

FLOODSECURE

FLOODSECURE: A Pan-European Network of Flood Response Practitioners

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and other actors in the field of security
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Table of Contents

1 EXCELLENCE.....3

1.1 OBJECTIVES.....4

1.2 RELATION TO THE WORK PROGRAMME.....5

 1.2.1 *Why a network of flood response practitioners?*.....5

 1.2.2 *Meeting the specific objectives of the call text*.....6

1.3 CONCEPT AND METHODOLOGY.....7

The Overall Concept.....7

 1.3.1.....7

 1.3.2 *Links to national and international research and innovation activities*.....9

 1.3.3 *Overall Approach and Methodology*.....10

 1.3.4 *Gender analysis*.....15

2 IMPACT.....15

2.1 EXPECTED IMPACT AS DESCRIBED BY THE CALL.....15

 2.1.1 *Other expected impacts*.....16

 2.1.2 *Barriers to impact*.....17

2.2 MEASURES TO MAXIMISE IMPACT.....17

 2.2.1 *Dissemination and exploitation of results*.....17

 2.2.2 *Communication activities*.....20

3 IMPLEMENTATION.....22

3.1 WORK PLAN – WORK PACKAGES, DELIVERABLES AND MILESTONES.....22

 3.1.1 *Overall structure of the work plan*.....22

 3.1.2 *Timing of the different work packages*.....22

3.2 MANAGEMENT STRUCTURE AND PROCEDURES.....39

 3.2.1 *Organisational structure and the decision-making*.....39

 3.2.2 *Innovation management*.....43

 3.2.3 *Critical risks*.....43

3.3 CONSORTIUM AS A WHOLE.....45

3.4 RESOURCES TO BE COMMITTED.....47

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1 Excellence

In 2016 the World Economic Forum's Global Risks Report (<https://www.weforum.org/agenda/2016/01/what-are-the-biggest-threats-in-2016/>) set out a list of the most likely crises to affect the planet. In terms of *likelihood* the 2nd and 3rd were extreme weather and failure of climate-change adaptation and mitigation. In terms of *impact*, the failure of climate-change adaptation and mitigation was the no. 1 risk. This assessment is borne out by experiences across the globe over the past two decades, with societal and economic impacts from flooding increasing over this period. Between 2002 and 2013, floods in Europe have caused around 1000 fatalities and the evacuation of more than 1.7 million people with a total extrapolated cost of €150 bn in damages. Expectations are that the current annual costs of fluvial flooding of €5.5 bn each year can rise to €97.9 bn each year if no action is taken. In the UK alone €1.5 bn damages occurred in 2013 of which 90% consisted of residential content damage. The summer 2007 floods across the UK were the largest insured loss across Europe for any natural event in the 2000s (Cred Crunch Report). Given this high certainty of likelihood and impact we have chosen to focus our community of practitioners on flood response as we believe that this will have a large and immediate impact on communities across Europe. Further details are provided in Section 1.2.1.

In Europe, there exists a recognised gap between the advanced technologies available for real-time operation and the current operational technologies/systems/applications to support the response and the coordination of civil protections and first responders (e.g. firefighters, police and intelligence communities, border guards, custom authorities, explosive specialists, forensic laboratories, medical emergency teams, etc.) during natural emergencies. This is particularly acute in the case of the emergencies related to floods, since being a natural hazard that can be anticipated, these emergencies may be much better managed if a specific technological support to forecast and anticipate the impacts before they occur would be available, being the best way to improve the response efficiency. On the other hand, first-responder institutions having Civil Protection and emergency management roles have little means to free workforces from daily operations to dedicate time and resources to monitor innovation and research that could be useful to them. So these organisations are not able to develop a demand that lead providers to uptake the security research and innovation advancements when designing the tools for their command and control centres, neither to include interoperability nor standardization priorities in their tenders. This issue is widely recognized by all stakeholders – public services, industry, academia – including those who participate in the Security Advisory Group.

In the last years a significant effort has been carried out under previously EU funded actions oriented to help to fill this gap, including Innovation Actions (under Call DRS-1-2015) and CSAs (i.e. Call DRS-10-2015). However none of them is directly focused to the specific flood related emergencies, nor to build a mechanism allowing these flood emergencies first-responder institutions to LEAD the process of monitoring available technologies / promoting innovation and uptake, nor to provide recommendations and guidelines to prioritize research and innovation really focused in filling their current needs.

In this framework the objective of FLOODSECURE is to support practitioners across Europe who have a civil protection and first –responders role in flood prevention, flood preparedness, flood monitoring and flood emergency response. This includes response to threats created by terrorism as well as natural and other man induced disasters.

Through the effective exchange of information and good practice at national and European levels, FLOODSECURE will help practitioners improve efficiency and performance by:

- i. maintaining awareness of outcomes of research and innovation projects and highlighting opportunities for uptake and industrialisation**
- ii. identifying and prioritising actions for future research and innovation that fill gaps in existing knowledge and which support enhanced performance**
- iii. identifying domains that would benefit from standardisation, and by providing initial specifications for standardisation of those domains**

Many practitioners work under difficult time constraints, often combining their response role with other formal duties; FLOODSECURE will combine a cycle of focussed European and National meetings, aligned with independently organised collaborative demonstration and training exercises – all in conjunction with bespoke online tools to support smart and effective interaction, storage and access to targeted information.

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1.1 Objectives

The 5 Specific Objectives of FLOODSECURE are:

- Specific Objective 1 (O1):** To support and build a community of flood response practitioners dealing with disaster risk and crisis management
- Specific Objective 2 (O2):** To monitor research and innovation projects with a view to recommending the uptake or the industrialisation of results
- Specific Objective 3 (O3):** To express common requirements as regards innovations that could fill in capability and other gaps and improve performance of first-responders' current practices
- Specific Objective 4 (O4):** To indicate priorities as regards domains requiring more standardisation
- Specific Objective 5 (O5):** To support wider collaboration in training and demonstration exercises, making more efficient use of existing (training) facilities and (exchange) initiatives.

These Specific Objectives are applied within the context of a civil protection role set out in the above text box. Since national governance structures vary across Europe, the roles and responsibilities of practitioners in different countries are divided in different ways across different state and industry organisations. As such, the range of practitioner organisations participating in FLOODSECURE is varied and provides a comprehensive cross-section of those found across Europe. A description of these roles and participants is given under Section 3.3.

To achieve these 5 Specific Objectives, 6 Core Actions have been defined as summarised in Table 1.1 below:

Table 1.1: Core Actions defined for achieving the Specific Objectives

CA	Core Action Description	Expected Main Outputs
CA1	Implementation of: the FLOODSECURE programme of workshops to facilitate exchange of information at both national and European levels	Knowledge exchange framework and process implementation supporting the five Specific Objectives across a rolling 5 year period
CA2	Development of: FLOODSECURE website and online systems and support tools	Bespoke online tools will be developed to support all aspects of FLOODSECURE implementation. To enable quick and consistent interaction with research and development programmes, Practitioners need simple, intuitive and effective ways to access information as and when it suits. Main points of access will be via the FLOODSECURE website and a dedicated smart phone App.
CA3	Alignment and collaboration in field exercises of: demonstration, testing and training facilities and training resources to support increasing efficiency in investments	Mapping services, service providers and collation of good practice training materials through: - Identification of demonstration and training centres, training programmes and service providers across Europe -
CA4	Developing and maintaining an overview of national and European research programmes	Increased awareness of past and on-going initiatives and recommendations for research and innovation uptake leading to greater and more effective practitioner focussed research and innovation
CA5	Developing and maintaining a prioritised list of recommended actions supporting innovation and enhanced performance	Better alignment of national and European research and innovation actions in meeting the direct needs of practitioners
CA6	Identification of domains and specification of products and processes for standardisation	Initial specifications for standardisation actions that will help to improve the efficiency of working approach and resources of practitioners

Met opmerkingen [DvR1]: Daniel remarks this is not clear

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By achieving the Specific Objectives through implementing these Core Actions, the FLOODSECURE project will achieve the goals of the SEC-21-GM-2016-2017 call. The expected outcomes are summarised in Table 1.2 below:

Table 1.2: Main expected outcomes of the FLOODSECURE project.

The main outcomes from FLOODSECURE will include:
<ul style="list-style-type: none"> • Greater uptake and implementation of research and innovation project solutions, supporting more efficient practitioner performance • More effective use of research funding in meeting the specific needs of practitioners • Better awareness and coordination of research needs at national and European levels • Improved awareness of practitioner training facilities and resources across Europe • Greater awareness and communication between existing national and European networks of practitioners • More targeted standardisation of products and processes to support greater practitioner efficiency

Met opmerkingen [DvR2]: Daniel suggests to integrate this in table 1.1

1.2 Relation to the work programme

1.2.1 Why a network of flood response practitioners?

FLOODSECURE builds and supports a network of Practitioners that have a dedicated Civil Protection and first responders role in performing flood prevention, preparedness, and monitoring and response actions. The scope of work, whilst covering the severe impacts resulting from extreme weather and the resulting floods, includes threats related to flood risk arising from terrorist and other intentional activities – for example, threats to the stability of levees, dams and water retaining structures protecting people and supporting critical infrastructure such as transport, power generation and supply, communications etc.

In this context, the FLOODSECURE Practitioners are drawn from a wide range of disciplines and from across the whole European area but acting in a specialist field of flood management from natural and potentially man-made hazards. The governance structure of Practitioners addressing these issues varies from country to country across Europe. Equally, the nature of the flood hazards (both natural and man-made) vary geographically as well as the civil protection that is driven by stipulated national policies (e.g. nuclear, hydro, standards of flood protection etc). Consequently, to comprehensively support this specialist group of practitioners our proposal cuts across both disciplines and geographic boundaries to ensure that the maximum value is gained through collaboration and information sharing in this important field.

Since flood response practitioner networks exist at European, national and sub-national level in different forms, FLOODSECURE also focuses on creating synergies by aligning, supporting and encouraging greater participation between and within those groups, so creating a pan-European network of practitioners better able to share and learn from each other. Overall, FLOODSECURE will lead to enhanced flood practitioner capability and collaboration across Europe. A further aim of the project is to close the gap that has traditionally existed between practitioner and researcher 'worlds', each with their own knowledge pathways (Figure 1.1).

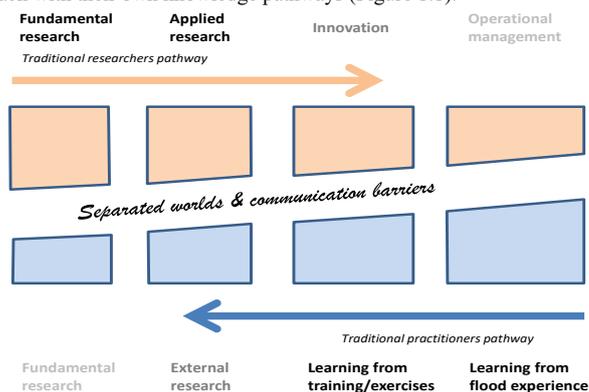


Figure 1.1. Past flood risk management and emergency response RDI approaches

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1.2.2 Meeting the specific objectives of the call text

The call text clearly defines the challenges, scope and expected impact of practitioner networks. Table 1.3 below summarises how the FLOODSECURE project addresses each of these specific objectives for a pan European network of flood response practitioners:

Table 1.3: Meeting the call outcomes.

The FLOODSECURE Approach to Specific challenges:
<p>Challenge: “Practitioners interested in the uptake of security research and innovations have little means to free workforces from daily operations, and to dedicate time and resources to monitor innovation and research that could be useful to them”.</p>
<p>Approach: Three specific aspects of the FLOODSECURE approach are designed to assist practitioners with time limitations. These are: (i) FLOODSECURE events are aligned with other external events so that attendance at both can be undertaken by some practitioners so as to reduce disruption to their work schedule (ii) The main FLOODSECURE events are held annually (not too often, not too infrequent) and also include a topic focus (iii) Multiple methods are adopted for the push / pull of information relating to the different project objectives. These include via workshops, survey, consultation, online and through social media. As such, each practitioner can utilise whichever method is most suited to their work style. (iv) Interaction on the FLOODSECURE web site.</p>
<p>Challenge: “They have little opportunities to interact with academia or with industry on such issues”</p>
<p>Approach: The FLOODSECURE partners comprise a careful balance between practitioners and Research & Technology Organisations (RTOs). A ratio of roughly 2/3rds : 1/3rd has been developed. The majority of RTOs are also organisations familiar with knowledge brokering and operating in the area between industry and academia. In this role many of the RTO partners already perform the process of research prioritisation and industry uptake for organisations within their own countries. This practical experience will be invaluable for implementing the FLOODSECURE programme.</p>
<p>Challenge: “get together to: 1) monitor research and innovation projects with a view to recommending the uptake or the industrialisation of results 2) express common requirements as regards innovations that could fill in capability and other gaps and improve their performance in the future, and 3) indicate priorities as regards domains requiring more standardisation”</p>
<p>Approach: A core feature of the FLOODSECURE approach is to mesh the push / pull of information programme (needed to identify priorities, needs etc.) with national, regional, local ‘external events’. The external events (such as training exercises) are recognised by practitioner organisations as valuable ways of testing, training and exchanging knowledge hence participation is valued. By aligning FLOODSECURE processes (data gathering, analyses, events) around such programmes we optimise participation in both the FLOODSECURE programme as well as in the existing programme of external events –a very positive outcome.</p>
<p>Challenge: Common understanding of innovation potential, more widely accepted understanding, expression of common innovation and standardization needs</p>
<p>Approach: By building a network, sharing (both the push and pull) of information and providing a forum for discussion and feedback, FLOODSECURE will facilitate a better understanding of innovation potential and common innovation and standardisation needs. To be effective, the network needs to have sufficient reach (membership) across a wide range of organisations. To this end, a structure of partners and associate partners has been established, whereby up to 50 associate partner representatives will be supported (travel & subsistence costs) in their participation in annual events. There will also be financial support for participation in external events where this facilitates the exchange of information needed to achieve the project objectives.</p>
<p>Challenge: “More articulated and coordinated uptake of innovative solutions among practitioners from different disciplines who are often called to act together to face major crisis”</p>

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Approach:

FLOODSECURE Partners and Associate Partners are drawn deliberately from different disciplines – see Section 1.2.1 above – to create a multidisciplinary approach that captures different requirements. The FLOODSECURE information exchange and analysis programme, combined with annual events allows for the discussion and exchange needed between different disciplines to meet this challenge. The five annual events in the FLOODSECURE programme are intended to be an opportunity for review, discussion and validation of the issues and priorities arising from the collation and analysis of information during the year. Hence, information presented to the wider participants at the annual event will be pre-processed so as to allow for open and informed discussion rather than basic analysis of raw data.

Challenge:

“More widely accepted understanding, expression of common innovation and standardisation needs among practitioners in the same discipline”

Approach:

The FLOODSECURE approach is to both push information out (research and innovation opportunities) and pull information in (identification of needs and standardisation opportunities). This will be undertaken continuously through the parallel methods of exchange (see first challenge above) and conclusions validated by the wider network during the annual events. The annual events will also be streamed online to permit involvement by those unable to travel, with feedback on recommendations sought online.

Challenge:

“More efficient use of investments made across Europe in demonstration, testing, and training facilities for first responders”

Approach:

Under FLOODSECURE WP6 three actions help to achieve this challenge. These comprise

- (i) External events (such as training exercises) are already organised in partner countries at a national, regional or local level. FLOODSECURE will map, track, promote and support attendance at such events – increasing practitioner awareness, participation and observation, and the exchange of knowledge and practice. FLOODSECURE project events will also be aligned with such external events to further promote awareness and participation.
- (ii) Existing testing and training facilities across Europe will be mapped and promoted by the FLOODSECURE network to ensure greater awareness and use. FLOODSECURE events will also be aligned with such facilities wherever possible.
- (iii) Practitioners learn from each other when considering response to extreme and rare conditions. A repository register of case study material – drawn from national, regional or local practice – will be built to support that learning process.

Challenge:

“Synergies with already established European, national and sub-national networks of practitioners, even if these networks are for the time being only dedicated to aspects of practitioners' work unrelated to research and innovation (in general, to the coordination of their operations)”

Approach:

The FLOODSECURE consortium contains a wide variety of partners with direct links to different networks of practitioners. In addition, some partners and associate partners are pan European organisations or networks in their own right – for example, the European Flood Awareness System (EFAS), the International Association of Fire and Rescue Services (CTIF), EurCOLD Levee Working Group / EurCOLD European Commission on Large Dams. The FLOODSECURE consortium also contains partners operating at governmental level (e.g. RWS, EA) who link into national networks and RTOs (eg. HRW, DELTARES, IRSTEPA, Samui) who link into the FLOODrisk conference series and initiatives such as the flood risk management community of practice (FRM-CoP) – hence providing a very strong interface with flood event related research / academia and industry practice.

Met opmerkingen [DvR3]: Daniel suggest to add emphasis on “increasing efficiency of investments”

1.3 Concept and Methodology

1.3.1 The Overall Concept

Floods as a natural hazards either stemming from short term risks like rain induced flash floods and tsunamis or risks with more warning time like storm driven coastal floods and river basin floods are the cause of significant socio-economic damages and long term societal disruptions. For this reason it also has been a topic covered by extensive legislation and policy making. At the European level risk management at the river basin scale has e.g. led to the Water Framework Directive and the Floods Directive. The Floods Directive has led to the development of Flood Risk maps and Member States are currently developing Flood Risk Management plans rooted in these

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mapping efforts. Secure societies depend not only on adequate risk management but since risks cannot be reduced to zero also on crisis management. Flooding both at the European and international level is one of the major threats requiring response recognised by the EU Civil Protection Mechanism. Coordination through the permanently operational European Response and Coordination Centre (ERCC) includes access to the established voluntary pool of flood expertise and equipment available through European Emergency Response Capabilities arrangements. . Furthermore, in the area of flood risk, the European Flood Awareness System is operated through four consortia focussing on different aspects. The EFAS Dissemination centre issues warnings on a daily basis and is currently being led by the Swedish Meteorological and Hydrological institute and Rijkswaterstaat (NL). At the international scale the Sendai Framework for Disaster Risk Reduction 2015 – 2030 also has the overall aim to reduce disaster risks and losses and shifting from managing disasters to managing the underlying risks¹. This does not however mean that there is a single strategy on crisis management and the extent to which a centralized or decentralized approach is implemented. Also the balance on prevention or response driven management differs significantly across Member States. The challenges resulting from the state of affairs are also at the core of the work programme call which this project addresses.

Figure 1.2 below positions FLOODSECURE according to the overall concept of the Disaster Management Cycle, and detailing it for the area of floods as natural and manmade hazards addressed both through risk management and crisis management policies as described above.

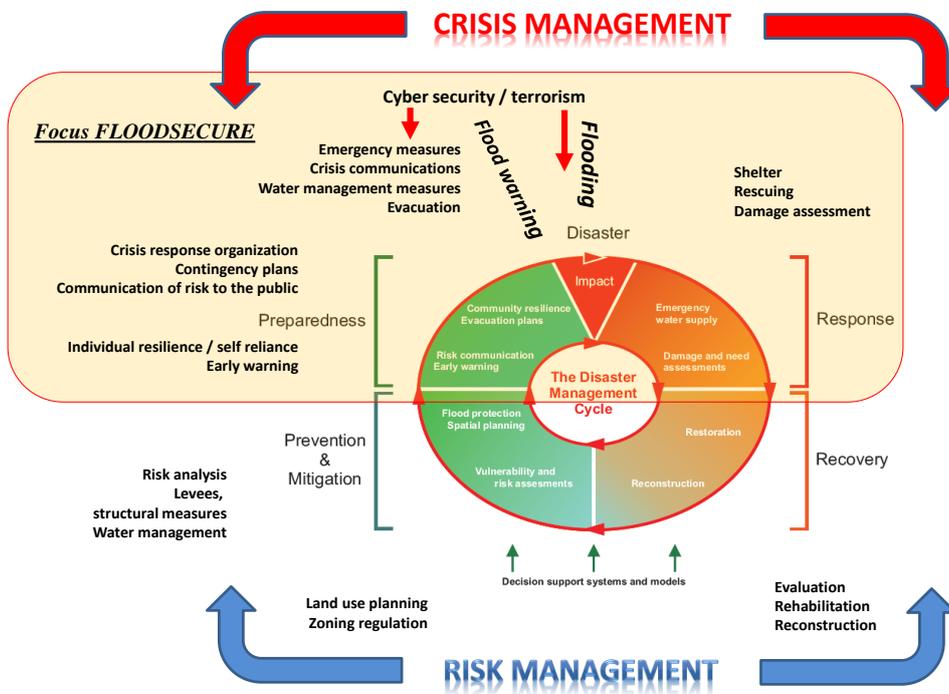


Figure 1.2 Disaster management of flood hazards and secure societies.

The overall concept to meet the work programme objectives and achieve the proposed impacts, comprises a combination of approaches, including:

- (i) Establishing a cyclic programme and process of information collection, analysis, conclusions and validation

¹ Poljanšek, K., Marín Ferrer, M., De Groeve, T., Clark, I., Faivre, N., Peter, D., Quevauviller, P., K., Boersma, K.E., Krausmann, E., Murray, V., Papadopoulos, G.A., Salamon, P., Simmons, D.C., Wilkinson, E., Casajus Valles, A., Doherty, B., Galliano, D., 2017. Science for disaster risk management 2017: knowing better and losing less. Executive Summary. EUR 28034 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-79-69673-2, doi:10.2760/451402, JRC102482.

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- (ii) Adopting multiple methods for capturing and sourcing information, including use of online tools and systems, to maximise the flow of information whilst minimising the time requirement for practitioners
- (iii) Establishing a hierarchy of work and information management, with roles shared by both Practitioner and RTO organisations to ensure that
 - a. the focus of effort remains of direct practitioner value
 - b. key issues and opportunities are compiled and finally reviewed by the Project Management Team (PMgT) so that an ‘intelligent’ assessment of how best to promote, support and maximise the innovation potential of each item is performed
- (iv) Establishing a programme of FLOODSECURE events that align with programmes of external events – optimising the opportunity of participation in both, and assisting with the feedback of practitioner information to the project
- (v) Financial support for the wider participation of Practitioners in both the FLOODSECURE events and external events.
- (vi) Promoting greater awareness and use of existing training centres through mapping, promotion and alignment of FLOODSECURE events.
- (vii) Ease of access to training material through collation and access to best practice and case study material, plus ‘points of contact’ for future bilateral collaboration.

Recognising that many practitioners operate with severe limitations on their time available to access, review and contribute to research and innovation programmes the combined approach of workshops plus online tools is intended to allow for different levels of participation and timing of participation (i.e. so that practitioners can access, learn and contribute when it is convenient to do so).

1.3.2 Links to national and international research and innovation activities

Before describing how FLOODSECURE links to existing innovation activities, it is useful to reflect on the variation in flood response practice across Europe. The institutional and governance structures for flood response naturally vary across the different Member States (MSs) as a result of history and the differing experiences of major floods, which in most countries drive the legislative requirements. It is worth illustrating this with a couple of examples. In the Czech Republic, the management and response to floods is hierarchical, with responsibility passing from central government, to regional and then municipal level, depending on the affected area (as illustrated in the following diagram). So flood commissions will be set up to manage a flood (the ‘crisis bodies’), which will have overall responsibility in their area, and will call on the in-situ entities for support as necessary. So in a nation-wide flood event, crisis bodies would be established at all three levels, with communication channels between them and supported by the POVIS flood information system.

Level	Flood Event Management		Flood Event Execution		
	Co-ordination		Action	In situ Involved entities	In situ Volunteers
State	Government	Ministries	Central Crisis Body	Central Bank, Police, (Army)	NGO s
County	Regional Government	Regional Security council	Regional Crisis Body	Fire Rescue Service	Red Cross Volunteers (organized)
Municipality	Mayor (Municipal Authorities)	Municipal Emergency Council	Municipal Crisis Body	Czech Hydrometeorologic Inst. River Basin Enterprises Dam, pond, levees operators Water Research Institute Water and Landscape Preservation Medical Rescue System	Donors

In England & Wales (figure 1.3), government sets the legislative framework for flood response management: in this case the Cabinet Office. There are 38 regional bodies, called the Local Resilience Forums (LRFs), based on the local Police administrative area. Each LRF is responsible for coordinating all defined emergencies, including the planning, response and recovery functions. These are multi-agency groups, comprising two categories of responders, which develop emergency plans, share information and intelligence, and coordinate the response and recovery.

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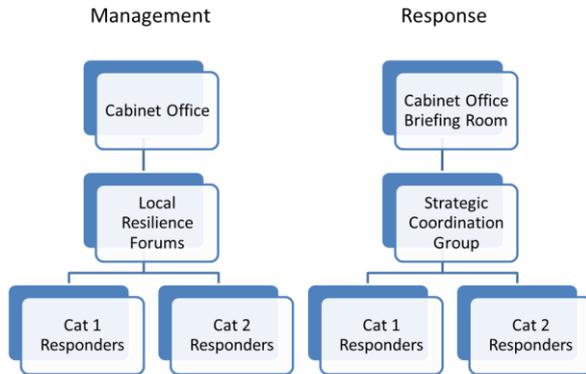


Figure 1.3 UK-example of flood response management organisation

Category 1 responders comprise emergency services, health bodies, local authorities and Government agencies (for floods this is the Environment Agency). Category 2 responders comprise utilities, transport operators and the Health & Safety Executive. In a crisis, a Strategic Coordination Centre would be set up by the LRF, and like the Czech crisis body would manage the input of the various responders. In a national crisis, a Cabinet Office Briefing Room would be established, with internal and external communication strategies in place, and coordinating overall national response.

So comparing these two formats, there is a central, government role for coordination and policy setting, some form of regional/local organisation, supported by a range of specialist responders and associated IT and information procedures. In the Czech Republic there is a role for volunteer bodies, which is not formally recognised in civil contingency processes in the UK. In terms of the FLOODSECURE project, the mapping of our partner base is given in Section 3.3.

At a European level there is the European Civil Protection mechanism which also entails the operation of the ERCC on a 24/7 basis. This includes the European Flood Awareness System (EFAS) operated by 35 member states and the wider Economic zone.

Under the European Civil Protection and Humanitarian Aid Operations (DG-ECHO) also a program of civil protection exercises is run providing valuable learning opportunities for all involved in operations under the EU Civil Protection Mechanism. The practitioners of the FLOODSECURE network will provide the links to these actions also.

1.3.3 Overall Approach and Methodology

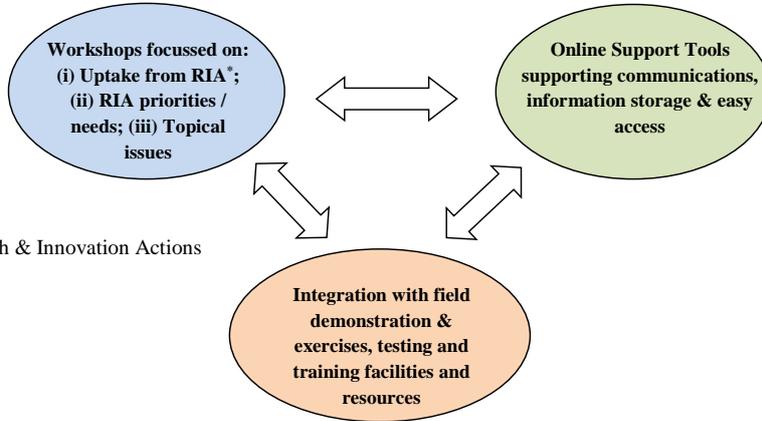
A key aspect affecting the success of FLOODSECURE in supporting flood response practitioners is in demonstrating that their investment in time is worthwhile. We adopt several approaches to achieve this, allowing practitioners to access information and participate in events in the most time and cost effective way, which also offers flexibility to fit around existing daily operations and commitments. FLOODSECURE therefore enhances their daily activities, rather than supplanting them. With this in mind, the FLOODSECURE approach is to combine three core processes, as shown below.

These processes are implemented through a project structure comprising 7 work packages, as shown in the PERT diagram (see Figure 3.1).

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*RIA Research & Innovation Actions

Figure 1.4 FLOODSECURE core process

As noted in Section 1.2.1 above, the traditional spheres of the research community and response practitioners have tended to be distinct, with few opportunities or steps taken to provide enhanced integration. The impact of the three key project processes is to bring these two spheres together as illustrated below. So the RIA needs / priorities and research uptake (covered by WPs 3 and 4) form a major part of the annual workshops, which cement the practitioner ‘pull’ for new innovation with the ‘push’ of information from the researchers. Similarly, the linking of workshops to external exercises or training events permits mutual learning of improved operational processes and reveals associated improvement needs. Finally, standardisation operates most effectively at the operational end of the practitioner spectrum, and here WP5 will link the outputs from WPs 3 and 4 to the need for increased pan-European standardised processes, policies or procedures. So overall, the proposed project processes are ideally aligned with the natural workings of both researcher and practitioner communities, helping to integrate and optimise their collaboration (as illustrated in Figure 1.5 below).

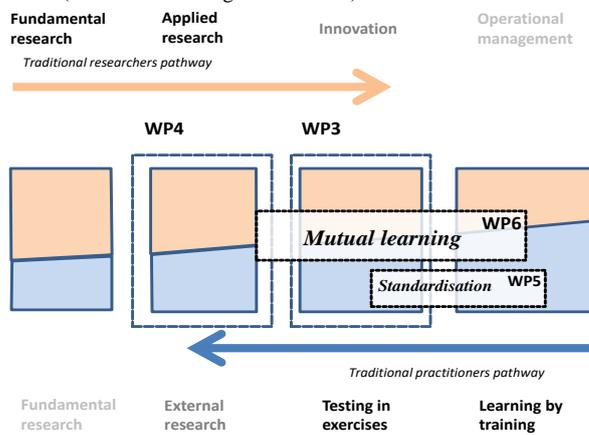


Figure 1.5 FLOODSECURE researchers and practitioners' alignment process

1.3.3.1 Programme of Workshops

The Overall Concept:

For the network to succeed in achieving the core objectives, the project requires clear and effective mechanisms for the push/pull of information on uptake, needs and standardisation.

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This **push/pull process** is achieved by:

- (i) online / email survey of the various organisations and networks linked through the FLOODSECURE network of partners and associate partners
- (ii) selected follow up interviews (based on high value survey responses)
- (iii) bespoke topic-specific meetings to develop a topic/issue briefing note
- (iv) integrating the process with feedback from 'external events' such as demonstration & training exercises throughout the year (either direct event feedback or 'supported participant' feedback)
- (v) integrating and processing all types of survey / feedback information in an annual analysis workshop (partners + others by invitation)
- (vi) online tools that will support time-challenged practitioners
- (vii) presenting and validating conclusions during an annual project workshop (open to all)

Hence the project supports the exchange of information, raising awareness and identifying priorities for action AND enhances international cooperation in 'external events' such as demonstration & training exercises. In addition, as part of this process:

- (i) where any of the push/pull information process (undertaken via WP3/4/5) identifies the need for specific action to improve / refine / develop knowledge about a specific issue, item or product, then an 'action group' can be formed to support the needs for this topic in whatever manner is most effective.
- (ii) All project events will be planned so as to (i) align with external events (supporting pan European knowledge exchange) and (ii) have a topic focus (so as to give greater emphasis to priority issues)

The Process in More Detail:

At a European Level:

There will be one project kick-off meeting attended by partners only. This will confirm the overall work programme, and the governance and management procedures to be adopted within the consortium.

WP3, WP4 and WP5 will hold annual analysis workshops (partners + others by invitation only) to process raw survey and feedback data into prioritised recommendations. They will also review the previous year's work against the plan, and seek feedback for any outstanding issues related to the new work plan.

There will be five annual FLOODSECURE workshops, attended by partners & associates, comprising 1.5 days meeting in a 2 day period. Each annual event will be hosted by a different partner, aligned with a relevant external event, but with a core programme comprising:

- ½ day monitoring RIA for uptake opportunities
- ½ day prioritised actions for enhanced performance
- ¼ day standardisation needs and opportunities
- ¼ day topic focus

At a National Level (i.e. linking with External Events):

The FLOODSECURE programme has 9 countries participating as partners, and X countries including associate partners established during the proposal stage. External events in each country will be mapped and promoted via the project network, website, social media etc. The project will also encourage and support attendance at selected events for a number of partners and associate partners, based upon the value gained in networking and wider collaboration (as determined through the Project Management Team (PMgT) review process). A key factor for external event support will be the feedback of information supporting the identification of research priorities, opportunities for research uptake and standardisation (i.e. the core objectives).

With a Topic / Problem Solving Focus:

Work analysing the push / pull of information under WP3,4,5 may from time to time identify specific topics or issues that require more detailed attention to refine or resolve. In this situation, topic groups can be established to address a particular issue and feed conclusions back into the network. Such topic groups may meet from time to time, and the attendees will be selected on the basis of the topic under consideration. Topic Groups will form and disband to suit the needs of addressing each issue. An example of such topic group would be the proposed content for a new standard or policy brief, which would be 'worked up' by a drafting group involving members who had particular knowledge or expertise in the topic.

Online:

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Online systems will be structured to support the project and network of practitioners in delivering the 5 core project objectives. For example, mapping and tracking research priorities, research opportunities (for uptake), opportunities and priorities for standardisation. Bespoke information storage and analysis systems will be used to maximise efficiency – for example, in dealing with surveys, feedback, reports etc. Tools will also be used to promote wider collaboration in training and demonstration exercises, and in making more efficient use of existing (training) facilities and (exchange) initiatives. Functionality will include, for example:

- providing easy access to the mapping of all existing facilities.
- supporting information sharing and promoting collaboration in external events
- supporting a wider Associate Partner programme noting that ~20 partners and ~50 associates can be funded to participate in annual events. It is recognised that associate participation in an event will change from event to event (topic focus to topic focus) – hence from a pool of >>50 associates, we financially support up to 50 each time.
- providing online access / streaming of events to promote much wider engagement than those able to attend in person.

Rules for Supporting Finance

Partners:	Time and T&S costs are covered within the project budget
Associate Partners:	T&S allowance for up to 50 associates joining an annual event and up to 50 associates joining external events in partner countries
Eligibility Rules:	Will apply to ensure that maximum value is obtained to the FLOODSECURE project through feedback of information from external events

Met opmerkingen [AT4]: Figure 2.2 shows this as £500k for the project. So I think this equates to 50 attendees at annual events 1,000 euro per attendee per event say 250,000 euro and a similar event for funding of associates to attend other events (approx. 50 per year at same rate). I think the scale of this funding should be made clear when it is first introduced (i.e. here) and the message that of a project funding of XM euros y% is being held for Associate Partner T&S.

Met opmerkingen [AT5]: can we define what an event is? (at least 450 person days per year plus flights or is this up to 50 people attending a topic meeting somewhere in one of 9 countries? each year – i.e. similar funding to (i))

1.3.3.2 Management of information flows

A significant challenge for the project will be the orderly and effective management of information. The central WPs (3 to 5) are concerned with the derivation and communication of information of interest and relevance to flood response practitioners. It is important, therefore, that we adopt a structured approach to the management of all of this information. The five principles of information management, also known as the 'Business Elements (BE) Method', can be applied to all information flow systems or business organisations, such as that involved in managing a flooding response, and bring together all possible elements from high-level policy issues to detailed analysis. We will use this framework, described below, to guide our management of information. The five principles of information management are summarised in the following diagram (Figure 1.6) and outlined as a set of statements or objectives for information management.

(i) Information and data requirements

Fundamentally, any organisation involved with the emergency planning for floods must review their information and data requirements to ensure they match their needs. It is not sufficient to assume that because certain information or data are collected or generated they will always be needed. Information demands need to be expressed explicitly to all the stakeholders involved. The movement of information through the emergency response system, between responders and with the public, needs to be understood.

The five principles

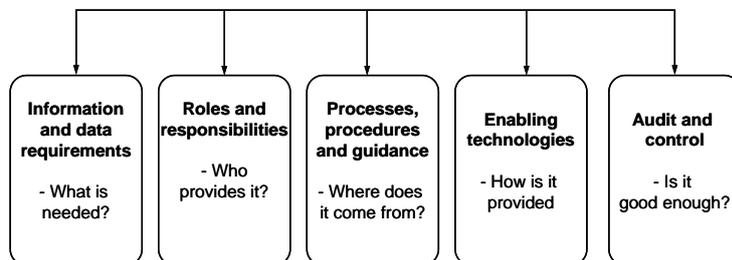


Figure 1.6 FLOODSECURE Information management principles

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(ii) Roles and responsibilities

It is important to define the roles and responsibilities of stakeholders involved in the emergency planning for floods. This can then be mapped to their data requirements, and how they change and transmit information.

(iii) Processes, procedures and guidance

The processes, procedures and guidance for emergency planning for floods within each organisation will be described at this stage. This means that if an organisation is a collector of information used in emergency planning, it needs to be stated what techniques are used. Similarly, if an organisation generates data using modelling (e.g. flood forecasts) such procedures also need to be documented.

(iv) Enabling technologies

In order for organisations to improve their emergency planning for flood events it is important that they apply appropriate enabling technologies. This does not mean the organisation has to constantly keep up with the latest technological developments, but it should recognise that technology does become obsolete and thus it is important to make informed decisions about upgrade programmes.

(v) Audit and control

The audit and control stage is an essential part of any practices for maximising the value of information. It enables the benefits of the process to be quantified and areas of improvement identified. If the organisation already has a formal audit procedure, then procedures to improve information exchange should be incorporated within it.

The above framework has been applied successfully in two previous flood-related studies: as an analytical framework for the development of improved emergency plans in the FIM FRAME project (www.fimframe.net); secondly, to provide a framework, guidance and tools for the assessment and management of flood risk to assist with the regulation and planning of new developments in England and Wales. More details can be found at the following web site: <http://www.hydres.co.uk/> (Defra/Environment Agency, 2006).

By its nature, the BE Method works well in an interactive format with stakeholders, and therefore we will look at options for its use in the project, particularly in WP5 in terms of prioritising issues for standardisation.

1.3.3.3 Integration with field demonstration & exercises, testing and training facilities and resources

One of the first tasks in the project will be to map the field or desktop demonstrations and exercises known to the project partners. This will be expanded via our extended network to cover the majority of Europe, so that we have a comprehensive list of opportunities for collaboration. This list will be kept updated throughout the project, so that we can make best use of the most relevant external events to our programme of topics. Alongside this, we will also map the availability of training centres and associated programmes and resources, and will make this available to the consortium, so that partners and associates can form contacts outside the project. However, the project will aim to showcase the most suitable training facilities, and will plan to include at least one such centre as part of an annual workshop.

Based on this dual mapping, the PMgT working with WP6 will look to align the annual workshop programme with the external events to obtain the maximum benefit to the community. Clearly, it may not be possible to develop a full 5-year programme at the outset, nor to define an external event that fits every workshop. The project has sufficient flexibility to allow it to develop the most appropriate workshop programme, based largely on the identified needs of practitioners. This will also retain the possibility to meet in an area that suffers major flooding during the project term. So the PMgT will look to optimise the opportunities that arise from the on-going external event programmes, and the need for topic-based meetings arising from WPs 3 to 5 and the identified responder needs.

1.3.3.4 Online Support Tools

Appropriate use of online and social media systems will be made to support access to and the exchange of information. It is recognised that there needs to be a carefully designed balance between usability, accessibility, complexity and functionality for such systems to provide real benefits. Through the network website, specific tools are planned to support:

- (i) Online network membership registration and contact management
- (ii) FLOODSECURE events and External Events programme tracking and attendance tracking
- (iii) Tracking of RIA projects and initiatives at national and European levels
- (iv) Repository for best practice and case study material
- (v) Repository for mapping testing and training facilities
- (vi) FLOODSECURE App – for access to web information via smartphone, receipt of push notices and submission of feedback

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Where existing systems already perform these tasks – or part of these tasks – the FLOODSECURE approach will be to link with and/or build from these systems rather than duplicate.

1.3.4 Gender analysis

The consortium will take all measures to promote equal opportunities between men and women in the implementation of the project and aim for the best possible gender balance at all levels of staff assigned to the project, including at supervisory and managerial level. All partners will help to promote equal opportunity recruitment and employment policies, including family-friendly policies (like favourable child care arrangements). In applying these policies, we aim to address the gaps in the participation of women in this field. Therefore, positive discrimination will include: i) prioritising the appointment of women in the event of a choice of equally qualified and suitable male and female candidates presenting for a post; ii) presenting a positive female dimension of the project in publications and on the web-site, for example, this may affect the choice of illustrations and language; iii) incorporating in service training where possible to increase the capacities of women participants, where those are perceived to be lesser than among their male counterparts (or vice versa); iv) ensuring a role for the women practitioners; v) ensuring that dissemination of the project outcomes reached men and women equitably and that the technology used is not “gender-exclusive” in its nature.

2 Impact

2.1 Expected impact as described by the call

The EU Commission’s Community of Users on Secure, Safe and Resilient Societies aims to make better sense of research and identify research needs through stronger networks and exchange of information². To strengthen these efforts FLOODSECURE as a pan-European network of practitioners is dedicated to floods and flood response, which pose the largest threat to people and the built environment.

Flood events lead to severe disruption in the operation of infrastructure and can put the functioning of societies and their economies at risk over extended periods of time. FLOODSECURE will help improve preparedness and response to floods thereby strengthening the practical implementation of the EU Civil Protection Mechanism (Decision 1313/2013), the IPCC7 recommendations in relation to extreme climatic events; and the Sendai Framework for Disaster Risk Reduction at an international level.

FLOODSECURE will lead to better international preparation and planning for flood fighters and result in more effective sharing of highly trained resources in emergency scenarios. This is achieved through optimising use of existing research outputs, better aligning flood responder needs with research programmes and more effective identification of opportunities for standardisation of products and processes.

The Expected Impacts as described by the call are:

Expected Impact 1: *Common understanding of innovation potential, leading to expression of common innovation and standardisation needs among practitioners in the same discipline.* FLOODSECURE will contribute to inter-organisational coordination and thus help establish common priorities and needs. Through WP3 and WP4 this will also lead to stronger involvement of practitioners in validating and testing of tools, concepts and methodologies.

Expected Impact 2: *More articulated and coordinated uptake of innovative solutions among practitioners from different disciplines who are often called to act together to face major crisis.* FLOODSECURE will identify tools and methods from previous and on-going FP7 and H2020 projects thus avoiding duplication of effort by practitioners (WP4). These will also be recommended for potential use and development in practitioner training activities.

Expected Impact 3: *Agreement on priorities as regards domains requiring more standardisation.* FLOODSECURE will combine the outputs of WP3 and 4 into a set of proposals for new standards covering methods, processes and procedures (WP5). Based on discussions and prioritisation with practitioners, outline briefs

²

Poljanšek, K., Marin Ferrer, M., De Groeve, T., Clark, I., (Eds.), 2017. Science for disaster risk management 2017: knowing better and losing less. EUR 28034 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-60679-3, doi:10.2788/842809, JRC102482.

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will be created for the most pressing actions, which can then be progressed by national or European bodies outside of the project.

Expected Impact 4: *More efficient use of investments made across Europe in testing, and training facilities for first responders.* FLOODSECURE will map and raise awareness of existing facilities across Europe (WP6).

Expected Impact 5: *Synergies with already established European, national and sub-national networks of practitioners.* Flood risk emergency response management is a complex adaptive system with a wide range of stakeholders operating in a diverse field, with varying institutional arrangements. FLOODSECURE will facilitate transdisciplinary networking between practitioners, researchers and policy makers responsible for preparedness and emergency response (WP6). This will lead to increased interaction and enhanced mutual learning, through evolution of the network building on existing bilateral cooperation-agreements and expanding these actions to continue after the EU-funded action.

Expected Impact 6: *Open innovation.* Participation in the FLOODSECURE network will enable practitioners to increase the effectiveness of investments in flood protection and response, by raising awareness and utilisation of newly developed cost-effective technologies and concepts. It will support collaborative and more focused innovation programmes to be designed to support policy implementation, along with meeting practitioner needs at all levels.

Expected Impact 7: *Significant savings on the cost of flood damage and protection in Europe.* The FLOODSECURE network value and impact across a longer timeframe of, for example, 10 years will be quite significant. The network's outputs will be generic and applicable across all areas with significant flood risk within the EU and worldwide. With flood risk management spending of €40 billion across Europe in 2008, and with projected increases to €100-120 billion, a saving in practice of just 1% arising from innovation resulting from the network activities equates to 1Bn savings for government and regional authorities.

Expected Impact 8: *International cooperation.* FLOODSECURE will contribute to truly international cooperation and information exchange through building upon existing international networks and collaboration by existing partners and associate partners (e.g. informal and formal collaboration agreements between Rijkswaterstaat, US Army Corps Engineers, UK Environment Agency etc.).

2.1.1 Other expected impacts

The contributions to harmonisation in Flood Emergency Response approaches, and provision of guidance-documents as well as policy briefs developed during multi-stakeholder exchanges will also support the implementation of the EU Floods Directive in a European context and demonstrate European capabilities in the international field of flood risk management and response. There is considerable expertise and experience in the network that would make sharing beneficial, leading to de-fragmentation and the creation of synergetic approaches that directly benefit operations under the Civil Protection Mechanism. The overall result will be beneficial for future innovation and job growth while at the same time reducing uncertainty in the effectiveness and efficiency in FRM measures and savings on projected FRM costs.

FLOODSECURE is intended to address limitations in existing practice and hence to increase the efficiency and effectiveness of flood risk emergency response at an international scale. Some specific aspects of current practice which FLOODSECURE will address include:

- Fragmentation of the industry: lines of communication are limited or not established, resulting in duplication of research and policy effort, inconsistent implementation of practice, and not necessarily use of best practice.
- Communication not dissemination: information is often disseminated through pushing of information to a wide audience. But for the provision of information to be worthwhile, two-way lines of communication are needed to allow discussion and agreement on action. The FLOODSECURE network provides just such a mechanism.
- Intelligent and automated: the advent of internet technology offers great potential for storing, manipulating and providing access to information. The FLOODSECURE network will provide an intuitive IT solution allowing access to the right type of information for specific end-user needs, only introducing an appropriate degree of automation that does not stand in the way of end-user flexibility.
- Individual flexibility in approach: The FLOODSECURE network will provide a framework that allows (i) an overview of best practice to be made, and hence adoption of the most appropriate solutions for a given

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environment; (ii) flexibility to create, develop and share new ideas and solutions with a minimum of constraint.

To assess the impact that FLOODSECURE has over the lifetime as a project a self-assessment will be undertaken amongst the participants of the network on the maturity levels of topics relevant to preparedness and emergency response in the field of floods both at the start of the project and one year before its finish. It is to be expected that the maturity levels (illustrated in Figure 2.1 below) will show a systematic increase in the topics of the FLOODSECURE network.

Characteristics of the Maturity levels

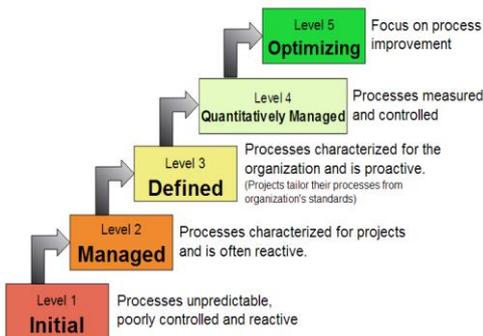


Figure 2.1 Maturity levels to be used for a self-assessment on flood preparedness and emergency response.

In the field of flood risk management and emergency response, FLOODSECURE may contribute to EU support of the Sendai framework for Disaster Risk Reduction especially Priority 4 (Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction). This includes promotion of a more systematic and reinforced science-policy interface to strengthen the contribution of DRM to smart, sustainable and inclusive growth globally. FLOODSECURE creates links, knowledge exchange and ideas for progress and innovation that go beyond existing governance and research and innovation institutional arrangements due to its open character in which a much wider range of stakeholders, experts and practitioners can communicate and act.

2.1.2 Barriers to impact

As with every project there are also a number of barriers that will require consideration to ensure that these will not impede the progress of the FLOODSECURE networking activities. Barriers that have been identified upfront are:

- procedural limitations through governance structures in the field of civil protection that may limit uptake to proven technology and approaches.
- the accessibility/use of information e.g. confidentiality of experiences and recommendations of emergency response exercises and availability of emergency response protocols
- language barriers hindering accessibility/availability of material to users.

These will be assessed within the project (PMgT) when they appear and are identified as impeding progress and solutions will be sought through the network itself.

2.2 Measures to maximise impact

2.2.1 Dissemination and exploitation of results

Communication, dissemination and exploitation of the results is the heart of the 5 Core Objectives of FLOODSECURE since a pan-European network of flood response practitioners does not provide any added value without effective sharing of knowledge and acting upon the priorities identified. A draft Communication, Dissemination, Exploitation and Outreach plan (CDEO plan) has been produced by Samui ahead of the project start; key components of this draft plan are outlined below and within the following Section 2.2.2 Communication Activities.

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Dissemination and exploitation activities focus on feeding information out from the project and encouraging actions which promote change arising from those outputs. For this to be effective, a strategic approach is necessary. The FLOODSECURE network focuses on providing support to different *target groups* of flood response practitioners, such as:

- Flood responders
- Scientists/researchers
- Policy makers
- Research programme managers / funders
- Industry (provision of equipment and solutions)
- Training and knowledge management organisations

The FLOODSECURE consortium comprises a range of organisations drawn from some of these sectors; the wider associate partners include members from all sectors. A key role of all partners will be the use of existing links and connections into organisations and networks covering the full range of target audiences across all partner countries and beyond.

Activities focussed at different target groups will then be structured – for example:

(i) FLOODSECURE and stakeholder engagement:

FLOODSECURE to Industry Engagement by the use of Knowledge Transfer Plans. These plans will include the identification of specific end-users and the associated value chain for the knowledge. This customised approach will increase the likelihood that (1) the KNOWLEDGE OUTPUTS are successfully transferred and the knowledge applied; (2) there is an increased potential for impact resulting from the transfer activity; and, (3) it is possible to measure and demonstrate the impact of the KNOWLEDGE OUTPUTS transfer. The measurement of impact will be done for two timelines, short term and projected long term.

(ii) FLOODSECURE to Policy Engagement:

Policy Briefs: FLOODSECURE has the aim to engage with policy-forming and policy-implementing actors and elected representatives in governments. The objectives of such engagement will be to understand the relevant legal constraints in each region, to inform officials about the work of FLOODSECURE, and to demonstrate how the project can contribute to the field of emergency response for floods. The FLOODSECURE outputs and results will directly feed into their decision-making processes and substantially contribute to preparedness and flood response.

Dissemination tools and processes

FLOODSECURE will use a combination of web based tools, social media, workshops and network member links to directly disseminate information from the project. The core process of information collation, analysis and exchange rotates around identification of practitioner research priorities, innovation and standardisation opportunities. This information is both collected and shared through surveys, email, direct consultation, workshops, online streaming and the use of social media (FLOODSECURE App) (WP7). FLOODSECURE holds a workshop each year to present and validate recommendations from the analysis of this information during the year. FLOODSECURE also aligns events with external training and exercise events, as well as promoting and supporting these external events, so as to maximise the exchange of information and hence value to practitioners. The mapping of external events, alignment of FLOODSECURE events and support for external events is monitored and reviewed by the PMgT every 3 months throughout the 5 year programme to maximise the opportunities. Direct contact with the external event managers also helps ensure the effective dissemination of information in both directions.

Hence the FLOODSECURE network provides a platform where scientists, policy makers and practitioners in the field can come together in a cycle of workshops, on-line discussions and drafting of key documents progressing the state of practice to the benefit of public safety and creating, in the long-term, the basis for more effective and efficient flood emergency response as part of the overall protection against flood hazards.

External Communications and Synergies with Other Initiatives

Consortium partners will provide links into organisations, networks and initiatives, allowing wide visibility of the FLOODSECURE network, and hence growth year on year. Jointly, consortium partners provide links into international networks and initiatives which will allow FLOODSECURE to quickly reach thousands of flood risk

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related practitioners, governmental policy and programme managers and industry and academic research organisations. This wide combination is needed to achieve the strategic goals.

The FLOODSECURE consortium provides immediate links with many existing initiatives, for example:

- Bi and multilateral governmental collaboration in flood risk response
- National and international programmes of research
- Existing programmes of practitioner training including joint exercises
- Existing networks addressing various aspects of flood risk processes (e.g CTIF, EU COLD levees)
- Existing research and industry events disseminating flood risk related information (eg. FLOODrisk conference series)

FLOODSECURE also aligns with and support the goals of other initiatives such as:

- SEC area 1st Responders Community of Users
- JRC Disaster Risk Knowledge Management Centre
- European Civil Protection Mechanism / Emergency Response Coordination Centre
- CIS Working Group F (Floods) via HR Wallingford's role as the Secretariat for this MS group

In addition, RTO members of the consortium link into academic research programmes and networks within their respective countries. This combination of links offered by the consortium helps to ensure that research initiatives from academia, government and European agencies and industry are included within the FLOODSECURE review and consultation programme.

Exploitation of the Results

The objective of the FLOODSECURE network is to support flood response practitioners by resolving gaps in knowledge, practice, solutions and equipment and to improve training, through better use of existing facilities, wider material and greater participation in collaborative exercises and events. The main routes for achieving exploitation of FLOODSECURE outputs are via:

- Feedback to the EC and national governments regarding research priorities, innovation and standardisation opportunities leading to
 - o More focussed research programmes and funding, targeting practitioner requirements – both at national and European scale
 - o More focussed standardisation efforts, improving practitioner collaboration
 - o More rapid industry development and uptake of solutions meeting practitioner needs
- Wider sharing of best practice and training material between practitioners
- Wider collaboration in training exercises and events between practitioners
- More effective use of existing training centres and facilities across Europe

Achieving impacts through feedback

The structure of FLOODSECURE, with annual recommendations compiled by the PMgT and active interfacing with external events and initiatives (which typically involve many governmental organisations) means that progress in the exploitation of results by practitioners will also be tracked and reported by the PMgT. Some partner and associate partners members already comprise those governmental organisations responsible for these uptake and innovation actions, hence direct lines of communication already exist within the consortium.

Ethics, Security and Data Management Plan

The collation, analysis and prioritisation of information through the FLOODSECURE network and programme will result in different forms of survey material. A comprehensive data management plan will be developed ahead of the kick off meeting (Month 2) to ensure that all partners follow a consistent approach. Since the network also includes consideration of flood issues arising from terrorism and vandalism, particular measures will be needed to ensure confidentiality of items arising from these aspects. These measures will be agreed with the securities area of the European Commission before those aspects of project work begin. (See also Section 5 of the proposal for more information).

Sustainability beyond the Project Lifetime

Funding FLOODSECURE provides a mechanism to establish the network of flood response practitioners and the processes and procedures needed to achieve the core objectives. It is anticipated that after 5 years, this process will be well established and the impacts and added value clear. With the intention that the network will continue beyond the initial FLOODSECURE programme, Task 7.4 looks at options for future sustainability during years 4

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and 5 of the programme. All of the network support tools, website etc. will also be maintained online for a period of not less than 5 years after project completion to provide high-level support to the transition and evolution to a self-sustaining network.

2.2.2 Communication activities

FLOODSECURE and end-user and practitioner engagement

To manage the identification and communication with a diverse range of initiatives, events and stakeholders, a series of bespoke online tools will be developed (WP7). In particular, these will facilitate:

- Registration of practitioners within the network
- Tracking of research priorities, innovation and standardisation opportunities
- Mapping of training events and facilities
- Tracking of 'external' events and exercises

The detailed roles and interests of stakeholders will subsequently allow more targeted communication during the process of gathering information relating to priorities, interests and opportunities. It will also allow the preferred mode of communication to be determined so as to minimize intrusion into limited work time availability.

A full draft of the Communication, Dissemination, Exploitation and Outreach (CDEO) plan will be shared ahead of the project kick off meeting (Month 2). This plan will contain an initial analysis of the information flow and the specific target audiences, as well as the channels that will be used for that purpose. An initial overview of the key information flows is shown schematically in Figure 2-2.

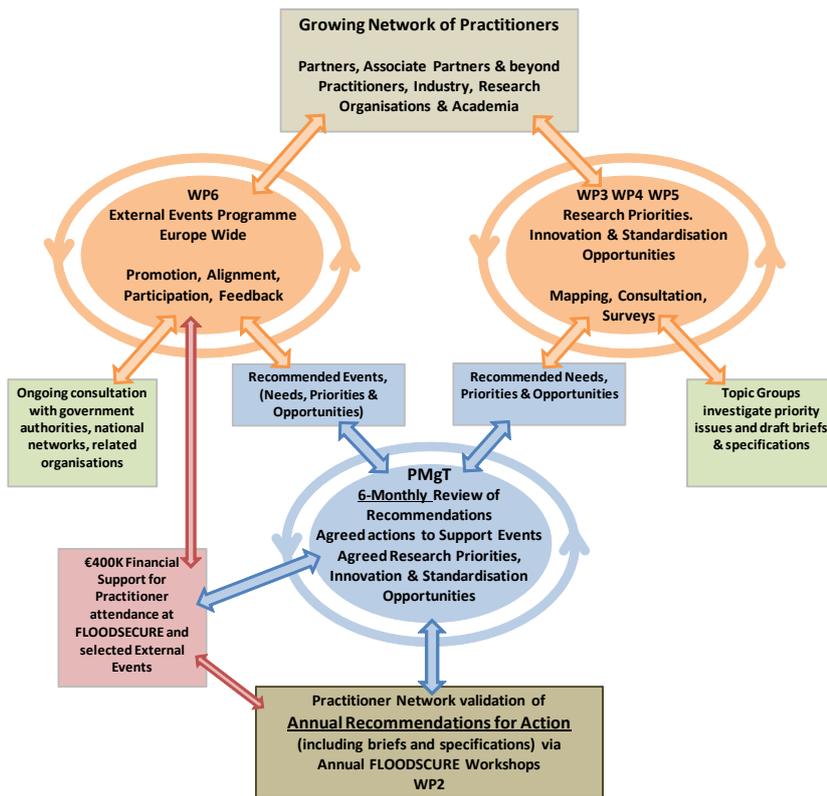


Figure 2.2 Cyclic processes for collation, review and analysis of information supporting the core objectives

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Both traditional and new media forms of communication will be used including:

- Project website
- eNews / Newsletters
- Project brochure / poster / video explaining the function and objectives
- Social media programme of distribution
- FLOODSECURE smartphone App

However, at the heart of the FLOODSECURE programme is the combination of annual workshops alongside the promotion, support and participation in external events, such as training exercises. This meshes the FLOODSECURE programme into the existing flood response practitioner training and exercise programmes across Europe, thereby optimising use of their limited and valuable time.

The annual FLOODSECURE events will be attended by all consortium members with financial support offered for up to 50 associate partners (practitioners) to also participate. Further to this, the events will be streamed (and recorded) online to allow even wider interaction and feedback. This is particularly important where the annual events will present recommendations and conclusions arising from the preceding year for wider practitioner validation.

Alongside the FLOODSECURE programme of workshops are the national programmes of events (external events). These events are tracked via WP6, promoted via the project network and support offered for selected participation in key events (as optimised via WP6 and the PMgT). Interaction with these events provides further strategic sources of information back to the project, as well as directly supporting wider practitioner involvement and encouraging greater national collaboration and exchange.

The following FLOODSECURE project events are planned (see also the GANTT chart):

Event	Date	Location	Host Partner	Description / Validation of
1	M2	France	EDF	Kick off meeting – structure and approach
2	M12	UK	BITC	Preliminary report – review of process
3	M36	Spain	GVDS	Full report
4	M36	Czech Republic	ELWRI	Updated report
5	M48	Netherlands	RWS/DELTARES	Updated report
6	M57	Belgium	DVW	Updated report

Met opmerkingen [DvR6]: change order based on Daniel's request

The FLOODSECURE App will be developed in Yr 2 of the project, once initial lines of communication and information analysis are established. The development of the App is intended to:

- Provide a further means for practitioners to access information
- Provide a mechanism for directly messaging network members (push info as compared to email)
- Provide a mechanism to receive direct feedback on issues (priorities, opportunities – surveys etc)

Uptake of the App will be encouraged through:

- Direction promotion through the network links using social media and through explanatory sessions online and at annual events
- Provision of specific annual and external event information via the App
- Provision of user feedback mechanisms via the App, so that users can directly indicate preferences and priorities allowing instant feedback during annual events (including online participants)
- Timely, continuous update of news items through the App

The communication challenges for building such a network of practitioners must not be underestimated. As such, the approach must also remain flexible and under constant review. The effectiveness of the CDEO plan and hence approaches being implemented will be reviewed by the PMgT on a 6 monthly basis, and adjustments in strategy and approach taken where appropriate.

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3 Implementation

3.1 Work plan – Work packages, deliverables and milestones

3.1.1 Overall structure of the work plan

Implementation of the FLOODSECURE programme is via 7 work packages, as shown in the PERT diagram (Fig 3.1). These work packages address 3 distinct aspects of the challenge, as reflected by the shading.

Firstly, at the heart of the programme, is the push/pull of information between practitioners and researchers, along with the analysis by all groups of priorities and opportunities. This work sits under WP3/4/5, with annual recommendations for action being produced. The information flow is via personal, email and online surveys, social media and a programme of topic focussed workshops. WP3, WP4 and WP5 implement the core information sharing, exchange and prioritisation process supporting the core FLOODSECURE goals of:

- (i) Monitoring research and innovation projects; recommending the uptake or the industrialisation of results
- (ii) Expressing common requirements as regards innovations that could fill capability and other gaps and improve their performance in the future
- (iii) Indicating priorities as regards domains requiring more standardisation
- (iv) Producing draft outlines for future implementation covering innovations and standardisation

Secondly, also at the heart of the project, is alignment of the FLOODSECURE programme of events with other 'external events' through WP6. These external events comprise training exercises and events being held in various partner countries at national, regional and local scales, to which practitioners would typically participate as part of their annual training. By aligning the FLOODSECURE programme in this way, we encourage both wider practitioner participation in external events as well as participation in both external and FLOODSECURE events, alongside the feedback to FLOODSECURE of specific issues and priorities from those events. Both the FLOODSECURE and external events programme is reviewed by the project management team quarterly to ensure that support and alignment of events remains optimised throughout the 5 year programme.

Thirdly, WP1/2/7 provide support for implementation of the project and management of the practitioner network. FLOODSECURE supports the participation of up to 50 additional 'associate partners' at each annual workshop along with up to 50 people to external events each year. This is undertaken to support wider practitioner participation and growth of the network. Management of the workshop programmes, registration, selection and subsistence support for participation requires a significant management effort, which is reflected in WP2. WP2 also addresses the overall project communication and dissemination activities, which will be closely linked with the network and programme of events. In parallel with WP2, WP7 provides online tools and systems to support growth of the network and implementation of the FLOODSECURE work programme (see Section 1.3.3.4).

3.1.2 Timing of the different work packages

The Gantt diagram below (Figure 3.2) shows work package timing alongside project workshops and annual outputs. Since the core objective of the project is to establish and support the pan-European network of flood response practitioners, the Gantt chart shows consistent inputs across all WPs after the first year, having established an annual cycle of information collation, analysis and prioritisation. Allowing for project start up, and initial data collection, the first report at the end of Year 1 is a preliminary report only. However, from Year 2 onwards, the annual reporting will be complete and updated each year.

The Gantt chart shows links between the FLOODSECURE event programme and the external event programme (which comprises events across all partner countries and wider). The interaction between event programmes is a continuous process, updated every 3 months. In Years 4 & 5 of the programme closer consideration will be given to the future sustainability and evolution of the practitioner network with a view to sustaining the programme beyond the end of the FLOODSECURE project, and the high-level support that might be needed.

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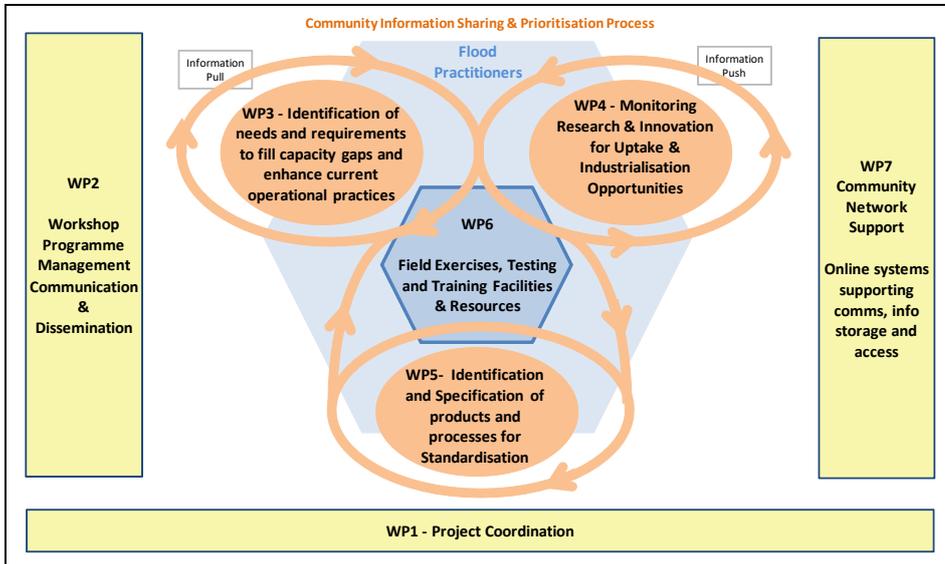


Figure 3.1: PERT Diagram showing work package structure and interaction.

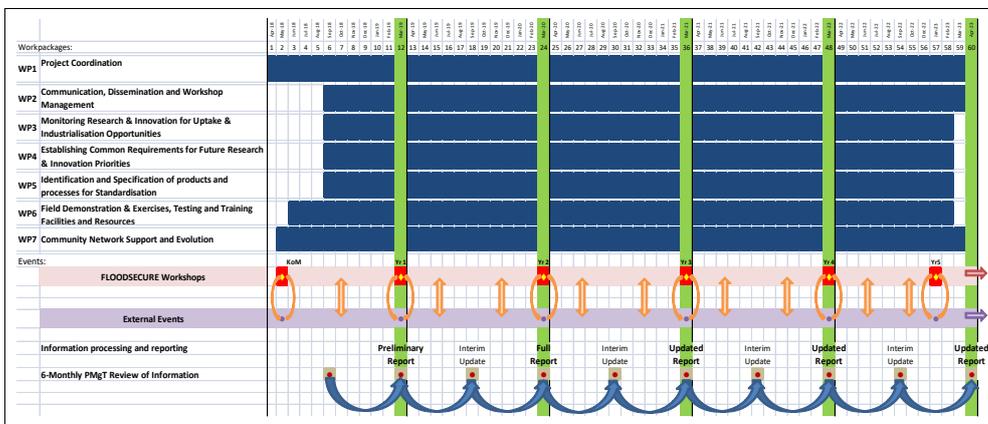


Figure 3.2: GANTT Diagram showing work package timing and interaction.

Met opmerkingen [C.C.D.F.7]: GANTT diagram needs to be larger to be readable

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FLOODSECURE

Work Pack No.	WP1		Lead: SAMUI-FR			Co-Lead:		
Work Pack Title	Project Coordination							
Partner No.	P01	P02	P03	P04	P05	P06	P07	P08
Short Name	Samui-Fr	Deltares	RWS	UPC	INT	GVDS	HRW	EVFH
Person-months	21	1.0	1.0	1.0	1.0	-	1.0	1.0
Partner No.	P09	P10	P11	P12	P13	P14	P15	P16
Short Name	DVW	SPW	METCENAS	ELWRI	LHW ST	EDF	SDIS 77	IRSTEA
Person-months	-	-	1.0	-	-	1.0	-	1.0
Partner No.	P17	P18	P19	P20	P21	P22	P23	P24
Short Name	CTIF	HKC	BITC	BME	STOWA	AMAYA	CIMA	EA
Person-months	-	-	-	-	-	-	-	-
					Start:	Month 1	End:	Month 60

Objective:

To coordinate project activities, ensure quality and timely project execution and deliverables, and to carry out the financial and administrative management of the project including:

1. To provide overall direction and a framework for the successful implementation of the project
2. To facilitate collaboration between partners, associates partners and the wider practitioner network
3. To facilitate communication between the EC and the consortium
4. To ensure timely and quality contractual reporting
5. To facilitate strong and effective involvement of the many different stakeholders bridging between local, regional, national and European initiatives and between the different sectors of research, policy and practice

Description of work and role of participants

WP1 will ensure the efficient administrative and scientific coordination and management of the FLOODSECURE project. Samui will lead this process working closely with a Project Management Team (PMgT) which will comprise WP leaders and Co Leaders. The core activities include:

Task 1.1: Consortium management

- Establish a Project Method and Activity Plan (PMAP) which defines overall project working procedures
- Facilitate development of each WP implementation plan (WIPs), ensuring clear and integrated programmes across all work packages (and providing a clear programme of roles and responsibilities for all partners)
- Organise and chair PMgT meetings in which all WPs and key project actions are represented
- Manage project risks and resolve problems
- Routinely monitor and ensure effective project progress and quality of deliverables
- Organise and chair annual partner general assembly meetings
- Ensure ethical procedures are followed and that a data management plan is developed and implemented
- Act as liaison with the European Commission (EC)

Task 1.2: Financial & administrative management

- Fulfil obligations and reporting according to the grant agreement
- Obtain reports from WP-leaders on partner and WP progress
- Compile and submit reports in accordance with the EC contractual requirements
- Maintain a consortium agreement
- Implement amendments to contract where necessary

Deliverables

- D1.1** FLOODSECURE Project method and activity plan (PMAP) prepared and approved [Samui] (Month 2)
D1.2 Risk Management Plan prepared and approved [Samui] (Month 2)
D1.3 Chair & meeting notes PMgT, Project Consortium and General Assembly meetings [Samui] (Month 3-60)
D1.4 Ethical Procedures and Approval Report (Month 3)
D1.5 Data Management Plan prepared and maintained [Samui Month 4]

Milestones

- M1.1** Project kick off meeting (KoM) implemented (Month 2)
M1.2 Partner General Assembly meetings (Month 12, 24, 36, 48, 57)
M1.3 Periodic reporting completed (Month 12, 27, 42, 60)

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Work Pack No.	WP2		Lead: SAMUI-FR			Co-Lead: METCENAS		
Work Pack Title	Communication, Dissemination and Workshop Management							
Partner No.	P01	P02	P03	P04	P05	P06	P07	P08
Short Name	Samui-Fr	Deltares	RWS	UPC	INT	GVDS	HRW	EVFH
Person-months	11.7	3.3	3.05	3.3	3.05	1.4	3.3	3.3
Partner No.	P09	P10	P11	P12	P13	P14	P15	P16
Short Name	DVW	SPW	METCENAS	ELWRI	LHW ST	EDF	SDIS 77	IRSTEA
Person-months	1.65	1.40	5.05	1.65	1.40	3.05	1.4	4.45
Partner No.	P17	P18	P19	P20	P21	P22	P23	P24
Short Name	CTIF	HKC	BITC	BME	STOWA	AMAYA	CIMA	EA
Person-months	2.80	1.40	1.65	4.30	2.80	2.30	1.40	1.40
					Start:	Month 1	End:	Month 59

Objectives:

- (i) Development and implementation of the FLOODSECURE communication & dissemination strategy
- (ii) Management of the overall programme of FLOODSECURE meetings and workshops
- (iii) Integration of FLOODSECURE recommendations and external event support (PMgT 6 monthly process)
- (iv) Management of funds supporting Practitioner Associates attendance in FLOODSECURE and External Practitioner events

Description of work and role of participants

Task 2.1: FLOODSECURE Communication & Dissemination Strategy (Lead: Samui-FR / METECENAS; Partners: PMgT)

Communication is at the heart of the whole process of creating and supporting the FLOODSECURE Pan-European Network of Flood Response Practitioners. Whilst the various project WP activities deal with the push / pull flow of information needed to inform and prioritise future direction, the Communication & Dissemination (C&D) strategy here refers to the actions needed to support and promote external visibility of the project itself, rather than implementing the network of practitioners (which is addressed in different ways by the combination of project work packages).

Key stages of work will include

- Development of the detailed FLOODSECURE C&D strategy (which will focus on objectives linked to target audiences and specific partner activities and actions) (D2.1)
- Implementation of the C&D strategy (with 6 monthly progress reviews and annual updates) and including:
 - o Project branding
 - o FLOODSECURE website functionality supporting the project management and team working (restricted area) (D2.2)
 - o FLOODSECURE website functionality supporting outward facing communication and dissemination actions (D2.2)
 - Social media presence
 - Use as a central portal to other relevant sources of information and support systems developed under WP7
 - Email / eNews / Newsletters
 - o Development of a FLOODSECURE smart phone App specification (supporting the push of information, event participation etc) (D2.3 for implementation of D7.5)
 - o Traditional promotional materials (brochure, poster, etc)

ALL Partners will actively engage with the C&D programme to help promote awareness of the FLOODSECURE network and to maximise the pan European engagement with existing networks and external programmes of events.

Task 2.2: FLOODSECURE Workshop Programme (Lead: Samui / METCENAS + PMgT)

The core process of FLOODSECURE is in the sharing and exchange of information. Participation in project workshops and linking with external events (practitioner exercises, training etc) will play a significant role in this process. The project workshop programme comprises:

- (i) **External Events** – FLOODSECURE will support the push and pull of information needed to achieve the

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core objectives by (i) direct surveys and consultation in parallel with (ii) promotion and participation in external events (such as exercises and training events that Practitioners use to test skills and procedures). The external event programme is defined by different national organisations, but will be mapped and linked via WP6. The nature of project interaction will be determined on an event by event basis according to the specific focus of that event. The project may support participation of partners / associate partners as observers in the event, who in turn feedback valuable information on issues, needs and priorities, or participate in the post event analyses or simply collate feedback after the event. These external events are recognised by Practitioners as of great value and hence time is allocated for Practitioner participation. By promoting and supporting such events the project not only encourages greater participation in a process that is clearly valued and working, but also makes more effective use of the limited time practitioners have for addressing the core project issues.

- (ii) **WP Specific Meetings** – Each WP, but particularly WP3/4/5, will collate and process information annually. There will be the need for the WP teams to periodically meet and draw conclusions from their analyses, which will then be available for the PMgT to draw overall project conclusions and recommendations.
- (iii) **PMgT meetings** – will occur quarterly, but with programme review and WP3/4/5 progress review activities six monthly. The ‘main review’ meetings will be face to face, whereas the interim PMgT meetings will be online. During each of these meetings (i.e. quarterly) the PMgT will:
- monitor project progress and help guide project direction, dealing with any issues and risks that may occur during project implementation;
- During the 6-monthly face to face meetings the PMgT will:
- review the project workshop and attendance programme in relation to the 6-monthly updates (D6.1) of the external events programme – taking decisions regarding the degree and focus of support to participate in such events so as to maximise impact for practitioners and achieving the project core objectives;
 - undertake an annual integration of conclusions and recommendations from WP3/4/5 analyses, producing a position paper, with clear recommendations for use in the annual workshops (D2.5)
 - review and agree on the formal release of information to the network of practitioners regarding key actions, findings, conclusions etc. [Release via the PMgT rather than via individual WPs helps ensure consistency and awareness across the project, providing a single source of official information to the network].
- The PMgT will act to balance opportunities between the research programmes and practitioner needs.
- (iv) **Annual workshops** – implemented by the project to disseminate and validate conclusions and recommendations arising from the project during the year. These events will be public, with **financial support for up to 50 associate partners to attend each event**. Each annual event will be hosted by a project partner in a different location and aligned, as far as possible, with an external practitioner event.

An initial Kick off meeting will also be held for the project partners to initiate the project programme, working procedures and processes.

Hence the specific actions under Task 2.2 will be to:

- Map and maintain the overall FLOODSECURE workshop programme plan (D2.4) (Month 4)
- Align and support attendance with the external events programme (D6.1) through 6-monthly reviews by the PMgT, identifying any new opportunities and agreeing the focus of any event alignment and support (i.e. promoting attendance and feedback via project partners and associates) (D2.5)

Task 2.3: Annual FLOODSECURE workshops (Lead: Samui-FR; Partners: PMgT)

There will be six FLOODSECURE workshops comprising one kick off meeting and five annual events. Each event will be hosted by a different partner and aligned with a strategically selected external event. The host and country locations will include:

FR	EDF / IRSTEA
UK	HRW / EA
ES	UPC / civil Cat
CR	METCENAS
NL	RWS/Deltares
BE	EVFH

The annual events will provide a forum for the presentation of annual progress and the review and validation of

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recommendations arising from the various activities. This feedback will then help align direction of the network and the focus of efforts in the coming year.

Task 2.3: FLOODSECURE Workshop Support: (Lead: Samui-FR, Partners: PMgT)

Task 2.3.1 Practitioner Financial Support

To encourage greater interaction and collaboration of practitioners in exercises and training events, FLOODSECURE has allocated a budget of €400K towards the travel and subsistence costs of partners and associate partners attending both annual project events and external events (WP6). The process for attending, the subsistence provided and the form of information feedback to the project will be determined by the PMgT.

This task will manage the overall process (promotion, validation and distribution of practitioner financial support for participating in both workshop meetings etc). This will be undertaken through use of online tools (D2.2)

Task 2.3.2 Workshop implementation Support

To help ensure consistency in style and approach, and hence costs, support will be provided to hosts of the annual workshops providing the following items:

- Workshop promotion: Event flyer, email, newsletter, social media and app promotion
- Workshop registration: Online materials including event details, online registration and distribution of support materials
- Workshop streaming: Each annual event will be streamed live online, and recorded for later access, so as to widen the potential audience

Deliverables

- D2.1 C&D strategy (Month 3), annual updates and implementation
- D2.2 Initial website (both public and team facing) (Month 12)
- D2.3 Smart phone App development specification (Month 18)
- D2.4 Event programme plan (Month 4 – on-going updated quarterly)
- D2.5 6-Monthly PMgT analysis of support and alignment of FLOODSECURE events with external events (Month 6 – initial plan, updated every 6 months throughout project)
- D2.6 Annual position paper, produced by the PMgT, integrating conclusions and recommendations on all core objectives from WP3,4,5 & 6 (Month 12 – updated and extended annually)

Milestones

- M2.1 Initial project website presence online (Month 2)
- M2.2 Year 1 Annual workshop
- M2.3 Year 2 Annual workshop
- M2.4 Year 3 Annual workshop
- M2.5 Year 4 Annual workshop
- M2.6 Year 5 Annual workshop

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Work Pack No.	WP3			Lead:	DINT			Co-Lead:	UPC
Work Pack Title	Identification of needs and requirements to fill capacity gaps and enhance current operational practices								
Partner No.	P01	P02	P03	P04	P05	P06	P07	P08	
Short Name	Samui-Fr	Deltares	RWS	UPC	INT	GVDS	HRW	EVFH	
Person-months	0.05	0.95	0.95	11.50	5.55	0.90	0.95	0.95	
Partner No.	P09	P10	P11	P12	P13	P14	P15	P16	
Short Name	DVW	SPW	METCENAS	ELWRI	LHW ST	EDF	SDIS 77	IRSTEA	
Person-months	0.90	0.90	0.95	0.90	0.95	0.90	0.90	0.95	
Partner No.	P17	P18	P19	P20	P21	P22	P23	P24	
Short Name	CTIF	HKC	BITC	BME	STOWA	AMAYA	CIMA	EA	
Person-months	0.95	0.90	0.90	0.90	0.95	2.65	0.90	0.90	
					Start:	Month 2	End:	Month 58	

Objectives

WP3 focuses on identifying common needs and requirements of the first-responders and civil protection bodies to fill capability and functional gaps in current operational practices, and express them through recommendations and guidelines to promote focused research and innovation able to meet the specific needs of practitioners. WP3 will produce annual recommendations (updated every 6 months) for these innovation priorities building from local, regional, national and European consultation undertaken directly and via external practitioner events.

Description of work and role of participants:

The information exchange process is explained in detail in Section 1.3.3.1 and Section 2.2 (Information flow diagram). Each of WP3, 4, 5, 6 collates and analyses information on different aspects related to the core objectives. Each provides 6-monthly updated summaries and annual recommendations, which are used by the PMgT to provide overall project recommendations and outputs.

Task 3.1 Co development of the **online** support system specification for monitoring research and innovation projects focussing on defining common requirements (Lead: Samui, Partners: UPC, INT) (Month 4)

WP7 will support this task by developing an online database system to support the storage and analysis of information relating to the goals of WP3, 4, 5 & 6. Hence this task comprises:

- Work in collaboration with WP4, WP5, WP6 and WP7 to develop a combined specification for an online system for storing and tracking information regarding ongoing RIA (both national and European) for uptake, and capturing practitioner needs
 - Performance testing of the online system
- Needs from WP3 will be agreed and defined in a technical note (D3.1 (Month 4)) which will form part of the specification for the development of D7.2.

Task 3.2 Confirmation of procedures for identifying common requirements for research and innovation needs (Lead INT, Partners: UPC) (Month 3-9)

The first actions towards identifying research and innovation needs for capability development and filling (future) gaps in will be to:

- develop a survey questionnaire,
- confirm the target audience,
- confirm the process for integration and evaluation of (i) survey responses; (ii) external event feedback
- ensure an integrated approach is taken with WP4, 5 & 6 to avoid any target audience receiving multiple requests from the project (see WP7)

This process will be detailed in a report (D3.2 (Month 7))

Task 3.3 Elaboration of a report with recommendations and guidelines compiling identified needs/requirements and gaps to be filled (Lead UPC, Partners: INT, GVDS,...) (Month 9-20)

The survey will be distributed by email and online using a database of contacts (practitioner network, WP7) comprising :

Met opmerkingen [DvR8]: Have ensure that we do not duplicate this text in all WP's, otherwise take it out and put in in general approach/methodology.
There also seems to be quite some duplication in the text regarding the link to WP7. Need to write that more efficiently and clear division of roles between WP3 and WP7 here

Met opmerkingen [DvR9]: Web-based or online in view of cybersecurity?

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- project partners
- associate partners;
- links to national networks and organisations
- 1st responders Community of Users (EC / JRC DRMKC)
- programme of external events contacts (WP6)
- Research and academic networks in each partner country

The call for responses will also be openly promoted via the project website and through social media. The survey will be supported by visits to selected partners/associated partners, as set out in Task 3.4

Four levels of response may be anticipated: (i) no response; (ii) general response – some information; (iii) detailed, specific response of greater value, (iv) external event participant information. Follow up interviews by phone and / or in person will be undertaken with those responses considered to be of greater value. Feedback from participation in external events (WP6) will most likely offer significant value, since the events are typically focussed on identifying issues and areas for improvement.

Task 3.4 Visits to selected partners/associated partners to identify needs, requirements and gaps.. (Lead: DINT, Partners: UPC,) (Month 9-18)

- Organization and realisation of thematic visits
- Compilation of the needs/ requirements and gaps to be filled

Task 3.5 Analysis of requirements expressed and exchange on their common character in the national and European context of research and innovation needs (Lead: UPC, Partners: INT,...) (Month 19-32)

The information collected from Task 3.3 / 3.4 will be integrated and then interpreted to identify innovation and uptake opportunities and priorities. The methodology followed will be as developed in Task 3.2. Information will be pre-processed and then the evaluation undertaken by the WP3 team during a WP3 survey analysis workshop.

Task 3.6 Six monthly and Annual Recommendations on common requirements for national and European research and innovation needs (Lead: INT, Partners: UPC,...) (Month 33-52)

Two outputs from the WP4 analysis of survey data will comprise:

- Initial findings and recommendations (D3.3 (Month 12)
- A 6-monthly update (interim between annual recommendations to allow the project to respond to opportunities that may arise within 6 months rather than a year)

Both of these outputs from WP3 will be used by the PMgT in conjunction with similar summary recommendations from WP4, 5 & 6 during their 6 monthly review meetings. The PMgT will then release overall (integrated) recommendations from the project.

Deliverables

- D3.1** Technical specification for WP3 needs from D7.1 (online support system) (Month 4)
D3.1 Summary of survey approach, target audiences, analysis process and procedures (Month 7)
D3.2 Initial survey feedback base data (comprising survey, meeting notes, external event feedback) (Month 10)
D3.3 Recommendations and guidelines compiling identified needs and requirements to fill capacity gaps and enhance current operational practices (Report, PU) (Month 32)

Milestones

- M3.1** Distribution of initial survey to target audiences (Month 10)
M3.2 First WP3 analysis workshop (Month 20)
M3.3 WP3 6-monthly updates (Month 30, 42, 52)
M3.4 WP3 Annual updates (Month 36, 48, 57)

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Work Pack No.	WP4			Lead:	EDF			Co-Lead:	DELTAIRES	
Work Pack Title	Monitoring Research & Innovation for Uptake & Industrialisation Opportunities									
Partner No.	P01	P02	P03	P04	P05	P06	P07	P08		
Short Name	Samui-Fr	Deltares	RWS	UPC	INT	GVDS	HRW	EVFH		
Person-months	-	11.25	1.55	1.55	1.55	1.55	1.55	1.55		
Partner No.	P09	P10	P11	P12	P13	P14	P15	P16		
Short Name	DVW	SPW	METCENAS	ELWRI	LHW ST	EDF	SDIS 77	IRSTEA		
Person-months	1.55	1.55	1.55	1.55	1.55	6.20	1.55	1.55		
Partner No.	P17	P18	P19	P20	P21	P22	P23	P24		
Short Name	CTIF	HKC	BITC	BME	STOWA	AMAYA	CIMA	EA		
Person-months	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55		
					Start:	Month 2	End:	Month 58		

Met opmerkingen [BV10]: I asked to lower this with 0,1 to 0,8. Now you have raised it to 1.55?

Objectives

WP4 focuses on recommending priority actions for uptake or industrialisation from existing research and innovation results that will help to enhance practitioner performance. This is done by bringing together information on protocols/tools, technologies out of the relevant national FP7, Horizon2020 and the upcoming new Framework program FP9 projects, consolidating stakeholder feedback of RTO and EC activities and by integrating these with stakeholder needs expressed through WP3, experiences out of the field and virtual exercises (WP6) on their elaboration and use. To raise awareness on existing research outputs, identify gaps and overlaps for European and international cooperation and discuss opportunities for uptake two workshops will be initiated together with international partners. The first to define information needs, the second to discuss recommendations for uptake based on the information gathering and linkage to stakeholder needs.

Description of work and role of participants:

Task 4.1 Co development of the online support system for monitoring research and innovation focussing on defining common requirements (Deltares) (Month ?)

WP7 will support this task by developing an online database system to support the storage and analysis of information relating to the goals of WP3, 4, 5 & 6. Hence this task comprises:

- Work in collaboration with WP3, WP5, WP6 and WP7 to develop a specification for an online system for storing and tracking information regarding ongoing RIA (both national and European) for innovation and uptake
- Performance testing of the online system

Needs from WP4 will be agreed and defined in a technical note (D4.1 (Month 4)) which will form part of the specification for the development of D7.2.

Task 4.2 Confirmation of procedures for identifying research and innovation project results for uptake (Lead EDF, Partners: PMgT)

The first actions towards identifying research and innovation project results for uptake will be to:

- develop a survey questionnaire,
- confirm the target audience,
- confirm the process for integration and evaluation of (i) survey responses; (ii) external event feedback
- ensure an integrated approach is taken with WP3, 5 & 6 to avoid any target audience receiving multiple requests from the project (see WP7)

This process will be detailed in a report (D4.2 (Month 7))

Task 4.3 Collation of information on relevant national and European research and innovation projects (Lead Deltares, Partners **METCENAS +1** Partner per country)

The survey will be distributed by email and online using a database of contacts (practitioner network, WP7) comprising:

- project partners
- associate partners;
- links to national networks and organisations
- 1st responders Community of Users (EC / JRC DRMKC)

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- programme of external events contacts(WP6)
- Research and academic networks in each partner country

The call for responses will also be openly promoted via the project website and through social media. Furthermore the search will be supported through internet searches, reviewing scientific literature and exploring patent databases seeking project results and innovative technologies.

Task 4.4 Analysis of information on national and European research and innovation project results (Lead: **Deltares / Partners?**)

This is done by bringing together information on protocols/tools, technologies out of the relevant national FP7, Horizon2020 and the upcoming new Framework program FP9 projects, consolidating stakeholder feedback of RTO and EC activities and by focusing these with stakeholder needs expressed through events in WP2, experiences from the field and virtual exercises (WP6) on their elaboration and use. To raise awareness on existing research outputs, and discuss opportunities for uptake the information collected from Task 4.3 will be integrated and then interpreted to identify opportunities for uptake of research and innovation results. The methodology followed will be as developed in Task 4.2. Information will be pre-processed and then the evaluation undertaken by the WP4 team during a WP4 survey analysis workshop.

Task 4.5 Six monthly and Annual Recommendations on uptake from relevant national and European research and innovation projects (Lead: **Deltares / Partners?**)

Two outputs from the WP4 analysis of survey data will comprise:

- (i) Annual findings and recommendations
- (ii) A 6-monthly update (interim between annual recommendations to allow the project to respond to opportunities that may arise within 6 months rather than a year)

Both of these outputs from WP4 will be used by the PMgT in conjunction with similar summary recommendations from WP3, 5 & 6 during their 6 monthly review meetings. The PMgT will then release overall (integrated) recommendations from the project.

Following the first cycle of survey analysis and recommendations, the process will be updated annually so as to identify any changes and new opportunities.

Deliverables

- D4.1** Technical specification for WP4 needs from D7.1 (online support system) (Month 4)
D4.2 Initial survey feedback base data (comprising survey, meeting notes, external event feedback) (Month 10)
D4.3 Report with recommendations on uptake of results from relevant national and European research and innovation projects (subsequently updated 6-monthly / annually)(Month 12)

Milestones

- M4.1** Distribution of initial survey to target audiences (Month 8)
M4.2 First WP4 analysis workshop (Month 11)
M4.3 6-monthly updates (Month 18, 30, 42)
M4.4 Annual updates (Month 24, 36, 48, 57)

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Work Pack No.	WP5			Lead:	CTIF			Co-Lead:	HRW
Work Pack Title	Identification and Specification of Products and Processes for Standardisation								
Partner No.	P01	P02	P03	P04	P05	P06	P07	P08	
Short Name	Samui-Fr	Deltares	RWS	UPC	INT	GVDS	HRW	EVFH	
Person-months	0.2	1.1	1.1	1.1	1.1	1.1	9.1	1.1	
Partner No.	P09	P10	P11	P12	P13	P14	P15	P16	
Short Name	DVW	SPW	METCENAS	ELWRI	LHW ST	EDF	SDIS 77	IRSTEA	
Person-months	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
Partner No.	P17	P18	P19	P20	P21	P22	P23	P24	
Short Name	CTIF	HKC	BITC	BME	STOWA	AMAYA	CIMA	EA	
Person-months	6.40	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
					Start:	Month 2	End:	Month 58	

Objectives

WP5 focuses on the identification and outline specification of products and processes for standardisation. It will consider the full range of standardisation products, including specifications, codes of practice, methods, vocabulary and guides. In addition the option to produce policy briefs is also considered. WP5 will produce annual recommendations for products and processes for standardisation building from local, regional, national and European consultation via national and European events, the outputs of WPs 3 and 4, and online support tools. It will also produce draft action plans or project specifications for the most urgent products and processes, so that these could be taken up by other partners/associates/external bodies for delivery outside of the project. Presentation of the various options for standardisation will utilise the information management protocols described in section 1.3.3.1, which will distinguish between options to improve data and information, audit controls or enabling technologies, for example.

Description of work and role of participants:

Task 5.1 Co development of the online support system for monitoring research and innovation for uptake (HRW / CTIF)

WP7 will develop an online database system to support the storage and analysis of information relating to the goals of WP3, 4, 5 & 6. Initial collaboration between these work packages is essential to ensure that the scope and functionality suits the individual WP needs. Hence this task comprises:

- (i) Work in collaboration with WP3, WP4, WP6 and WP7 to develop a specification for an online system for storing and tracking information regarding ongoing RIA (both national and European) for innovation and uptake
- (ii) Performance testing of the online system

Needs from WP5 will be agreed and defined in a technical note (D5.1 (Month 4)) which will form part of the specification for the development of D7.2.

Task 5.2 Confirmation of procedures for identifying products and processes for standardisation (Lead HRW, Partners: CTIF)

Similar to WP3/4 – and in collaboration with WP3 - the first actions towards identifying products and processes for standardisation will be to:

- develop a survey questionnaire,
- confirm the target audience,
- confirm the process for integration and evaluation of (i) survey responses; (ii) external event feedback
- ensure an integrated approach is taken with WP3, 4 & 6 to avoid any target audience receiving multiple requests from the project (see WP7)

This process will be detailed in a report (D3.2 (Month 7))

Task 5.3 Collation of information for the identification and specification of products and processes for standardisation (Lead HRW / CTIF?)

In collaboration with WP3, the survey will be distributed by email and online using a database of contacts (practitioner network, WP7) comprising :

- project partners

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- associate partners;
- links to national networks and organisations
- 1st responders Community of Users (EC / JRC DRMKC)
- programme of external events contacts(WP6)
- Research and academic networks in each partner country

The call for responses will also be openly promoted via the project website and through social media.

Four levels of response may be anticipated: (i) no response; (ii) general response – some information; (iii) detailed, specific response of greater value, (iv) external event participant information. Follow up interviews by phone and / or in person will be undertaken with those responses considered to be of greater value. Feedback from participation in external events (WP6) will most likely offer significant value, since the events are typically focussed on identifying issues and areas for improvement.

In addition, WP5 will review the summaries and outputs of WP3 and WP4, to identify synergies between research outcomes and practitioner needs that could benefit from standardisation or improved policy/procedure.

Task 5.4 Analysis of information on national and European specification of products and processes for standardisation (Lead: CTIF / Partners HRW) (Month 11-18)

The information collected from Task 3.3 / 4.3 / 5.3 will be integrated and then interpreted to identify opportunities for standardisation of products and processes. The methodology followed will be as developed in Task 3.2. Information will be pre-processed and then the evaluation undertaken by the WP5 team during a WP5 survey analysis workshop.

Task 5.5 Six monthly and Annual Recommendations on opportunities for standardisation of products and processes (Lead: HRW / CTIF)

Two outputs from the WP5 analysis of survey data will comprise:

- (i) Annual findings and recommendations
- (ii) A 6-monthly update (interim between annual recommendations to allow the project to respond to opportunities that may arise within 6 months rather than a year)

Both of these outputs from WP5 will be used by the PMgT in conjunction with similar summary recommendations from WP3, 4 & 6 during their 6 monthly review meetings. The PMgT will then release overall (integrated) recommendations from the project. Following the first cycle of survey analysis and recommendations, the process will be updated annually so as to identify any changes and new opportunities.

Task 5.6 Production of draft plans for the products or processes that are identified by the consortium for early or urgent delivery (Lead CTIF / Partners?) (Month 19-58)

For each topic agreed by the consortium partners and associates at the annual workshops, an outline brief or specification will be produced that sets out the topic content, the urgency, the assumed delivery route, required resources and the potential organisations that could adopt this for delivery outside of the project. This could include standards developed by CEN or national standards bodies, policies adopted by government, associated agencies, or professional bodies.

Deliverables

- D5.1** Technical specification for WP5 needs from D7.1 (online support system) (Month 4)
- D5.2** Initial survey feedback base data (comprising survey, meeting notes, external event feedback) (Month 10)
- D5.3** Recommended opportunities for standardisation of products and processes report (subsequently updated 6-monthly / annually). (Month 12+)
- D5.4** A report compiling outline plans/briefs for each topic identified by the consortium (Month 24 onwards)

Milestones

- M5.1** Distribution of initial survey to target audiences (Month 8)
- M5.2** First WP5 analysis workshop (Month 11)
- M5.3** 6-monthly updates (Month 18, 30, 42)
- M5.4** Annual updates (Month 24, 36, 48, 57)

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Work Pack No.	WP6			Lead:	RWS			Co-Lead:	EVFH	
Work Pack Title	Field Exercises, Testing and Training Facilities and Resources									
Partner No.	P01	P02	P03	P04	P05	P06	P07	P08		
Short Name	Samui-Fr	Deltares	RWS	UPC	INT	GVDS	HRW	EVFH		
Person-months	-	0.70	2.65	0.70	0.70	0.70	0.70	2.05		
Partner No.	P09	P10	P11	P12	P13	P14	P15	P16		
Short Name	DVW	SPW	METCENAS	ELWRI	LHW ST	EDF	SDIS 77	IRSTEA		
Person-months	0.70	0.70	2.40	0.70	0.70	0.70	0.70	0.70		
Partner No.	P17	P18	P19	P20	P21	P22	P23	P24		
Short Name	CTIF	HKC	BITC	BME	STOWA	AMAYA	CIMA	EA		
Person-months	0.70	0.70	0.70	0.70	0.70	0.70	0.70	1.45		
					Start:	Month 2	End:	Month 58		

Met opmerkingen [BV11]: Why lowered the input on this one from 3.5 to 2.65?

Objectives:

WP6 focuses upon bridging between the world of the practitioners and that of research and development through a focus on field demonstration and training exercise programmes. Field demonstration and (large scale) exercises as well as product testing and attendance at training facilities underpin the development of Practitioner response skills and form an essential part of their annual development programmes. FLOODSECURE will align with and support participation in a number of 'external events' each year (and in each partner country) in order to raise awareness and promote greater collaboration. Support for participation will facilitate the push / pull of information between the project and the specific events regarding the core objectives of the project. To encourage greater participation in external and project events, project workshops will also be aligned with external events.

Hence, specific objectives are to:

- (i) raise awareness and promote greater collaboration and cooperation in external events such as practitioner field demonstrations and exercises, by providing funding and support to partners and associate partners for attendance at such events (covering events in all partner countries during each project year)
- (ii) raise awareness and promote greater collaboration and cooperation in the use of existing testing & training facilities and resources
- (iii) provide a **registerpository** and access to case study material supporting training and good practice
- (iv) support the annual check and balance opportunity between research programmes and practitioners needs, resulting in recommendations for future actions and events

Description of work and role of participants

Task 6.1 Overview External Events 2018-2022 Lead: RWS, Partners: EVFH, METCENAS, Environment Agency?) (Month ?)

FLOODSECURE will link with, support and promote external events in each partner country during each year of the project. These events will focus around the periodic (crisis) training programs organized by different flood defense managers in Europe. Where appropriate (and permitted), FLOODSECURE will support participation of additional practitioners in these events combined with seeking feedback on event outcomes, priorities and opportunities, in accordance with the overall objectives of FLOODSECURE (i.e. WP3/4/5).

Specific actions to support and interact with these external events include:

- (i) Initial mapping of external events in each partner country, creating a European schedule of events for and beyond the duration of the project (D6.1)
- (ii) Building up an overview of flood response organizations and members, supporting wider membership of the FLOODSECURE network of flood response practitioners

Task 6.2 Organizing Participation in External Events 2018-2022 Lead: RWS Partners: EVFH, METCENAS, Environment Agency?) (Month ?)

FLOODSECURE aims to link with, support and/or promote one or two national exercises in each partner country during each year of the project. In addition to promoting wider collaboration and participation between practitioners in these events, participation will also provide a link for feeding information back from the events regarding the core objectives of WP3/4/5, namely research needs and priorities, and opportunities for innovation

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and standardisation.

External exercises are events for practitioners already planned by external organisations covering one or more issues related to flood response (e.g. flood response measures, evacuation, etc.). The schedule and focus of these external events are outside of the reach of the project. However, many of the project partners are either directly involved in running or participating in such events and the number of links increases significantly through involving the Associate Partners.

Specific actions for Task 6.2 include:

- (i) Review and update the external and project programmes every 6 months, recommending adjustments to the FLOODSECURE project programme (both events and who receives financial support to attend events) each period (See D2.4). [These recommendations are then considered alongside biennial outputs from WP3/4/5 by the PMgT, who take the final decisions on recommendations and support actions]
- (ii) Ensure that details of the project and specific outcomes from the project such as annual priorities and recommendations (see D2.5) are fed (back) to external event organisers. Where appropriate, consult with external event organisers highlighting opportunities and priorities arising from FLOODSECURE that may become the focus of subsequent external events. (Such recommendations will also be integrated into the annual outputs from the project via the PMgT).

These specific actions then form a valuable cyclic process helping to ensure that conclusions from FLOODSECURE reach and potentially influence the programme of external events which Practitioners typically depend upon as a key source of knowledge and training. The cycle also allows for issues identified in one year to be addressed in the following year.

Task 6.3 Testing and Training Facilities and Resources (Lead METCENAS, Partners: All)

FLOODSECURE will collate and map details of national testing and training facilities across Europe, so providing an overview of national testing and training facilities and resources for (i) promotion to Practitioners; (ii) integration with the FLOODSECURE programme of workshops (i.e. as in Task 6.2 where appropriate). An online register will be developed under WP7, and populated and maintained with information from this review (D6.3).

Deliverables

- D6.1** A rolling program of external events, with event material made available online (**Month 6**)
- D6.2** Report (updated every 6 months) providing details of external events, recommendations, learning points and suggestions for future issues to address (**Month 6 - ongoing**)
- D6.3** Populated online register and details of testing and training facilities (**Month 12**)

Milestones

- M6.1** Link with, support and promote national events in each partner country during each 2018
- M6.2** Link with, support and promote national events in each partner country during each 2019
- M6.3** Link with, support and promote national events in each partner country during each 2020
- M6.4** Link with, support and promote national events in each partner country during each 2021
- M6.5** Link with, support and promote national events in each partner country during each 2022
- M6.6** Online testing and training facilities data reviewed and updated Month 36
- M6.7** Online testing and training facilities data reviewed and updated Month 58

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Work Pack No.	WP7			Lead:	STOWA			Co-Lead:	IRSTEA
Work Pack Title	Community Network Support and Evolution								
Partner No.	P01	P02	P03	P04	P05	P06	P07	P08	
Short Name	Samui-Fr	Deltares	RWS	UPC	INT	GVDS	HRW	EVFH	
Person-months	9.90	0.45	0.75	0.45	0.40	-	0.45	1.80	
Partner No.	P09	P10	P11	P12	P13	P14	P15	P16	
Short Name	DVW	SPW	METCENAS	ELWRI	LHW ST	EDF	SDIS 77	IRSTEA	
Person-months	0.70	-	0.60	-	-	0.40	-	3.55	
Partner No.	P17	P18	P19	P20	P21	P22	P23	P24	
Short Name	CTIF	HKC	BITC	BME	STOWA	AMAYA	CIMA	EA	
Person-months	0.40	-	-	-	2.55	-	-	-	
					Start:	Month 2	End:	Month 60	

Objectives

Use of bespoke web tools for storing, managing and sharing information will be an important aspect for effective communication within and beyond the FLOODSECURE network. Achieving the right balance between usability and functionality will be essential. By creating a 'lean' and effective network support system this will facilitate both establishing the network during the project and continuing life of the network after the end of the EU-funded project.

The objectives of WP7 are to:

- (i) Provide online support systems to help deliver goals of the network, support project management and team communication (noting that these also need to be acceptable for all participating organisations considering any ICT safety regulations (cyber threats etc))
- (ii) To review and map existing online tools and systems supporting practitioners and practitioner networks
- (iii) To review options for the future sustainability of the FLOODSECURE network

Description of work and role of participants

Task 7.1 Online tools to support FLOODSECURE information storage, sharing (access) and analysis (Lead: Samui, Partners: PMgT)

A suite of bespoke online tools will be developed to support the processes and objectives of FLOODSECURE. These will include:

Task 7.1.1 Tools to support management of the FLOODSECURE project and practitioners network (Lead: Samui, Partners: PMgT)

Creation and implementation of the FLOODSECURE network requires effective project management and team working. A series of project support tools will be created to facilitate the team working process including (for example) team contacts (including registration of Partner and Associate Partner details), document control and storage, meetings & events, progress reporting, file & data exchange, team news / blog. These tools will form part of the project website delivery (D2.2)

Task 7.1.2 Tools to support management of the FLOODSECURE workshop programme and links with external events (Lead: Samui, Partners: PMgT)

With a 5 year programme of events a consistent approach to event planning, promotion and implementation – including live streaming and online recording – will be undertaken. The FLOODSECURE programme of events will allow users to link through to event information, online registration, live streaming and post event materials. The system will also include details (where appropriate and permitted) of the external events tracked under WP6. The system will also support participants T&S claims and payments. These tools and procedures will be established by M11, for use in the annual project workshops (M2/M3/M4/M5/M6). A report providing guidance on approach, procedures and implementation will be provided (D7.1)

Task 7.1.3 Tools to support specific activities within the FLOODSECURE programme (Lead: Samui; Partners: PMgT)

Functionality of these tools will be co-developed with the leaders of the respective work tasks. Specific items include:

- (i) A system for registering details of all members (partners, associate partners) of the network of practitioners,

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allowing for easy communication, identifying roles, links etc.

- (ii) A system for tracking any consultation / information requests to practitioners and wider, to avoid consultation fatigue from simultaneous requests arising from WP3, 4, 5, or 6.
- (iii) A system for recording and tracking research and innovation projects at both national and European levels will be developed with functionality allowing for (i) the assessment of potential of research systems and products for uptake; (ii) recording and analysing priorities for future research; (iii) noting and developing specifications for products and processes that would benefit from standardisation. This online tool will help the project team produce the core deliverables of D3.2, D4.3 and D5.2 (D7.2)
- (iv) An online repository for mapping details of national testing and training facilities across Europe will be developed to support actions under WP6.(D7.3)

Task 7.2 Development of the FLOODSECURE App (Lead: Samui, Partners: PMgT)

A FLOODSECURE App will be developed to provide network members with easy access to all aspects of network information and activity (D7.4). Roughly 60-70% of the western European population now use smart phones, which provide an effective way for (i) the user to access news and information at a time and place of convenience and (ii) for the App provider to directly target users with news and information. The App will provide access to information which will also be available on the FLOODSECURE website, providing alternative ways of accessing the information. The functionality and scope of the App will be increased progressively during the project in response to user uptake and feedback, so ensuring that the focus and function of the App remains effective.

Task 7.3 To review and map existing online tools and systems supporting practitioners and practitioner networks (Lead: EVFH, Partners PMgT)

A review of existing practitioner networks and any online tools and systems used to map and share information will be undertaken. Ways in which these tools and information may be used, aligned or integrated to support the FLOODSECURE network (or visa versa) will be considered along with the future development of such tools and systems in parallel with the evolving direction of the FLOODSECURE network. The review will be reported, along with conclusions and recommendations for future developments (D7.6)

Task 7.4 Future Sustainability of the FLOODSECURE network (Lead IRSTEA; Partners: PMgT)

In Year 4 of the project a review of the FLOODSECURE network will be undertaken to consider potential future sustainability options (including different funding options and models and how any information systems and online tools may evolve) (D7.7). The Directors of flood defense partner organizations (such as RWS, EA etc) will support and participate in this process with the aim that the *Community of Flood Response Practitioners* will endure beyond the lifetime of the FLOODSECURE project, building from the structure and evolution achieved during the project. The support of Directors in this process allows for the commitment of staff and resources for the continuation of the network. This review will provide base options for consideration during the 4th annual workshop, allowing the future form and direction of the network to be agreed.

Deliverables

- D7.1** Report on approach, procedures and implementation for workshop support systems (D7.1)
[Samui] (Month 11)
- D7.2** A system for recording and tracking research and innovation projects at both national and European levels
[Samui] (Month 12)
- (Month **D7.3** An online repository for mapping details of national testing and training facilities across Europe
[Samui] (Month 24)
- D7.4** A FLOODSECURE APP, for pushing and pulling information from the project website to partners and associate partners via smartphones [Samui] (Month 22)
- D7.5** A review of existing practitioner networks and online tools and systems used to map and share information
[EVFH] (Month 12)
- D7.6** A report outlining the current position of the FLOODSECURE network and future sustainability options
[IRSTEA] (Month 46)

Milestones

- M7.1** Specification for FLOODSECURE support tools agreed (Month 3)
- M7.2** Specification for practitioner network support tools agreed (Month 6)
- M7.3** Outline options for FLOODSECURE App development defined (Month 12)

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Table 3.1a: List of work packages

	Work Package Title	Lead Participant		Person	Start	End
WP1	Project Coordination	P01	SAMUI	31.0	1	60
WP2	Communication, Dissemination and Workshop Management	P01	SAMUI	71.90	1	59
WP3	Monitoring Research & Innovation for Uptake & Industrialisation Opportunities	P05	INT	39.10	2	58
WP4	Establishing Common Requirements for Future Research & Innovation Priorities	P14	EDF	51.55	2	58
WP5	Identification and Specification of Products and Processes for Standardisation	P17	CTIF	39.90	2	58
WP6	Field Exercises, Testing and Training Facilities and Resources	P03	RWS	22.55	2	58
WP7	Community Network Support	P03	STOWA	21.70	2	60
Total Person Months				277.70		

Table 3.1b: List of Deliverables³

	Deliverable name	WP No.	Lead partner	Type	Diss. level	Del. date
D1.1	FLOODSECURE Project method and activity plan (PMAP) prepared and approved	WP1	SAMUI	R	Pu	M2
D1.2	Risk Management Plan prepared and approved	WP1	SAMUI	R	Pu	M2
D1.3	Chair and meeting notes PMgT, Project Consortium and General Assembly meetings [Samui] (Month 3-60)	WP1	SAMUI	R	Re	M3+
D1.4	Ethical Procedures and Approval Report	WP1	SAMUI	R	Pu	M3
D1.5	Data Management Plan prepared and maintained	WP1	SAMUI	R	Pu	M4
D2.1	C&D strategy, annual updates and implementation	WP2	SAMUI	R	Pu	M3
D2.2	Initial website (both public and team facing)	WP2	SAMUI	O	Pu	M12
D2.3	Smart phone App development specification	WP2	SAMUI	R	Pu	M18
D2.4	Event programme plan (Month 4 – on-going updated quarterly)	WP2	SAMUI	R	Pu	M4
D2.5	6-Monthly PMgT analysis of support and alignment of FLOODSECURE events with external events (Month 6 – initial plan, updated every 6 months throughout project)	WP2	PMgT (SAMUI)	R	Pu	M6
D2.6	Annual position paper, produced by the PMgT, integrating conclusions and recommendations on all core objectives from WP3,4,5 & 6	WP2	PMgT (SAMUI)	R	Pu	M12+
D3.1	Technical specification for WP3 needs from D7.1 (online support system)	WP3	SAMUI	R	Pu	M4
D3.2	Summary of survey approach, target audiences, analysis process and procedures	WP3	INT	R	Pu	M9
D3.2	Initial survey feedback base data (comprising survey, meeting notes, external event feedback)	WP3	UPC	R	Pu	M20
D3.3	Recommendations and guidelines compiling identified needs and requirements to fill capacity gaps and enhance current operational practices	WP3	UPC	R	Pu	M32
D4.1	Technical specification for WP4 needs from D7.1 (online support system)	WP4	Deltares	R	Pu	M4
D4.2	Initial survey feedback base data (comprising survey, meeting notes, external event feedback)	WP4	Deltares	R	Pu	M10
D4.3	Priorities for future research and innovation report (subsequently	WP4	Deltares	R	Pu	M12

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	updated 6-monthly / annually)					
D5.1	Technical specification for WP5 needs from D7.1 (online support system)	WP5	HRW	R	Pu	M4
D5.2	Initial survey feedback base data (comprising survey, meeting notes, external event feedback)	WP5	CTIF	R	Pu	M10
D5.3	Recommended opportunities for standardisation of products and processes report (subsequently updated 6-monthly / annually).	WP5	HRW	R	Pu	M12
D5.4	A report compiling outline plans/briefs for each topic identified by the consortium	WP5	CTIF	R	Pu	M24
D6.1	A rolling program of external events, with event material made available online	WP6	RWS	R	Pu	M6
D6.2	Report (updated every 6 months) providing details of external events, recommendations, learning points and suggestions for future issues to address	WP6	RWS	R	Pu	M6
D6.3	Populated online register and details of testing and training facilities	WP6	METCENAS	O	Pu	M12
D7.1	Report on approach, procedures and implementation for workshop support systems	WP7	Samui	R	Pu	M11
D7.2	A system for recording and tracking research and innovation projects at both national and European levels	WP7	Samui	O	Pu	M12
D7.3	An online repository for mapping details of national testing and training facilities across Europe	WP7	Samui	O	Pu	M24
D7.4	A FLOODSECURE APP, for pushing and pulling information from the project website to partners and associate partners via smartphones	WP7	Samui	O	Pu	M24
D7.5	A review of existing practitioner networks and online tools and systems used to map and share information	WP7	EVFH	R	Pu	M12
D7.6	A report outlining the current position of the FLOODSECURE network and future sustainability options	WP7	IRSTEA	R	Pu	M46

3.2 Management structure and procedures

3.2.1 Organisational structure and the decision-making

The organisational and management structure for FLOODSECURE is shown in Figure 3.3. This structure supports the core management challenges whilst also supporting the flow of information within the network.

Coordination:

The FLOODSECURE project will be coordinated by Mark Morris (Samui France), with close support from the Project Management Team (PMgT). Mark Morris is a professional engineer who has worked in the flood risk sector for 30 years, with a particular emphasis on levee and dam failure and emergency response. Mark has considerable experience of working as a knowledge broker, interfacing between research / academia and industry applications. Mark has worked on European research projects under FP4, FP5, FP6, FP7 and H2020. These projects have ranged in size from small concerted actions to large integrated projects, with research teams ranging from a dozen to over 250 personnel spread across many different countries. Over the years, Mark has participated as a researcher, WP leader, coordination support and Coordinator on these various projects so is well placed to coordinate the FLOODSECURE network of practitioners. Mark has particular expertise in the use of web based tools and systems to support research and networks and significant use of web based tools for team communication, project management and communication and dissemination will be made within this project.

The Project Management Team (PMgT):

The Project Management Team (PMgT) will play a key role in the overall implementation of the project, and also for specific decisions regarding priorities for supporting and participating in external events. In this role the PMgT will (i) use national connections through government, existing networks and organisations to identify and align the FLOODSECURE network with external events and initiatives; (ii) review on a quarterly basis the external events programme and the focus of FLOODSECURE support for alignment, promotion and participation in such events; (iii) review and draw conclusions and priorities from the annual analysis of information regarding research priorities, innovation and standardisation opportunities.

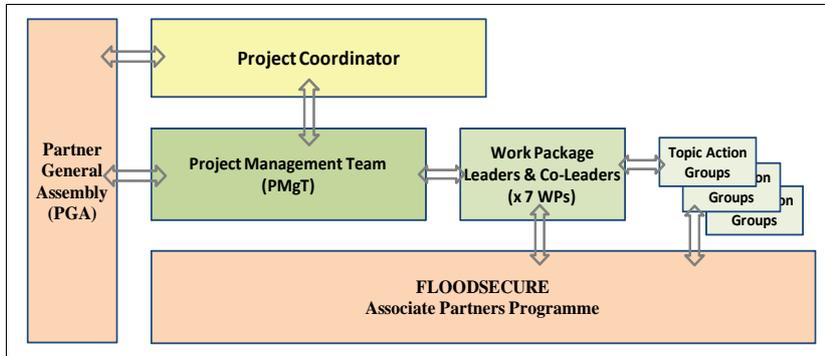


Figure 3.3: Management structure of FLOODSECURE.

The PMgT will comprise the Leaders and Co-Leaders of each work package. Additional partners may be co-opted where the need and value is identified. In their project management role, the PMgT will meet quarterly throughout the project to ensure that work progresses effectively. Two meetings per year will be face to face meetings and two using web based conferencing technology. All of the face to face meetings will be held in series with other events for the project in order to minimise travel. The PMgT will:

- Be the decision body of FLOODSECURE
- Review the overall progress of the project, undertake risk analysis and take any appropriate actions
- Evaluate any change proposals and make suitable decisions for the next steps
- Review progress of the communication and dissemination strategy for the project
- Assess the impact of any change to contract suggested by the European Commission and respond accordingly
- Resolve any conflict (technical, managerial, legal or financial) which may arise amongst the project members

Work Package Management:

Each of the 7 work packages has a lead and a co-lead partner. The Lead Partners are typically a Practitioner organisation whilst the Co-Lead partners are typically an RTO. This combination is designed to help ensure that both research and practitioner perspectives are reflected in implementation of the project and the associated outcomes. The work package leader is ultimately responsible for delivery of the work package scope of work, and specified deliverables. Work package team members are drawn from the overall project partnership as appropriate. All work package leaders and Co Leaders are also members of the Project Management Team (PMgT).

Partner General Assembly (PGA):

The Partner General Assembly is a mechanism through which any issues regarding project implementation that requires the approval of all partners are discussed and agreed. A PGA will be held annually and require that a representative of each partner organisation participates.

Associate Partners (APs):

Developing a pan-European network of practitioners is at the heart of FLOODSECURE. This network will be much larger than the project consortium; hence we have defined the category of Associate Partner to reflect membership of this network. A substantial part of the project budget (k€ 400) has been allocated to supporting practitioner participation in both project and external events. Registration as an AP will be a pre-requisite of receiving that support to help the project optimise collaboration between networks and organisations, external events and information exchange to help achieve the core project objectives. This aspect of management at the heart of the network will be overseen by the PMgT.

3.2.1.1 Procedures and tools supporting effective management

Project method and activity plan (PMAP):

A key challenge for managing any consortium or network with a large and dispersed team is to ensure that:

- The overall aims and objectives of the project are clear

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- The scope of work for each partner is clear
- The method of communicating intra team is clear
- The method of working and reporting is clear
- Procedures for dealing with any problems or issues as they arise is clear

The project method and activity plan (PMAP) will be established by the Coordinator in Month 1 of the project. This document will detail working methods and procedures addressing each of the issues above so that all team members can work in a consistent, efficient and effective manner from the outset. The PMAP and supporting online tools, documents and templates will be provided through the online team working area.

Overall aims and objectives of the project

A 'Kick Off' meeting, KoM) will be held in Month 2 of the project. At this time, a review of the overall schedule and steps planned for each WP will be undertaken. This will also integrate with development of the WIPs (see below). The overall aims and goals of the project will be revisited to ensure that they remain appropriate, to see whether they can be enhanced and to ensure that the team has a common vision. The agreed aims will be recorded and accessible online throughout the project to ensure no deviation from the project objectives.

Scope of work for each partner

The budget for FLOODSECURE has already been developed using a detailed plan of proposed activities for each partner. The detail of these plans will be expanded through development of work package implementation plans (WIPs). Through this mechanism the specific roles of each partner across the whole project will be identified, agreed and recorded. This avoids any confusion later in the project should there be any dispute as to scope of agreed work.

Team communication

A set of web based tools will be used to support team communication. Half of the PMGT meetings will be performed remotely using an online web conferencing system. Virtual meeting room space will be created at the start of the project and used each time the team or PMGT wish to communicate online.

Working and reporting

To help ensure consistency and quality in products from the project, a set of document templates will be produced so that all products, whether team working material or public facing material, will be recognisable from FLOODSECURE network and in a consistent style and format. In doing this, document control procedures such as file naming, document development histories etc. will also be introduced to the team.

An online system of progress reporting will also be adopted so that the PMGT is able to track project progress. The system operates on the basis of reporting by exception – i.e. reporting when problems occur, rather than describing actions completed, which should be routine for a successful project. In this way the burden of progress reporting is minimised for all partners, but remains effective for managing overall implementation of the project.

Work package implementation plans (WIPs)

Whilst the WP description tables provide a clear summary of the work proposed, they do not detail the specific actions of each partner. Work package implementation plans (WIPs) will be produced for each work package, within which an expanded description of the work programme will be developed. The description will be such that any person could review and understand the steps of work that all partners involved in that work package will be undertaking. The contents of the WIP will include:

- Detailed description of work and partner roles
- Description of deliverables
- Schedule
- Review of risks

Use of web based tools and procedures

It has been found that the use of web based tools and procedures can significantly enhance the team working process, facilitating team communication, remote working and project management. The coordinator and many members of the PMGT have been using web based tools to support EU project coordination for over 20 years, with many of the tools, methods and procedures having evolved through experience on various projects. As such, the methods proposed for FLOODSECURE are proven to work in practice and have the flexibility to adapt to different teams and project structures. It is envisaged that these tools will include:

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- Team contacts
- Document management system
- Meetings & Events management system
- Guidance and templates
- Progress reporting
- EC reporting
- File exchange
- Media material library
- Social media interfaces
- Workshop / conference events support facilities
- Newsletters / press

In a similar manner to supporting the project team and implementing the project work, web based tools and procedures will be used as part of the practitioner network management system. Details of these can be found under Task 7.1 of WP7.

Table 3.2a: List of milestones.

	Milestone name	Rel WP	Est. date	Means of verification
M1.1	Project kick off meeting (KoM) implemented	WP1	M2	Event held – all partners
M1.2	Partner General Assembly meetings	WP1	M12+	Agenda & notes online
M1.3	Periodic reporting completed	WP1	M12+	Reports submitted EC
M2.1	Initial project website presence online	WP2	M2	Accessible online
M2.2	Year 1 Annual workshop	WP2	M12	Information & streaming online
M2.3	Year 2 Annual workshop	WP2	M24	Information & streaming online
M2.4	Year 3 Annual workshop	WP2	M36	Information & streaming online
M2.5	Year 4 Annual workshop	WP2	M48	Information & streaming online
M2.6	Year 5 Annual workshop	WP2	M57	Information & streaming online
M3.1	Distribution of initial survey to target audiences (Month 8)	WP3	M10	Survey emailed
M3.2	First WP3 analysis workshop	WP3	M20	Workshop held
M3.3	WP3 6-monthly updates	WP3	M30+	6 monthly updates reported
M3.4	WP3 Annual updates	WP3	M36+	Annual updates reported
M4.1	Distribution of initial survey to target audiences (Month 8)	WP4	M8	Survey emailed
M4.2	First WP4 analysis workshop (Month 11)	WP4	M11	Workshop held
M4.3	6-monthly updates (Month 18, 30, 42)	WP4	M18+	6 monthly updates reported
M4.4	Annual updates (Month 24, 36, 48, 57)	WP4	M24+	Annual updates reported
M5.1	Distribution of initial survey to target audiences	WP5	M8	Survey emailed
M5.2	First WP5 analysis workshop	WP5	M11	Workshop held
M5.3	6-monthly updates	WP5	M18+	6 monthly updates reported
M5.4	Annual updates	WP5	M24+	Annual updates reported
M6.1	Link with, support and promote national events in each partner country during each 2018	WP6	M12	Events promoted via website
M6.2	Link with, support and promote national events in each partner country during each 2019	WP6	M24	Events promoted via website
M6.3	Link with, support and promote national events in each partner country during each 2020	WP6	M36	Events promoted via website
M6.4	Link with, support and promote national events in each partner country during each 2021	WP6	M48	Events promoted via website
M6.5	Link with, support and promote national events in each partner country during each 2022	WP6	M58	Events promoted via website
M6.6	Online testing and training facilities data reviewed and updated	WP6	M36	Information online updated
M6.7	Online testing / training facilities data reviewed & updated	WP6	M58	Information online updated
M7.1	Specification for FLOODSECURE support tools agreed	WP7	M3	Specification in team area
M7.2	Specification for practitioner network support tools agreed	WP7	M6	Specification in team area
M7.3	Outline options for FLOODSECURE App development defined	WP7	M12	Specification in team area

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3.2.2 Innovation management

Innovation is at the heart of the FLOODSECURE network, with core actions including:

- (i) Monitoring research and innovation projects with a view to recommending the uptake or the industrialisation of results
- (ii) Express common requirements as regards innovations that could fill in capability and other gaps and improve their performance in the future
- (iii) Indicate priorities as regards domains requiring more standardisation

The expected impacts include:

- (i) Common understanding of innovation potential, more widely accepted understanding, expression of common innovation and standardisation need among practitioners in the same discipline
- (ii) More articulated and coordinated uptake of innovative solutions among practitioners from different disciplines who are often called to act together to face major crises

The FLOODSECURE process of information push and pull via partners, associate partners and across both FLOODSECURE and external events allows for the identification and prioritisation of innovation opportunities. Prioritised opportunities arising each year are review and agreed by the PMgT before wider validation through the annual FLOODSECURE events.

Identification of innovation opportunities (as per the actions and impacts listed above) is the first step towards making a difference in practice. Where opportunities are identified, the state of technology readiness level (TRL) and steps needed to move from the current position through to use in practice will also be identified. This information is then fed both to the European Commission, for consideration as part of future research and innovation actions, and to national programme managers for consideration as part of national efforts to develop and improve solutions for practitioners. The mix of partners and associate partners within the network also allows for the assessment of potential solutions for each item, whereby combinations of national, regional, European or international funding may be considered along with interests and opportunities arising from parallel projects or initiatives. In this context, the PMgT sits at the centre of the web of practitioners, taking time to assess and consider the innovation position and potential of each issue or item that arises through the push / pull of network information.

In conclusion, FLOODSECURE is focussed on addressing the research and innovation divide. This will be achieved through a wide ranging and strong partnership (and Associate Partners programme) that already includes organisations from many European countries and organisations and which will grow as the project is implemented. Network growth and the combination of both top down and bottom up approaches to identifying needs and opportunities, combined with an intelligent and strategic approach to international cooperation, will help ensure more effective innovation of both national and European products and solutions to more effectively support practitioner needs.

3.2.3 Critical risks

A risk management plan will be developed by Month 2 (Task 1.2) and used to monitor and manage risks during the lifetime of the project. The risk management plan will be a standing item for the quarterly PMgT meetings. Risks will be classified broadly as internal (administrative, technical, financial) or external – recognising that whilst external risks can significantly affect project programmes, our ability to deal with them directly is more limited. An initial list of risks for implementation of the FLOODSECURE network is listed below:

Table. 3.2b: Critical risks for implementation.

Description of risk	WPs involved	Proposed risk management measures
Administrative		
Failure to produce deliverables or meet milestones on time	ALL	<ul style="list-style-type: none"> • Work implementation plans are set up at the start of the project ensuring all partners understand their roles and responsibilities to the consortium • Progress on each WP is monitored by the PMgT using quarterly online progress reporting • PMgT to instigate remedial action plan in case of

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		significant delays
Clear communication between partners	ALL	<ul style="list-style-type: none"> • Amongst the online tools supporting the team will be a contacts database; all partners will register and maintain details of staff working on the project and their roles
Following agreed working procedures	ALL	<ul style="list-style-type: none"> • The combination of Consortium Agreement and PMAP document (Task 1.1) will clearly define working processes and procedures. Failure to follow these will be taken up by the PMgT and remedial actions put in place.
Issues in management of annual workshops affects reputation of the network		<ul style="list-style-type: none"> • A consistent approach to workshop management will be set up in WP2, to be followed by all partners that host an event. • Experiences from the previous workshops will be used to update the event protocols, with support available to organisers • The consortium has extensive experience in running international events involving several 100s of attendees
Technical		
Failure of actions and recommendations arising from the project to meet practitioner needs	WP2-WP7	<ul style="list-style-type: none"> • Each WP is led and co-led by a practitioner and RTO • All actions aligning with, supporting external events are reviewed quarterly by the PMgT • Annual recommendations for action are reviewed and confirmed by the PMgT, following full discussion by all partners at the workshops
Online tools and systems do not meet the needs of the WP, network and practitioners	WP2-WP7	<ul style="list-style-type: none"> • Any online tools and systems produced by WP7 are developed through joint agreement of the specification by all WPs, followed by implementation
Failure to receive detailed information relating to research priorities, innovation and standardisation opportunities	WP2-WP7	<ul style="list-style-type: none"> • Multiple methods and lines of communication are being applied to collate this information, including directly via partner organisations and networks, by survey, direct consultation and online submission. • Consortium partners have existing wide networks and access to extensive information sources. • Progress will be reviewed quarterly by the PMgT and steps taken if alternative approaches are found to be necessary
Inability to attract enough Associate Partners to attend the annual events	WP2-WP6	<ul style="list-style-type: none"> • Events will be scheduled and advertised as early as possible so that APs can fix the date of the meeting • The proposal already contains our preferred workshop locations • The consortium has a long list of potential partners and in case of APs not attending, we will substitute alternatives to ensure a good spread of practitioner areas.
Financial		
Effective management procedures for reimbursement of T&S costs	WP?	<ul style="list-style-type: none"> • A streamlined process for managing associate partners T&S costs that complies with EC regulations whilst minimising costs, will be required
Fair control of T&S budget distribution for support in attending both annual events and external events		<ul style="list-style-type: none"> • Procedures for agreeing on who is supported to attend which events, and how information is fed back to the project will be developed under WP02 and overseen by the PMgT
External		
Limitations on participation in external events		<ul style="list-style-type: none"> • Limitations will apply depending upon the nature of the external event. These will be agreed with the event organisers in advance and the PMgT will agree on the extent and focus of participation accordingly.
Cancellation / programme changes for		<ul style="list-style-type: none"> • Where external events are cancelled or changed,

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external events		<p>alternative options depending upon the notice given and costs already expended will be reviewed by the PMgT. Each case will be event specific.</p> <ul style="list-style-type: none"> • By maintaining an up-to-date mapping of all planned events known to the partners (via WP6), it will be possible to identify easily alternative events in case of cancellation. • The PMgT will explore the utility of progressing ‘back-up events’, as a standard procedure, to cover such eventualities.
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3.3 Consortium as a whole

The FLOODSECURE consortium comprises 25 organisations drawn from 9 different countries from across Europe. The composition comprises roughly 2/3rds flood practitioners and 1/3rd RTOs. This balance was intended to ensure that practitioner needs were at the forefront of all of the network activities, whilst at the same time it remained essential to have clear links with both the applied and academic research communities; this consortium balance achieves both objectives.

Within these two groups, each partner also reflects certain areas of expertise and practice – the combination of which allows FLOODSECURE to touch a very wide range of practitioner issues across different countries operating under different governance regimes and hence practitioner structures. A summary of these areas of expertise can be seen in Table 3.3 below.

Roles within the FLOODSECURE consortium fall into 4 specific categories, comprising:

- (i) Coordination
- (ii) WP Lead / Co Lead
- (iii) Project Management Team Member
- (iv) Project Team Member

Project Coordination

The project Coordinator is Dr Mark Morris (Samui France). Mark has 30 years’ experience of working in the flood risk management sector, with specialist experience relating to dam and levee breach and emergency planning. Mark has worked in different EC research project roles, including Coordinator, on projects under FP4/5/6/7 and H2020 and participates in international research collaboration as well as helping to steer UK reservoir safety research via the government agency programmes and the reservoir safety advisory group. This combination of experience ensures that Mark is well placed to steer and guide the FLOODSECURE programme.

WP Lead and Co Lead

Each of the FLOODSECURE work packages has a lead and co lead drawn from practitioner and RTO organisations respectively. This helps to ensure a balance in approach (between industry and research) as well as helping to address any work time limitations or fluctuations that may occur.

Project Management Team (PMgT)

The PMgT comprises the leaders and co-leaders of all WPs and plays a significant role in delivering the project goals. As well as dealing with the more routine project implementation issues, the PMgT oversees (i) Direction and decisions relating to interfacing, supporting and attending external events; (ii) integrating overall annual recommendations arising from each of the core activity teams. This centralised role helps ensure strong and productive links between different national organisations, centres and training programmes – all of which underpins the core goals of the project.

Project Team Member

The wider project team membership perform the vital roles of (i) linking the project initiatives and efforts with national bodies, organisations and networks; (ii) contributing directly to the core network goals (priorities etc), (iii) providing feedback on draft recommendations and conclusions, and (iv) disseminating the project outputs to their own networks and countries.

Partner Expertise

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Table 3-3 illustrates the full range of topic/functional areas covered by the consortium partners. Further details are set out in the partner descriptions in Section 4-5. The consortium mixes, for example, first responder practitioners, with flood risk / emergency monitoring and planners, asset owners and managers, business support and research programme managers. Many partners also provide links to wider networks or services – for example, (i) BITC provides a response function for businesses, and with strong links to the insurance industry and community support; (ii) HR Wallingford has been providing the secretariat services to the CIS Working Group F (Floods) since 2012 and will continue to do this until at least 2018; (iii) RWS provides a link to EFAS as they are contracted by JRC together with Slovakia and Sweden to take care of flood messaging warnings twice a day to EFAS members (35 countries are member).

Table 3.3: Type and field of expertise of partners.

Field of Expertise	Flood Planning / Preparedness	Flood Monitoring	Coordination of Civil Protection (National / Regional / Local)	1 st Responders evacuation / rescue – Fire / Police	1 st Responders evacuation / rescue – Agency / Authority	Asset Manager / Owner (Dams, Levees etc)	Critical Infrastructure Manager / Owner	Research & Technology Organisation (RTO)	Technical / Research Programme Manager	Knowledge Management / Training Centre / School	Existing Network / Community	Regional Authority
P01 Samui-Fr								✓		✓		
P02 Deltares	✓	✓						✓	✓	✓	✓	
P03 RWS												
P04 UPC								✓	✓	✓		
P05 INT			✓		✓							✓
P06 GVDS			✓		✓							✓
P07 HRW		✓						✓		✓		
P08 EVFH												
P09 DVW	✓					✓	✓					✓
P10 SPW												
P11 METCENAS		✓						✓		✓		
P12 ELWRI	✓								✓			
P13 Sachsen Anhalt												
P14 EDF	✓	✓				✓	✓		✓			
P15 SDIS 77												
P16 IRSTEA												
P17 CTIF				✓							✓	
P18 HKC	✓	✓				✓		✓	✓		✓	
P19 BITC												
P20 BME								✓		✓		
P21 STOWA												
P22 AMAYA		✓		✓	✓							
P23 CIMA												
P24 EA												

Associate Partners

In addition to the project consortium, FLOODSECURE has established an initial group of Associate Partners which will grow as the network of flood response practitioners expands during the course of the 5 year programme. At the point of proposal submission, the AP programme comprised **XX** organisations drawn from **YY** countries. At the start of the project, information about the FLOODSECURE network and how to participate will also be shared with:

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- (i) The Flood Risk Management Community of Practice members (~ 50 organisations across Europe)
- (ii) The FLOODrisk conference series participants database (~1500 members across Europe)
- (iii) The 1st responders CoU members (>2000 registrants early 2017)
- (iv) The Emergency Response Coordination Centre (ERCC)
- (v) The JRC disaster risk management knowledge centre (DRMKC)
- (vi) The MS representatives of Working Group F via the HRW Secretariat
- (vii) National links through each FLOODSECURE partner via the 9 countries represented

These steps alone will reach an audience of practitioners numbering into the thousands. The project will support the participation of up to 50 network members for each annual event, but also promote online streaming and open access to a much wider group of participants, accompanied by the opportunity to provide feedback online that can contribute towards the overall project goals.

Details of the FLOODSECURE Associate Partners along with letters of support can be found under Section 4-5 of this proposal.

3.4 Resources to be committed

FLOODSECURE is planned over a **duration of 5 years**, using a total of **277.7 person months** effort from **25 partners**, drawn from **9 different countries**, with a requested grant of **€3.484.985,94**.

Other direct costs form ~27% of the project costs. This high percentage of costs is due to the allocation of a significant budget (**€400k**) to directly support the participation of up to 50 practitioners in both the annual project workshops and in external practitioner events spread across the 9 partner countries.

The amount of budget allocated for the interaction with industry, academia and other providers of innovative solutions is substantial, and forms the core of the FLOODSECURE work, well in excess of the 25% minimum specified:

WP1	Coordination (including PMgT coordination support)	10%
WP2	Dedicated to Communication, Dissemination and managing the FLOODSECURE workshops and practitioner participation in these and external events	41%
WP3	Monitoring research and innovation for uptake and industrialisation opportunities	9%
WP4	Establishing common requirements for future research and innovation priorities	11%
WP5	Identification and Specification of Products and Processes for Standardisation	11%
WP6	Field Demonstration & Exercises, Testing and Training Facilities and Resources	12%
WP7	Community Network Support	6%

All partner costs for travel, workshop hosting etc have been calculated using the following values:

- European air travel €500
- 24 hr hotel / food €150
- Annual workshop = 2 days + 1 flight €800
- Support for hosting a technical meeting €500
- Support for hosting an annual workshop €5000

Table 3.4a Person months required

		WP1	WP2	WP3	WP4	WP5	WP6	WP7	Total
P01	Samui-Fr	21.00	11.70	0.05	0.00	0.20	0.00	9.90	42,85
P02	Deltares	1.00	3.30	0.95	11.25	1.10	0.70	0.45	18,75
P03	RWS	1.00	3.05	0.95	1.55	1.10	2.65	0.75	11,05
P04	UPC	1.00	3.30	11.50	1.55	1.10	0.70	0.45	19,60
P05	INT	1.00	3.05	5.55	1.55	1.10	0.70	0.40	13,35
P06	GVDS	0.00	1.40	0.90	1.55	1.10	0.70	0.00	5,65
P07	HRW	1.00	3.30	0.95	1.55	9.10	0.70	0.45	17,05
P08	EVFH	1.00	3.30	0.95	1.55	1.10	2.05	1.80	11,75
P09	DVW	0.00	1.65	0.90	1.55	1.10	0.70	0.00	5,90
P10	SPW	0.00	1.40	0.90	1.55	1.10	0.70	0.00	5,65

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P11	METCENAS	1.00	5.05	0.95	1.55	1.10	2.40	0.60	12,65
P12	ELWRI	0.00	1.65	0.90	1.55	1.10	0.70	0.00	5,90
P13	Sachsen	0.00	1.40	0.90	1.55	1.10	0.70	0.00	5,65
P14	EDF	1.00	3.05	0.95	1.55	1.10	0.70	0.40	13,40
P15	SDIS 77	0.00	1.40	0.90	1.55	1.10	0.70	0.00	5,65
P16	IRSTEA	1.00	4.45	0.95	1.55	1.10	0.70	3.55	13,30
P17	CTIF	1.00	2.80	0.95	1.55	6.40	0.70	0.40	13,80
P18	HKC	0.00	1.40	0.90	1.55	1.10	0.70	0.00	5,65
P19	BITC	0.00	1.65	0.90	1.55	1.10	0.70	0.00	5,90
P20	BME	0.00	1.40	0.90	1.55	1.10	0.70	0.00	8,55
P21	STOWA	0.00	2.80	0.90	1.55	1.10	0.70	2.55	9,65
P22	AMAYA	0.00	2.30	0.90	1.55	1.10	0.70	0.00	8,30
P23	CIMA	0.00	1.40	0.90	1.55	1.10	0.70	0.00	5,65
P24	EA	0.00	1.40	0.90	1.55	1.10	0.70	0.00	6,40
Total Person/Month		31.00	71.90	39.10	51.55	39.90	22.55	21.79	277.70

Eight partners exceed the 15% ratio of direct costs as a percentage of their total costs. Details of the costs for each of these partners are provided below. These divide into three groups as follows:

- (i) Coordinator Including various costs supporting overall promotion and implementation of the project
 - (ii) P2/P4/P7/P8/P11 Each holding 2 x €40000 to support participation of practitioners attending annual workshops and external events
 - (iii) P12 / P20 With the lowest direct cost rates combined with smaller time contributions, making T&S costs for attending the workshops a relatively high percentage of their overall budget.
- NOTE: Regardless of monthly direct cost rate, the minimum involvement of any partner is over 1PM per year, at 5.85PM total.

Table 3.4b Other direct costs – Partner by Partner

P01 Samui-Fr	Cost(€)	Justification
Travel	9750	Allocated for additional Coordinator travel (assuming 3x 1 day/night trips per year over 5 years)
	6500	Attending (10) and hosting (5) project management team meetings – 2 per year over 5 years
	14400	3 people attending 6 project workshops over 5 years
Equipment	0	
Other G&S	5000	Allocated for audit costs (budget > €325K)
	10000	Allocated for printing costs
	15000	Allocated towards translation costs
	20000	5 x €4K for live web streaming / recording for each project workshop
	20000	This budget is allocated for the subcontract development of the FLOODSECURE App during Year 2 of the project
Total	100650	

P02 Deltares	Cost(€)	Justification
Travel	4000	Attending 10 PMgT meetings over 5 years
	4800	1 person attending 6 project workshops over 5 years
	8000	Year 1 10 follow up visits for more detailed survey consultation
Equipment	0	
Other G&S	5000	Allocated for audit costs (budget > €325K)
	40000	Budget to support up to 50 associate partners (50 x €800) at workshop #1
	40000	Budget to support up to 50 associate partners attending external events in Yr 1
	2500	Hosting WP4 analysis workshops (5 x €500 – over 5 years)
Total	104300	

P04 UPC	Cost(€)	Justification
Travel	4000	Attending 10 PMgT meetings over 5 years

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	4800 8000	1 person attending 6 project workshops over 5 years Year 1 10 follow up visits for more detailed survey consultation
Equipment	0	
Other G&S	40000 40000 2500	Budget to support up to 50 associate partners (50 x €800) at workshop #2 Budget to support up to 50 associate partners attending external events in Yr 2 Hosting WP3 analysis workshops (5 x €500 – over 5 years)
Total	99300	

P07 HRW	Cost(€)	Justification
Travel	4000 4800 4000	Attending 10 PMgT meetings over 5 years 1 person attending 6 project workshops over 5 years Year 1 5 follow up visits for more detailed survey consultation
Equipment	0	
Other G&S	40000 40000 2500	Budget to support up to 50 associate partners (50 x €800) at workshop #2 Budget to support up to 50 associate partners attending external events in Yr 4 Hosting WP5 analysis workshops (5 x €500 – over 5 years)
Total	95300	

P08 EVFH	Cost(€)	Justification
Travel	4000 4800	Attending 10 PMgT meetings over 5 years 1 person attending 6 project workshops over 5 years
Equipment	0	
Other G&S	40000 40000 4000	Budget to support up to 50 associate partners (50 x €800) at workshop #5 Budget to support up to 50 associate partners attending external events in Yr 5 Attending WP6 analysis workshops (5 x €800 – over 5 years)
Total	92800	

P11 METCENAS	Cost(€)	Justification
Travel	4000 4800	Attending 10 PMgT meetings over 5 years 1 person attending 6 project workshops over 5 years
Equipment	0	
Other G&S	40000 40000	Budget to support up to 50 associate partners (50 x €800) at workshop #3 Budget to support up to 50 associate partners attending external events in Yr 3
Total	88800	

P12 ELWRI	Cost(€)	Justification
Travel	4800	1 person attending 6 project workshops over 5 years
Equipment	0	
Other G&S	5000	Hosting the project workshop in Yr3
Total	9800	

P20 BME	Cost(€)	Justification
Travel	4800	1 person attending 6 project workshops over 5 years
Equipment	0	
Other G&S		
Total	4800	

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