, which included the following elements:

- Geographical area
- Brief description of implemented pilot activity
- Pilot Team composition
- Outputs of pilot activity achieved
- Deviations in the implementation of the pilot project activities (pre post pilot benchmark)
- Pilot activities contribution to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake/maritime hazard)
- CBC effect of undertaken pilot activities/ transferability of results of pilot activities to CB territories
- Sustainability of pilot deliverables (governance model)

Followed by Methodology for the assessment of pilot projects (and the elements from the Evaluation questionnaires) each TF member evaluated the impact of pilot interventions in its territory by comparison between the pre and post pilot benchmark, and provided inputs of the achieved results, faced critical issues and observed changes in the resilience of involved territory. In order to make a proper assessment of pilot projects, TF members organized a **Work coffee/Workshop with local stakeholders** to discuss the evaluation of the implemented pilot projects following the elements from the Evaluation questionnaires.

After collecting all the inputs, each TF member/PP sent to the LP Evaluation questionnaires with all the inputs with detailed information about implemented pilot activities.

Evaluation questionnaires were structured by TF Groups:

- TF-1 FIRE AND EARTHQUAKE PILOT DEPLOYMENT
- TF-2 OIL SPILLS AND OTHER MARINE HAZARDS PILOTS DEPLOYMENT
- TF-3 ESTABLISHMENT OF ADVANCED TRAINING CENTRES FOR CIVIL PROTECTION

3.3. Result of the evaluation/Conclusions

Following the Methodology for the evaluation of pilot projects (and elements from the Evaluation Questionnaires), each member of the TF assessed the effect of the pilot interventions in their area, and the main deliverables/indicators achieved by the implementation of the pilot project are listed here.

3.3.1. Deliverables

Deliverable 4.2.1.

Deliverable 4.2.1.	**Number of deliverables**
Planned	**Implemented**
☐ n° 6 Specialized trainings/drills for firefighters and CP units (1 training per involved PP). *Firefighters and civil protection units will organize specialized trainings/drills (fire and earthquake) by using and testing the equipment that will be purchased by involved PPs*	✓ n° 1 PP2 ✓ n° 1 PP5 ✓ n° 1 PP8 ✓ n° 1 PP9 × n° 0 PP10 ✓ n° 1 PP15
☐ n° 1 Cross border training of experts (e.g. engineers, architects, cultural heritage experts, etc.) and creation of lists of experts in earthquake emergency management. (PP10)	✓ n° 1 PP10
☐ n° 3 case studies in the earthquake area identified and monitored (PP10)	✓ n° 3 PP10

□ n° 10 Instrumentally SPBs monitored (PP2)	× n° 0 PP2

Deliverable 4.3.1.

Deliverable 4.3.1.	Number of deliverables
Planned	**Implemented**
□ n° 1 Oil spill operational prototype and hazard mapping capacities developed (PP4)	✓ n° 1 PP4
□ n° 2 Enhanced simulation models for oils spills and other marine hazards (PP9, PP11)	✓ n° 1 PP9 ✓ n° 1 PP11
□ n° 5 Specialized exercises implemented (with usage of personal protective equipment and specialized equipment floating booms, boats, drones.) (1 exercise per PP)	✓ n° 1 PP1 ✓ n° 3 PP7 × n° 0 PP4 ✓ n° 1 PP9 ✓ n° 1 PP11

Deliverable 4.4.

Deliverable 4.4.	Number of deliverables
Planned	**Implemented**
☐ D.4.4.1. Investment preparation package realized. (PP13)	✓ n° 1 PP13
☐ D.4.4.2. n° 1 Realized investment of new infrastructure: Advanced training center for firefighting and civil protection in Split- Dalmatia County (Vučevica) (PP13)	✓ n° 1 PP13
☐ D.4.4.3. n° 1 Realized investment of new infrastructure: Outpost of Advanced training center for firefighting and civil protection in Dubrovnik-Neretva County (Kula Norinska) (PP3)	✓ n° 1 PP3
☐ D.4.4.4. n° 1 Realized investment of the restructuring of existing infrastructure: Advanced training canter of Fabriano Belvedere in Marche region (PP6)	✓ n° 1 PP3

3.3.2. Indicators

According to the date collected throughout Evaluation questionnaires delivered by TF group members/PP the main following indicators were accomplished as a result of a pilot project implementation.

Number of Civil Protection volunteers and professionals participated in pilot activity implementation (fire and earthquake pilot activities)
305 (fire pilot activities) 127 (earthquake pilot activities)

Population benefiting from oil spills and other marine hazards pilot activities	7.944.144 inhabitants
Population benefiting from forest fire protection pilot activities	2.699.430 inhabitants
Population benefiting from pilot activity (Establishment of Advanced training centres)	1.997.723 inhabitants

In Annex 1 the Evaluation questionnaires related with the pilot project evaluation by each project partner of TF 1, TF 2 and TF 3 are elaborated in detail according to the Methodology for the evaluation of pilot projects.

Annex 1- Evaluation questionnaires per TF groups

TF-1 FIRE AND EARTHQUAKE PILOT PROJECT EVALUATION

PP10 - EMILIA-ROMAGNA REGION
Agency for Reconstruction Earthquake 2012

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
The Agency for Reconstruction, in collaboration with Teknehub of the University of Ferrara, selected three case studies from the crater area of the 2012 earthquake as significant examples of reconstruction: Palazzo Schifanoia in Ferrara, Castello Lambertini in Poggio Renatico and Rocca Possente in Stellata di Bondeno (Ferrara Province). They, having heterogeneous dimensional/functional/morphological characteristics, represented the test-bed of the 'Pilot Actions' for developing/sharing integrated documentation strategies, and optimized digital acquisition protocols and tools for seismic risk assessment mitigation, emergency management, and reconstruction processes related to catastrophic events. The Rocca Possente, a fortified tower structure, is characterized by a close relationship with the surrounding natural environment. Being located in the floodplain area of the river Po, it is strongly exposed to flood risk phenomena. The Lambertini Castle, set in a residential city context, presents an architecture halfway between a medieval fortress and a historical building, with numerous reconstructions and significant shortcomings. Its interest in the project is linked to the recovery of the existing historical building and its re-functionalization. Palazzo Schifanoia, a Renaissance residence in the historic centre of Ferrara, witnessed earthquakes from 1570 to 2012. During the 2012 earthquake, all of its vulnerabilities re-emerged with the reopening of existing and historic lesions. The three case studies open a new window on how seismic risk on historical buildings can be technologically assessed, setting conditions for a better prevention policies.

Basic info	
Surface	Not relevant for the cases in subject: surfaces assessed are limited to the three buildings
Population	Not applicable
Population benefiting from forest fire protection pilot activities	Not applicable

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- fire/earthquake, short description of pilot activity, number of participants and equipment used (max 500 chars)
The activity is part of Work Package 4, and its objective was to develop and apply an optimized 3D digital survey procedural flow for the digital documentation of the built cultural heritage exposed to hazardous conditions. The TeckneHub (UNIFE) survey team performed the integrated documentation activities. Responding to the specific landscape-architectural characteristics of the pilot cases, integrated methods and procedures were applied to obtain morphometric models with an adequate level of reliability, usability and effectiveness. The leading integrated technologies used were terrestrial and area photogrammetry and laser scanner survey. In the cases of the Stellata Fortress and of Palazzo Schifanoia, some dozens of relevant architecture students have been involved, as on field demonstrations activity.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
The activities on the three pilot cases were implemented by the TeckneHub survey and documentation team of the University of Ferrara - Department of

Architecture. The team was coordinated by the scientific responsible, Prof. M. Balzani. It involved:

- on the side of the University of Ferrara, two field operators for the acquisition phase, four operators for processing and interpreting the acquired data, and two for parametric modelling in the HBIM environment according to the scan-to-bim procedure;
- on the side of the Agency for Reconstruction, two members of the technical structure (Architect, Engineer), managing and coordinating the entire work process.

Number of Civil Protection volunteers and professionals participated in pilot activity implementation

The topic is not relevant to PP10, as it has been not foreseen to buy equipment (only the renting of survey drones) while, as by being the activity a real, experimental, "pilot", the involvement of Civil Protection and/or Firefighters has been considered not relevant, for the moment. Future, post Firespill, communication/training activities will be planned by the Agency in view of a proper diffusion and re-use of the outputs produced.

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to the Deliverable 4.2.1.)

(max 500 chars)

Deliverable	Number of deliverables
☐ n° 6 Specialized trainings/drills for firefighters and CP units (1 training per involved PP). *Firefighters and civil protection units will organize specialized trainings/drills (fire and earthquake) by using and testing the equipment that will be purchased by involved PPs*	Please see previous answer.
X n° 1 Cross border training of experts (e.g. engineers, architects, cultural heritage experts, etc.) and creation of	A two – steps Cross Border Training has been held at:

lists of experts in earthquake emergency management. (PP10)	- the Ferrara Restoration Fair (June 2022) - at the University of Ferrara (March 2023), involving the LP and PP6 as well as stakeholders from relevant institutions from Italy and other countries (incl. Brasil, Tk, etc.)
X n° 3 case studies in the earthquake area identified and monitored (PP10)	The three pilot cases of Rocca Possente (Stellata Fortress), Lambertini Castle and Palazzo Schifanoia, all in the Ferrara province (eligible for ITA-CRO), previously described
□ n° 10 Instrumentally SPBs monitored (PP2)	

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
The primary deviation to be stressed deals with the impossibility of a direct involvement in Firespill of the regional Civil Protection structure, as during all the first phase of te project was ongoing a process of deep re-organization, WP5 sensitization and training activities. On the other hand, as the were no need neither for the Agency nor for the University of Ferrara, to buy new, specific equipment to implement the pilot cases (but only the renting of a drone survey service), "demonstration" activities of any significance, weren't making any particular sense. Another – positive – deviations to be underlined are: - the extension of the scale of the activity linked with the pilot case of Palazzo Schifanoia: in that case the survey was aimed to preserve one of the essential decorative apparatuses of the Ferrara and Italian Renaissance. In the aftermath of the 2012 earthquake, the palace reaffirmed its vulnerability by reopening existing and historicized lesions that bear witness to the earthquake that had already struck the city in 1570. The building, starting from its 14th-century core, has undergone several modifications and conservative restorations throughout its life cycle, which

today restore it as a stratified palimpsest. All these characteristics led to extend the the Survey Campaign to the most valuable interiors (initially not included), that has been performed using photo modelling processes using a full-frame terrestrial camera with topographic network support points to document the metric-formal and cultural-historical significance of the building's stratigraphic grammar. In addition, the predominantly frescoed surfaces obtain metric values and color data to compensate for and complete the overall point cloud model.

- the outline of a digital platform for an online post event damage assessment, overcoming the old – standard – practice of a (litarlly) hand-made damage survey, performed with on field, paper-based, survey. The new experimental system addresses in particular the needs for the assessment of cultural heritage (historical building, churches, theatres) and proved of high level of interest for the Agency, with a good potential for practice transfer. The Agency therefore decided to support, with own financial resources, a post-R&D work phase, to make the tool fully operational.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake hazard)?
(max 500 chars)
The Emilia-Romagna approach to managing processes based on multi-level governance, i.e. on the ability to network institutional and non-institutional actors at different levels, fostering interaction, made it possible to activate integrated digital documentation processes and test their effectiveness and optimization on the three case studies to define standard survey and damage mitigation protocols for cultural heritage exposed to risk. In this scenario, therefore, it is the development of an integrated digital helpful platform for the operators in the chain involved in risk management, configured as a collaborative environment for collecting, aggregating and sharing data from different acquisition sources. In parallel to these results, the systematization of the post-disaster governance experience (held within WP3 White Paper on governance) led to modelling a way for institutional and public-private cooperation in managing emergencies and post-emergencies, with a view to new, innovative, development paths for the territories hit by disasters.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
PP10 (presently addressing a new, climate-related very vast flood) considers that the approach to governance, adopted to face the post-earthquake emergency management and reconstruction, is well suitable, if not as a real "model" at least as a good practice of inter-institutional cooperation. From a CBC point of view, not only the pilot activities but the entire experience carried by the Agency across WP3, 4 and 5, may represent an interesting approach, based upon a "package" of activities that involve systematization of past experiences (WP3), applied R&D for damage survey and building restoration according to seismic safety criteria (WP4) and direct, on-field sensitization and training activities, involving new generations (WP5).

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The Agency considers that the integrated approach adopted to the problems posed by risk management (see previous paragraph), can be used to improve significantly the territorial resilience ("adaptability") of Emilia-Romagna and other partner territories, to face not only seismic risk but also several territorial security challenges posed by climate change mitigation/adaptation. This is the most relevant "lesson learned" from Firespill, to be re-used within other contexts reclaiming advanced risk management. From the point of view of the University of Ferrara, the R&D trial outlined a matrix of digital survey evaluation categories closely related to the survey purpose and the necessary data to be acquired, on which to develop an optimised and integrated survey protocol for buildings exposed to natural and anthropic risk situations to develop HBIM information models as gestation and monitoring tools. The multi-criteria survey matrix aims to be an operative tool to guide the technical operators to define standard optimised survey protocols and a validation tool for the bodies responsible for conserving and protecting cultural heritage. In this direction, an integrated and collaborative digital platform was developed.

PP2 - EUROPE POINT CONSORTIUM

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
The territory of the Province of Teramo is dominated to the east by the Adriatic Sea and to the west by the Apennine mountain range, with its highest Gran Sasso peak. It is divided latitudinally by the hills and valleys that start from the Apennines and descend to the coast. The short distance between the Adriatic Sea (0 m.a.s.l.) and the snow-capped peaks of the Gran Sasso (3,000 m.a.s.l.) characterizes it. It has about 80,000 hectares of forests, thus distributed ▪ hilly forest (200-600 m.a.s.l.): invasion broad-leaved trees, hornbeam, ash, poplar-willow grove, downy oak (predominant), Mediterranean conifers ▪ low mountain forest (700-1300 m.a.s.l.): chestnut, Turkey oak, beech (predominant), conifers ▪ high mountain forest (1400-1800 m.a.s.l.): beech About 6500 ha (2007-2012) of surface crossed by fires, where over 4,000 were forests (Wild Fire) and the remaining were marginal areas of hills and mountains, abandoned by agriculture (Interface Fires).

Basic info	Province of Teramo
Surface	1,948 square kilometres
Population	298 280 inh. (2023)
Population benefiting from forest fire protection/seismic pilot activities	128 000

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- fire/earthquake, short description of pilot activity, number of participants and equipment used (max 500 chars)
Advanced specialization course for C.P. Volunteers for the qualification as "AIB Operators (Anti-Forest Fire) enabled to extinguish". The course, in compliance with Annex A of the Abruzzo Region D.G.R. No. 383/2021 was divided into 22 hours of theoretical training and 8 hours of theoretical-practical training in addition to the final exercise. 50 C. P Volunteers belonging to 15 Volunteer Associations of the Province of Teramo took part in the course and 41 were qualified.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
The Team for the training phase, consisting of Theoretical and Theoretical-Practical lessons, were carried out by teachers from: Volunteer trainers accredited to the P.C. Department, Officers of the Carabinieri Forestry, Environmental and Agri-food Unit Command (CUFAA) Officers of the National Fire Brigade (CNVFF). Assisted by the external expertise Project Coordinator and Civil Protection expert, as well as by tutors provided by the Volunteer Association of P.C Cives
Number of Civil Protection volunteers and professionals participated in pilot activity implementation
Theoretical and Theoretical-Practical lessons: 60 Civil Protection volunteers 5 professionals Final exercise: Professionals from

• Civil Protection Agency of the Abruzzo Region (Supervision);
• Provincial Command of the Teramo Fire Brigade (Coordination);
COPE Project coordinator
15 Volunteer Associations of C.P. con un totale di 80 volontari

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to Activity 4.2.1. deliverables)

(max 500 chars)

Deliverable	Number of deliverables
☐ n° 6 Specialized trainings/drills for firefighters and CP units (1 training per involved PP). *Firefighters and civil protection units will organize specialized trainings/drills (fire and earthquake) by using and testing the equipment that will be purchased by involved PPs*	N°1 Specialized training and drill for the training and qualification of 41 Civil Protection Volunteers belonging to 15 Volunteer Associations of the Province of Teramo as "AIB Fire Extinguishing Qualified Operators" All the equipment used during the exercise was owned by the Associations and/or made available by the National Fire Brigade.
☐ n° 1 Cross border training of experts (e.g. engineers, architects, cultural heritage experts, etc.) and creation of lists of experts in earthquake emergency management. (PP10)	
☐ n° 3 case studies in the earthquake area identified and monitored (PP10)	
☐ n° 10 Instrumentally SPBs monitored (PP2)	na

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.

(max 500 chars)
The foreseen three parallel courses were unified: The foresee firefighting DPIs were not purchased The n° 10 Instrumentally SPBs monitored was not implemented

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/maritime hazard)?
(max 500 chars)
The implemented pilot activity has significantly contributed to the improvement of the involved territory's resilience to forest fire hazards by enhancing the firefighting skills of volunteers, increasing preparedness levels, establishing a localized response capability, promoting community engagement and awareness, and fostering collaboration among Volunteer Associations.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
The undertaken pilot activity is expected to bring about improved firefighting capabilities, strengthened cross-border collaboration, enhanced emergency response preparedness, knowledge transfer, and positive impacts on local communities in both Italy and Croatia. The degree of transferability of the results must take into account the two different Legal and Regulatory Frameworks and Training and Certification Standards.

Sustainability of pilot activities (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
To ensure the sustainability of the deliverables several measures can be taken: Continuous Training and Skill Development: Provide ongoing training and skill development opportunities for the volunteers. Equipment Maintenance and Replacement: Ensure that the volunteers have access to well-maintained firefighting equipment and gear. Collaboration with Local Authorities: Foster strong partnerships and collaboration.

Volunteer Recognition and Incentives to maintain their motivation and dedication.

PP5 – ZADAR COUNTY

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
Zadar County is situated in the northern part of the Dalmatia region. Zadar County has karst topology. It's one of the largest counties in Croatia - with 3.641,91 km2 land territory and 2.845 km2 of sea surface, the county takes up 6.5% of the total land territory and 12.4% of the total sea surface in Croatia. Zadar County is populated by 170.017 inhabitants which makes up for 4% of total number of inhabitants in Croatia. By its administrative and territorial constitution, Zadar County consists of 28 municipalities and 6 cities. City of Zadar is the administrative, economic and educational center of the County. Zadar, with a 3000 years long history, is also the fifth largest city in Croatia and the third on the Croatian part of Adriatic coast. At average there are approximately 508 wild fires per year with more than 2.362.189m2 burned area yearly. Zadar County is an area of moderate seismic activity. During the period of 130 years 22 intensity level 6 or higher earthquakes occurred.

Basic info	Zadar County
Surface	6486 km2
Population	170 017
Population benefiting from forest fire	28 municipalities and 6 cities: Zadar, Biograd, Nin, Pag, Obrovac, Benkovac, Bibinje, Galovac, Gračac, Jasenice, Kali, Kolan , Kruševo, Kukljica, Lišane Ostrovičke, Novigrad,

protection pilot activities	Pakoštane, Pašman, Petrčane, Polača, Poličnik, Posedarje, Povljane, Preko, Privlaka, Ražanac, Sali, Stankovci, Starigrad, Sukošan, Sveti Filip i Jakov, Škabrnja, Tkon, Vir, Vrsi, Zemunik Donji

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- fire/earthquake, short description of pilot activity, number of participants and equipment used (max 500 chars)
Zadar County PP5, as part of the implementation of the FIRESPILL project, organized a demonstrative field firefighting exercise "Evacuation of tourists and firefighting in Zaton Holiday Resort". At the end of the fire drill, an exhibition of the equipment of the county forces and emergency services was held - Ambulance, Police, Firefighters, Croatian Mountain Rescue Service and the Croatian Red Cross. As part of the exercise, the readiness of the emergency services for thematic natural disasters was tested. The topic of the exercise was "fires in open space with evacuation of users/residents" The implementation of the pilot activities included the activities of civil protection services as well as communication with the public, all with the aim of strengthening the system. The exercise was of a field nature with elements of showing individual activities of the operational forces, and is based on the assumption of the possible occurrence of a real event. The main focus of the exercise - checking the activities: - checking the flow of communication activities, - establishing a chain of command, - rescuing and caring for the injured, - operational activities of the fire brigade (JVP Zadar, DVD Pljusak-Nin, DVD Privlaka and the firemen of the tourist resort Zaton, the Red Cross and the headquarters of civil protection). Teams that participated in drill were: 11 members of Public firefighting department Zadar,

3 volunteer firefighting department Privlaka , 3 volunteer firefighting department Nin , 3 Emergency medicine team, 3 Police members, 3 Red Cross members, 1 person from City of Nin and 5 members form Turisthotel – Zaton Holiday resort.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
Teams that participated in drill were: 11 members of Public firefighting department Zadar, 3 volunteer firefighting department Privlaka , 3 volunteer firefighting department Nin , 3 Emergency medicine team, 3 Police members, 3 Red Cross members, 1 person from City of Nin and 5 members form Turisthotel – Zaton Holiday resort.
Number of Civil Protection volunteers and professionals participated in pilot activity implementation
Professionals: 23 11 professional firefighters, 3 Medical emergency team, 3 Police department members, 1 person from City of Nin and 5 members form Turisthotel – Zaton Holiday resort. Volunteers: 9 3 Red cross members 3 volunteer firefighting department Privlaka ,

3 volunteer firefighting department Nin

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to Activity 4.2.1. deliverables)
(max 500 chars)

Deliverable	Number of deliverables
□ n° 6 Specialized trainings/drills for firefighters and CP units (1 training per involved PP). *Firefighters and civil protection units will organize specialized trainings/drills (fire and earthquake) by using and testing the equipment that will be purchased by involved PPs*	1
n° 1 Cross border training of experts (e.g. engineers, architects, cultural heritage experts, etc.) and creation of lists of experts in earthquake emergency management. (PP10)	0
□ n° 3 case studies in the earthquake area identified and monitored (PP10)	0
□ n° 10 Instrumentally SPBs monitored (PP2)	0

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
We had problems with the acquisition of specialized equipment, the acquisition of which was repeated several times.

The goal was to acquire the specialized equipment before the start of the fire drill, but due to the mentioned problems, it was acquired a few months later. The delivery period itself was very long due to disruptions in the market, but in the end the equipment was successfully delivered and handed over for use.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake hazard)?
(max 500 chars)
The implementation of the pilot activities contributed immensely to disaster safety. the exercise itself was held in the largest tourist resort in Zadar County. That settlement also has a large pine forest, which represents a great risk for all users of the settlement. the conducted exercise as well as the acquired equipment increased the readiness of emergency units that are ready and trained to prevent and overcome major threats.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
Through the implementation of Work cafe meetings, the emergency services received information, as well as through the duration of the project they gained contacts for further exchange of experiences, people and equipment with the aim of better protection and reducing the risk of threats.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
Zadar County, as the holder of the Protection and Rescue Headquarters system in the county, will continue to work on equipping emergency units, as well as regularly organizing exercises with the aim of maintaining readiness and increasing safety and preventing disasters that may arise due to the influence of people and nature. The equipment that was acquired through the pilot activity was assigned to the emergency services for use. The equipment was received by: Zadar Public Fire Department, Croatian Mountain Rescue Service, Croatian Red Cross County Association and the Zadar County Institute of Emergency Medicine.

PP8 – DEVELOPMENT AGENCY OF ŠIBENIK-KNIN COUNTY

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
Šibenik-Knin County is situated in the central part of the northern Dalmatia region. Geographic limits of the area are: * N: 46.8° N * S: 42.1° N * W: 13.1° E * E: 19.9° E Šibenik-Knin County has karst topology. County covers surface area of 5670 km2, of which mainland area covers 2994 km2 (53%). Thirteen natural asset areas are protected in Šibenik-Knin County: two national parks, parts of two nature parks, two nature monuments and seven significant landscapes. The total surface area of protected natural areas in Šibenik-Knin County is 577,81 km^2, i.e. 10,2% of its total surface area (land and sea). At average there are approximately of 770 wild fires per year with more than 60.000.000 m^2 burned area yearly. Šibenik-Knin County is an area of moderate seismic activity. The area of Šibenik was particularly seismically active between 1923 and 1926, when a large number of moderate earthquakes (magnitude less than 5,3) occurred.

Basic info	Šibenik-Knin County
Surface	5670 km^2
Population	96 624
Population benefiting from forest fire protection pilot activities	Whole County population

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- fire/earthquake, short description of pilot activity, number of participants and equipment used (max 500 chars)
The pilot activity conducted as part of the FIRESPILL project was a fire simulation in an enclosed space. Over 40 firefighters, more than 10 journalists, and key stakeholders, including the Šibenik-Knin County Prefect, the Mayor of Vodice, and the Director of the Development Agency, participated in the event. The main focus was on showcasing the capabilities of the advanced command and communication vehicle, which played a crucial role in coordinating the emergency services on the field. Equipped with information and communication technologies, the vehicle featured TETRA stations, a generator, a radio repeater, satellite internet access, and a telescopic mast camera, all aimed at enhancing operational efficiency in firefighting efforts. Additionally, specialized equipment for firefighting in enclosed spaces, along with a fire simulator, were demonstrated. Other firefighting equipment, particularly for high-altitude operations and rescue missions, was also exhibited. The pilot activity aimed to improve the response capacities of emergency services in tackling natural and human-induced disasters, contributing to increased safety levels in the Šibenik-Knin County and beyond.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
The implementation of the pilot activity involved a team of professionals and volunteers from various emergency services and organizations. The exercise was led by Mr. Darko Dukić, the County Commander of the Firefighters Association. The demonstration of high-altitude and underground rescues was performed by the firefighters from the Public Fire Brigade (JVP) Vodice, while the firefighters from JVP Knin showcased their skills in rescuing individuals from a simulated fire in an enclosed space. Overall, the team composition consisted of Mr. Darko Dukić, County Commander of the Firefighters Association, who led the exercise; firefighters from JVP Vodice, who performed high-altitude and deep-water rescues and firefighters from JVP Knin, who demonstrated rescue operations in an enclosed space.

Number of Civil Protection volunteers and professionals participated in pilot activity implementation
Over 40 professional firefighters from Public Fire Brigade Vodice and Public Fire Brigade Knin.

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to Activity 4.2.1. deliverables)	*(max 500 chars)*

Deliverable	**Number of deliverables**
☐ n° 6 Specialized trainings/drills for firefighters and CP units (1 training per involved PP). *Firefighters and civil protection units will organize specialized trainings/drills (fire and earthquake) by using and testing the equipment that will be purchased by involved PPs*	1 Specialized training/drill for firefighters and CP units
☐ n° 1 Cross border training of experts (e.g. engineers, architects, cultural heritage experts, etc.) and creation of lists of experts in earthquake emergency management. (PP10)	n/a
☐ n° 3 case studies in the earthquake area identified and monitored (PP10)	n/a
☐ n° 10 Instrumentally SPBs monitored (PP2)	n/a

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
During the implementation of the pilot project activities, there was a deviation from the original plan regarding the participation of Civil Protection Volunteers in the simulated search and rescue operations. Instead of involving a minimum of 30 Civil Protection Volunteers as initially intended, the training sessions were attended solely by firefighters from the Šibenik-Knin County Firefighting Brigades. The reason for this deviation was the decision to prioritize the involvement of firefighters due to their higher level of standardization and training. By focusing on firefighters, the pilot project aimed to ensure a higher level of coordination and effectiveness in the simulated search and rescue operations, and streamlined communication from the command-communication vehicle. This approach aimed to facilitate faster, more precise, and efficient deployment of the participating organizations.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake hazard)?
(max 500 chars)
The implemented pilot activities made significant contributions to enhancing the resilience of the involved territory to the specific hazard of fire. Through the simulated search and rescue operations, coordinated from the command-communication vehicle, the pilot activities focused on improving the response capabilities and preparedness of the Šibenik-Knin County Firefighting Brigades. By conducting training sessions in scenarios such as post-earthquake rescue and rescue from wildfires, the pilot activities aimed to strengthen the capacity of the participating organizations in handling these specific hazards. The exercises provided an opportunity to test and refine their response strategies, coordination protocols, and communication systems in realistic simulated environments. The involvement of specialized personnel and the utilization of advanced equipment in the command-communication vehicle facilitated more efficient and precise deployment of the ground

forces. This enhanced coordination and communication among the involved organizations, leading to improved overall response times and effectiveness in addressing fire-related hazards.

The pilot activities also fostered the development of standardized procedures and protocols, promoting a higher level of resilience in the face of fire hazards. By enhancing the training and operational capabilities of the participating organizations, the pilot activities contributed to a more coordinated and effective response to fire emergencies, minimizing the potential impact on the involved territory and its residents.

While the exact details and specific outcomes of the pilot activities may vary, the overall objective was to enhance the resilience of the involved territory to fire hazards by strengthening response capacities, improving coordination, and refining operational procedures.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
The pilot activities were part of the FIRESPILL project, which aimed to stimulate improved cross-border emergency response and disaster prevention by increasing the level of safety. The project involved collaboration between multiple Croatian and Italian partners, emphasizing the importance of cross-border cooperation in addressing common challenges. By implementing the pilot activities, the project facilitated the exchange of knowledge, expertise, and best practices between the participating organizations from different regions. The training sessions, simulations, and utilization of advanced equipment showcased effective coordination and communication mechanisms, promoting a standardized approach to emergency response. The lessons learned and successful strategies developed through the pilot activities can serve as valuable references for other CB territories facing similar hazards. The transferability of the results lies in the shared understanding of emergency response protocols, the adoption of advanced equipment, and the establishment of efficient communication networks.

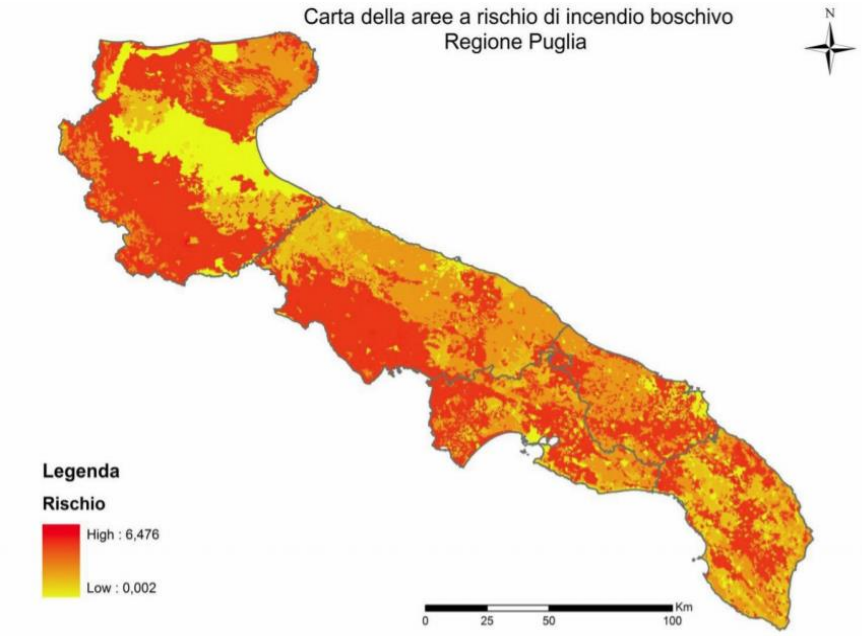
Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)

Sustainability of pilot deliverables will be ensured through a robust governance model, resource allocation, capacity building, maintenance, stakeholder engagement, and monitoring/evaluation. This comprehensive approach guarantees long-term support and effectiveness.

PP9 – PUGLIA REGION – CIVIL PROTECTION DEPARTMENT

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
In Puglia Region there are 161 municipalities with high and medium fire risk. The regional area has a surface of 19.350 square kilometers. Puglia regional territory is mostly flat (about 53% of region area), hills occupy the 45% of regional area and mountains only the 1%. Forest area represents about 10% of the Puglia Region area. In Puglia there are 179.040 hectare of forest. The half of forest area is in the north of Puglia Region, especially in the province of Foggia. The period of greatest criticality for forest fires is between the 15th of June and the 15th of September when there is a very high temperature. Based on this the pilot site for the implementation of the specialized drills for firefighters and CP units Municipality of San Giovanni Rotondo, city located in the province of Foggia (North of Puglia Region). The specialized trainings of the CP units took place in the headquarters of Civil Protection Section in Bari.

Basic info	Puglia Region in terms of fire risk
Surface	179.040 hectare of forest
Population	Not available (population may be can be involved in interface fires)
Population benefiting from forest fire protection pilot activities	161 municipalities with high and medium fire risk are the beneficiaries of the project activities implemented; 2.701.499 inhabitants



Mappa rischio incendi

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- fire/earthquake, short description of pilot activity, number of participants and equipment used (max 500 chars)
The specialized trainings took place at the headquarters of the Puglia Civil Protection Section and was divided into two training moments: on 23th May 2022 theoretical training on the technical characteristics of the AIB water tanks, mobile and modular with AIB frame, water storage tanks, which can be used for the supply of vehicles during active struggle operations and on 26th May 2022 was organized a practical session with the equipment purchased in the frame of the FIRESPILL project, characterized by the assembly of the tanks, the filling of the tanks and the water supply of the AIB vehicles. The specialized exercise was implemented on 27 May 2022, at the Gargano Airfield, based in the Municipality of San Giovanni Rotondo (FG).

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
Vito Augusto Capurso - Responsible of volunteer management and communication Simona Ciavatta - Volunteer management and communication - Domenico Donvito - Responsible of risk forecasting and prevention - Lucio Pirone - Responsible of COR (Regional Operative Centre) Lorenzo Natrella - COR (Regional Operative Centre) - Gennaro Ciliberti (Responsible of Regional Mobile Column, Logistics and Warehouses) - Giuseppe Verdiani –Technician of the operations room of Regional Civil Protection Department - COR (Regional Operative Centre) - Francesco Vito Ronco - Responsible for ERD Funds at Regione Puglia - Civil Protection Department.
Number of Civil Protection volunteers and professionals participated in pilot activity implementation
During the activities will be involve the representatives of the following associations of volunteers: CP volunteers of Lecce Province, CP volunteers of Bari Province, CP volunteers of Barletta-Trani Province, CP volunteers of Foggia Province, CP volunteers of Brindisi Province and the European Modul association. The total number of the participants was 37 volunteers.

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to Activity 4.2.1. deliverables)	
(max 500 chars)	
Deliverable	**Number of deliverables**
X n° 1 Specialized training/drill for firefighters and CP units *Firefighters and civil protection units will organize specialized trainings/drills (fire and earthquake) by using and testing the equipment that will be purchased by involved PPs*	Deliverable 4.2.1 Specialized training/drill for CP Unites of Puglia Region
☐ n° 1 Cross border training of experts (e.g. engineers, architects, cultural heritage experts, etc.) and creation of lists of experts in earthquake emergency management. (PP10)	

□ n° 3 case studies in the earthquake area identified and monitored (PP10)	
□ n° 10 Instrumentally SPBs monitored (PP2)	

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
There were no deviations or problems in the implementation of the activity

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake hazard)?
(max 500 chars)
These activities have allowed both to improve the skills of volunteers to intervene in cases of emergencies related to fires and to increase the instrumentation available for civil protection for intervention in these emergencies. Moreover, thanks to the practical section of the activities held in San Giovanni Rotondo, where other bodies involved in the intervention, such as the fire brigade, were tested the methods of intervention and coordination of the bodies involved and volunteers. All this has allowed an improvement in the response of civil protection services in cases of fires.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
The activities, in detail both theoretical and practical training can be implemented in other areas of the Apulian territory ensuring a multiplier effect of the project results. As well as the acquired equipment ensure a strengthening of the equipment available to the Civil Protection.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)

(max 500 chars)
The sustainability of this deliverable is guaranteed by the fact that training, the coordination and the intervention during fires in Puglia territory is one of the institutional objectives of the Civil Protection Section of Puglia Region. For this both the equipment and the model of training activity will be valorized by the Civil Protection Section of Puglia Region, guaranteeing the sustainability of the results and the transfer of it in other territories of Puglia region.

PP15 – UNIVERSITY OF PADOVA

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
The territory of the Veneto Region is dominated to the east by the Adriatic Sea and the Friuli-Venezia Giulia Region, and to the north by the Alps - Dolomites and by the Provinces of Trento and Bolzano. The Lombardia Region and the Emilia Romagna Region are respectively located on the western and southern borders. From the geomorphological point of view the Veneto Region is mainly subdivided into two parts: the northern mountainous area (many peaks over 3000 m a.s.l.), coinciding with the Province of Belluno, and the southern plain area, coinciding with the Po Plain and Piave Valley where the other six Provinces (Treviso, Venezia, Padova, Vicenza, Verona and Rovigo) are located. The norther part of the Region, on the border between the Province of Belluno and Treviso, a series of active seismic faults are present, and they caused some significant seismic events in the last centuries.

Basic info	Veneto Region
Surface	18.345 km^2
Population	4,848 million inh. (2022)

Population benefiting from forest fire protection pilot activities	4,848 million inhabitants

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- fire/earthquake, short description of pilot activity, number of participants and equipment used (max 500 chars)
1) Identification of theoretical and computational approach to study earthquake-fire interaction effect in prestressed concrete, steel, masonry and wood structures. Investigation of a significant case study for each typology (static condition, earthquake and earthquake-fire). 2) Seismic risk assessment of existing bridges in Italy, subject to different deterioration phenomena. Performance of visual surveys for damage detection and assignment of a Risk Rating wrt seismic actions to each case study. Post-processing of results of in situ activities to capture recurring condition states and vulnerability factors. Implementation of a survey on seismic risk addressed to population. 3) 1 training course on "Technical Triage for the Evaluation and Treatment of Structural Criticality from Seismic Events" for firefighters and 1 workshop on “Operational indications for the connection and coordination of impact assessment and damage survey activities and post-seismic habitability of buildings” for local government employees, civil protection and AeDES qualified technicians.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
The scientific coordination of pilot activities is under the responsibility of: - Prof. Carmelo Maiorana, Full Professor and Scientific coordinator of the project - Prof. Giovanna Xotta, Associate Professor - Prof. Carlo Pellegrino, Full Professor - Dr. Mariano Zanini, Fixed-term Researcher Rtd B - Dr. Lorenzo Hofer, Fixed-term Researcher Rtd A Considering the issue of research activities and its usual fields of research, ICEA Department organized the team as below:

- 03 engineers, recruited as external experts, were in charge of identification of a theoretical and computational approach for the study of the earthquake-fire interaction in reinforced concrete, steel, masonry and wood structures.
- 08 internal staff of the University of Padua (1 fixed-term researcher, 3 technicians/laboratory workers, 4 PhD students) carried out on-site activities to collect data about the role of deterioration on the overall seismic risk of existing road bridges
- 01 company in charge of visual inspection with drones
- 01 company in charge of implementing a sociological research to investigate people's behaviour in the event of an earthquake

Are also associated to the implementation of pilot activities:

- *Dipartimento dei Vigili del Fuoco, del Soccorso pubblico e della Difesa civile del Ministero dell'Interno - Direzione Interregionale VV.F. Veneto e Trentino Alto Adige*. This organisation was involved in implementing the training activity "Technical triage for the assessment and treatment of structural criticality from seismic events"
- *Regione Veneto, Direzione Protezione Civile, Sicurezza e Polizia Locale.* The regional public body was involved in implementing the workshop on "Operational indications for the connection and coordination of impact assessment and damage survey activities and post-seismic habitability of buildings"

Administrative tasks were mainly performed by Dr. Valérie Darjo (as ICEA administrative staff), in cooperation with Contract and Financial Units and ICEA Department board.

Number of Civil Protection volunteers and professionals participated in pilot activity implementation

Took part to pilot activities:

- 51 firefighters from Veneto Region took part to the training "Technical triage for the assessment and treatment of structural criticality from seismic events"
- 120 local government employees, heads of the "damage assessment and habitability survey" teams of the civil protection coordination operational centers, AeDES qualified technicians. They took part to the workshop on "Operational indications for the connection and coordination of impact assessment and damage survey activities and post-seismic habitability of buildings" (Padua, 27/06/2023)

TF-2 OIL SPILLS AND OTHER MARINE HAZARDS PILOTS DEPLOYMENT-EVALUATION

PP9- PUGLIA REGION - CIVIL PROTECTION DEPARTMENT

Geographical area
Brief description of involved area and its substance in terms of oil spills and other marine hazards (max 1000 chars)
Puglia Region is characterized by 1.040 km of coastline along the Adriatic and Ionian seas. In terms of linear extension, the Puglia coast represents 14% of the overall Italian coast with 68 municipalities and 7 physiographic units (UF). The morphology of the Puglia coast includes wide sandy beaches and rocky cliffs with diffuse coves. The sandy coasts are often protected by vegetated dune cordons and Posidonia oceanic. Given the morphology and the length of the Apulian coasts, the region is strongly exposed to the risk of oil spill for which the project activities have been characterized by the purchase of specific equipment, the implementation of risk forecasting and mapping models and the testing of such tools during a specialized exercise held on 5th May 2023 in Marina di Lesina (Foggia Province). The main stakeholders and decision makers at regional and national level were involved in this activity and a regional conference was organized on 14 May 2023 in Bari to present all the results.

Basic info	
Surface	1.040 km of coastline
Population	Not available (population may be can be involved in oil spills propagation)

Population benefiting from oil spills and other marine hazards pilot activities	67 municipalities with the population of 1.696.706 inhabitants, with high and medium risk in terms of oil spills and other marine hazards, are the beneficiaries of the project activities implemented

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- oil spills/marine hazards, short description of pilot activity, number of participants and equipment used (max 500 chars)
The Equipment purchased and used during the specialized exercises were: 1. hydraulic floating panniers; 2. supporting vessels for separating hydrocarbon; 3. floating containers for separated hydrocarbon; 4. absorbent and unsinkable materials. Related to the activity of **Oil spill operational prototype and hazard mapping capacities developed:** 1. PP9 ensured the collection of ship traffic and all the Adriatic data useful for this activity, the implementation of the WITOIL platform and a workshop to train the experts of PPs and regional staff on it. For the **Enhanced Simulation models for oil spills** PP9 carried out**:** 1. Fully physics in surface spill representation, 2. Validated of data; 3. Tested by drifters; 4. HPC-based stochastic simulations in support of risk assessment. **-** The **specialized exercise** was carried out on 5 May 2023 in Marina di Lesina (North of Puglia Region), in which the spill has been simulated. The simulation event was a distance from the coastline of 1 - 2 km with the involvement of coastal guards, the National Department of the Civil Protection.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)

Vito Augusto Capurso - Responsible of volunteer management and communication Simona Ciavatta - Volunteer management and communication - Domenico Donvito - Responsible of risk forecasting and prevention - Lucio Pirone - Responsible of COR (Regional Operative Centre) Lorenzo Natrella - COR (Regional Operative Centre) - Gennaro Ciliberti (Responsible of Regional Mobile Column, Logistics and Warehouses) - Giuseppe Verdiani –Technician of the operations room of Regional Civil Protection Department - COR (Regional Operative Centre) - Francesco Vito Ronco - Responsible for ERD Funds at Regione Puglia - Civil Protection Department.
Number of Civil Protection volunteers and professionals participated in pilot activity implementation
During the specialized exercise participated 30 representatives of CP unites volunteers, internal staff of the Civil Protection Section of Puglia Region, National Civil Protection Department, NGO Legambiente, ARPA PUGLIA, ISPRA, ASL Foggia, Coastal Guards and experts (CMCC).

Outputs of pilot activity (please mark implemented pilot activity in relation to Activity 4.3.1. deliverables)

(max 500 chars)

Deliverable	Number of deliverables
☐ n° 1 Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea developed (PP4)	
☐ n° 1 Oil spill operational prototype and hazard mapping capacities developed (PP9)	D. 4.3.1 Oil spill operational prototype and hazard mapping capacities developed
☐ n° 2 Enhanced simulation models for oils spills and other marine hazards (PP9, PP11)	D.4.3.1 Enhanced simulation models for oils spills and other marine hazards
☐ n° 5 Specialized exercises implemented (with usage of personal protective equipment and specialized equipment floating	D. 4.3.1 One specialized exercise implemented with usage of personal protective equipment and specialized equipment

booms, boats, drones.) (1 exercise per PP)	

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
There were no deviations or problems in the implementation of the activity

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/maritime hazard)?
(max 500 chars)
Thanks to the acquired equipment and the training course implemented the Puglia region has improved the response capabilities in the event of accidents related to the oil spills. In addition, the outputs "**Oil spill operational prototype and hazard mapping capacities developed"** and the **"Enhanced Simulation models for oil spills"** will allow all project partners, and the Adriatic regions in general, to predict the direction of the oil spills on the basis of climate data and also to simulate the propagation speed, ensuring that civil protection services can take timely action.

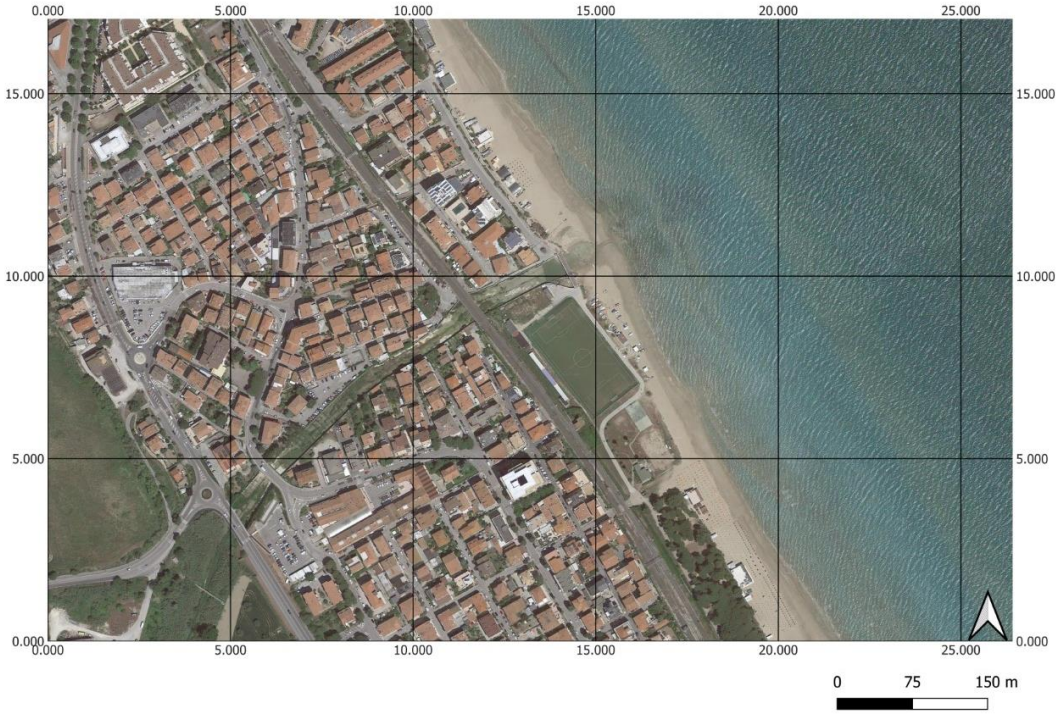
What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
In the two activities "**Oil spill operational prototype and hazard mapping capacities developed"** and **"Enhanced Simulation models for oil spills"** all project partners were involved in the implementation phase of the activities, through the organization of technical meeting periods, and in the training activity implemented by PP9 and held online for the project partners on how to use these two tools. Moreover, thanks to the implementation of the WITOIL platform, these tools are available to project partners, their stakeholders and other civil protection bodies of the programme territory.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The sustainability of these deliverables is guaranteed by the fact that training, the equipment purchased and specialized exercise carried out, could be replicate and use in other territory of Puglia Regions. Moreover, the prototype and simulation models included in the WITOIL Platform will be used by the internal staff of Civil Protection section of the Puglia Region in the frame of its institutional activities. For this both the equipment and outputs will be disseminated by the Civil Protection Section of Puglia Region, guaranteeing the sustainability of the results and the transfer of them in other territories of the Puglia region.

PP1 - ABRUZZO REGION

Geographical area
Brief description of involved area and its substance in terms of oil spills and other marine hazards (max 1000 chars)
The Abruzzo coastline is about 130 km in length. It is rather heterogeneous, with stretches characterized by low and sandy coastline and stretches characterized by high and rocky coastline. The coastal strip extending from the north border (mouth of the Tronto River) to Ortona's headland is characterized as a substantially low-lying coastline. The southern stretch, from Ortona to the border with the Molise Region (mouth of the Trigno River), is characterized by a high, rocky coastline interspersed with low and sandy stretches. The length of the substantially undeveloped coastline is about 25 km (20.7 percent of the total extension of the regional coastline), while the length of the low coast corresponds to about 98 km (79.3% of the total). The area along the coast identified for the simulation of the beaching and consequent activities intended for the removal of the pollutant product identified falls in the Province of Teramo and in particular in the territory of the marine protected area of Torre del Cerrano, located on the territories of the

municipalities of Silvi and Pineto. It is, therefore, an area that does not present particular complexities from a technical logistical and accessibility point of view, but certainly represents an element of particular interest from the point of view of the naturalistic and ecosystem value exposed.
In particular, the beach in which the activity will be simulated is located in the municipality of Pineto, near the campgrounds carrying the following coordinates: 42°36'46''N - 14°03'57''E.



Legenda

1: stazione di decontaminazione
2: tenda spogliatoio
3: sito di deposito temporaneo rifiuti
4: parcheggio
5: bagni spogliatoio
6: tenda segreteria - comando
7: tende area riposo

Basic info	
Surface	130 km of coastline
Population	Not available (population may be can be involved in oil spills propagation)
Population benefiting from oil spills and other marine hazards pilot activities	About 450.000 inhabitants of 19 municipalities with high and medium risk in terms of oil spills and other marine hazards, are the beneficiaries of the project activities implemented

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- oil spills/marine hazards, short description of pilot activity, number of participants and equipment used (max 500 chars)
- Training course aimed at civil defense volunteers for coastal cleanup activities involved in oil spills; - The specialized exercise was carried out on 27 May 2023 in the territory of the marine protected area of Torre del Cerrano, located on the territories of the municipalities of Silvi and Pineto;

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity(max 500 chars)
Mauro Casinghini – Director of the regional civil protection agency; Gabriella Cipollone – Director staff office; Silvio Liberatore – Manager of civil protection emergency service; Giampiero Antonetti – Responsible of Volunteer management and planning; Giuseppe Fiaschetti – Responsible for rescue operations, regional operations room and regional mobile column; Marco Papponetti - Volunteer management and planning office; Fabio Ferrante – Rescue operations, regional operations room and regional mobile column office; Luca Di Giammatteo – Volunteer management and planning office Francesca Nespoli - Volunteer management and planning office;
Number of Civil Protection volunteers and professionals participated in pilot activity implementation

During the specialized exercise participated about 40 representatives of CP unites volunteers, internal staff of the Civil Protection Agency of Abruzzo Region, NGO Legambiente, Teramo prefecture, Coastal Guards and experts (CMCC).

Outputs of pilot activity (please mark implemented pilot activity in relation to Activity 4.3.1. deliverables)

(max 500 chars)

Deliverable	Number of deliverables
☐ n° 1 Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea developed (PP4)	
☐ n° 1 Oil spill operational prototype and hazard mapping capacities developed (PP9)	D.4.3.1 Oil spill operational prototype and hazard mapping capacities developed.
☐ n° 2 Enhanced simulation models for oils spills and other marine hazards (PP9, PP11)	D.4.3.1 Enhanced simulation models for oils spills and other marine hazards
☐ n° 5 Specialized exercises implemented (with usage of personal protective equipment and specialized equipment floating booms, boats, drones.) (1 exercise per PP)	D. 4.3.1 One specialized exercise implemented with usage of personal protective equipment and specialized equipment

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.

(max 500 chars)

There were no deviations or problems in the implementation of the activity.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/maritime hazard)?
(max 500 chars)
Thanks to the training course which were implemented, the Abruzzo region improved the response capabilities in the event of accidents related to the oil spills. In addition, the results "Development of an oil spill operational prototype and hazard mapping capabilities" and the "Enhanced simulation models for oil spills," developed under the coordination of PP9 and PP11, will enable the Abruzzo Region Civil Defense to predict the direction of oil spills based on climate data and simulate the speed of propagation, ensuring the timeliness of intervention in order to limit damage.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
Teams of civil protection volunteers trained in coastal cleanup activities following hydrocarbon spills will support emergency planning, operational activities as well as informing the public about good civil protection practices. In addition, the two activities "Development of an oil spill operational prototype and hazard mapping capabilities" and "Improvement of simulation models for oil spills" experts from the Regional Civil Protection Agency were involved in the implementation phase of the activities, through the organization of technical meetings and in the training activity carried out by PP9 on the use of the two tools. The trained ACP staff will train their colleagues who have the two tools through the platform WITOIL, implemented as part of the project.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The sustainability of these deliverables is guaranteed by the fact that training and specialized exercise carried out, could be replicate in other territory of Abruzzo Region.

Moreover, the prototype and simulation models included in the WITOIL Platform will be used by the internal staff of Civil Protection Agency of the Abruzzo Region in the frame of its institutional activities.

PP4 - ADRIATIC TRAINING AND RESEARCH CENTRE FOR ACCIDENTAL MARINE POLLUTION PREPAREDNESS AND RESPONSE - ATRAC

Geographical area
Brief description of involved area and its substance in terms of oil spills and other marine hazards (max 1000 chars)
Primorje-Gorski Kotar County is characterized by geographical location. It geographically covers the Gulf of Rijeka and Kvarner's area, a rich indented coast with islands, of which Krk and Cres are the largest in Croatia. The size of 3,582 km2 of inhabited area (about 6.3 % of the inhabited area of Croatia) is inhabited by about 6.9 % of the country's population with an average population density of 84.9 inhabitants / km2. The coastal area is characterized by a predominantly Mediterranean climate with the influence of mountain climate (bora, rain and snow) during the winter months. From the point of view of protecting and preserving biodiversity, the coast is one of the most endangered areas due to the higher population density since this unit is the most important tourist, traffic, and industrial center of the County. The mountains of Gorski Kotar prevent the spread of the Adriatic Sea's thermal influence inland, and the high altitude affects the increase in rainfall; a moderate continental characterizes this unit to the mountain climate. The biggest threat from fire and potentially from explosions in the Primorje-Gorski Kotar County is the LNG terminal on Krk. The terminal has a geopolitical and strategic dimension in strengthening the European energy market and increasing gas supply security to European Union countries. The technical capacity of the terminal is 2.6 billion cubic meters per year. The planned start of operation of the terminal is 1 January 2021.

Basic info	Primorje-Gorski Kotar County
Surface	The county's land area is 3,587 km^2 The area of the waters is 4,344 km^2
Population	266 503
Population benefiting from oil spills and other marine hazards pilot activities	

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- oil spills/marine hazards, short description of pilot activity, number of participants and equipment used (max 500 chars)
ATRAC's completed pilot activity was Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea. The main objective of this Guideline was to provide a uniform, consistent methodology for the oil spill risk assessment process within the area under project consideration. To maintain as wide usability as reasonably possible, the methodology must be implementable by different authorities or interested parties, providing comparable results, thus fostering the harmonized implementation and improving emergency service capacities.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)

In the making of the pilot activity, apart from ATRAC's project team, was included the Faculty of Maritime Science from Rijeka. The team that worked on the Methodology has many years of experience in preparedness and response to accidental oil spills.
Number of Civil Protection volunteers and professionals participated in pilot activity implementation
n/a

Outputs of pilot activity (please mark implemented pilot activity in relation to Activity 4.3.1. deliverables)
(max 500 chars)

Deliverable	Number of deliverables
☐ n° 1 Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea developed (PP4)	1
☐ n° 1 Oil spill operational prototype and hazard mapping capacities developed (PP9)	
☐ n° 2 Enhanced simulation models for oils spills and other marine hazards (PP9, PP11)	
☐ n° 5 Specialized exercises implemented (with usage of personal protective equipment and specialized equipment floating booms, boats, drones.) (1 exercise per PP)	

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)

As we didn't have a designated pilot location where we could do the exercise, we were an active participant in the implementation of the annual exercise done by the County Operational Centre of Primorje-Gorski Kotar. We were designated to work on cleaning the shoreline with the participants of the Civil Protection and specialized response company.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/maritime hazard)?
(max 500 chars)
ATRAC delivered the Guidelines to all the project partners. Those Guidelines are a very useful tool which can help all the partners to assess risk and track changes in their location and in accordance to that, adapt the methods for preparedness and response to accidental marine pollution.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
As all of the partners received the Guidelines, that should lead to the universal methodology of risk assessment in the whole Adriatic region.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
Methodology is sustainable and partners should constantly evaluate risk. It is a unique way to calculate the changes in the possible risk. Guidelines refer on how to track those changes and how to make evaluation of risks related to accidental marine pollution.

PP7 - REGION OF ISTRIA

Geographical area
Brief description of involved area and its substance in terms of oil spills and other marine hazards (max 1000 chars)
PP7 Istrian County is the westernmost Croatian county, and like a peninsula it is open to the sea on two sides. The length of the coast is 445 km, and with the islands 539.9 km. The Adriatic Sea is a shallow and small sea, which is additionally, due to extremely large sea traffic and developed nautical tourism, very sensitive to possible accidental situations involving spills of hydrocarbons and other dangerous substances in to the sea, as well as possible occurrences of fires on the coast or on some of the vessels. Due to the above, in the very preparation of the project, the need to provide the necessary equipment to prevent the aforementioned accidents was assessed, as well as the need for procurement of vessels that would reduce the risk of unwanted consequences of possible fires at sea and on the coast.

Basic info	Istrian County is the westernmost Croatian county
Surface	2.813 km^2
Population	207.939
Population benefiting from oil spills and other marine	207.939, tourism and economy in general

hazards pilot activities	

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- oil spills/marine hazards, short description of pilot activity, number of participants and equipment used (max 500 chars)
With our firefighting boat, the Istria County Fire Service will be better equipped and thus better prepared for firefighting at sea. The 8.51 metre long, three-manned boat is suitable for navigation in rough weather conditions. This light, low draft vessel is equipped with engines and other equipment necessary for early response, extinguishing of fire at sea and other emergency interventions on smaller vessels. Also, the County of Istria secured the procurement of an additional 500 meters of oil containment booms and accompanying equipment for the prevention of marine pollution.
Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
Experts from Department for Sustainable Development of Istrian County are developing and implementing EU financed projects from 2006 until today. By strictly defined scope of work, all our projects are focused on areas of nature and environment protection, which refers to waste management, protection of karst and drinking water sources, protection from a forest fire, and to management and prevention of environmental and technological risks at sea.
Number of Civil Protection volunteers and professionals participated in pilot activity implementation
Within the County of Istria, there is a County Operations Center made up of 10 members and 10 deputy members from all relevant emergency and other services for the purposes of preventing sea pollution. All members and deputy members were involved in the implementation of the pilot activities. In addition, the fire fighters plan to use and maintain the equipment after the project, and through the implementation of the pilot activity, 3 members of the Pula fire fighters were introduced to the maintenance and handling of the purchased boat, while an additional 13

members were trained in the maintenance and manipulation of dams and accompanying equipment. Likewise, 2 employees of the Port Authority and 4 employees of the Port of Pula are included in the equipment use and maintenance education system.

Outputs of pilot activity (please mark implemented pilot activity in relation to Activity 4.3.1. deliverables)

(max 500 chars)

Deliverable	Number of deliverables
□ n° 1 Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea developed (PP4)	
□ n° 1 Oil spill operational prototype and hazard mapping capacities developed (PP9)	
□ n° 2 Enhanced simulation models for oils spills and other marine hazards (PP9, PP11)	
□ n° 5 Specialized exercises implemented (with usage of personal protective equipment and specialized equipment floating booms, boats, drones.) (1 exercise per PP)	□ On June 2, 2023, an annual comprehensive exercise was held (alarming, incident management, use of firefighting equipment and marine pollution remediation) to check readiness for intervention - FIRESPILL 2023 □ On April 26, 2023, training was held for 13 firefighters, 4 members of the Port of Pula and 2 employees of the port authority for manipulation and coordinated action in the event of the need to use booms and accompanying equipment □ Day 1. In June 2023, a test voyage of the built boat was carried out in the waters of the Pula Bay, where 3

	members of the Pula fire department were trained to use the boat.

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
The contract with the shipbuilder of the fire boat was extended at their request primarily due to the economic circumstances that have affected the world, especially due to the war in Ukraine, that is, primarily due to disrupted market relations in the procurement of materials, goods and equipment. Market circumstances also had a smaller effect on the activity of purchasing dams and related equipment.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/maritime hazard)?
(max 500 chars)
The newly built ship is the first of its kind in the Istrian County, which significantly reduces the risk of unwanted consequences of uncontrolled fires from vessels on the open sea and in the coastal area, as well as on the coast itself. The ship has powerful propulsion units, which is why it is expected to be ready for quick action if necessary on most of the Istrian peninsula. On the other hand, with the acquisition of booms, training in their coordinated use with a larger number of necessary services in the County of Istria, the effectiveness of action in preventing unwanted accidents, which include the spilling of hydrocarbons from vessels or, in certain situations, from the shore, has significantly increased.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
The Adriatic Sea is a relatively small body of water, which is why it is realistic to expect situations in which coordinated action and the participation of services on both sides of the border are necessary. In such situations, the County of Istria now has, in addition to its human capacity, a significantly improved situation regarding the available equipment that it can offer

in such cases in order to prevent large-scale accidents that affect all the countries of the Adriatic basin.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The implementation of the pilot projects itself included the procurement of equipment, the design and construction of a fire boat. However, we additionally included in the pilot activities the familiarization of all relevant services with the planned project activities, and we also conducted training for members of individual services for the use and later maintenance of the results of the pilot activities. The pilot activities themselves are the result of consideration of the needs of the emergency services before the inclusion of the County of Istria in the project, so their implementation actually made a direct contribution to solving the needs of the emergency services, which they themselves expressed as necessary.

PP11 - ENVIRONMENTAL PROTECTION AGENCY OF FRIULI VENEZIA GIULIA

Geographical area
Brief description of involved area and its substance in terms of oil spills and other marine hazards (max 1000 chars)
The PP11 pilot project has focused on the Gulf of Trieste and the related coastal areas characterized not only by historical and cultural sites, but also by important tourist resorts. In the area there are the port of Trieste and Monfalcone, that represent important arrival points for maritime traffic in the north-eastern Adriatic; furthermore, in the Aussa-Corno industrial area there is a port system called “Porto Nogaro”, which constitutes the landing point inside the lagoon of Marano and Grado. The area affected by the PP11 pilot project also hosts an ecosystem that represents a high value for the European community as it consists of several sites belonging to the so-called Natura 2000 network. In the area there are also several economically relevant anthropic activities, some of which represent a potential danger of oil spills into the sea, such as

the oil terminal of the SIOT oil pipeline that transports crude oil from the port of Trieste to the refineries of central Europe.

Basic info	The stretch of coast involved extends from the delta of the Tagliamento River, in Italian territory, to the Slovenia-Croatia border
Surface	750 km2 for the simulation models 14 km2 for the specialized exercise
Population	24.348 inhabitants of the Monfalcone municipality for the specialized exercise
Population benefiting from oil spills and other marine hazards pilot activities	Population of the FVG living near the coasts 344.788

Brief description of implemented pilot activity
Description of pilot activity (type of pilot activity- oil spills/marine hazards, short description of pilot activity, number of participants and equipment used (max 500 chars)

The first activity simulates an accident where a boat impacts with coastal reef. The consequences of this impact where hull fire and oil spill.
09:32 – The simulation started from the Harbor Master's Office from the alert control room. Called: fire department, 112, medical rescue, the Mayor, Civil Defense, and, for ARPA FVG, the manager on standby duty.
09:45 - ARPA FVG duty manager activates air, weather and sea emergency teams.
ARPA FVG technician set-up GNOME model. The ARPA team at sea launches drifters to simulate the pollutant path and compare it with the model. UVILUX probe and Schomacher sampler are used to identify the type of pollutant.
10:30 – After the Capitaneria di Porto threw the smoke bomb, the air emergency team conducts surveys based on modelling indications.
11:30 – Exercise finished and the debriefing started
The second activity in charge of ARPA FVG is the enhanced of model simulations. Modeling activities have been distinguished in two complementary classes of oil-spill response: pollutant dispersion evolution forecast (tactic approach), oil-spill impacts risk assessment (strategic approach).
In the tactical approach fall: input to simulation models for emergency response and hourly dispersion forecasts for hot areas. Technicians use HF radar, drifters and drones to improve the quality of input data and for modeling verification.
In the strategic approach falls oil spill risk-assessment. ARPA FVG, in accord with the Civil Protection, identified areas of exposure and vulnerability. For these areas, the impact is evaluated in terms of time and expected pollutant quantities, under different meteorological conditions for different sources. To achieve this, the technicians made a statistical analysis of impact simulations developed at high-resolution on an hourly basis for one year. (PyGNOME).
All Project Partners can access the operational service.

Pilot Team composition

Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)

The team for the exercise necessitates of more participants than for the improving the simulation model, and in that case, considering only ARPA FVG personnel, there was:

- A motorboat pilot,
- A Pilot Team coordinator, with excellent knowledge both of the activities planned within the project and of the roles and responsibilities required for their performance
- N.2 basic operator for sea water and/or hydrocarbon sampling, with excellent knowledge of sampling and conservation methods of environmental samples
- N.3 basic operator for air quality evaluation
- A specialist operator for measurements with multiparameter probe and detection with drifter/ROV,

- A specialist operator for modeling, with excellent knowledge of the forecast model and the necessary input data
- N.2 specialist operator for drone operations (pilot), with all the qualifications required to pilot the drone
- A weather forecast team

Number of Civil Protection volunteers and professionals participated in pilot activity implementation

15

Outputs of pilot activity (please mark implemented pilot activity in relation to Activity 4.3.1. deliverables)

(max 500 chars)

Deliverable	Number of deliverables
☐ n° 1 Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea developed (PP4)	
☐ n° 1 Oil spill operational prototype and hazard mapping capacities developed (PP9)	
X n° 2 Enhanced simulation models for oils spills and other marine hazards (PP9, PP11)	1
X n° 5 Specialized exercises implemented (with usage of personal protective equipment and specialized equipment floating booms, boats, drones.) (1 exercise per PP)	1

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
During the Specialised exercise two problems emerges: in case of the event of an accident like the one just simulated, the Port Authority personnel would have no way to activate the GNOME template for lack of staff. It would be better if an ARPA FVG expert could manage the application from ARPA FVG office. Furthermore, during the exercise, a problem relating to the positioning of the absorbent by the company appointed by the Harbor Master's office Porto as, being based in Trieste, the times of arrival on site could be long.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/maritime hazard)?
(max 500 chars)
Thanks to the computational tools developed for the pilot purposes, the whole cooperation area and specifically the pilot benefit of an oil spill and oil leak evolution simulator that is operationally available to support the response to adverse events. The simulator is already integrated in the operational facilities of the PP11, who is in charge to support the, Coast Guard, the Fire Brigade and Civil protection in case of oil accidental release in the sea. In addition, the training, which has been carried on in preparation to the specialized exercise, has increased the level of cooperation among the actors involved in the response. Those enhanced the preparedness and the knowledge of the territory in managing the risk due to the oil spill hazard.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
A cross-border approach for developing these activities is necessary for sharing data and evaluating the good performances of the pilot activities. The cross border approach, in these activities, was necessary to enhance the capacity of Emergency Service Organizations to increase cross-border effectiveness in tackling natural and man-made disasters.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The project activities will address directly environment and its protection against pollution, through the development of new/improved solutions helping to better monitor and manage/control the eventual presence of oil pollution in the northern Adriatic Sea. Through Pilot Activities, the project had a direct positive impact in partners' territories, but further communication, dissemination and training activities will contribute to diffuse the developed knowledge and methods also to other organizations outside the regions.

TF-3 ESTABLISHMENT OF ADVANCED TRAINING CENTRES FOR CIVIL PROTECTION- EVALUATION

PP 3 – DUBROVNIK- NERETVA COUNTY

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
Dubrovnik-Neretva Region is located in the border area. It represents the external border of the European Union towards Bosnia and Herzegovina and Montenegro. The Dubrovnik-Neretva Region has a long border with Italy over the Adriatic. The area of the Neretva valley is no exception. The area is characterized by two kinds of hazards: fires and floods. These are disasters that have often affected this area in recent years, endangering the people of the Neretva valley, but also causing enormous economic losses. It is a rural area far from city centers. The Civil Protection Training Centre in Kula Norinska has increased the security of residents. Emergency preparedness has been increased to a higher level, along with the equipment and speed of the response of the emergency preparedness task forces. The Centre will contribute to the professional development of emergency preparedness task forces. It is also an important part of the Split-Dalmatia Region Training Centre. This means that it will also become a forum for the exchange of experiences of members of the civil protection of the countries of the European Union. This impact will be transferable to neighboring third countries, mainly Bosnia and Herzegovina or Montenegro.

Basic info	The Neretva River Valley. The Neretva is one of the largest rivers in the eastern Adriatic Basin. Four HE power plants with major dams to protect against flooding, electricity and water storage. It is known for its natural environment and the variety of its landscape. It is also one of the most precious natural resources of Bosnia and Herzegovina and Croatia is its freshwater resource contained in an abundant source and clear rivers.
Surface	412,57 km2
Population	35.000
Population benefiting from pilot activity	35.000 – 50.000 (spreading of fire to neighbouring areas can be stopped earlier than it was before)

Brief description of implemented pilot activity
Description of infrastructure (short description of pilot activity and its purpose- infrastructure, equipment) (max 500 chars)

The Dubrovnik-Neretva Region received a modern building which represents an extremely important infrastructure for the civil protection. It is a building which forms the operational center of the fire service in the area of the Neretva valley. In addition to video surveillance of nature protected areas and other areas, the Centre has a 24-hour on-call service. It also serves for the storage of the equipment of the operational forces of civil protection, professional training, and in case of need, it is possible to provide quality care for members of the operational forces of civil protection who may come from outside the Dubrovnik-Neretva Region.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
The project team was made up of representatives from the Dubrovnik-Neretva Region: project, communication and financial manager. The team also involved representatives from the contractor, the professional and the project supervisor. All of them were coordinated by the project manager.

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to the Activity 4.4.)

(max 500 chars)

Deliverable	Number of deliverables
☐ D.4.4.1. Investment preparation package realized. Technical documents, permissions and other documents that are necessary for the realization of pilot projects that include small scale infrastructure investments. (3 sets of documents, 1	

set per each investment). (PP13)	
☐ D.4.4.2. n° 1 Realized investment of new infrastructure: Advanced training center for firefighting and civil protection in Split- Dalmatia County (Vučevica) (PP13)	
☐ D.4.4.3. n° 1 Realized investment of new infrastructure: Outpost of Advanced training center for firefighting and civil protection in Dubrovnik-Neretva County (Kula Norinska) (PP3)	The activity was successfully implemented, the Civil Protection Training Centre was built in Kula Norinska, which reach the expected result. The work was completed on time with a slightly more favorable price than the contract price. The Dubrovnik-Neretva Region has also equipped the Centre building with furniture, communication and computer equipment, and other equipment required for the maintenance and repair of firefighting tools.
☐ D.4.4.4. n° 1 Realized investment of the restructuring of existing infrastructure: Advanced training canter of Fabriano Belvedere in Marche region (PP6)	

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
There were no major issues related to the implementation of the pilot activities. With the additions to the contract, the deadline for the construction of the Centre has been extended by

an additional three months. This can be explained by the circumstances caused by the COVID-19 pandemic, which have to do with the supply of materials and the availability of labor.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake hazard)?
(max 500 chars)
The safety of the residents of the Neretva valley area from almost all types of disasters has been significantly increased because the construction of the Centre has improved preventive action, as well as the speed of intervention and the equipment of the operational forces of civil protection.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
It is being done in an infrastructure that will only have a real effect on the CBC in the future. The Centre is an outpost for the future European Regional Training Centre in the Split-Dalmatia region, so that the CBC will reach its full potential. Cooperation with the training centre Belvedere di Fabriano is expected as well. Also, we should not ignore the fact that this CBC Centre will also achieve an effect with countries that are not members of the European Union - Bosnia and Herzegovina and Montenegro.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The Centre in Kula Norinska was built on the land of the Municipality of Kula Norinska. The owner of the building is Dubrovnik-Neretva Region. The building will be used for the purposes for which it was built for a minimum of five years. It cannot be changed even after 5 years without the consent or approval of the Dubrovnik-Neretva Region.

PP 6 – MARCHE REGION

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
The pilot project area is located in the municipality of Fabriano, in the province of Ancona, the territory has been classified by the Italian National Department of Civil Protection as "Zone2 "that is, an area with a possibility of strong earthquakes. The area is also densely wooded and may be affected by forest fires. Two major earthquakes occurred in the area in 1997 and later in 2016. The Marche Region's pilot project stems from the idea of modernizing and adapting a village of temporary accommodation (real wooden huts) that had been used during the 1997 earthquake to accommodate the displaced population of the Fabriano area in the province of Ancona.

Basic info	The center is about 25 minutes from Fabriano and an hour from ancona. The geographical coordinates are: 43°14'22.6"N 12°51'32.8"E
Surface	6.600 mq
Population	1 500 000
Population benefiting from pilot activity	12.000 Volunteers in Region Marche

Brief description of implemented pilot activity
Description of infrastructure (short description of pilot activity and its purpose- infrastructure, equipment) (max 500 chars)

The facility consists of 16 heated wooden houses that can host 4 people each. There is also a meeting room, a bar and a 50-seat classroom. The purpose is to use the infrastructure for training activities for civil protection volunteers especially in forest firefighting. The FIRESPILL project, as a pilot of the Marche Region, involves some work to restore and redevelop the electrical and network systems of the building designated for the Advanced Civil protection Training Center.

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
Silvia Moroni - Responsible for programming phase verification and contracting of the pilot activity Stefano Stefoni - Responsible for execution phase Gioia Stefania - Principal contributor for programming, contracting and execution Claudio Carboni - Director of Works, safety coordinator in phase of execution and tester/regulator Tonino Achilli - Design Verifier Mauro Perugini - Paola Latini - Luca Abeti - Maria Carla Perelli - Candelaresi Claudia: Staff

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to the Activity 4.4.)

(max 500 chars)

Deliverable	Number of deliverables
☐ D.4.4.1. Investment preparation package realized. Technical documents, permissions and other documents that are necessary for the realization of pilot projects that include small scale	

	infrastructure investments. (3 sets of documents, 1 set per each investment). (PP13)	
☐	D.4.4.2. n° 1 Realized investment of new infrastructure: Advanced training center for firefighting and civil protection in Split- Dalmatia County (Vučevica) (PP13)	
☐	D.4.4.3. n° 1 Realized investment of new infrastructure: Outpost of Advanced training center for firefighting and civil protection in Dubrovnik- Neretva County (Kula Norinska) (PP3)	
X	D.4.4.4. n° 1 Realized investment of the restructuring of existing infrastructure: Advanced training canter of Fabriano Belvedere in Marche region (PP6)	

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.
(max 500 chars)
There were some delays in the completion of the work: during the execution of the work there were unforeseen events that were overcome. There was a temporary suspension of work to assess the situation and, in the end, everything was concluded without affecting the work and its functionality.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake hazard)?
(max 500 chars)
The center is intended for prevention activities through training for Civil Protection Volunteers. Training becomes essential to prevent risks, address them, and promote overcoming them. In other words, building a resilient community.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
Cross-border cooperation (CBC) has an essential role to play by virtue of operating for the benefit of both sides of the EU's external borders. the Belvedere center pilot activity provided for the reuse, modernization and adaptation of a pre-existing structure and is transferable to CB territories.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The sustainability of the pilot's results will be guaranteed by the Marche region in terms of manuattraction through a free loan agreement with the municipality of Fabriano. Civil protection volunteers contribute to the ordinary maintenance of the Centre.

PP 13 – SPLIT- DALMATIA COUNTY

Geographical area
Brief description of involved area in pilot activities and its substance in terms of Fire Risk and Seismic Risks (max 1000 chars)
Split-Dalmatia County is the largest county in Croatia by area - with a total area of 14.106,40 km2. The area of the land part with the area of the island is 4.523,64 km2 (8% of the area of the Republic of Croatia), and the area of the sea part is 9.576,40 km2 (30.8% of the sea area of the Republic of Croatia). In the context of the risk of natural disasters, the Split-Dalmatia County is the most exposed to the dangers of fire, earthquakes, and sea pollution. Namely, because of pronounced droughts, fires occur in the county every year in the summer, the largest of which in recent times was in 2017, when a total of four thousand hectares of forest burned. in the last few years, there have been several significant fires in the area of the county. A large part of the Split-Dalmatia County is located in an area of high earthquake risk. In the context of sea pollution, there is also a big risk because nautical tourism is very developed, and Split has been a destination for cruise ships from all over the world for several years. Consequently, the construction of the Advanced Training Centre for Civil Protection was of essential importance for strengthening the area's resistance to the aforementioned risks.

Basic info	
Surface	14.106,40 km2
Population	447.723
Population benefiting from pilot activity	Whole County's population (447.723) and wider

Brief description of implemented pilot activity
Description of infrastructure (short description of pilot activity and its purpose- infrastructure, equipment) (max 500 chars)

Advanced training centre for civil protection in Vučevica is established as central administrative and logistic base for specialist fire brigades, civil protection units and base for offshore incidents in project area. It is intended for the accommodation and maintenance of fire trucks, vehicles and equipment, and the command and communications centre. Engine room, sprinkler vent. stations, houses and equipment repositories, and connection centre, offices and classroom are integral parts of the building. The ground floor is designed for 13 garages for fire trucks, changing rooms and toilets. Upstairs there will be 15 accommodation units with 4 beds each, with users' social rooms (leisure) and classrooms. Along the east facade there is a fire tower, connected by a tunnel to the basement of the building. It will be in the ownership of Split- Dalmatia County at least 5 years after the end of the project. County will sign an agreement with public institution that will be set up for managing the Centre.
In addition to the mentioned infrastructure, a lot of equipment was also purchased and it will be used by the Centre. The equipment can be divided into five functional groups:
• Fire house (polygon A)
• Industrial plant simulator (polygon B)
• Mobile simulator for transport (polygon C),
• Fire containers and training products.
• Oil spill equipment

Pilot Team composition
Brief description of the team composition who participated in the implementation of pilot activity (max 500 chars)
In the implementation of the pilot activity mainly participated project team members from the Split Dalmatia County, together with many external experts (construction company, equipment providers, supervision company,).

Outputs of pilot activity achieved (please mark implemented pilot activity in relation to the Activity 4.4.)
(max 500 chars)

Deliverable	Number of deliverables
☐ D.4.4.1. Investment preparation package realized. Technical documents, permissions and other documents that are necessary for the realization of pilot projects that include small scale infrastructure investments. (3 sets of documents, 1 set per each investment). (PP13)	
☐ D.4.4.2. n° 1 Realized investment of new infrastructure: Advanced training center for firefighting and civil protection in Split- Dalmatia County (Vučevica) (PP13)	The activity was successfully implemented, the Advanced training center for firefighting and civil protection in Split- Dalmatia County (Vučevica) which reach the expected result.
☐ D.4.4.3. n° 1 Realized investment of new infrastructure: Outpost of Advanced training center for firefighting and civil protection in Dubrovnik-Neretva County (Kula Norinska) (PP3)	
☐ D.4.4.4. n° 1 Realized investment of the restructuring of existing infrastructure: Advanced training canter of Fabriano Belvedere in Marche region (PP6)	

Were there any deviations in the implementation of the pilot project activities (pre post pilot benchmark). If so, please briefly describe the problems you encountered and the steps you had to take to solve them for the successful implementation of the pilot activity.

(max 500 chars)
The biggest problems in implementation were the relatively late initiation and completion of the public procurement process. Also, due to major disturbances in the market, the contracted suppliers had difficulties in performing the works and equipping the center.

In what way did the implemented pilot activities contribute to the improvement of resilience of the involved territory to a specific hazard (fire/earthquake hazard)?
(max 500 chars)
The importance of firefighting and civil protection as a multidisciplinary activity, as well as high-tech threats in all segments of life, have created a need for a central base- that will monitor and develop state-of-the-art techniques so that fire fighters and civil protection units can be trained at all levels and for every hazard. Split Dalmatia County will benefit greatly from the setup of Advanced training center in Vučevica, given the fact that its area has been facing many hazard outbreaks in the last ten years calling urgently for common solutions and modern approaches to be taken.

What is the CBC effect of undertaken pilot activities? Are the results of pilot activities transferable to CB territories?
(max 500 chars)
Due to an increasing number of hazards as a result of climate change, which are increasingly affecting the lives of citizens in the project/programme area, there is a necessity for timely and efficient response of emergency service organizations to prevent even greater consequences. Key actors in the protection and rescue system will, through training seminars, simulations and exercise in Advanced training center, significantly increase their capabilities to respond properly to fire, earthquake, oils spills and other marine hazards at cross border level. Together with Italian partners, different specialized training programmes will be designed that will contribute to the improvement of knowledge, resources and potentials from command to teaching firefighting and civil protection staff through individual and cross- border exercises, turning Centre into a unique entity in south east Europe. The administrative-logistic base with its contents will provide a wide range of specialty trainings, also to the members of the Ministries of Internal Affairs and Defense, specialist divers' units, teams of dilapidated dogs, cavers, and all other specialized units.

Sustainability of pilot deliverables (How will the sustainability of deliverables be ensured/ governance model)
(max 500 chars)
The intention of the Advanced training center in Vučevica to grow into a central cross border center for presentation of best practices in the field of firefighting and civil protection through organization of specialized seminars, trainings, and simulations for different Emergency system organizations in EU and wider. Split- Dalmatia County will remain the owner of the infrastructure and equipment at least 5 years after the end of the project. County will sign an agreement with public institution that will be set up for managing the Centre.