

Pilot Project Framework Plan

D.4.1.3

1

1

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	4.1.
Activity Title	Pilot projects planning
Partner in Charge	PP 13
Partners involved	All
Status	Final
Distribution	Partnership
Date of release	27.12.2021

Summary

List of abbreviations and terms.....	4
Abstract.....	4
1. Introduction and contents.....	5
2. Pilot deployment of fire and earthquake.....	8
3. Pilot deployment of Oil spills and other marine hazards.....	12
Conclusions.....	19

List of abbreviations and terms

Pilot Project Framework Plan (PPFP)
Project Partner (PP)
Task force (TF)

Abstract

In addressing the way partners intend to develop their proposals for pilot actions, it is useful to recall the FIRESPIILL overall objective, i.e. *“to enhance the capacity of Emergency Service Organizations to increase cross-border effectiveness in tackling natural and man-made disasters, decreasing the exposure of the populations 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”*. It is within this framework that pilot actions are expected to establish a *“better coordinated collective emergency planning”*, to tackle the several types of risk that affects both countries and the Adriatic basin in between.

This strategy relies upon the three Firespill macro-actions, dedicated to the improvements of the Emergency Services Regulations, of the Emergency Management Systems and, last but not least, 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 behaviours. Together, these three components contribute in increasing societal resilience to natural and man-made disasters.

The overall expected outputs of Work Package 4 are 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 FIRESPIILL 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 behaviours.

The main goal of the pilot actions is to establish a better coordinated collective emergency planning and preparedness for risk related to fire, oil spills, pandemic, or earthquake in both countries and thanks to the Summary report on implementation and evaluation of pilot deployment the existing methodologies will be improved and available for all future actions. This will be achieved by developing Pilot Project Framework Plan (PPFP), one for Pilot deployment of fire and earthquake and one for Pilot deployment of oil spills and other marine hazards, that will be used as a manual for the pilot project deployment that provides a short description of pilot concepts that will be implemented by PPs.

1.Introduction and contents

PPFP is a result of many activities that preceded several activities:

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 (of READINESS project) 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 two thematic task forces (TF)

During the 1st Steering Committee Meeting held online via MSTeams (November 2020), two task forces were established:

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.

TF members implemented the following activities:

- Each TF made a (preliminary) survey of capitalizing items in its thematic area.

Elements of survey/capitalizing item were:

1. Title of CP advanced training/SPB building/awareness event
2. Type of CP advanced training/SPB building/awareness event
3. Location and NUTS classification
4. Description of activities
5. Description of outputs/results and lesson learned
6. Relevance to project themes/ objectives/outputs
7. Proposal for enhancement/adaptation measures

When all TF members give their inputs for survey, all data will be sublimated in two Technical reports which will be delivered to the Lead partner:

- 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.

2. Capitalizing practices' enhancement & adaptation

Second major activity related to further implementation of project activity in preparation of methodology will be tested and implemented on involved territories for which Technical Reports will be used as a base. Technical Reports were designed during the Workshops of TF groups where TF groups members discussed about the methods/procedures that will be implemented through pilot projects in order to achieve the project deliverables. After all TF members made analyses based on capitalizing items and taking into consideration their specific needs, they proposed methodologies, procedures and framework to be tested and implemented on involved territories which were sublimated in two Thematic reports, one for each TF.

As a delivery of TF Workshop, each PP characteristics were described, and it consisted of the following elements:

- Type of pilot activity
- Geographic area- giving a brief description of involved area and it's substance per each theme
- Phases of pilot activity
- Methodology/Phases of pilot activity implementation (Pilot team composition)
- Enhancement/adoption measures to be implemented
- Expected outputs of pilot activities
- Estimated budget

TF members gave their inputs tailored to specific context, needs and willingness of each involved territory that are integrated in PFP of Firespill project, which is the document that details the project

response to the challenges posed in the context of the project and provides a clear picture on how each involved territory needs to implement the pilot activities.

PPFP is structured in two thematic chapters:

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

2. Pilot deployment of fire and earthquake

As it is faithfully reflected by the proposals made by the partners of Task Force 1 on fire and earthquake risks, the concrete needs are diverse – some of them needing overall infrastructure and equipment, some giving key relevance to civil protection personnel training in administrative and technical capacities, some other aiming at capitalizing and sharing its experience about the governance arrangements implemented for managing natural disasters.

This TF 1 Pilot Project Framework Plan (PPFP) about fire and earthquake risks, include 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.

1. The work process

Although its formal establishment has been only during the 1st Steering Committee Meeting, in view to shorten time TF1 started its work since November 2020. The group held two online meetings:

- November 11, 2020

and

- January 19, 2021.

The first one (that was held with the participation also of some of TF 2 members), was aimed at the sharing and critical review of the draft of the PFPF guidelines, provided by the LP¹, also in view to consolidate it in a final version, definitely approved during the 1st SC held on December 16.

After this event, several direct online contacts (by webcall and/or email) were held by the TF 1 coordinator with each TF member, in view to previously outline the orientations of each partner regarding the pilot action they were to propose, with the intent to steer contents towards a standardized compliance with the templates provided.

The second meeting has been held with the scope to verify the state – of – art in the preparation of the proposals and to plan the finalization of the job. The first draft of each proposal was developed according to the template provided, i.e. covering the following aspects:

- 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

¹ D.4.1.3 - n° 1 Pilot Project Framework Plan (PPFP): Manual for the pilot project deployment that will provide a description of pilot concepts (description of pilot activities, locations, involved actors & beneficiaries, impacts & indicators, dissemination activities, schedule, budget, etc.).

- 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)

Nevertheless, during the work process, after the proposal of PP 2 COPE, some useful integrations have been introduced in the project template, in view to make it more fit to the present operational conditions. In particular:

- a section with a map of the location of the pilot action;
- a final section analysing the operational risks about the implementation of the pilot actions, considering in particular the difficulties linked with the Covid 19 pandemic.

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.

The present version of this deliverable has been implemented after PP 15 University of Padua joined the partnership formally and operationally. Its proposal has been elaborated after several online meetings held with the TF 1 coordinator (PP 10), in view to define precisely contents and modalities of implementation of the proposed pilot actions.

2. Nature of the outputs

The outputs are expected to achieve:

- the 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;
- the establishment of an enhanced monitoring procedure based on the low cost and non-invasive instrumental seismic vulnerability measurement² in order to promote an effective seismic risk prevention policy.

This is in view to establish a coordinated emergency planning and preparedness for risk related to fire and earthquake (and, together with the outputs of TF 2, related to oil spills and other marine hazards).

While replicability of the practices is ensured by the adoption of a common methodology, the mainstreaming of the result at a higher policy level is expected to be ensured by the involved associated partners and by the advisory board members.

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

² Applicable to a large number on a widespread territory to "Eurocode 8 class III and IV" Public Buildings to catalogue their seismic safety status.

- 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 behaviour, 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

Similarly 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.

3. The pilot project fiches

In annex 1 the files related with the pilot project proposal by each partner of TF 1, elaborated according to the Guidelines.

3. Pilot deployment of Oil spills and other marine hazards

The aim of the Pilot actions 4.2 “Oil spills and other marine hazards” that will establish a better coordinated collective emergency planning and preparedness for risk related to oil spills in both countries and thanks to the Summary report on implementation and evaluation of pilot deployment the existing methodologies will be improved and available for all future actions. The specific objective of this pilot action is 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.

During the 1st Steering Committee Meeting held on 16th december 2020 PPs established the Task Forces responsible for the implementation of the pilot actions, for the Pilot Action 4.2 “Oil spills and other marine hazards pilots deployment”, the Civil Protection Department of Puglia Region is the coordinator of the implementation.

The Task Force n. 2 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

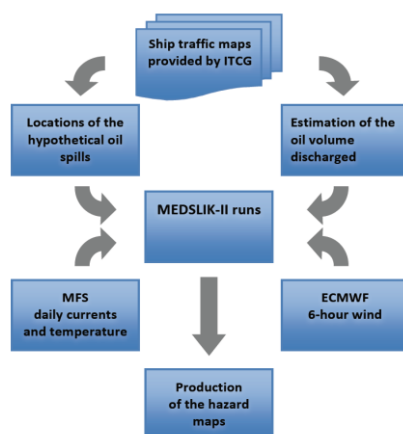
This methodology is based on the discussion between project partner during the first Coordination meeting of the Task Force 2 held on-line on 30th March 2021. During the second technical meeting held on 4th May 2021 was verified the state – of – art of the proposals and to plan the finalization of the activities.

1. The work process

In general, the goals are to develop a methodology for risk assessment for oil spills in the Adriatic Sea, the use of oil spill trajectory models for tracking the movement of the oil slick and oil spill dispersion model for predicting possible impacts to the environment and the specialized exercises and simulation, with at least one having a CBC dimension.

The first step, that PPs identified, is the collection of data relating to ship traffic, platforms and production sites in the area and, finally, the maps on vulnerable areas. Based on the selected hazards, the second step will involve the development of an application for accident intervention (Operation NRT Oil Transport and Destiny Forecast) and a multimodal approach that combines the various approaches of the partners (MEDSLIK-II is coupled to CMEMS products and regional scaled output of

the ultrafine resolution model (e.g. SANIFS).



The last step will many devolve 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.

2. Nature of the outputs

The outputs are expected to achieve:

- Development of methodology for risk assessment for oil spills in the Adriatic Sea providing data collection on maritime traffic, possible sources of pollution, exposure, environmental sensitivity, impacts on human life, environment, and economy;
- Simulation of oil spill scenarios using oil spill trajectory models for tracking the movement of the oil slick, and oil spill dispersion model for predicting possible impacts to the environment are foreseen;
- Capitalization of existing simulation models for oils spills and its upgrade with new functionalities will be available to all project partners though web interface and interoperable services and development of oil spill operational prototype and hazard mapping capacities relevant for all partners;
- Purchase of the equipment to act in case of oil spills and other marine hazards;
- Organisation with the Coast Guard and the Civil Protection Units of specialized drills and simulations with use of floating barriers for oil containment or absorption and the use of skimmer equipment capable of removing the oily components from sea water.

Replicability of outputs is guaranteed by the development of common methodology, common evaluation and impact indicators facilitating the transfer process to other regions and organizations outside the current partnership.

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

2.1 PP 1 COPE – 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 finalised specifically to marine pollution and impacts of accidents: the upgraded version will acquire and elaborate data related to the Adriatic environment, also utilising 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;
- Organisation 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 fire fighting 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 FIRESPELL 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).

3. The pilot project fiches

This section includes all the project fiches proposed by participants, elaborated according to the Guidelines

Activity 4.3 "Oil spills and other marine hazards pilots deployment				
Start date: 01.02.2021				
End date: 30.06.2022				
Partner coordinator: Civil Protection Section of Puglia Region (PP9)				
Deliverable	Activity Leader	Partners involved	Description	Output
Methodology/guidelines for risk assessment for oil spills in the Adriatic Sea developed	PP4	All PPs	Development of methodology for risk assessment for oil spills in the Adriatic Sea providing data collection on maritime traffic, possible sources of pollution, exposure, environmental sensitivity, impacts on human life, environment, and economy.	Report of methodology
Oil spill operational prototype and hazard mapping capacities developed	PP9	All PPs	The aim of hazard mapping is to study the ship traffic, through the mapping of the coasts and the sea surfaces and the oil platforms at sea. After that, it will be developed a prototype 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).	Prototype and hazard mapping on GIS platform
Enhanced simulation models for oil spills and other marine hazards	PP9 and PP11	All PPs	The aim of simulation of oil spill scenarios using oil spill trajectory models for tracking the movement of the oil slick, and oil spill dispersion model is to predict possible impacts to the environment. The capitalization of existing simulation models for oils spills and its upgrade with new functionalities will be available to all project partners through web interface and interoperable services and	Simulation models

			development of oil spill operational prototype and hazard mapping capacities relevant for all partners. Based on these simulations it will be possible to understand what kind of equipment and what areas to study.	
Specialized exercises implemented	1 exercise per PPs and 1 joint exercise	All PPs	Organisation with the Coast Guard and the Civil Protection Units of specialized drills and simulations with use of floating barriers for oil containment or absorption and the use of skimmer equipment capable of removing the oily components from sea water.	5 specialized exercises

Conclusions

The main goal of the pilot actions that are defined in PPF (one for Pilot deployment of fire and earthquake and one for Pilot deployment of oil spills and other marine hazards) is to establish a better coordinated collective emergency planning and preparedness for risk related to fire, oil spills, pandemic, or earthquake in both countries and thanks to the Summary report on implementation and evaluation of pilot deployment the existing methodologies will be improved and available for all future actions.